

(No Model.)

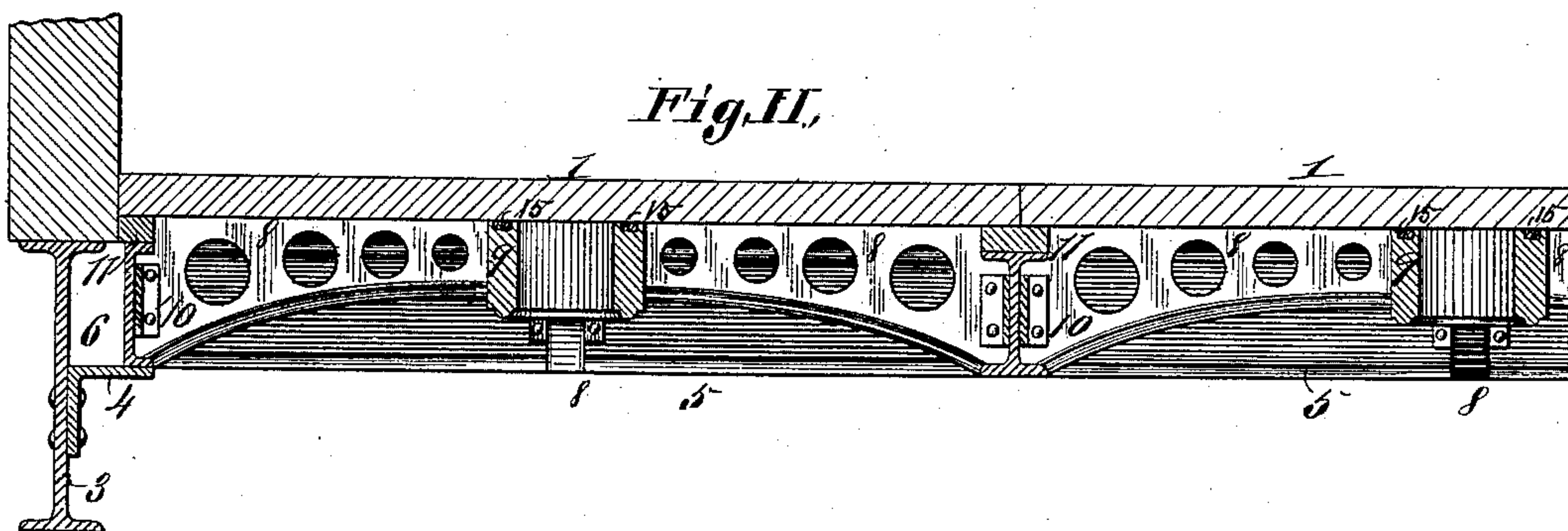
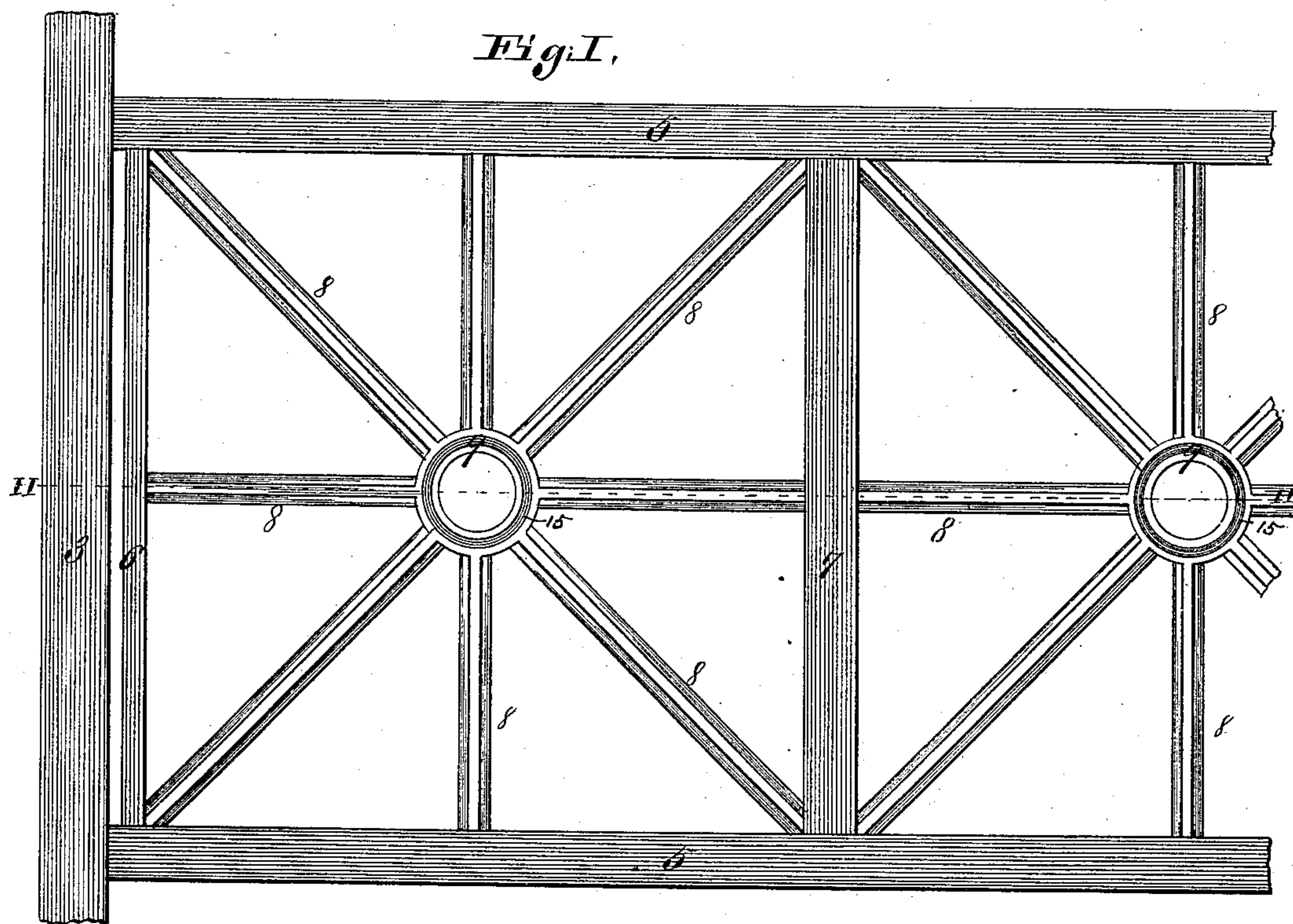
2 Sheets—Sheet 1.

S. D. HATCH.

CONSTRUCTION AND DECORATION OF BUILDINGS.

No. 376,380.

Patented Jan. 10, 1888.



Attest:

Charles Pickles

F. A. Hopkinson

Inventor:

Stephen D. Hatch

By Knight Bros.

Atty's

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2 Sheets—Sheet 2.

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Fig. III,

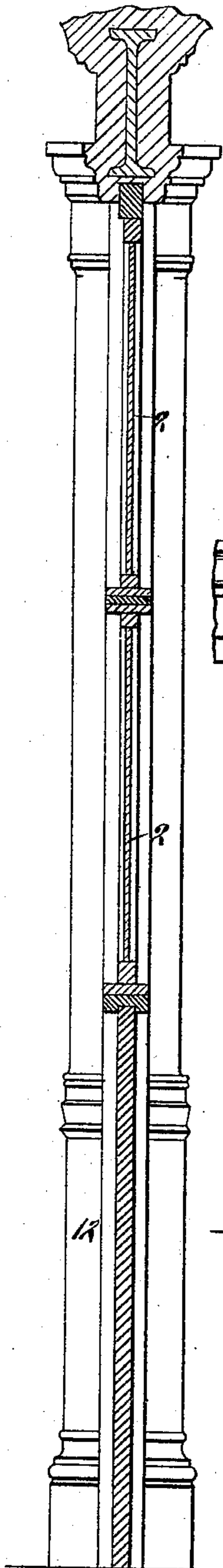
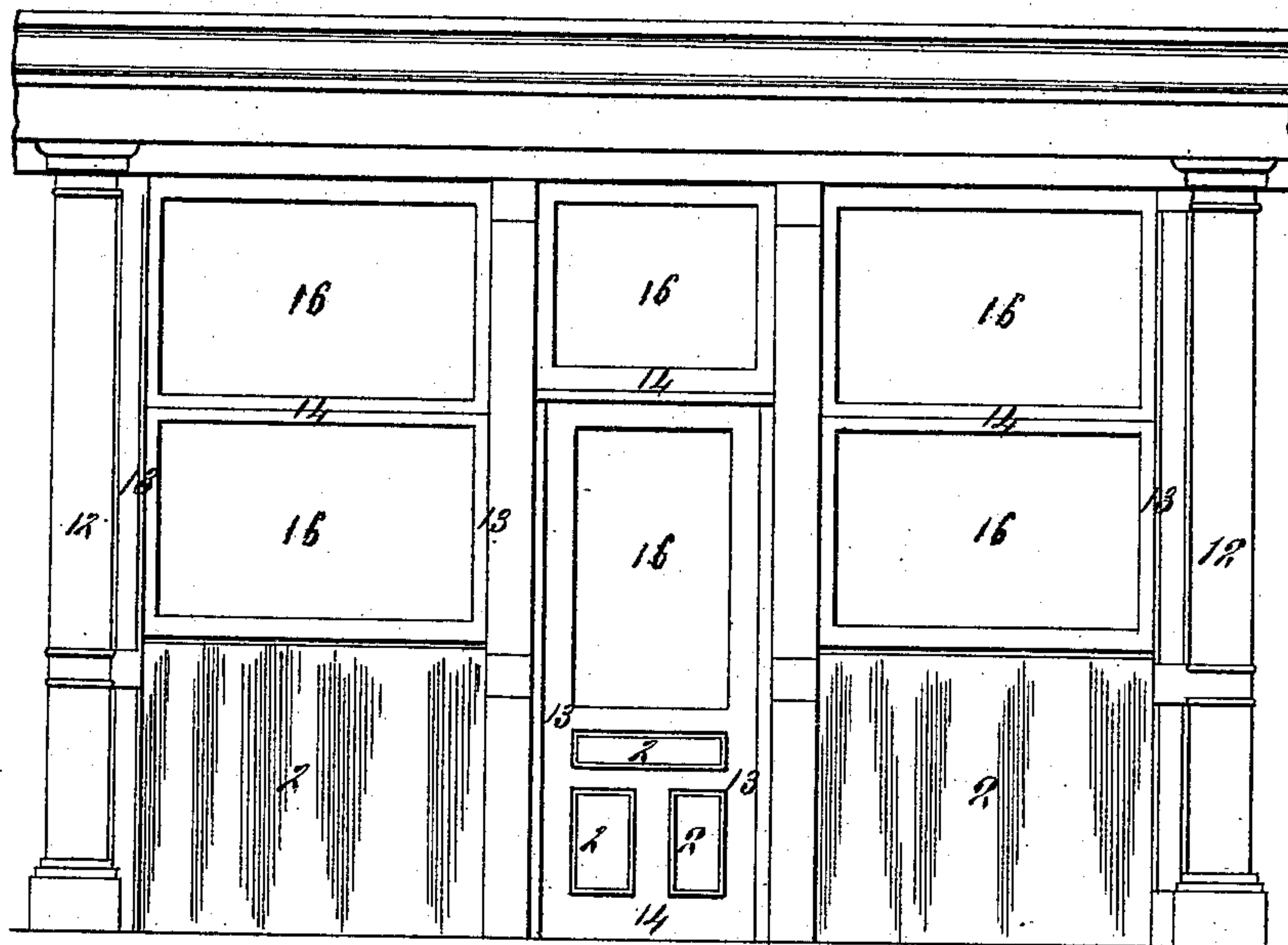


Fig. IV.



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UNITED STATES PATENT OFFICE.

STEPHEN D. HATCH, OF NEW YORK, N. Y.

CONSTRUCTION AND DECORATION OF BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 376,380, dated January 10, 1888.

Application filed June 6, 1887. Serial No. 240,359. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN D. HATCH, of the city of New York, in the county and State of New York, have invented a certain new and
5 useful Improvement in the Construction and Decoration of Buildings, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in
10 which—

Figure I is a detail view of section of ceiling looking up, showing the system of I-beams that support the spider arches with their
15 interradiate bars connecting in the center or rosette bracket. Fig. II is a vertical section, taken on line II II, Fig. I, showing the bars of the spider-arch and the center brackets that connect them, as also the marble or other material that constitutes the combined floor and
20 ceiling with the system of I-beams and angle-brackets that attach and support said arches. Fig. III is a vertical section of partition, showing a column and partition-frame with the panels of marble or other material in section;
25 and Fig. IV is a view of the partition in elevation, showing the device for utilizing both sides of the marble or other material in panels.

My invention relates to improvements in utilizing both sides of marble floors, panels,
30 &c., or any other embellishing material, with other constructive and decorative devices in buildings, in combination with combined ceilings and floors and single-wall partitions that have no intervening spaces which provide
35 flue-drafts that in case of accident increase the danger of fire, and also form highways for vermin, and uselessly occupy room to the reduction of the capacity of the building; and the invention consists in features of novelty, hereinafter fully described, and pointed out in the
40 claims.

Referring to the drawings, in which similar figures of reference indicate like parts in all the views, 1 represents marble or other slabs,
45 &c., used, as seen in Figs. I and II, as a combined floor and ceiling, and 2 are panelings of like material shown in Fig. III in section in connection with the partition, and in Fig. IV as panels in a partition between adjoining
50 halls and offices, the same feature in my invention being thus shown in all the figures—viz., utilizing both sides of the material for

use and embellishment in the construction and decoration of buildings, and with greatest economy of space and material.

It will be seen that in all the figures two
55 surfaces of the marble, &c., are exposed to view, making a twice-told use, especially of the most valuable and expensive material that is used in the construction of the ceilings, 50 floorings, and partitions of buildings.

3 represents the main I-beams, which may rest on the walls or pillars of the story immediately beneath the combined ceiling and floor. The said beams are provided with angle-
65 brackets 4, that are riveted, cast, or otherwise secured to them. These angle-brackets support the transverse I-beams 5, which, with the channel tie bars 6 and the I tie-bars 7, support the spider-arches, whose interradiate
70 bars 8 are connected and unitedly held in and by the center or rosette bracket, 9, which has a recess at top, 15, which is filled with cement to make a smooth bed to seat the marble slab, &c. The bars of said arches are secured to
75 the tie-bars 6 and 7 by angle-brackets 10.

The tie-bars 5 and 6 form bearings for the joists 11, that support the floor. The top of said joists are just flush with the top of the spider-arches, so that the marble or other
80 slabs, &c., that form the floor, fit snugly not only on the joists, but also on the arms and center-pieces of the arches. Not only does marble or other material in the one layer form both floor and ceiling, thus utilizing both sides
85 of expensive material in the embellishment of the building and producing a double effect at one expense, but also a more beautiful effect is produced by the paneling of the polished marble, &c., by the interradiate bars of the
90 spider-arch that enframe it; also, as shown in Figs. III and IV, when the same idea is carried out in the filling of panels in partitions, single slabs of marble or other highly-decorative material is made to do double duty, em-
95 bellishing both sides of a partition and ornamenting alike adjoining halls and offices or rooms by utilizing both surfaces of the slab or material.

Although marble has been especially men-
100 tioned as appropriate to be used in my invention, I do not confine myself to that material, but may use stained or figured glass, fancy woods, or other suitable highly-decorative ma-

terial, especially in partition-paneling. When stained or richly-figured glass is used, or other transparent or semi-transparent substances, the light permeating through it is made to
 5 produce an effect in the combined floors and ceilings, as well as in partition-panels, in advance of anything heretofore known in the past or present state of the art.

The spider-arches and their supporting I-beams and columns 12 are preferably of iron, but may be of steel or bronze, and when the combined floor and ceiling is of marble, glass, or other incombustible material the flooring-joists, not being required to hold nails, may
 15 be of iron also; but when the floor is of wood, the joists will be of wood also to receive the nails.

The stiles 13 and rails 14 of the partition-frames may either be of metal or wood. When
 20 the former and the panels and combined ceilings and floors are of marble, glass, or other incombustible material, the device is especially adapted for fire-proof buildings, for it is entirely clear of material to feed combustion.
 25 Another important and useful feature that it embraces and that especially adapts it for use in fire-proof buildings is the avoidance of all flue-like interspaces between partition-casings and between floors, so that those great high-
 30 ways for the spread of fire in buildings are entirely avoided, and there being no passage for the encroachments of fire, so also is the great highway for the passage of vermin avoided, a free highway under covert that
 35 they have enjoyed in most systems of architecture from time immemorial.

To recapitulate briefly, some of the advantages of my invention are: first, utilizing both sides of the material, both as to use and orna-
 40 ment, thus producing a double effect with one cost; second, the avoidance of all flue-like inclosures, which, especially in partitions, as well as between floors, are a disastrous means for the spreading of fires; third, the avoid-
 45 ance of all harbor for rats, mice, or other vermin; fourth, the saving of space both in partitions and between floors, an item of considerable importance in buildings of costly construction, in which a large percentage of the
 50 capacity of the building is worse than thrown away; fifth, the means thus afforded when glass is the material used of skylighting from floor to floor, especially between the upper stories of the building; sixth, when colored
 55 and figured glass is used the luminous effect to the ceilings and panels of partitions that the rays of light passing through it produces, adding largely to the embellishing effect produced; seventh, that my invention, when de-
 50 sired, can be entirely constructed of incombustible material, especially adapting it for

use in fire-proof buildings; eighth, the avoidance of all inclosures of dead air.

I have described the combined floors and ceilings as being supported on spider-arches, 65 and their I and T beam-bearers in conjunction with the joists they carry, which is my preferable device; but I do not confine myself to those means of support, for it is evident that flat-arched, straight joists, or other means
 70 of supporting the combined ceiling and floors may be used without departing from the essential features of my invention, some of the important features of which are the utilizing both surfaces of marble or other material both
 75 for use and the embellishment and decorations of buildings, both as regards the combined floor and ceilings and the panels and windows of partitions, and the avoidance of all hollow
 80 partitions and interspaces between floors and ceilings that make flue-like passages for the spread of fire in buildings and a highway for rats, mice, and other vermin.

In my description of the partitions I have described the frames as filled with panels; but
 85 when preferred, the upper squares (shown unshaded in Fig. IV and of lighter material in Fig. III) may be filled with glass and form windows 16.

I claim as my invention—

1. In combination with the I-beams and suitable supports, interradiate arms having center brackets and a combined floor and ceiling of suitable material supported thereon,
 95 substantially as set forth.

2. In the construction and decoration of buildings, the combination of the I-beams 3, having brackets 4, I beams 5, resting on the said brackets, tie-beams 6 and 7 crosswise of the I beams 5, center bracket, 9, having an an-
 100 nular groove, 15, to receive cement, arms 8, radiating from said center bracket, 9, and resting on the beams 5, 6, and 7, and slabs 1, of marble or other suitable flooring material secured in place by the cement in the grooved
 105 bracket 9, substantially as set forth.

3. In the construction and decoration of buildings, the combination of the interradiate arms 8 of the spider-arches that connect in the center bracket, 9, said arches supported
 110 on the brackets 4 of the I-beams 3, the I beam 5, and the tie-beams 6 and 7, and themselves supporting a combined floor and ceiling that is arranged to utilize both surfaces of the material in the embellishment and decoration of
 115 buildings, substantially as described, and for the purpose set forth.

STEPHEN D. HATCH.

In presence of—

W. H. BUTTERWORTH,
 WILLIAM HENRY WILLIS.