Supervisor's Bill No. 134—Introduced by Supervisor Chalmers.

A BILL

AN ORDINANCE REGULATING THE CONSTRUCTION AND INSPECTION OF BUILDINGS AND PARTS OF BUILDINGS, AND PROVIDING FOR THE CARE, USE AND MAINTENANCE OF THE SAME, AND REPEALING ALL ORDINANCES AND PARTS OF ORDINANCES IN CONFLICT WITH THIS ORDINANCE.

Be it Enacted by the City Council of the City of Denver:—

Sec. 1—No person, firm or corporation shall begin or continue the erection, alteration or repair of any building or structure, within the corporate limits of the City of Denver, without first having applied for and obtained a permit so to do from the Building Inspector.

Sec. 2—In all cases plans and specifications, sufficient to enable the Building Inspector to obtain full and complete information as to the character of the work proposed to be done under the permit, shall be filed with the application for permit, and if the cost of the work is to exceed $1,500.00, complete plans and specifications, showing and describing all parts of the construction, shall be submitted, and upon the issue of a permit a true copy of said drawings and specifications, signed by the architect or owner, shall be filed in the Building Inspector's office and remain on file there until the completion of all building operations had under said permit, when they shall be returned to the party who filed them; such plans and specifications so filed shall not be open to the inspection of others than those interested in the building or structure, and if not claimed by the proper party within three months after completion they shall be destroyed.

All plans and specifications of buildings of a public character shall remain on file permanently in the Building Inspector's office.
Sec----If the matters mentioned in the application for a permit or the plans and specifications filed with the same, indicate to the Building Inspector that the work to be done is not in all respects in accordance with the provisions of the City ordinances, he shall refuse to issue a permit therefor until the same has been made so to comply, when he shall issue the permit.

Sec----When the Building Inspector has issued a permit, said permit shall be a guarantee that all loads, strains, and all other computations have been checked over and corrected by the Building Inspector before said permit was issued.

Sec----With the plans and specifications of all buildings or structures over two stories in height, there shall be filed with the application for a permit, a strain sheet, showing the weights carried by the several supports when the building is fully loaded, and the safe load said supports will sustain; all loads weights and strains and all strengths shall be computed from the formulae given in this ordinance.

Sec----Permits for clearing the ground or excavating may be issued pending the completion of the plans and specifications; for such temporary permit a fee of fifty cents shall be paid and such permits shall terminate in 30 days from date thereof.

Sec----If during the progress of the work upon any structure it is desired to deviate in any manner affecting the construction or strength of the same, from the plans and specifications upon which the permit was issued, notice of such proposed change must be filed in the Building Inspector's office and his written permit obtained therefor before such alterations are made.
Sec---Building permits shall issue upon payment of the following fees for the same, viz:-

For work costing $100,00 or less---50 cts-
For work costing over $100, the fee shall be $1,00 for each $1,000, or fraction thereof, up to and including $5,000; and 50 cts additional for each $1,000 or fraction thereof, after the first $5,000, up to and including $20,000, and 25 cts for each $1,000 or part thereof after the first $20,000. The fee for moving buildings or other heavy objects through the streets, requiring the use of machinery of any kind, shall be $1,00 for each building or heavy object so moved.

Sec---The duration of all permits shall be governed by the cost of the structure; they shall not exceed a period of three months for buildings costing $5,000 or less, not exceeding four months for buildings costing between $5,000 and 10,000, and not exceeding six months for buildings costing between $10,000 and $50,000 and not exceeding twelve months for buildings costing over $50,000; permits may be once renewed free of cost, without the right to use any part of the streets.

Sec---Building permits imply a license to occupy a part of the public street and sidewalks for private use in connection with actual building operations, and it shall be unlawful to occupy any part of the street or walk before building operations have commenced or after the same have ceased. It shall be unlawful to place upon the street or walk anything not required for immediate use in connection with the structure then being erected, and when the building is under roof all materials shall be placed within the lot lines and the streets and walks cleaned and put in the same
condition as before building operations commenced.

Sec.--Building permits shall not permit the use of any street or walk, or any part thereof, other than immediately in front of the lots upon which the building is being erected and then only to the extent of thirty feet from the lot line; when there are car tracks in the street all obstructions shall be kept back six feet from the nearest rail of said tracks.

Sec.--Within the inner fire district that part of the street permitted to be used for building operations shall be enclosed with a tight board fence extending from the lot line on one side around to the lot line on the other side, and it shall be unlawful to obstruct any part of the street or walk before such fence is in place, and where the street is not paved, a temporary plank walk shall be built from the permanent walk on one side around to the permanent walk on other side. The walk shall be built of two 2 x 12 plank on 2x4 sleepers with six inch space between the plank.

During the occupation of the street, said fence and walk shall be kept in good repair. No shavings, straw or loose materials shall ever be placed upon the streets and when materials causing dust are to be handled they shall be kept wetted down.

All excavations along the street or walk shall be at all times safely guarded and protected by suitable fence or railing.

When walls are being built adjoining the street line the walk shall be closed and persons prevented from passing on said walks, unless the walks are covered as provided in section 17 of this ordinance.
Sec. 2. The regulations for the use of the streets outside of the inner fire district are the same as the inner fire district, only the fence is not required and when three feet of the sidewalk is left open, free and clean, the temporary walk will not be required.

Sec. 3. The gutter or waterway of any street shall not at any time be obstructed so as to prevent the free passage of water along the same and if the gutter shall be shaded or covered, so that ice accumulates therein, the ice will be cut out and the water allowed to pass at all times.

Sec. 4. Mortar beds shall be placed and protected so as to protect the clothing of persons passing; in the inner fire district mortar beds for mixing plaster shall not be located upon any street or public way, unless within a close fence.

Sec. 5. Red lights shall be placed and maintained from six P.M. to six A.M. of each day at both ends of every obstruction upon any street, and at intervals of seventy-five feet along the same.

Sec. 6. Whenever alterations or repairs are being made adjacent to the line of any street the building inspector may require the whole of the sidewalk to be covered with two thicknesses of two inch plank, upon proper supports, elevated not less than 12 feet above the walk; the outer edge of said covering to have a substantial guard or railing at the outer edge, the railing to be closed and not less than 4 feet in height.
Sec. -- In this ordinance the following terms shall have the
meaning herein respectively assigned to them, viz:

1st. Alteration: - Means any change in, to or upon any structure,
or things connected therewith, and to alter means to make any such
change or alterations.

2d. Repairs: The reconstruction or renewal of any part of a struc-
ture or things therewith connected, by which the structure shall
be maintained in good order and repair, without change in its fire
risk, strength or sanitation, and not made for the purpose of con-
verting the structure, in whole or in part, into a new one.

3d. AREAS: Sub-surface excavations adjacent to the building for the
purpose of lighting and ventilating cellars or basements; the same
are prohibited from projecting into any street or alley.

4th. Cellar: The lower story of any structure or building.

5th. Basement: One whose floor is more than 18 in. and less than
one half the height of the story below the sidewalk grade.

6th. 1st. Story or ground floor: The story the floor of which is
not more than 18 in. below the sidewalk grade and nearest to the
sidewalk; other stories to be numbered in regular succession count-
ing upwards.

7th. Footing: Projecting course under base of foundation walls or
piers, &c.

8th. Foundations: That part of the walls or supports of a build-
ing that are below the grade line and next above the footings.

9th. Depth of foundations: The depth of foundations of any build-
ing shall be measured in each case from the level of the top of
the curbing directly opposite said foundations.

10th. Height of stories: The perpendicular distance from the top
of the floor joist to the corresponding point in the next story.
11th. Height of Structures: The perpendicular distance of the highest point of the roof above the sidewalk grade adjoining.

12th. Building Line: The line between public and private space, the lines given by the City Engineer in the survey of the lots.

13th. Bearing Walls: Those walls upon which the joist, beams, trusses or girders rest.

14th. Partition walls: Any interior wall other than a Party wall.

15th. External Walls: Every outer or vertical enclosure of a building, other than a party wall.

16th. Party Wall: (a) A wall built upon a dividing line for the joint use of two owners; (b) Every wall built or used as a separation of two or more buildings.

17th. Brick, Pressed: Brick manufactured by high pressure in separate moulds and burned to the highest point of consolidation without vitrification.

18th. Brick, Hard Burned: Brick manufactured by the "continuous stiff mud" or other process, not pressed and burned almost to the point of vitrification and giving out a clear ringing sound when struck with metal.

19th. Brick, Soft: Sometimes called salmon brick; light colored, soft, crumbly brick, will not ring when struck, absorbs large percent of moisture and of low crushing resistance.

20th. Brick, Push-placed: Brick laid in a bed of mortar and shovelled or pushed to place in such a manner that all open space between the brick and the adjoining brick at the ends, sides and bottom are filled completely filled with mortar.

21st. Owner: Any person, firm, corporation or agent controlling or collecting rents from property in this City.
22d. Public Buildings: Every Theater, Opera House, Hall, Church, School or other buildings intended to be used for public assemblages or any part of any building so used.

23d. Building Inspector: The Building Inspector of the City of Denver or any of his Assistants; The Officer having charge of the inspection of buildings and parts of buildings in the City of Denver.

24th. Tenement House: A building which or any part of which is occupied or intended to be occupied, as a dwelling for three (3) or more families living independently and doing their own cooking on the premises; or by two (2) or more families above the first floor, so living and cooking.

25th. Factory: Any premises where steam or other mechanical power is used in the aid of any manufacturing process there carried on.

26th. Street: Shall include all public ways, alleys, lanes, courts, sidewalks and those parts of public places which form traveled ways for the public.

27th. Shed: A structure not exceeding one story in height one or more of whose sides are open.

28th. Frame Building: Any building or structure having outer walls constructed in whole or in part of lumber or wooden frame work.

29th. Mortar-Cement: A mortar composed of one part of fresh cement to not more than three parts of clean sharp sand; (bank or pit) which is to be used immediately after mixing.

30th. Mortar-Lime: A mortar composed of one part fresh burned lime to not more than four parts of clean sharp sand, which shall not be used before being thoroughly slacked.
31st. Mortar- Cement and Lime: A mortar made of one part of cement, one part of thoroughly slacked lime and not more than six parts of clean sharp sand.

32d. Concrete: A mortar made of cement, sharp sand and clean broken stone not larger than hens' eggs, the whole to be thoroughly mixed when dry and then add only sufficient water to make a stiff mortar, deposited in place and ramed with a beater until the water forms at the top. The maximum proportions of materials shall be two (2) parts sand, four (4) parts broken stone, one (1) part natural cement or three (3) parts of sand, five (5) of stone to one of Portland cement.

33d. Dwellings: Buildings, either detached or in blocks, used solely as a residence and occupied by not more than two families.

34th. Slow-Burning Construction: As used in this ordinance shall apply only to buildings in which the structural members which carry the loads and the floors and roofs are made in whole or in part of incombustible materials, but throughout which all members are protected against fire by a covering of incombustible non-heat-conducting materials similar to that described under the definition of "Fire-Proof Construction", except that single covering of plaster on metal lath shall be sufficient protection for the under side of joists that are not less than 4 inches in thickness and that two inch plank form the rough floor beneath the finished floor. No floor joist shall be less than 4x12 inches.

Where Posts of greater sectional area than 100 square inches (10x10) are used they need not be covered. All partitions and elevator enclosures shall be brick or terra cotta. Fire-Stops shall be used throughout; no wooden furring or wooden lath will be allowed.
35th. Ordinary Construction: As used in this ordinance is meant the ordinary system of construction in which timbers of small size are used, with no protection against fire.

36th. Mill Construction: As used in this ordinance shall apply only to such buildings in which all the wooden girders and floor beams have an area (sectional) of not less than 72 square inches; and above all floor or roof joists, there shall be laid solid plank covering not less than three inches in thickness, or, when covered with a finished floor 7/8 inch thick, the plank covering may be 2 1/2 inches thick or more. Wooden posts in buildings of this class shall not be less in sectional area than 100 square inches. Partitions shall be wholly of incombustible materials. When iron structural members are used, they shall be covered with terra cotta or, as in "fire proof construction", wooden posts and girders need not be covered; Fire-Stop shall be used throughout and all wood lath and furring is prohibited. When wooden posts are used they shall have cast iron caps so constructed as to form a base for the post next above and form a continuous anchor lengthwise of the building.

37th. Skeleton Construction: As used in this ordinance shall apply only to such buildings wherein all loads and strains are transmitted all the way to the foundations by skeleton or frame work of rolled iron or steel. In such frame work the beams and girders shall be riveted or bolted together at all junction points. All pillars shall be made of rolled iron or steel and their parts shall be riveted to each other, and all beams or girders resting upon them shall have riveted or bolted connections.

No cast iron lintels or columns shall be used in this construction.

In all buildings of this construction where the walls are carried by the metal frame work the thickness of outside masonry shall not be less than 12 inches.
31st. Mortar—Cement and Lime: A mortar made of one part of cement, one part of thoroughly slacked lime and not more than six parts of clean sharp sand.

32d. Concrete: A mortar made of cement, sharp sand and clean broken stone not larger than hens’ eggs, the whole to be thoroughly mixed when dry and then add only sufficient water to make a stiff mortar, deposited in place and rammed with a beater until the water forms at the top. The maximum proportions of materials shall be two (2) parts sand, four (4) parts broken stone, one (1) part natural cement or three (3) parts of sand, five (5) of stone to one of Portland cement.

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Where Posts of greater sectional area than 100 square inches (10x10) are used they need not be covered. All partitions and elevator enclosures shall be brick or terra cotta. Fire-Stops shall be used throughout; no wooden furring or wooden lath will be allowed.
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37th. Skeleton Construction: As used in this ordinance shall apply only to such buildings wherein all loads and strains are transmitted all the way to the foundations by skeleton or frame work of rolled iron or steel. In such frame work the beams and girders shall be riveted or bolted together at all junction points. All pillars shall be made of rolled iron or steel and their parts shall be riveted to each other, and all beams or girders resting upon them shall have riveted or bolted connections. No cast iron lintels or columns shall be used in this construction. In all buildings of this construction where the walls are carried by the metal frame work the thickness of outside masonry shall not be less than 12 inches.
38th. Fire-Proof Construction: As used in this ordinance shall apply only to buildings in which all parts that carry weights or resist strains are constructed wholly of stone, burnt clay, iron, steel or concrete and in which all stairs, elevators, partitions and other permanent fixtures are made entirely of incombustible materials, and in which metallic structural members are protected against the effects of fire by coverings of a material entirely incombustible and slow heat conducting. The materials which shall be considered as fulfilling the conditions of fire-proof covering are: 1st. Brick, 2d. Hollow tile or burnt clay, 3d. Porous terra cotta not less than three inches thick, laid around the metal in a bed of mortar and constructed in such a manner that there shall be an air space of at least one inch between the metal and said covering; 4th. Two independent layers of plaster on metal lath, with not less than one inch space between the layers of plaster and between the plaster and the metal protected. In all cases the covered members shall alone support the covering. The filling between the beams supporting the floors or roof shall be arches of incombustible materials approved by the building inspector.
Sec. 4. All that portion of the City of Denver embraced within the following described limits shall be known and designated as the Inner Fire District; Viz:-

Commencing at the intersection of the center line of Cherry Creek with the center line of Colfax Ave., thence north-westerly along the center line of Cherry Creek to the center line of Lawrence St., thence along the center line of Lawrence St. to the center line of Seventh (7th) St., thence along the center line of 7th St. to the center line of Wazee St., thence along the center line of Wazee St. to the center line of Cherry Creek, thence along the center line of Cherry Creek to the center line of Wewatta St., thence along the center line of Wewatta St. to the center line of 18th St., thence along the center line of 18th St. to the center line of Wazee St., thence along the center line of 18th St. to the center line of Wazee St. to the center line of 20th St., thence along the center line of 20th St. to the center line of the alley between Blake and Wazee St.s, thence north-easterly along said alley to the center line of 23d St., thence along the center line of 23d St. to the center line of the alley between Blake and Market St., thence along the center line of said alley to the center line of 26th St., thence along the center line of 26th St. to the center line of the alley between Lawrence and Arapahoe St.s, thence along the center line of said alley to the center line of 23d St., thence along the center line of 23d St. to the center line of the alley between Arapahoe and Curtis St.s, thence along the center line of said alley to the center line of 20th St., thence along the center line of 20th St. to the center line of Welton St., thence along the center line of Welton St. to the center line of 20th Ave., thence along the center line of the alley between Lincoln and Sherman Aves., thence along the center line of said alley to the
center line of 16th. Ave. to the center line of Grant Ave., thence along the center line of Grant Ave. to the center line of 14th. Ave., thence along the center line of 14th. Ave. to the center line of Broadway, thence along the center line of Broadway to the center line of 12th. Ave., thence along the center line of 12th. Ave. to the center line of South 15th. St., thence along the center line of South 15th. St. to the center line of 14th. Ave., thence along the center line of 14th. Ave. to the center line of Cherry Creek, thence along the center line of Cherry Creek to the place of beginning.

See—All that portion of the City of Denver embraced within between the limits as given in the preceding section and the following described limits shall be known as the Middle Fire District; viz: Commencing at the intersection of the center line of 40th. Ave. with the center line of the alley between High and Race streets, thence along the center line of said alley to 28th. Ave., thence along the center line of 28th. Ave. to the section line between sections 25 and 36 T. #, S.R. 68 W., thence south along said section line to the south west corner of the City Park, thence east along said south line of the City Park to center line of Addams St. , to center line of 11th. Ave. , to center line of Detroit St. , to center line of 7th. Ave. , to center line of Gilpin St. , to center line of 5th. Ave., to center line of Corona St. to center line of 4th. Ave., to center line of Logan, to first Ave. to Washington, to Kentucky St. to Grant, to Florida St. to South 15th. St. to Virginia, to S. Evans, to Bayaud, to Denver & Rio Grande R.R. tracks, to 14th. Ave. to South 1st. St., to Larimer St. to 1st. St. , to the Platte River, to W. 20th. Ave. to Decatur St., to W. 17th. Ave., to Taylor, to Colfax, to Homer Boulevard, to W. 20th. Ave. to Perry St., to W. 26th. Ave. to Tennyson St. to W. 38th. Ave., to Justina.
to W. 33d. Ave., to Palmer, to 19th. St., to south east side of
the Denver Pacific (U.P.) right of way, to 34th. St., to Garden
lane, to 39th. St., to 40th. Ave., produced, to the place of begin-
ning.

Sec. 14 - All that portion of the City of Denver embraced between
the limits described in the proceeding section and the following
described limits shall be known as the outer fire district of the
City: viz: - Commencing at the center line of Colorado Boulevard
where it intersects the south line of the Town of Elyria, thence
south along the centerline of Col. Boulevard to lst. Ave., to York
to Alameda, to Denver & Gulf R.R. tracks, to the east line of the
City limits, to Warren Ave., to Grant Ave., to the south boundry
of the City, to the A. T. & S. F. R.R. tracks, to Alameda St., to
Platte River, to Rio Grande Ave., to Boulevard I., to 30th Ave.,
to west boundary of the City, to W. 38th. Ave., to Gallup Ave.,
to Gaston, to the Denver & Gulf R. R. tracks, to the Platte River,
to the south line of the Town of Elyria produced, to the place of
beginning.

Sec. 15 - Whenever two thirds (2/3) of the property owners upon
any block or number of blocks in connected location shall petition
for the same and the petition is granted by the City Council, the
Fire Districts shall be extended to include the blocks or number
of blocks mentioned in the petition; provided that all changes
thus provided for shall be extended, from the Outer to the
Middle, or from Middle to Inner, Fire districts and never in the
reverse order.
Classification of Buildings.

Sec. 2. As a means of reference in this ordinance all buildings erected within the City of Denver shall be divided into classes as follows; viz:

Class I.
In this Class shall be included all buildings used for the sale, storage or manufacture of merchandise and all livery, boarding and sale stables.

Class II.
This Class shall include all Tenement or Apartment Houses, Hotels, Boarding or Lodging houses occupied by 20 or more people, all Hospitals, Asylums and Office Buildings.

Class III.
This Class shall include all Dwellings and Private Stables.

Class IV.
This Class shall include all Public Buildings, as defined by this ordinance.

Buildings of Class IV shall be divided into two special classes as follows; viz: Class IV, a, shall embrace all buildings of Class IV, in which no movable scenery is used upon the stage thereof.

Class IV, b, shall embrace all buildings of Class IV, in which movable scenery is used upon the stage thereof.

Sec. 2. If buildings, the use of which bring them within any of the before mentioned Classes are to be applied to the use of any other class for which a better system of construction is required by this ordinance, the construction and equipment of such buildings must first be made to conform to the requirements of this ordinance as specified for their intended use and it shall be unlawful to apply any building to a new or different use than that to which its construction and equipment adapts it under this ordinance, unless the requirements of this ordinance for such new or different use shall first have been complied with and a permit for such alteration or use shall have been obtained from the building inspector.
Sec. 2-2. No frame building, frame shed or other frame structure shall be erected in any of the Fire Districts of the City of Denver, except as is herein provided.

Sec. 2-3. Within the Inner Fire District all buildings over six stories in height or over 80 feet in height, except Churches and Grain Elevators, shall be wholly of Fire-Proof Construction.

Sec. 2-4. Within the Inner Fire District all buildings over six stories in height or over 80 feet in height, except Churches and Grain Elevators, shall be wholly of Fire-Proof Construction of Class IY, B.

Sec. 2-5. Within the Inner Fire District all buildings not Fire-Proof and all buildings over 50 feet or more than three stories in height and less than 80 feet in height, if not Fire-proof shall be of Slow-burning or Mill construction.

Sec. 2-6. Within the Inner Fire District all Dormers, Gables, Hones, Towers, Spires, Cornices, Gutters, Bay-windows, Balconies, Forches, Bulk-heads, Tank houses, roof covering and other appendages placed on buildings shall be constructed of incombustible materials, except as herein provided. Lookouts, maybe of blank when walled in solid walls.

Sec. 2-7. Within the Middle Fire District all buildings over four stories in height, if not fire-proof, shall be slow burning or Mill construction.

Sec. 2-8. Outside of the Inner Fire District, buildings used as dwellings or private stables may have the gables, dormers, porches and all that part above the walls of the upper story, constructed of frame work, except as herein provided.
Sec. 22.— Out side the Inner Fire District, buildings used exclusively for the storage of grain or ice may be constructed with solid wooden walls in the manner known as "crib-construction", provided that such walls shall not be less than six inches thick.

Sec. 23.— Out side of the inner and middle fire districts, buildings embraced in Class III, when not more than two stories in height, if erected five feet from the lot line, may have the second story walls and the roof constructed of wooden frame work.

Sec. 24.— Within the Outer fire district, buildings used exclusively for stables, coal houses or privies, when not more than 500 ft. area (20x25) and not over 14 ft. to the highest part, may be constructed of wooden frame, provided such structures are built on the rear of the lot and not nearer than 75 ft. of any street.

Sec. 25.— Out side the inner fire district, porches may be built of wooden frame work against the external walls of any building, provided that the width of any such porch shall not exceed ten feet nor the highest part pass more than two feet above the second floor joist; nor shall any such porch within the middle fire district be built within five feet of any division line unless the side or end adjoining the division line shall have a brick or stone wall; if of brick not less than 8 in. thick, if of stone, not less than 12 in. thick; said brick or stone walls shall extend above the roof not less than 16 inches.

Sec. 26.— Porches must have not less than 75 per cent of the sides and ends open, unless enclosed with incombustible materials. No stove, range or fire of any kind will be permitted in or upon any porch.
Sec. 25. All porches over one story in height shall have their floors constructed of three inch plank laid on joist not less than 4 in. thick and open below the floors and roof covering; the sides or ends shall not be enclosed except with incombustible materials.

Sec. 27. Bay or oriel windows and balconies, located above the first story, not exceeding 10 ft. in width and projecting less than four feet from the wall line, may be built of wood in the middle and outer fire districts, provided they are not less than 5 ft. of any division line or other wooden structure of like nature.

Sec. 28. Outside of the Inner fire district, conservatories or green houses may be built with brick or stone walls not less than two feet above the surface and with a wooden frame filled with glass; the proportion of glass surface above the walls to be not less than 80 per cent of walls and and roof.

Sec. 29. Outside the inner fire district, tank houses, bulkheads upon the roof of any building may be built of wood and covered with tin or iron, 4 in. veneering, cement plaster on metal lath or tile, but such structures shall not be over 14 feet in any dimension, nor shall there be more than one such structure upon any one building.

Sec. 30. Outside the inner fire district, pavilions, summer-houses and children's play houses may be built inside of private grounds, of wooden frame work, provided that such structures are not nearer than 10 feet of any brick or stone building or within 20 feet of any frame, and it shall be unlawful to use any such building for any other purpose than those mentioned in this section.
Sec. 45 — No wooden or canvas sign over 24 inches in width shall be placed upon the side or top of any building within the fire district, nor shall any such sign have other than the ends nearer than five feet of any other sign of wood or canvas, nor shall any such sign project over the lot line upon any street of the City.

Sec. 46 — All signs or other appendages placed upon the top or sides of buildings within the inner fire district shall be wholly of incombustible materials, and the hanging, placing and fixing of all such work shall be subject to the approval of the building inspector. The placing and securing of all bill boards and like structures shall be subject to like approval, and they shall not be erected without a written permit from the Fire and Police Board.

Sec. 47 — The use of any part of the sidewalk, streets or alleys of the City for steps, stairs, vaults, sub-surface excavations or for like purposes, is by this ordinance prohibited, and when material alterations or additions are made to existing buildings, they shall be made to conform to this ordinance.

Sec. 48 — It shall be unlawful to place, fix or stretch any spiked railings, barbed wire or things of like nature, anywhere within the City limits of the City of Denver. Wooden fences shall never exceed six feet in height. No wall of masonry used as a fence shall exceed six feet in height.

Sec. 49 — No boiler for the production of steam shall be permitted outside of a suitable building to enclose the same, except for temporary hoisting in connection with building operations, and then only in manner approved by the building inspector.

Sec. 50 — In every factory, mill or other like place where belting, gearing, shafting or things of like nature are used, the same shall be guarded in such a manner as will reasonably protect persons employed or passing near the same.
Sec. 312. All receptacles for ashes shall be built of brick, stone, or other incombustible materials with walls not less than 8 in. thick, with proper iron doors, the doors to be kept in repair and closed when not being used to empty said pits. No receptacle for ashes shall ever be allowed to overflow or so constructed that the ashes will be blown about by the wind.

When ash cans are used they must have double bottoms with a space of at least two inches between, the covers secured with iron hinges and the cans at all times be in proper repair, the lid to be closed when not being filled or emptied.

Sec. 589. Any existing frame building that is in good condition and suitable for the purpose may be veneered with 4 or 8 inches of brick work, the building inspector having examined such structure and given his permit for such veneering.

Sec. 582. Permits may be issued to alter any existing frame building in any manner provided the height or area or fire risk is not increased and outside of the inner fire district improvements may be made to existing frame buildings or to the second story of buildings having the second story of frame, provided the application for such permit shall have the approval of the Mayor and the Denver Board of Underwriters indorsed thereon or attached thereto.

Sec. 583. Loose hay shall not be piled or stacked in any lot within the Middle or inner fire districts or kept in any place outside of a proper building to enclose the same.

Sec. 584. Inflammable oils or explosives shall never be placed or stored near any stairway or exit from any building so as to render the exits dangerous in case of fire or accident.
they still fail or refuse for a period of three days, after being so notified by the building inspector, the building inspector may enter upon the property, employ such labor, purchase such materials and take such steps as in his judgment may be necessary to make the adjoining walls or structures safe and prevent the same from becoming unsafe or dangerous, at the expense and cost of the owner or owners of such adjoining walls or structures. Any party doing said work or furnishing said materials or any part thereof, under and by direction of the building inspector may bring and maintain an action against said owner or owners in the same manner as if he had been employed to do said work or furnish said materials by the owner or owners of said walls or structures.
Sec—Every brick, stone or iron building hereafter built in the City of Denver shall be built upon a foundation, the footing or lowest course of which shall not be less than 18 in. below the natural surface of the earth and upon firm solid ground suitable for the purpose. In case solid ground is not reached, then the footings shall be laid upon driven piles, timbers, rip-rap or such other work as shall be approved by the building inspector. Foundations shall not be laid upon made or filled ground or on soil containing admixture of organic matter. The surface ground around all buildings shall be graded so that the watershall drain away from the walls of the building.

Sec.—In all buildings over 4 stories in height the earth shall be tested at least three feet below the bottom of the trenches and should a stratum of clay or loam less than six feet in thickness be encountered within three feet, the footings shall be carried through it.

Sec.—The foundation walls of every building and the internal supports shall rest upon footings of stone, hard burned brick, concrete or iron bedded in concrete and such footings shall be not less than 12 in. wider than the wall or pier immediately above them and the actual pressure upon the soil beneath the footings shall never exceed 5 tons per square foot on coarse sand and gravel, 3 tons per square foot on sand and gravel, two tons per square foot on clay or adobe or one ton per square foot on loam.

Sec.—Buildings whose external walls are over 60 feet in height shall have dimension stone footings of hard laminated stone or portland cement concrete not less than 8 in. thick, and if of stone the stone shall cross the wall in one length and project equally on both sides, except on party lines. Footings for piers or columns shall be one stone up to 5 ft. in size, above that size two stones properly bonded may be used.
When the external walls of any building exceed 80 ft. in height the stone footings shall rest on a bed of concrete not less than 12 inches in thickness and 12 inches wider than the stone footing laid upon it. If brick footings are used they shall be "stepped up" and the offsets, if laid in single courses, shall not exceed 1,1/2 inches or if laid in double courses, the offsets shall not exceed 2 in. and in all cases there shall be double courses at the bottom. If iron or steel beams are used as part of the footings they must be placed in a bed of concrete extending not less than 8 in. below and on all sides of the rails; the ingredients of the concrete must be such that after proper ramming the interior of the mass will be free from cavities.

Sec. 3.--The external walls of all buildings embraced in classes II, and III, when not more than 4 stories in height, shall be of a thickness not less than that indicated in the following table:

<table>
<thead>
<tr>
<th>Stories in Height</th>
<th>Thickness of Walls in Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basement, 1st. Story, 2d. Story, 3d. Story, 4th. Story,</td>
<td>13&quot; 9&quot;</td>
</tr>
<tr>
<td>1st. Story</td>
<td>13&quot; 9&quot;</td>
</tr>
<tr>
<td>2</td>
<td>17&quot; 13&quot;</td>
</tr>
<tr>
<td>3</td>
<td>21&quot; 17&quot;</td>
</tr>
<tr>
<td>4</td>
<td>21&quot; 17&quot;</td>
</tr>
</tbody>
</table>

provided that dwellings and private stables not exceeding 850 ft. (20X40) of ground area (not including porches) may have 13" walls in the basement and 9" inch walls on the second story. Further provided that no 9" wall shall have a greater length than 30 ft. or greater height than 10 ft. when so used, without cross walls or proper return angles to stiffen said walls.

Sec. 4.--The external walls of all buildings embraced in classes I, and IV, and all buildings over four stories in height, shall be of a thickness not less than indicated by the following table.

<table>
<thead>
<tr>
<th>Stories in Height</th>
<th>Thickness of Walls</th>
</tr>
</thead>
<tbody>
<tr>
<td>one</td>
<td>17&quot; 13&quot;</td>
</tr>
<tr>
<td>two</td>
<td>17&quot; 13&quot;</td>
</tr>
<tr>
<td>three</td>
<td>21&quot; 17&quot;</td>
</tr>
<tr>
<td>four</td>
<td>26&quot; 21&quot;</td>
</tr>
<tr>
<td>five</td>
<td>26&quot; 21&quot;</td>
</tr>
<tr>
<td>six</td>
<td>30&quot; 26&quot;</td>
</tr>
</tbody>
</table>

(5)
Sec. 32. Buildings of Class 1, when not over 40 feet in length, and not over 25 feet wide, and not exceeding 16 feet in height, may have walls 4" less in thickness than is given in the above table.

Sec. 33. - Party walls (a) intended for the use of two or more owners shall not be less than 4 1/2" thicker than is required for external walls in the above table. Party walls (b) between buildings belonging to the same owner and erected at the same time shall not be less in thickness than shown in the above table for external walls for buildings of the same class.

Sec. 34. Foundation walls shall be built of Stone, Hard Burned Brick or Concrete; if built of Brick they shall not have a less thickness than shown in the above tables to a depth of 12 feet below the grade line, and for every additional 10 feet, or part thereof, deeper, they shall be increased 4" in thickness, except as provided in section---- of this ordinance.

Sec. 35. - Walls built of Rubble Stone work shall not have a less thickness than 4" thicker than shown in the above tables.

Walls built of Dimension Stone equal to St.Vrain or Ft.Collins stone may be of the same thickness as shown in the above tables when that thickness exceeds 17".
Sec.--- All Stone Walls 24" or less in thickness shall have at least one header extending through the wall in every five feet in length of the wall and every three feet in height. All walls over 24" in thickness shall have the same number of headers running into the wall 2/3 of the thickness of the wall, to be lapped with headers from the opposite side of the wall. All headers shall be not less than 12" in width and not less than 6" in thickness, and all stone built into any wall shall be laid on the natural bed.

Sec.--- Partition walls may be 4" inches less in thickness than the dimension shown in the above tables for external walls, provided that no brick wall shall be less than 8" in thickness and no 8" wall shall exceed two stories in height or 60 feet in length; and no 12" wall shall exceed three stories in height or 125 feet in length, without cross walls or proper buttresses for lateral support. All interior walls supporting joist shall be carried up to the top of said joist and plastered flush with the top of the joist, unless the same are the ceiling joist, when in all flat roofed buildings and in all buildings of class I, and IV, the walls shall be carried to the top of the roof joist, leaving no openings in the attic unless said openings are covered with iron doors and said doors closed at all times when not in actual use.

Sec.--- All changes in the thickness of walls shall be at the top of the joist and not otherwise, and that portion of the walls above the ceiling joist shall be of the same thickness as given for the upper story; and when the external or party walls pass more than four feet above the last floor timbers it shall be classed as a full story.
Sec---- In all walls the same amount of materials may be used in piers or buttresses or for hollow walls, but when such construction is employed it shall be subject to the approval of the building inspector. All hollow walls shall be properly bonded together with brick, stone or terra cotta, or with wrought galvanized iron wire wall ties not over three feet apart in any direction.

Sec---- Whenever in any building in Class II, or III, the height of the basement story exceeds 11 ft., or any of the other stories exceed 13 ft., or whenever in any building of class I, or IV, the height of the basement exceeds 12 ft., or the 1st. story exceeds 16 ft., or any of the upper stories exceed 12 ft., or the top story exceeds 16 ft. to the roof timbers where no ceiling joist are used, the thickness of such stories must be increased 4" and the thickness of the walls below, if not of such increased thickness, they shall be so made.

Sec---- All buildings that are over 100 ft. in width or over 125 ft. in depth, without proper cross walls or buttresses, shall have such long walls increased 4" in thickness and a further increase of 4" for every 100 feet of fraction thereof said walls are longer than the above dimensions.

---- If in any horizontal section through any wall in any building there shall be more than 25 per cent of openings then such wall shall be increased 4" inches in thickness and the walls below made the same or greater in thickness.

Sec---- The external and party walls of all buildings with flat roofs shall be carried at least 18" above the roof and coped with stone, iron or terracotta, except such walls as are finished with a gutter or cornice, when the walls shall extend to the under side of the roof boards.
All parapet or fire walls extending over three times their thickness above the roof timbers shall be securely braced with iron braces, each 12 ft. in length of wall.

Sec-12--No recess for pipes, ducts or other purposes shall be cut into any wall more than one third the thickness of the wall, and then only in vertical lines, and no recessing or cutting shall be done in any 9" in. wall, nor nearer than six feet of any outer angle; horizontal recessing is unlawful. All recesses or openings in walls shall be filled in solid around pipes or ducts from 6" below to 18" above the joist, with mortar or cement.

Sec-13--The walls, piers, buttresses and other portions in all buildings shall be properly bonded and solidly put together with close joints filled with mortar; they shall be built to a line and carried up plumb, straight and true from bottom to the top.

Sec-16--No soft or under burned brick and no inferior, soft or shelly stone or stone absorbing more than three per cent of moisture shall be used in any building except for fire stops.

No Salmon brick shall be used in any building where exposed to the weather, or in piers, nor in any part of any wall where there is unusual weight or where there is more than 25 ft. of wall above them.

Sec-17--All brick walls shall be built with header courses at least every seventh course, the headers lapped over each other and going through the wall, except where face bricks are used.

Pressed brick facings must be bonded to the backing at least once in every seven courses by solid headers or galvanized iron wall ties; the clipping of corners is prohibited.

Pressed brick in all cases must be laid with a full bearing of mortar under the whole surface; the laying of pressed brick with a "buttered joint"
or with merely a thin ring of mortar at the outer edge shall be unlawful and is prohibited.

Sec. 241. Piers faced with pressed brick shall have only solid 8x8 headers and when piers are less than 24" in their least horizontal dimension the core shall be built of pressed brick of the same size and strength as the facing.

Sec. 242. All piers, buttresses or pilasters that carry 2/3 of their safe load and are less than five feet on any side shall have bond stones every four feet in height; the bond stones shall be not less than six inches in thickness and the full size of the pier, buttress or pilaster; and all piers, buttresses and pilasters shall be capped with a stone or iron cap.

Sec. 243. No pier of masonry which carries 1/2 its safe load shall exceed in height more than six times its least horizontal dimension, nor shall any such pier, buttress or pilaster be built in freezing weather. All brick laid in such members shall be push placed.

Sec. 244. In no case shall the front or side walls of a building be carried up more than ten feet in advance of the other walls unless by permission of the building inspector, in which case iron anchors shall be built into all angles and joinings.

Sec. 245. Walls may be built with a facing of stone, terra cotta or other suitable materials securely tied to a backing not less than 8 in. of hard burned brick laid in proper manner, but the thickness shall not be less than required for brick walls of the same height.

Sec. 246. The sand for mortar in all buildings shall be clean, sharp
The walls and timbering of all buildings shall be securely braced during erection or alteration.

All openings for doors, windows and the like in walls of masonry shall have good and sufficient arches with sufficient abutments or shall have lintels of stone or iron of sufficient strength. All arches not having sufficient piers or abutments to resist the thrust of the arch when loaded shall have proper tie rods to prevent the arch from spreading the walls; low flat arches shall not be used unless over iron or stone lintels. All wooden lintels used in walls where the opening will permit, shall have the upper side cambered and shall have a two or more row lock arch over them. No wood or combustible materials shall be used in any stone or brick wall except lintels or arch forms.

The ends of all girders, lintels, beams, trusses, posts or other supports shall rest on a hard flat stone or iron plate of sufficient size as will spread the weight over sufficient superficial surface that the stress upon the masonry or the earth shall not exceed the safe limit herein after mentioned and provided.

In buildings of fire-proof, hill or slow-burning construction no wall of brick or stone shall be supported in whole or in part by wooden posts or girders; but in buildings of ordinary construction interior walls not exceeding 18 ft. in height, and external walls not exceeding six ft. in height may be supported by wooden posts and girders properly portioned and of not less than 64 square inches in sectional area, and such wooden girders shall not have a greater span than ten feet.
Six and four-inch hollow tile partitions of hard.

clay or porous terra cotta may be built not exceeding 16 and 14 ft. respectively, and in their horizontal measurements 40 ft. between cross walls, piers or buttresses, but such partitions shall not be used for bearing walls. All such partitions are to be solidly put together in lime or cement mortar and carried upon proper beams or girders; when only one story in height they may rest upon wooden beams or girders.

Every brick, stone or iron building hereafter erected more than 25 ft. in width, except dwellings not exceeding three stories in height and tenement houses not exceeding two stories in height, shall have brick or stone partition walls or girders supported on columns so located that the distance between any two partition walls or girders, or between said walls and girders and the external walls shall not exceed 24 ft.; and where wooden columns or girders are used the sectional area of such posts shall not be less than 8x8, and for girders 8x10, and the columns shall not be farther than 14 ft. apart.

Wooden columns supporting girders, when erected in tiers a one above another, shall have cast iron caps and brackets, and the columns in the upper stories shall rest on the cap of the column below and never on the girder.

In all apartment and double houses the dividing walls or partitions between the apartments provided for one family shall be made entirely of incombustible materials, or of solid three inch plank plastered each side on metal lath. In the absence of definite subdivisions between each family eight (8) rooms shall be taken as the equivalent of one apartment.
Sec.——It shall be unlawful to cut or leave any opening in any division or party wall above the first story, except as herein provided; all such openings to be approved by the building inspector and a permit issue therefor. Every opening left in or cut through a division or party wall shall be closed with iron or metal covered doors hung on each side of the wall to iron or metal covered frames or to iron hinges bolted through the wall; all such doors shall be self closing and held open only by a cord that will readily burn and allow the doors to close. No such opening shall be more than ten feet in height or width and all such openings shall be closed at the end of each day's business and not opened until the next business day.

Sec.——The enclosing walls of light and elevator shafts shall in all cases be built entirely of incombustible materials.

The use of hollow tile or terra cotta for the walls of light or elevator shafts is permitted, but such enclosing walls shall be firmly anchored to the timber or iron framing of each floor.

Where the walls of light or elevator shafts begin at any point above the foundation of the building, their means of support shall consist entirely of fire-proof materials.

Sec.——Every habitable room shall have at least one window communicating directly with the outer air. Waterclosets and plumbing fixtures shall be placed only in rooms that are ventilated by windows or skylight opening directly to the outer air. No such rooms shall be ventilated by a light shaft which ventilates habitable rooms unless such light shaft is more than 8 feet in its least dimension. No space of less than 40 square feet for three story buildings or less than 50 square feet for four story buildings, and so on increasing 10 ft² for each story additional shall be con-
considered as affording communication with outer air and such open space or light shaft, if covered with a skylight or roof of any kind, shall not be considered as fulfilling the requirements of this section.

Sec------- Chimneys in all buildings over one story in height shall have the walls at least 8 in. thick, unless lined their entire length with tile flue linings, in which case the walls cut side of the linings may be reduced to 4", except as hereafter provided.

Stone flues shall have walls not less than 8" thick in addition to the tile linings. The inner side of all flues not lined shall be plastered smooth from bottom to the top. All brick laid in any flue shall be push placed. All flues cut or placed in old work shall have flue linings from the bottom to the top with a brick wall around the linings.

Sec-------All chimneys shall be built to a height of not less than four feet above the roof adjoining; if such roof is a flat roof and not less than 18" above the ridge if the roof is a pitch roof and the chimney is within 12 ft. of the ridge. All chimneys rising more than five times their least horizontal dimension shall be securely braced with iron anchors; when the short sides of flues have 8" walls they may rise seven times their least side without bracing.

Sec------- No flue shall be corbelled from any wall more than 1/2 the thickness of the wall nor shall any chimney rest upon any wood construction. No chimney shall be built nearer than six feet of any outer angle of any building unless the outer walls of such flue is not less than 13" in thickness. No chimney shall be drawn to one side more than 1/3 of its size unless supported on metal or incombustible frame work approved by the building inspector.
Sec. — No wood furring shall be placed against any flue or around any chimney, nor shall any wood work be placed within two inches or wainscoting inches of any chimney, except the base outside of the plastering.

Sec. — Smoke flues of a greater area than 172 square inches and less than 500 square inches shall have the walls not less than 8" thick and the top of such flues shall extend at least five feet above the highest opening into any building within 50 ft. of such chimney.

Sec. — Smoke flues of a greater area than 500 square inches shall have hollow walls in which there shall be not less than 16" of brick work and 4" of hollow space between the walls.

From a distance of two feet below the smoke inlet to a distance of 20' feet above the same chimneys having a greater area than 300 square inches shall be lined with fire brick laid in fire clay.

The top of such flues shall extend to a height of not less than 20 ft. above the highest window opening into any building within 80 ft. of such chimney.

Sec. — Metallic smoke pipes shall not be used inside of any building in such a manner as to pass through floor or roof unless such metal smoke pipe be enclosed with brick or tile walls or metal jacket, the jacket to be made of two concentric rings of sheet metal at least two inches apart and one inch from the smoke pipe and so constructed that there shall be a free circulation of air between the rings and the pipe and the wood work; such rings and spaces for air shall be proportioned to the size of the smoke pipes.

Sec. — Metallic smoke pipes shall be kept away from all wood work by at least the diameter of the pipe unless the woodwork is protected by a metal shield fixed at a distance of 1/4 the diameter of the pipe, when the pipe may be placed within 1/2 the diameter;
such shields must extend on each side and be of a width three times the diameter of the smoke pipe. When double shields are used with an inch space between the metal sheets the smoke pipe may be placed 1/2 the last mentioned distance from the wood.

Sec______-The ceilings over furnaces, boilers and other heating apparatus shall be plastered on metal lath unless the ceilings are incombustible or protected by metal shields, or the top of the same below are more than 18 in. above the ceiling.

Sec______-No heating stove, range, oven, furnace or other apparatus in which coal or wood is burned shall have the sides, top or bottom placed within 12" of any wood work, unless the wood work is protected by metal shield as above, and there shall be free circulation of air all around such heating apparatus unless placed on or against incombustible masonry.

Sec______-No furnace, range, boiler or other heating apparatus having a grate surface of more than 100 square inches shall be set in any building or its location changed without a permit from the Building Inspector and no such apparatus having a grate surface of over 300 square inches shall have the smoke pipe therefrom enter any flue having the walls less than 8" thick.

Sec______-No smoke pipe from any stove shall be projected through any roof or external wall of any building without the written approval of the Building Inspector.

Sec______-No fire-place shall be built with less than 8" of brick wall at the back. Brick trimmer arches shall be turned for all hearths unless the same are supported on iron frame work; all trimmer arches for hearths in floor joist less than 12" thick shall be supported on iron frame work with no wood below them; in all joist 12" or over in height, the hearths may be supported on wood.

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wholly self supporting.

Sec． No boiler used for steam heating, water heating or motor power, and no furnace for melting and no oven shall be placed on other than the basement floor unless placed on incombustible beams and arches and all wood work removed from near the same, and in no case without a permit from the building inspector.

Sec． Every boiler used for steam heating or motor power, in buildings over 1 story in height shall be placed in rooms made fire proof, or such rooms shall be surrounded with brick walls going up close to the floor boards, all openings through these walls to be protected with iron or metal covered doors; the ceilings, when supported on wooden joist, shall be protected with two coverings of plaster on metal lath, separated by two inches of metal furring. The space at the foot of all elevator or light shafts shall be protected as above as to the walls and doors.

Sec． All chutes, ducts, conveyors or other openings from one part of a building to another part, used for any purpose, shall be constructed of brick, tile, metal or other incombustible materials and shall have self closing doors at every opening to prevent draft along the same.

Sec． No Smoke Stack or chimney in connection with any laundry, factory, manufactory or other like establishment where power is used exceeding 20 horsepower, shall hereafter be erected of less height than 20 feet above all buildings within a radius of 300 ft. unless with the written consent of the owners of such buildings, nor shall any steam boiler or boilers be set up or installed in any part of the inner or middle fire district of the City without
the written consent of 2/3 of the property owners within a radius of 400 feet, except for running elevators, electric plants, heating or pumps, situated within the building where the boilers are located. No boilers or heating apparatus shall be placed beneath the stairs or exits from any public building, nor beneath the auditorium of any Church or assembly hall.

Sec. 10. All buildings of Class 1 not having direct entrance to the basement from the outside shall have in the first floor, within six feet of the front and rear doors, trap-doors, not less than 12 x 18 inches in size, and so constructed that they may be readily opened by the firemen in case of fire in the basement.
Sec.—No building and no lot within the inner fire district, except those now in actual use for such purposes shall hereafter be occupied or used in whole or in part as or for any of the purposes herein mentioned, to wit: Planing mills, sash, door and blind factory, wood yard, lumber yard for the storage and sale of lumber, hay yards for the sale or storage of hay or straw, nor shall any such business be established in either the middle or outer fire districts without a special license from the City Council approved by the Mayor.

Sec.—Within established coal yards, outside the inner fire districts, coal bins for the storage of coal may be built of crib construction out of surfaced 2x4 timber, provided such bins shall not be over 12 feet in height and covered with a corrugated iron roof, and the cross walls between bins shall not be farther apart than 12 ft.

Sec.—No wooden fence exceeding six feet in height shall be erected in any of the fire districts of the City. No wall used as a fence shall exceed six feet in height. Open iron cresting may be placed on the top of walls to increase the height when used as a fence, same to be well bolted to the wall.

Sec.—No building, any part of which is within forty feet of the dwelling of an adjoining owner, shall be erected for or converted to use as a stable, without the written consent of such adjoining owner or owners.
Sec----The load placed upon walls, piers, or other supports of masonry shall never exceed the limit given in the following table:

| Materials | Safe load per sqr-
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>superficial foot</td>
</tr>
<tr>
<td>Brick Work, Common with coal dust</td>
<td>3 Tons</td>
</tr>
<tr>
<td>&quot; &quot; Hard burned with coal dust in lime mortar</td>
<td>5 &quot;</td>
</tr>
<tr>
<td>&quot; &quot; &quot; without coal dust</td>
<td>8 &quot;</td>
</tr>
<tr>
<td>&quot; &quot; Selected hard burned in cement mortar</td>
<td>9 &quot;</td>
</tr>
<tr>
<td>&quot; &quot; Pressed, Fire, Paving, in lime mortar</td>
<td>11 &quot;</td>
</tr>
<tr>
<td>&quot; &quot; in cement mortar</td>
<td>12 &quot;</td>
</tr>
<tr>
<td>Terra Cotta solid in cement</td>
<td>18 &quot;</td>
</tr>
<tr>
<td>Hollow tile in cement mortar</td>
<td>3 &quot;</td>
</tr>
<tr>
<td>Concrete, Best Portland cement 1 to 5 after 20 days</td>
<td>10 &quot;</td>
</tr>
<tr>
<td>&quot; &quot; Best natural cement 1 to 5 after 20 days</td>
<td>4 &quot;</td>
</tr>
<tr>
<td>Stone Work, Lava rubble in lime mortar</td>
<td>4 &quot;</td>
</tr>
<tr>
<td>Lava Dimension in lime mortar</td>
<td>5 &quot;</td>
</tr>
<tr>
<td>Lons or Ft. Collins rubble in lime mortar in cement mortar</td>
<td>8 &quot;</td>
</tr>
<tr>
<td>Cement mortar</td>
<td>12 &quot;</td>
</tr>
<tr>
<td>Dimension in lime mortar</td>
<td>20 &quot;</td>
</tr>
<tr>
<td>Cement mortar</td>
<td>30 &quot;</td>
</tr>
<tr>
<td>Granite dimension dressed beds</td>
<td>40 &quot;</td>
</tr>
<tr>
<td>Sand stone best with dressed beds</td>
<td>12 &quot;</td>
</tr>
<tr>
<td>Soft, inferior dressed beds</td>
<td>3 &quot;</td>
</tr>
</tbody>
</table>

Other material as given in standard engineering works.

Sec----Cast iron subject to crushing strain only, as in plates, may be loaded to the extent of 15,000 pounds per square inch when not less than one inch in thickness.

Compression strain on cast iron shall not exceed 13,000 pounds per square inch.

Tensile strain on cast iron shall not exceed 3,000 pounds per square inch.

Cast Iron used for pillars shall be proportioned in accordance with the following formulas:

For Round Cast Iron Columns:

\[ S = \frac{12,000 \times A}{1 + \frac{L}{600D}} \]

S - Safe load in pounds,
L - Length of Column in inches
A - Sectional area of column in square inches
D - Diameter of Column in inches.
For Rectangular Cast Iron Columns

\[ S = \frac{12,000A}{L^2} \]

where:

- \( S \) = Safe load in pounds
- \( L \) = Length of Column in inches
- \( A \) = Sectional area of Column in square inches
- \( D \) = The least side of a rectangular Column.

The minimum thickness of metal in cast iron Columns shall not be less than \( \frac{3}{4} \) in. and no cast iron column shall exceed in height thirty times its least horizontal dimension.

All cast columns shall have their ends turned true and at right angles with their axis. When such columns are used in tiers one above another their ends shall be bolted together.

Cast Iron Columns shall be thoroughly tested and inspected before being placed in position and if they are to support a wall more than 30 feet in height, or more than three stories, they shall be drilled into not less than two holes in the length, one on the upper surface and one on the lower surface as cast; such columns, if found to be less than \( \frac{5}{8} \) in. thick in any place, shall not be used; the strength shall be computed from the least thickness as found by the test holes.
Sec. -- All steel or wrought iron work shall be so proportioned that the maximum fiber strain will not exceed 16,000 pounds for steel or 12,000 pounds for wrought iron, per square inch.

Sec. -- Plate girders shall be designed and constructed of a strength at least equal to those developed by the following formulas for plate girders:

Flange Area = \( \frac{\text{Maximum bending moment in foot pounds}}{CD} \)

\( D \) - Distance between centers of gravity of flanges in feet.

\( C \) - 13,500 for steel; 10,000 for iron.

Web area = \( \frac{\text{Maximum shear}}{C} \)

\( C \) - 10,000 for steel; 8,000 for iron.

Sec. -- Maximum strain per square inch of rivet area (single shear) shall not exceed:

- For shop-driven rivets: 9,000 lbs
- For field-driven rivets: 7,500 lbs
- Maximum shearing strain in webs: 7,000 lbs
- Direct bearing: 15,000 lbs

Sec. -- The maximum load allowed upon riveted columns shall not exceed those determined by the following formulas:

For riveted or other forms of wrought iron columns more than 90 R in length:

\[ S = 10,800 - 30 \frac{L}{R} \]

\( S \) - Safe load in pounds per square inch.

\( L \) - Length of column in inches.

\( R \) - Least radius of gyration of column in inches.

For riveted forms of wrought iron columns less than 90R in length:

\[ S = 8,000 \]

\( S \) - Safe load in pounds per square inch.
Sec---- For riveted or other forms of steel columns more than 90 ft in length:

\[ S = 17,100 - \frac{57}{R} \]

- \( S \) - safe load in pounds per square inch
- \( L \) - length of column in inches.
- \( R \) - least radius of gyration of column in inches.

For riveted and other steel columns less than 90 ft in length:

\[ S = 12,000. \]

- \( S \) - safe load in pounds per square inch.

Sec---- No wrought iron or rolled steel column shall have an unsupported length of more than 40 times its least lateral dimension or diameter, nor shall its metal be less than 1/4 inch in thickness.

Sec---- With regard to connections of all structural iron work upon buildings erected in the City of Denver, such work shall hereafter be in conformity with the practice of the Carnegie, Trenton, Phoenix, Pencoyd, Jones & Laughlin or other first-class rolling mills, as published in their standard books and sheets and approved by the building inspector.

Sec---- When wooden pillars are used, the maximum load to which they are to be subjected shall never exceed those determined by the following formula, \( S \) representing the maximum load as intended to be fixed by this ordinance.

For wooden pillars whose the length is not more than twelve times the least thickness:

\[ S = \frac{AC}{4} \]

- \( S \) - safe load in pounds.
- \( A \) - sectional area of post in square inches.
\[
C = \begin{cases} 
4,000 & \text{for long leafed yellow pine}, \\
3,200 & \text{for oak or Norway pine}, \\
2,800 & \text{for white pine, spruce or hemlock (Oregon)}, \\
2,400 & \text{for Colorado, Texas or Mexican}.
\end{cases}
\]

Sec-----For wooden pillars where the length is more than twelve times the least side or thickness:

\[
S = \frac{X-YL}{B}
\]

**S** - safe load in pounds per square inch.

**L** - length of post in inches.

**B** - breadth or least side, or diameter of round post.

\[
X = \begin{cases} 
1,000 & \text{for long leaf yellow pine}, \\
800 & \text{for oak or Norway pine}, \\
700 & \text{for white pine, spruce or hemlock (Oregon)}, \\
600 & \text{Colorado, Mexican or Texas}.
\end{cases}
\]

Sec-----The ultimate load to which timber used for girders, joist or beams may be subjected shall not exceed those determined by the following formulas, to wit:

\[
S = \frac{CBD^2}{L}
\]

**S** - safe load in pounds.

**B** - breadth of beam in inches.

**D** - depth of beam in inches.

**L** - length of beam in feet.

**C** - \(200\) for long leaf yellow pine, \(180\) for Oak, Oregon and Texas, \(150\) for Colorado and Mexican.

Sec-----The contents given in all the foregoing formulas are based on the use of materials and workmanship of the best of their respective kinds and all timber thoroughly seasoned.

Sec-----All formulas herein given for determining the load permitted upon girders of any kind are for girders supported at each end and uniformly loaded over their entire length. The formulas for column loads are for columns **concentrically loaded**.
Sec.----- The calculations for the allowance which must be made for other forms of loading shall be based upon the above formulas and constants, and the rules of the best engineering practice; subject to the approval of the building inspector.

Sec.----- For the purpose of computing the weight upon floors, walls, piers, columns and other supports the following shall be taken as the weight of materials: viz.

<table>
<thead>
<tr>
<th>Material Description</th>
<th>Weight per Foot Board Measure, Green (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lumber</td>
<td>3.1 lbs</td>
</tr>
<tr>
<td>Loam, clay, sand, green plaster &amp;c.</td>
<td>6 lbs</td>
</tr>
<tr>
<td>Brick work common, soft</td>
<td>120 lbs</td>
</tr>
<tr>
<td>Terra Cotta in mortar</td>
<td>100 lbs</td>
</tr>
<tr>
<td>Lava Stone work, partly dry</td>
<td>130 lbs</td>
</tr>
<tr>
<td>Sand Stone work</td>
<td>160 lbs</td>
</tr>
<tr>
<td>Granite, Marble</td>
<td>180 lbs</td>
</tr>
<tr>
<td>Slate per square 100 ft.</td>
<td>600 lbs</td>
</tr>
<tr>
<td>Lath and plaster one side, per square foot</td>
<td>10 lbs</td>
</tr>
<tr>
<td>4 ply felt and gravel roof</td>
<td>15 lbs</td>
</tr>
</tbody>
</table>

All other materials as given in best engineering works.

Sec.----- No building shall be erected in the City of Denver that is more than four times its least horizontal dimension in height.

In case of buildings that are at least more than one and one half times their least horizontal dimension in height, allowance shall be made for wind pressure, which shall not be figured at less than 30 pounds per foot of exposed surface. When the dead weight of the structure is not sufficient to insure stability against wind pressure, the following precautions shall be taken to insure stability:

1st. Wrought iron or steel columns shall pass through two stories with the joints broken in alternate stories;

2d. Rigid connections must be made between all members;

3d. A sufficient quantity of diagonal or portal bracing must be introduced in the construction to insure stability.

In buildings of this character the use of cast-iron columns will not be allowed.
Sec.----It shall be the duty of the owner of every building of class 1, already constructed or hereafter to be constructed, or the occupant or agent of the same, to affix and display conspicuously on each floor of such buildings a placard showing the load per square foot of floor surface which may be with safety applied to that particular floor, or the strength of the different parts of the same floor, where such strength varies. It shall be unlawful to load any such floor, or any part thereof, to a greater extent than the load indicated on such placards. It shall be the duty of the occupant of the building to maintain such placards during their occupation of the premises and the owners shall see such placards properly affixed with each change of occupants. These placards shall be verified and approved by the building inspector before they are affixed upon the several floors, and they shall be recalculated, verified and approved every five years.

The building inspector may require the owner, agent or occupant of any building to redistribute the load upon any floor or to lighten the same, when he shall deem the same necessary.

Sec.----The floors of all buildings shall be constructed in such a manner as to be capable of bearing in all parts, in addition to the weight of the partitions and permanent fixtures and mechanism and that may be set upon them, in addition to the weight of the material of which such floors are constructed, a live load for every square foot of floor surface as follows: viz.

Dwellings, tenements and flats, 40 lbs
Hotels, lodging houses, schools, fixed desks, 50 lbs
Office buildings, churches, theaters, halls with fixed seats, 70 lbs
Dancing rooms, corridors and all public hotels, 80 lbs
Drill rooms, 120 lbs
Floors of Warehouses and Store houses shall be proportioned to the load they are intended to carry, provided that all such floors shall be constructed to support not less than 150 pounds for every square foot of floor space or area.
Sec. 1. Every column, post, pier, footing and other vertical support shall be of sufficient strength to bear safely the weight of the portion of each and every floor and roof depending upon it for support, in addition to the weight required above, provided that in determining the stress on posts, columns, piers and footings in buildings of more than three stories in height that are used for dwellings, lodging or offices, the live load may be reduced on the floor next to the top 5%, in the next lower 10%, in the next lower 15%, in the next lower 20%, and so on, to and including the second floor, but the full load of the first floor shall be included in computing the weights on supports below said first floor.

Sec. 2. All buildings of ordinary construction when more than two stories in height shall have under floors in each story not less than ¾ in. in thickness, which shall be laid immediately after the joist are set and bridged, and at least one thickness of asbestos or other incombustible material shall be laid between the under and finished floor.

Sec. 3. All wooden beams or joist entering a division wall of masonry shall have a proper bearing and have the ends cut on a slope of about three inches in the width or depth, and the ends of all such timbers shall be separated by not less than 4" of masonry from the beams or joist entering from the other side.
Sec.---Each tier of floor beams shall be anchored to the side, front, rear and division walls at intervals not to exceed 8 ft., with wrought iron anchors not less in size than one by 1/4 in. and well secured to the wall and to the timbers; in all walls less than 13 inches in thickness the anchors shall go through the wall and have plates on the outer side. The ends of all joist meeting on a girder shall be anchored together in such a manner as to form a continuous tie across the building. The ends of all girders and partition caps shall be anchored together in such a manner as to form a continuous tie and be well anchored to the walls at each end.

Sec.---All wood trimmer and header beams shall not be less than double the thickness of the other joist; they shall be framed not less than two inches from the walls of all flues and where the header is more than three feet in length they shall be hung in suitable iron stirrups; in all floors carrying a load of over 100 pounds per square foot of floor surface, all joist framed into a header or girder shall be hung in proper iron stirrups.

All wooden floor or roof joist, except in Mill-Construction, shall be properly bridged and the distance between bridging or between bridging and walls shall not be more than 8 ft.

---No piping or conduits of any kind shall be put down into any floor timbers at a greater distance than two feet from the ends of said beams nor to a greater depth than 1/6th of the depth of the beam.
Sec. 444. All new or renewed flat roofs shall be constructed to bear safely a weight of 40 pounds per square foot in addition to the weight of the materials composing such roof, and all roof rising at a greater angle than 20 degrees shall be constructed to carry a dead load of 20 pounds in addition to its own weight and to resist a wind pressure of 30 pounds per square foot of surface hereafter erected.

Sec. 444. The roof of all buildings in the inner fire district shall be covered with tin, slate, composition not readily inflammable or some incombustible material.

Sec. 445. The roof of all buildings shall be kept in good repair and all water drained therefrom so as not to flow upon or against any wall, along or against any foundation of any building or upon the property of other than the owner of the building.

No water shall be discharged from any conductor pipe upon any sidewalk, but shall be conducted underneath the walk in iron or tile pipes. The water from conductor pipes shall not be discharged into any alley at a point higher than one foot above the surface nor shall such discharge be permitted to flow against any adjoining wall, into any areaway, or upon any private property other than the owner of the building from which the water is conducted.

Sec. 445. All roof so constructed and located that the snow which lodged upon the same might slide from said roof into any public place shall have suitable snow guards to prevent the snow from sliding. All snow found to be lodged upon any cornice, gutter or other part of a building, which might slide therefrom into any public place shall be at once removed by the owner or occupant of any such building.
Sec——All skylights in the inner fire district shall be constructed wholly of incombustible materials and glazed with glass not less than double strength. (DS) Skylights located at the foot of light courts or light wells shall be made either of prismatic lights in iron frames or glass not less than 1/4 in. thick set in metallic frames, and where the latter are used the glass shall be protected from falling bodies by a wire netting placed not less than six inches above the glass and rigidly supported on iron stanchions, such netting to be made of wire not less in size than No. 8 and mesh not coarser than 1,1/2 x 1,1/2 inches. Skylights over the floors to which the public have free access shall have a wire netting as above securely fastened in a horizontal position underneath, or such skylight may be glazed with wire-bound glass.

Sec——All buildings over two stories in height shall have scuttles or bulkheads leading to the roof, with proper ladders or stairs leading thereto from the floor below; the lid of any scuttle or door of any bulkhead shall not be fastened in such a manner that it cannot be readily opened from the inner side without the use of any key, nor shall the approaches thereto be fastened with other than a movable bolt on the inner side. In buildings over four stories in height the ladder or stairs shall be of iron and secured permanently in place at all times.
Sec. 143—All brick or stone buildings over one story in height having furring on the walls shall have the space between the furring from 4 in. below the joist to 12 in. above the same filled with masonry, tile, brick or like substance. No wood furring shall be used in buildings required to be slow-burning or fire-proof construction.

Sec. 150—Within the inner fire district all stud partitions shall have caps and sills not less than 4 in. thick by the full width of the studding; no studding shall pass from one story to the next without a solid cap at or near the floor joist. When stud partitions rest on girders or the caps of other partitions, the space between the joist to 10 inches above the floor shall be filled in with brick, tile, terra cotta or other incombustible material, unless there be no ceiling under the joist. In buildings over two storied in height all partitions that support floors shall have the sill of such partitions resting on a sheet of metal not less than 18 in. wide by the full length of the partition on each and every story. (In addition to the asbestos here before mentioned between all double floors.) Walls that support floor joist shall be carried to the top of the floor joist and finished smooth with the underside of the floor boards; upon all girders that carry floor joist there shall be a fire-stop built to the top of the joist, and when a partition starts off the girder, the fire-stop shall be carried 12 inches above the joist. All furred walls shall have a fire-stop between the furring from four inches below the joist to 12 inches above them.
In all buildings of class 1, which are used as workshops, or which are used as sale rooms, where there is an occupation of the same at any one time by 100 or more persons employed or engaged therein, there shall be at least two staircases, each not less than three feet in width. If the number of persons so employed exceeds 300, then the width of the stairs shall be not less than five feet; if the number of persons so occupying any such premises exceed 800 there shall be not less than three stairways not less than 5 feet in width. If the number of persons exceed 1,200 such building shall be governed as regards the number and size of stairways by the regulations laid down for buildings of Class IV.

In all cases the stairways shall be located at as great a distance from each other as practicable and the number of persons above any floor shall be counted as being on that floor as well as being counted on the floors above; provided that in fire-proof buildings one less height of stairs than above called for may be used. All doors opening on both sides shall be swinging on both sides. 

In all buildings used as hotels, tenements, lodging or rooming houses, the halls, stairs, passageways and exits shall be arranged to facilitate egress in case of fire or accident and all such buildings having more than 25 rooms above the first floor shall have at least two independent stairways connecting the ground floor, each stairway not less than four feet wide and at opposite ends or opposite sides of the building. All doors at the foot of such stairways shall open outward and never fastened but with a movable bar or bolt readily drawn from the inner side, without the use of any key or combination whatever. At the upper floor, fire escapes may be provided without the stairway, but the doors shall be made of fire-proof material. 

The aggregate width of doors opening at the street level in buildings of class 1 shall be equal to the aggregate width of stairs and in no case shall the doors leading to any means of exit be locked, or the exits in any way obstructed, during the occupation of any such building.
Sec. 151. No building any part of which is used for the storage of hay, straw, excelsior, shavings or inflammable oils in greater quantities than 50 gal., shall have any of the upper part occupied as a dwelling, tenement or lodging house; this section does not apply to private stables.

Sec. 152. All steam or hot water pipes passing through any floor, ceiling, partitions or other wood work shall be protected with a proper metal sheath and the pipes shall not be placed within one inch of any wood work. In no case shall branches be placed between floors and ceilings except in fire-proof buildings. All recesses for steam or hot water pipes not in masonry shall be lined with tin or other incombustible metal and the covering to all recesses shall be so lined.

Sec. 153. No tin or metal flue, pipe or box, of a single thickness of metal, used or intended to be used to carry heated air, shall hereafter be placed in any other than a masonry wall unless the pipe leading to such flue shall be more than 10 feet in length and such pipe, flue or box be kept at least one inch from any wood. The studs at the sides of all hot air pipes shall be lined with metal and the space at the front and back of all such flues shall be lathed with metal lath, unless such hot air pipes are made double.

Sec. 154. All register boxes hereafter placed in any wood work shall have a clear space of not less than 1 1/2 inch between the box and any wood work, unless the woodwork is protected with a metal covering, in which case they may be placed within one inch.

Sec. 155. All registers within 20 feet of the furnace shall have incombustible borders not less than two inches wide, when such register boxes are set in or near wood work.
Sec. Every building now built or hereafter to be built, occupied by two or more families above the second floor and every building more than two stories in height, except such as are occupied solely by one family, shall be provided with one or more safe external means of escape in case of fire or accident, in addition to the stairways herein before provided. Said fire escapes shall consist of iron balconies at or near the level of each floor, with iron stairs connecting each balcony from the roof down within 12 ft. of the ground; said stairs shall not be steeper than 70 degrees and shall be provided with outer railings of iron, the balconies to have iron railing all around not less than three feet in height. Fire escapes shall be located as far from the stairs as practicable and may project over the public streets at any point above the first story.

The brackets for the support of fire escapes shall in all cases be bolted through the walls and be of sufficient strength to sustain a weight of 200 pounds per square foot of surface of balcony.

The floors of all such balconies shall be slates of iron on edge.

The balconies and stairs shall at all times be kept in good repair and well painted. The connections from the building to the platforms of fire escapes shall be from the halls and corridors, and never through any private room; when necessary to be through a room, the room shall be directly connected to the corridor and the door connecting said room to the corridor removed.

The balconies, stairs and all approaches there to shall never be incumbered; doors connecting onto the platforms and balconies of fire escapes shall never be locked save with a movable bolt readily drawn from the inner side. The number and size of fire escapes to be regulated by the number of persons liable to use them; not more than 50 persons shall be required to use any one fire escape; the number, size and location of all fire escapes to be determined by the building inspector.
Sec. 160 - Every building over three stories in height, except those occupied solely by one family, shall have one or more metallic stand pipes not less than 2 1/2 inches in internal diameter, extending from above the roof and arranged so that engine hose can be readily connected from the street or alley; such stand pipe shall have proper valves and hose couplings at each floor above the first floor and all hose couplings shall conform to the size and pattern used by the Denver Fire Department.

Sec. 164 - All buildings more than three stories in height and all two story buildings used as a school, factory, manufactory, hotel, lodging house, hospital, asylum, office building, assembly room for more than 50 persons or institution for the care or treatment of individuals shall be provided with one or more internal stand pipes connected to the City water mains and carried to the upper floor of the building, located in the most accessible locality and at all times in good repair, ready for instant use, provided with not less than fifty feet of hose on each floor.

All interior stand pipes shall have the City pressure upon them at all times when the building is occupied by the public and they shall be inspected and tested at least once each year.

Sec. 162 - Whenever the doors and windows of buildings of classes I, II, and IV, more than one story in height, are within thirty feet of other buildings more than one story in height, or when openings are cut through the walls of buildings above the roof of other buildings, all such doors, windows and openings shall be provided with metal or metal covered shutters approved by the building inspector.
Sec. 163—No building shall be materially altered or any of the conditions changed until full and detailed plans and specifications shall be filed in the building inspector's office and the building examined by him and found to be in safe condition to be altered as proposed, and the building so altered shall conform to the requirements of this ordinance.

Sec. 164—Walls heretofore built for and used as party walls, whose thickness at the time of their erection was in accordance with the then existing laws, may be used if in good condition for the ordinary uses of party walls, provided their height is not increased or the load placed thereon comes within the limit of safety.

Sec. 165—In case it is desired to increase the height of existing external or party walls which are less in thickness than required by this ordinance for the proposed number of stories in height, the said walls shall be extended only by building the new part in accordance with this ordinance and supporting such extension of the walls entirely upon iron or steel posts and girders, which may be placed in recesses cut in the old walls. The posts supporting said extension shall have proper footings placed below the footings of the old wall, shall be bolted to each other and to the old wall, and then covered with proper fire proofing; such supporting frame work and the covering shall be subject to the approval of the building inspector.

Sec. 166—Any existing frame structure may be kept in repair with like material, except as hereinafter provided. When any frame structure in the middle or inner fire districts of the City shall be damaged to the extent of 50% of its value exclusive of the foundation, either by fire or decay, it shall not be repaired but must be taken down and removed. All exterior cornices, gutters or things of like nature constructed of wood, damaged to the extent of 50% shall be taken down and replaced with incombustible materials.
Sec. ---- The owner, agent or occupants, having the care of build-
ings shall keep them in repair and when so notified by the building
inspector shall make needed repairs and shall point up and fill
with mortar or cement all cracks, splits, fissures or loose materi-
als and other defects in the walls or supports to enable the build-
ing inspector and others to judge of changing conditions should
they occur in any part of any such building.

Sec. ---- No frame or wooden building or structure shall be moved
into any locality where it would be unlawful to build such building
or structure, provided that outside of the inner fire district,
with the approval of the Mayor, frame buildings may be moved from
the front of the lots towards the rear of the same lots for the
purpose of making room for better improvements in front.

Sec. ---- It shall be unlawful for any person not licensed so to
do to move any building along any of the streets of the City or
to move anything requiring the use of rollers, capstan or machinery
of any kind upon any of the streets, or to hoist any heavy weight
over any street or places
to the upper portions of buildings to which the public have access.

Sec. ---- Before any building or heavy article as above shall be
moved along any street or hoisted to or from any building as above,
the party engaging so to do shall first apply to the building
inspector and obtain a permit therefor; said permit shall designate
the streets and walks and to what extent they may be used for the
purpose and the hours of the day during which such work shall be
done; the fee for permits as above shall be one dollar for each
permit.
Sec. -- Whenever, in the opinion of the building inspector any building or part thereof, or any structure of like nature, is in a condition dangerous to the occupants or those passing, by reason of bad condition of walls, overloaded floors, defective heating apparatus, vibrations from machinery, defective flues, confined or cramped stairways, insufficient exits, narrow or dark passageways or from other like causes, said building or part thereof shall be deemed to be a public nuisance, and the building inspector may at any time require the owner, agent or occupant of any such building to make such repairs or take such steps as in his opinion may be necessary for the public safety.

Sec. -- In case the owner, agent or occupant of any dangerous building or structure shall fail or refuse to make such repairs within three days after the service of any notice so to do by the building inspector, the building inspector, with the approval of the Mayor, may enter upon the premises and employ such labor and purchase such materials as in his judgment may be necessary to make any such building or structure safe or prevent the same from becoming unsafe or dangerous; or he may, with the approval of the Mayor, demolish any such building or structure.

Any party doing the work, or any part thereof, or furnishing any materials therefor, under and by direction of the building inspector may bring and maintain an action against the said owner in the same manner as if he or they had been employed to do the said work or furnish said materials by the owner or agent of the said building or structure. And the building inspector, by and with the approval of the Mayor, may remove all occupants of any dangerous building and prevent the same from being occupied until the same has been made safe and secure.
Sec.---The openings through or upon any floor of any building used for stairs, hoist, elevators or light shall be protected with proper railing not less than three feet in height. All elevator openings shall have proper automatic rails, gates, trap doors or such other device as will be equivalent thereto.

Sec.---Every elevator shall be provided with some safe and sufficient arrangement or device to prevent the falling of the car in case of accident.

Sec.---When the cab of any passenger elevator shall have more than one entrance or exit, all such entrances or exits except the one immediately in front of the operator shall be closed with sliding doors inside the cab, such doors to be the full height and shall be closed before starting the cab and no door shall be opened before the cab has come to a full stop. Opening and closing doors of elevators while the cab is in motion shall be unlawful, and shall subject the operator to the penalties of this ordinance.

Sec.---All elevators shall have at least one slack cable as a safety against the breaking of the lifting cables. When any of the cables of an elevator show 10% of the wires composing such cables to be stranded, then such cable shall be replaced with new ones. The building inspector may cause repairs to be made upon any elevator, or he may close any elevator deemed to be unsafe, and prevent the use of the same until repairs are made and the same placed in charge of a proper pilot.

Sec.---Freight elevators shall not be used to carry passengers unless the platforms are enclosed all around to the height of not less than five feet, except the opening in front of the operator.
Sec.—— All walls enclosing elevator shafts shall be constructed entirely of incombustible materials and no part of any such enclosing walls shall be supported in whole or in part upon wooden construction. All such enclosing walls shall project not less than three feet above the roof timbers. The roof over all elevator shafts shall be fire proof and at least 3/4 of the area of the covering shall be glass set in iron frames. All doors opening into an elevator enclosure shall be iron or solid wood metal covered, the same to be self closing and closed when not in use for entrance or exit. All elevators running through the well holes of stairs shall, together with the stairs, be constructed of fire proof materials except the floor of the cab.

Sec.— Immediately beneath the machinery of all passenger elevators there shall be an iron net work of such construction as will protect passengers from any parts that might become detached; the construction and support of the same to be approved by the building inspector.

Sec.— The landings of all passenger elevators shall be protected by having the under side of the trimmer or beam at the door opening slope away from the cab door, the incline to be about 3 in. in 12 in. of rise.

Sec.— The building inspector shall visit and inspect every elevator running in the City once each year and shall keep a record of all inspections and any or all orders concerning the same. No elevator shall be used in any building until after it has been inspected and a certificate of approval issued from the building inspector; a certificate from any responsible insurance company may be accepted by the building inspector.

Sec.— Every elevator shall be provided with proper automatic stops to bring the car to a stop without jar or jolt, at the top and bottom, independent of the operator.
Sec---- Every public building hereafter erected and every building intended for the theatrical or operatic purposes or public entertainments of any kind where stage scenery and apparatus are employed, hereafter erected, shall be made to comply with the requirements of this ordinance. No building which at the time of the passage of this ordinance is not in actual use for theatrical or operatic purposes and no building hereafter erected not in conformity with the requirements of this ordinance shall be used for theatrical or operatic purposes or for public entertainments of any kind where stage scenery or apparatus are employed until the same shall have been made so to comply, and no building herein before described shall be opened to the public for such purposes until the building inspector shall have approved the same in writing as conforming to the requirements of this ordinance.

Sec---- Every building of Class IV b shall have at least one front on a public highway or street, and in such front or fronts there shall be means of entrance and exit. In addition to the aforesaid entrances and exits on the public street there shall be reserved for service in case of emergency an open court or space, open to the sky, on the side not bordering on the street, where such building is located on a corner lot, and on both sides of said building where there is but one frontage on the street.

The width of such open courts shall not be less than eight feet, and said open court or courts shall begin on a line with or near the proscenium wall and shall extend the length of the auditorium proper, to or near the wall separating the same from the lobby, foyer or vestibule. A separate and distinct corridor shall be built to the street from each open court, with continuous walls, floors and ceilings, of brick or other fireproof materials the entire length of said corridor or corridors.
Said corridor or corridors shall not be reduced in width more than three feet less than the width of the open courts or court, and there shall be no projection into the same; the outer openings to be provided with doors or gates opening towards the street. During the time such buildings are occupied by the public, the doors or gates in the corridors and all approaches thereto shall be kept open by proper fastenings, such as may be readily drawn from the inner side; at other times they may be closed and locked. The said open court or courts shall not be used for storage purposes or for any other purpose whatsoever, except for exit and entrance from and to the auditorium and stage, and must be kept free and clear during performances. The level of said corridors at the front entrance of the building shall not be greater than one step of eight inches above the level of the sidewalk, where they begin at the street entrance and they shall not be more than one step of eight inches from the floor of the open court to the ground floor of the auditorium.

Sec. 185. To overcome any difference of level existing between exits from the ground floor of auditorium into courts, and the level of the street, gradients may be used in the corridors and courts of not over one foot in ten feet without perpendicular rises. From the auditorium opening into said open courts, or on the side street where the building is placed on corner lot, there shall not be less than two exits on each side from the ground floor auditorium, balcony, and each and every balcony and gallery. Each exit shall be at least five feet wide in the clear and provided with doors of iron or wood; if of wood the doors shall be constructed according to underwriters rules. All of said doors shall be opened outwardly and fastened only with movable bolts, the bolts to be kept drawn during performances.
There shall be balconies not less than four feet in width on each side of the auditorium, of sufficient width length to embrace the exits, and from all balconies there shall be staircases extending to the ground level, with a rise of not over nine inches and a step of not less than nine inches tread, exclusive of the nosing.

The stairs from the upper balcony to the next below shall not be less than three feet in width in the clear, and from the first balcony to the ground floor, four feet wide in the clear.

All the before-mentioned balconies and staircases shall be constructed of iron throughout, including floors, and of ample strength to sustain the load to be carried by them. Where one side of the building borders upon a street the lower balcony shall be about 12 ft. above the sidewalk and may have sliding or drop ladders to reach the walk from the lowest balcony.

Sec.----The following limitations of floor levels in buildings of Class IV shall be observed in all cases of new construction or material reconstruction, alteration or improvement of existing buildings. The ground floor of auditorium in buildings of Class IV b where it connects with the lobby or foyer shall not be at a greater height above or depth below the street level than a gradient from the street vestibule of one foot in ten; said street vestibule to be not more than one step above or below the grade of sidewalk at the central entrance point. The only exception to the foregoing shall be the case of rooms of Class IVb containing less than 500 seats, which, in fire-proof buildings, may be located in any floor thereof, but in such cases there shall be at least two flights of stairs from the floor in which such auditorium is located, to the ground, and the width of such stairs shall not be less than four feet in the clear for each.
Sec----In buildings of Class 1Va no auditorium containing more than 1,000 seats shall have the highest part of its main floor more than eight feet above the adjacent sidewalk grade. No room of Class 1Va containing more than 500 seats shall be at a greater distance than 30 ft. above the sidewalk. No room of Class 1Va containing more than 200 seats shall be at a higher level above the sidewalk than 45 feet. Exceptions to the foregoing are to be made in the case of rooms containing less than 500 seats, which may be located in any part of a fireproof building; provided, however, that there shall be the stairs required in section 187.

Sec------Stairs in buildings of Class 1Va and 1Vb shall be in width equivalent to eighteen (18) inches for every 100 seats or fraction thereof, but no stairway in such building shall be less than four feet in width in the clear. All stairways shall have railings on each side thereof. No stairway shall ascend to a greater height than 11 feet without a level landing, which, if its width is in the direction of the run of the stairs, shall not be less than three feet, or which, if at a turn of the stairs, shall not be less in width than the width of the stairs.

Sec------Distinct and separate places of exit and entrance shall be provided for each gallery above the first. A common place of exit and entrance may serve for the main floor of auditorium and first balcony, provided its capacity be equal to the aggregate capacity of the outlets from the main floor and the said gallery as required by section 187.

All rooms accommodating more than 500 persons shall have all the seats, not in private boxes, firmly secured to the floor.
Sec.----Aisles in buildings of Class IVA and IVb shall be equal to 18 in. for every 100 seats or fraction part thereof, the occupants of which will be required to use said aisles, but no aisle is to be less than two feet three inches wide in the narrowest part and increasing in width towards the exits. Steps are permitted in aisles only as extending from back to back of seats, and where the rise from back to back of seats is less than 6 in., the floor of the aisle shall be made an inclined plane, and where steps occur in outside aisles or corridors, they shall be grouped together and there shall be a lamp at or near every place where there are steps in enclosed aisles or corridors. All aisles and passageways in said buildings shall be kept free from camp stools, sofas, chairs and other obstructions, and no person shall be allowed to stand in or occupy any of said aisles or passageways during any performance, service, exhibition, lecture, concert, ball or any public assembly, nor shall there be any camp stool, chairs, sofas or any such things in any such aisles or corridors at such times.

The building inspector, or any of his assistants, shall have the right to enter any such buildings at any time during any performance, service, exhibition, lecture, concert, ball or any public assembly, to enforce this ordinance.

Sec.----The width of corridors, passages, hallways and doors shall be computed in the same manner as that herein provided for for stairways and aisles, excepting that no corridor shall be anywhere less than five feet in width, and no door less than three feet in width, and all doors shall open outward.

Sec.----In all buildings of Class IVb there shall be a solid wall, not less than 17 in. thick, between the auditorium and the stage, and in non-fireproof buildings this wall shall be not less
It shall be the duty of the building inspector to inspect and measure the exits of all buildings in Class IVA and IVB, including all theaters, concert halls, assembly rooms, lecture halls, schools, churches, dance halls and lodge rooms, and to compute the number of persons said rooms, halls or buildings will safely seat or accommodate, not to exceed one hundred persons—fractional parts of one hundred being counted as a full one hundred—for each eighteen (18) inches in width for each stairway, door or exit; and when said number has been determined by said building inspector, he may cause a notice or notices, stating the maximum number to be admitted in said room, hall or building, to be posted in a conspicuous place near the entrance to said room, hall or building; and it shall be unlawful for the owner, agent, manager or trustees or person or persons in charge or having control of any such rooms, halls or buildings, to admit a larger number of persons to such rooms, halls or buildings.

In all buildings of Class IVB there shall be a solid brick wall not less than 17 inches thick, between the auditorium and the stage, and in non-fire-proof buildings this wall shall be not less—
than 20 in. thick shall extend to a height of six feet above the roof. The main curtain opening shall have an iron or asbestos curtain and all other openings in this wall shall have fire-proof doors.

Sec. 404 - The framing of the floor of the stage in buildings of Class I Vb containing seats for more than 500 people shall be of iron or steel; the stage floor may be of wood, but shall not be less than three and three quarters inches thick. The entire floor construction and floors of fly galleries and rigging lofts, and all railings and supports, and all sheaves and pulleys and their supports, shall be made of iron or steel. All wood work, including both sides of the floor boards, and all scenery used on or about the stage, shall be coated with fire-proof paint, the fire resisting qualities of which shall be tested and approved by the building inspector.

Sec. 405 - Structures of any kind and for any purpose whatever, erected above the ceiling of any auditorium containing 500 or more seats, shall be entirely of fire-proof construction.

Sec. 406 - There shall be over the stage of every building of Class I Vb flues or ducts extending at least 10 ft. above the highest point of the roof, which flues or ducts shall have an area of at least one thirtieth of the total area of the stage. The dampers for opening or closing these ducts shall be controlled from a point near the proscenium arch; these dampers shall be made of sheet metal on iron frames and be not nearer than 8 in. of any wood work or other combustible materials.
Sec----It shall be the duty of the owners, agents, lessees and occupants of buildings of Class 1Vb to provide such fire extinguishing apparatus at such points about the building as the building inspector shall direct and all stand pipes, gas pipes, electric wires, hose, foot lights, and all apparatus for guarding against fires or for extinguishing the same, shall at all times be kept in condition satisfactory to, and under control of the building inspector.

Sec---Every portion of any building of Class 1V devoted to the use or accommodation of the public, also all outlets leading to the street, open courts and corridors, shall be properly lighted during every performance and the same shall remain lighted until the entire audiencr has left the premises. Buildings of Class 1Vb shall be at night illuminated entirely by electric light and shall have at each exit and at the head and foot of each stairway a metal bracket and a candal or sperm oil lamp kept burning during the entire duration of any performance. Similar provisions shall apply to buildings of Class 1Va seating more than 1000 persons.

Sec---In buildings of Class 1V no gas or electric light shall be inserted in the walls, wood work, ceiling or in any part of the building, unless protected by fire-proof materials. All lights in passages and corridors of said buildings and wherever deemed necessary by the building inspector, shall be protected by proper wire net work. The foot-lights in addition to the wire net work shall be protected by strong wire guard, not less than two feet distant from foot lights, and the trough containing such foot-lights shall be fire-proof.
All ducts used for conducting heated air from the main chandelier or from any other light or lights shall be constructed of metal and made double with an air space between and shall not come in contact with any wood work. All stage lights, if of gas, shall have strong wire guards or screens, not less than ten inches in diameter, so constructed that any material contact therewith shall be out of the reach of the flame and must in all cases be soldered to the fixture.

Section 24 - In all buildings of Class Ivb there shall be an iron girder above the proscenium opening, the iron girder to be protected from heat by proper fire-proof covering; above the girder these shall be a relieving arch the full width of the wall and the intervening space filled in with brick work. Should there be constructed and orchestra over the stage, above the proscenium opening, the said orchestra shall be placed outside of the proscenium wall. The moulded frame around the proscenium opening shall be formed entirely of fireproof materials; if metal be used, the metal shall be filled in solid with non-combustible materials and the whole securely anchored to the wall with iron. The proscenium opening shall be provided with a fire-proof curtain, sliding at each end within iron groves securely fastened to the wall, and extending into such groves not less than six inches on each side. Said fire-proof curtain shall be raised at the commencement of each performance, and lowered at the close of said performance, and to be operated by approved machinery. The proscenium curtain shall be placed at least three feet from the foot-lights at the nearest point.

There shall be no openings in the proscenium wall above the level of the auditorium ceiling, and not to exceed two on any level below and all such openings shall be closed with fire-proof doors, said last mentioned doors not to exceed three feet in width.
Sec.—— Should the owner, architect or agent be subject to any order or decision of the Building Inspector upon any matters left to his approval by this ordinance, or should some form of construction other than that that mentioned in this ordinance be deemed more suitable in their particular case, and shall so notify the Building Inspector, within two days after the first order or notice of the Building Inspector, and shall notify the building inspector that he or they have selected a person—giving the name and address of the party—to act as arbitrator for him or them, in all matters arising in connection with the matter in controversy; then the Building Inspector shall select a proper person to represent the ordinances and the two so appointed shall select a third party and the decision in writing of these arbitrators or any two of them, when approved by the Mayor, shall be final and conclusive upon the matters and things submitted in writing to them by the owner, agent and Building Inspector.

Sec.—— In the absence of the Building Inspector one of the assistants may be designated by him to act in his place, and when so designated the assistant shall exercise all the powers and duties of the Building Inspector.

Sec.—— Any person, firm or corporation who violates, disobeys, omits, neglects or refuses to comply with, or who resists or opposes the execution of any provision of this ordinance, shall be subject to a fine of not less than $5.00 or more than $300.00, and every such person, firm or corporation shall be deemed guilty of a separate offence for every day such violation, disobedience, omission, neglect or refusal shall continue, and shall be subject to the penalty imposed by this section for each and every such separate offence; and any builder, architect or contractor who shall have constructed any building in violation of any provision of this ordinance shall be liable to the penalties provided and imposed by this section.
Sec. 205. Ordinances Nos. 120 and 128 of the series of 1889, of the city of Denver; ordinances Nos. 16, 27, 37, 49, 59, 120 and 132, of the series of 1890, of the city of Denver; ordinances Nos. 22, 48 and 107, of the series of 1891, of the city of Denver; and ordinances Nos. 39 and 25 of the series of 1892, of the city of Denver; ordinance No. 25 of the series of 1893, of the city of Denver; and all ordinances and parts of ordinances of said city in conflict with this ordinance, are hereby repealed.

Sec. 206. This Ordinance shall take effect form and after its passage and approval and the publication thereof in pamphlet form, which said publication shall be in lieu of newspaper publication. A copy of such pamphlet publication shall be filed with the city clerk and kept on record in his office.

Mardo B. Leeley
President of the Board of Supervisors

C. C. Sales
President of the Board of Aldermen

Signed and approved by me the 22nd day of April,
1898

Thomas H. Sullivan
Mayor

Attested by the undersigned with the corporate seal of the city of Denver

F. R. Butz
City Clerk

Published in the Denver Republican, this 22nd day of April, 1898.