

No. 746,345.

PATENTED DEC. 8, 1903.

H. L. KUBBERNUSS.
FIREPROOF CONSTRUCTION.
APPLICATION FILED MAY 27, 1903.

NO MODEL.

5 SHEETS—SHEET 1.

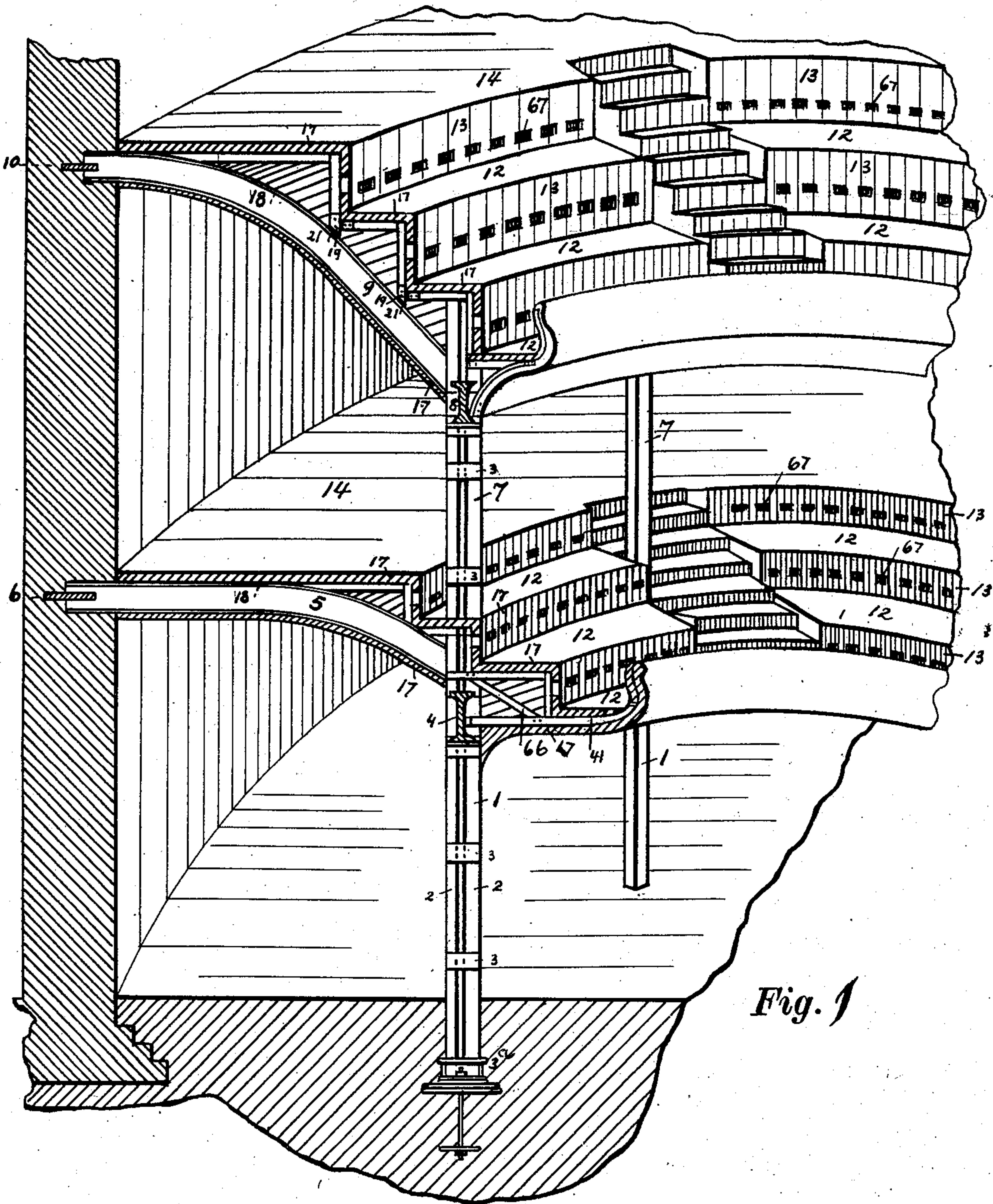


Fig. 1

WITNESSES:

H. L. KubbernuSS
Maud E. Letcher

INVENTOR:

Hermann L. KubbernuSS
BY
Hugh K. Wagner
ATTORNEY.

No. 746,345.

PATENTED DEC. 8, 1903.

H. L. KUBBERNUSS.
FIREPROOF CONSTRUCTION.
APPLICATION FILED MAY 27, 1903.

NO MODEL.

5 SHEETS—SHEET 2.

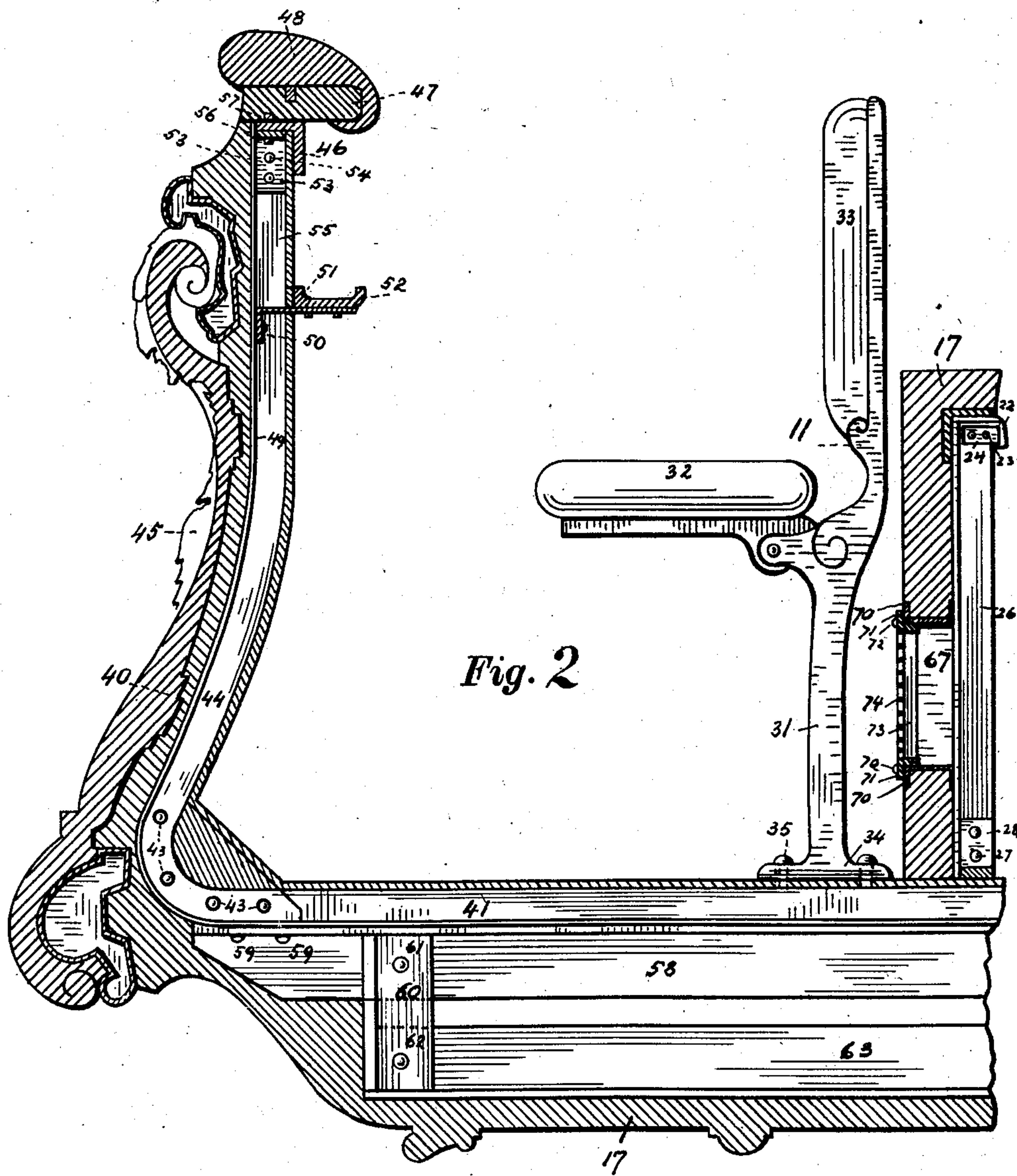


Fig. 2

WITNESSES:

Carl W. Kapp
Maud C. Petcher

INVENTOR:

Hermann L. Kubbernuess
BY
Hugh N. Wagner
ATTORNEY.

No. 746,345.

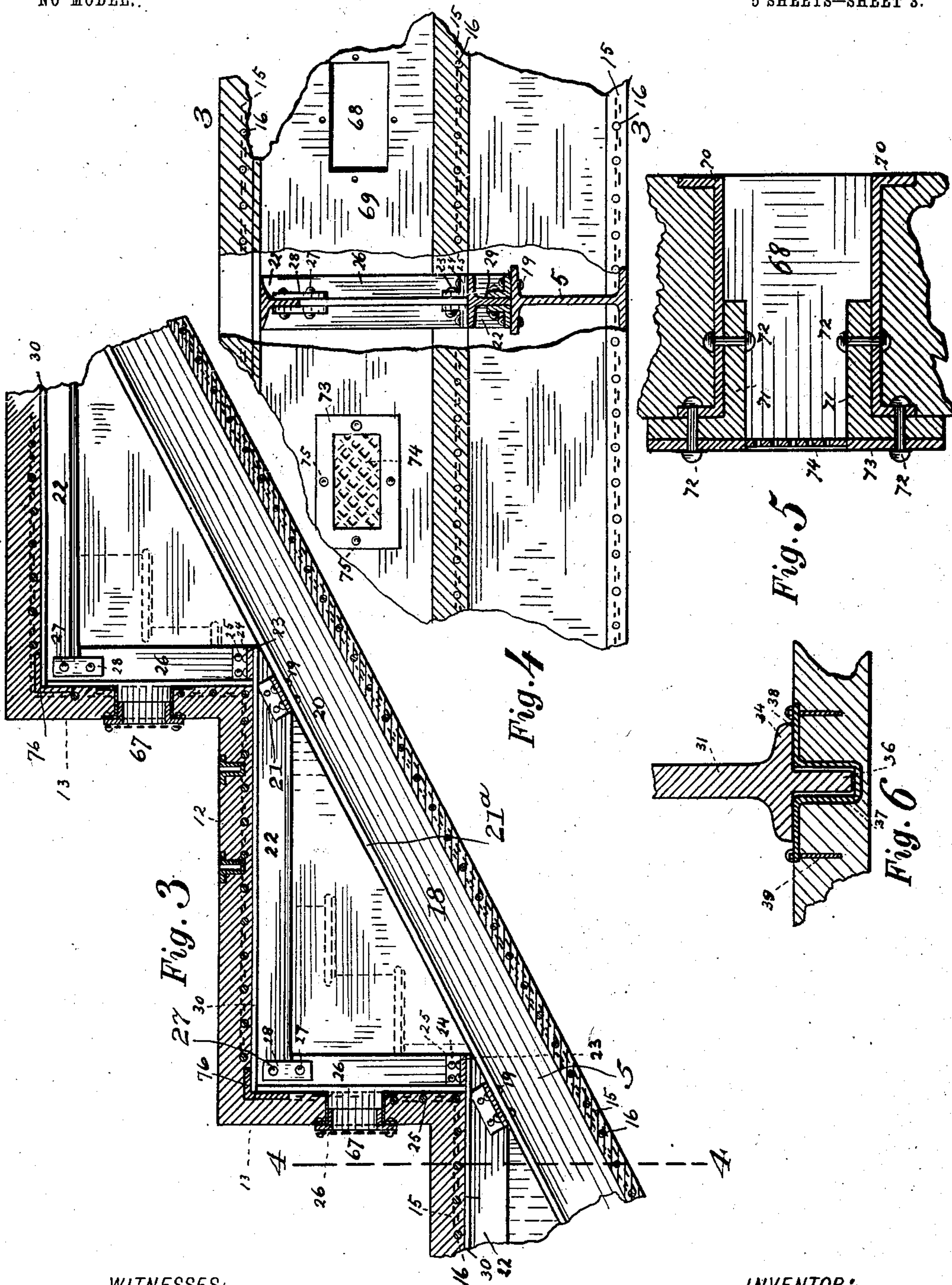
PATENTED DEC. 8, 1903.

H. L. KUBBERNUSS.
FIREPROOF CONSTRUCTION.

APPLICATION FILED MAY 27, 1903.

NO MODEL.

5 SHEETS—SHEET 3.



WITNESSES:

Carrington
Maud E. Fletcher

INVENTOR:

Hermann L. Kubbernuess,
BY
Hugh V. Wagner
ATTORNEY.

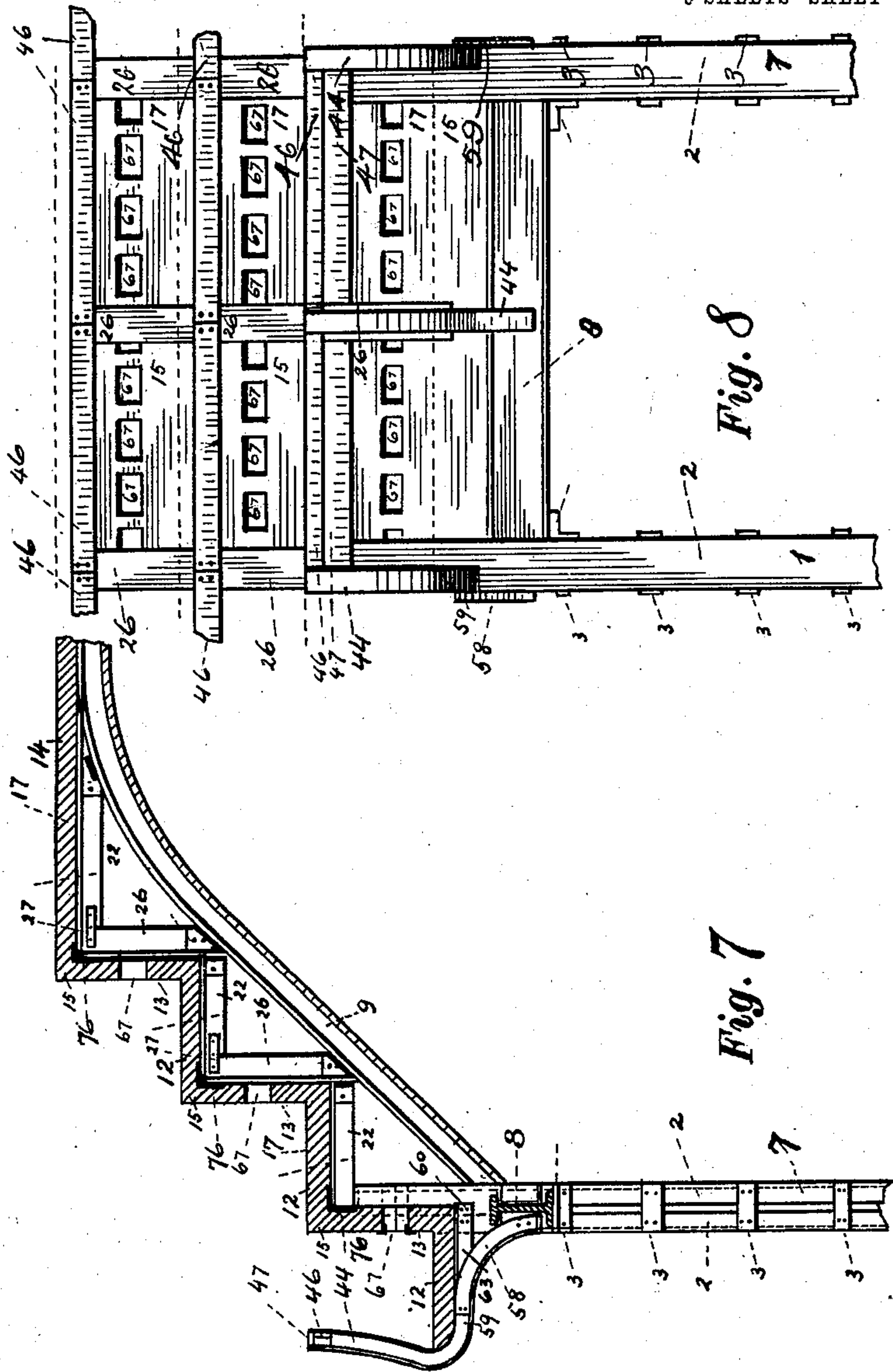
No. 746,345.

PATENTED DEC. 8, 1903.

H. L. KUBBERNUSS.
FIREPROOF CONSTRUCTION.
APPLICATION FILED MAY 27, 1903.

NO MODEL.

5 SHEETS—SHEET 4.



WITNESSES:
Edw. C. Letcher
Maud C. Letcher

INVENTOR:
Hermann L. Kubbernuess
BY
Hugh K. Wagner
His ATTORNEY.

No. 746,345.

PATENTED DEC. 8, 1903.

H. L. KUBBERNUSS.
FIREPROOF CONSTRUCTION.

APPLICATION FILED MAY 27, 1903.

NO MODEL.

5 SHEETS—SHEET 5.

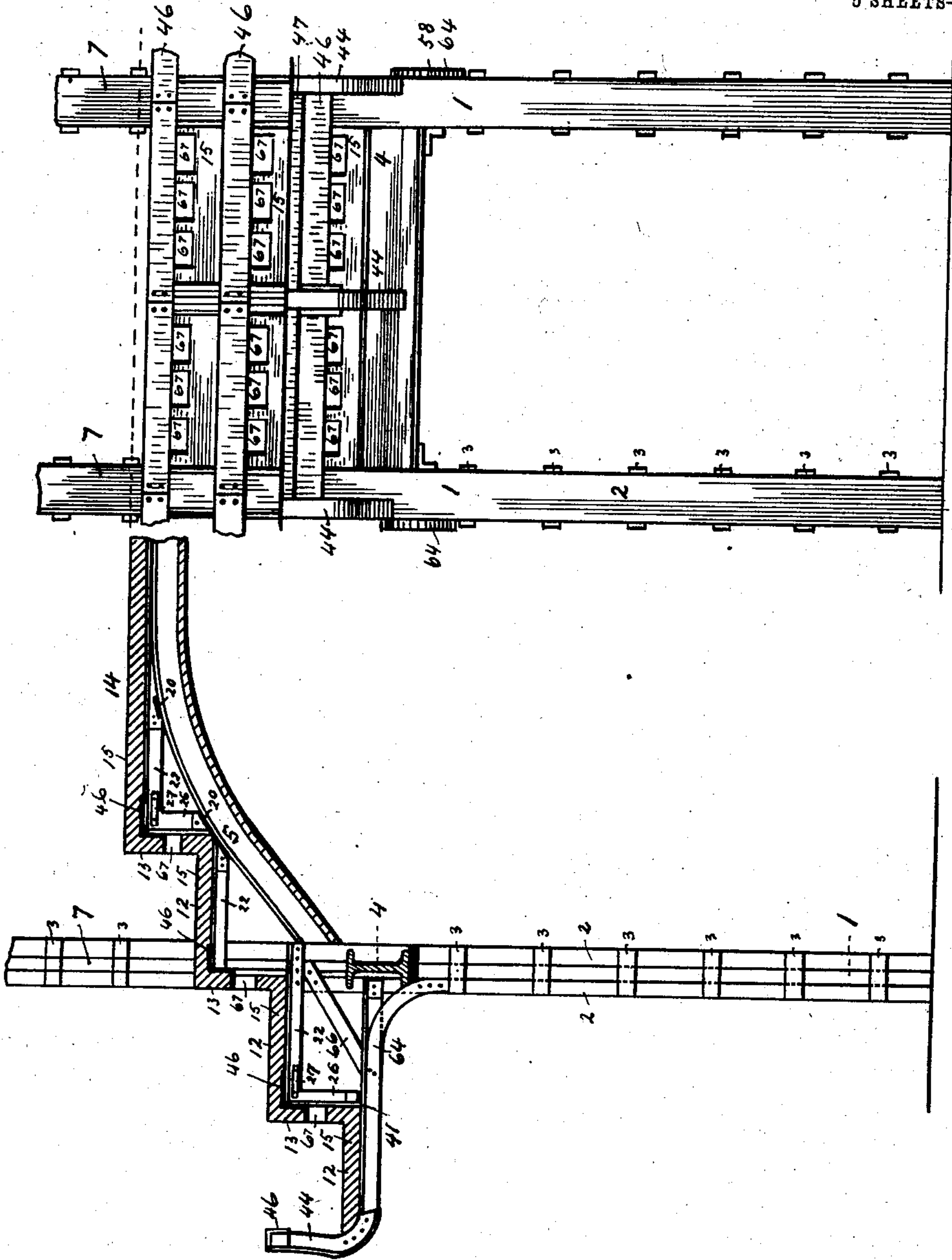


Fig. 10

Fig. 9

WITNESSES:

Carl Kupp
Maud C. Letcher

INVENTOR:

Hermann L. Kubbernuess
BY
Hugh K. Wagner
ATTORNEY.

UNITED STATES PATENT OFFICE.

HERMANN L. KUBBERNUSS, OF ST. LOUIS, MISSOURI.

FIREPROOF CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 746,345, dated December 8, 1903.

Application filed May 27, 1903. Serial No. 158,978. (No model.)

To all whom it may concern:

Be it known that I, HERMANN L. KUBBERNUSS, a subject of the Emperor of Germany, residing at the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Fireproof Constructions, of which the following is a specification.

This invention relates to fireproof constructions, and in the drawings is shown as adapted to the complete fireproof constructions of theaters, concert-halls, and the like.

In the drawings, in which like numbers of reference denote like parts wherever they occur, Figure 1 is a general perspective view of my improved fireproof construction applied to theater construction. Fig. 2 is a sectional view through the balcony balustrade, floor, supports, &c. Fig. 3 is a sectional detail view of the seat-supporting steps. Fig. 4 is a partial sectional view on the line 4-4, Fig. 3. Fig. 5 is a detailed view of the construction of the ventilation-orifices. Fig. 6 is a detailed view showing the manner in which the seats are fastened to the floor of the step-like tier construction. Fig. 7 is a sectional view through the second balcony, showing a tier of seat-supports, drawn on a reduced scale, supporting-columns, &c. Fig. 8 is a front view of the same and of the same character. Figs. 9 and 10 are views similar to Figs. 7 and 8, but illustrate especially the construction of and supports for the first balcony.

In a theater construction it is desirable to make same as thoroughly fireproof and incombustible as is possible, and to this end I provide an improved arrangement of the iron-work serving as general supports for the different floors or so-called "balconies" of a theater or concert-hall and also especial arrangement of supporting-framework covered with insulating material, which not only is supported by but protects the iron framework and in turn forms a strong and fireproof support for the rows of seats arranged in tiers or steps in a theater. It will be readily understood that while I shall describe these arrangements as applied to the construction of the balconies, yet they might in part readily be adapted for use in other parts of the building.

The supporting-columns 1, formed of a pair of channel-beams 2, are suitably anchored at 3^a in the concrete base. The channel-beams

2 are united at intervals by the plates 3, which are securely riveted thereto, so as to form of the two channel-beams a solid column. These columns occur at suitable intervals, as seen in Figs. 1, 8, and 10. Supported thereby and running from column to column are the I-beams 4, which in turn support the curved T-beams 5, anchored in the rear wall at 6, the forward ends of said beams 5 resting upon the I-beams 4. The columns 7, constructed like the pillars 1, are superimposed upon said I-beams 4 and in turn support the I-beams 8, which in like manner receive the curved T-beams 9, anchored at 10 in the rear walls, the beams 5 forming supports for the floor and tiers of the first balcony and the beams 9 in like manner supporting the floor and tiers of the second balcony or gallery, all parts resting upon or touching each other being suitably riveted together or otherwise fixed. The T-beams 5 and 9 occur at intervals coincident with the recurrence of the columns 1 and 7.

The seats 11 are arranged in rows (not shown) located upon the steps or tiers 12, the riser part 13 of which, as indicated in Figs. 1, 7, and 9, is higher in the second balcony or gallery than it is in the first balcony.

The floors 14, as well as the tiers 12 and the risers 13, are covered with a fireproof material, which is spread or plastered upon wire-netting or other similar reticulated material 15, which itself rests upon transverse round iron rods or bars 16, suitably spaced apart, as indicated, for example, in Figs. 3 and 4. It will be understood that while the arrangement of the rods 16 underneath the netting 15, both being embedded in the fireproof composition or insulating material 17, is indicated only in Figs. 3 and 4, yet all the iron parts and the spaces intervening between same are similarly covered with the fireproof material 17, having the netting 15 and rods 16 embedded therein, and for the sake of convenience the combination of these three parts may hereinafter be referred to by the term "wire-plaster."

The T-beams 5 and 9, suitably spaced apart, as hereinbefore stated, and resting upon the pillars 1 and 7, respectively, form the supports, respectively, for the tiers of seats in the first and second balconies. The construction being practically the same in both bal-

conies, I shall describe that of the lower or first balcony only. In this construction the web 18 of the T-beam 5 is turned downward, while the body portion of said beam 5 supports one end of the smaller horizontal T-beam 22, which at its other end is supported by being attached in the manner hereinafter described to the small vertical T-beam 26, which at its lower end rests upon the end of the body portion of the next succeeding lower T-beam 22, which is in turn supported upon a lower portion of the body portion of the slanting large T-beam 5. The support of the smaller T-beams 22 and 26 is therefore the larger T-beam 5; but in order to insure stability of the structure the T-beams 22 and 26 are bolted, riveted, or otherwise secured together and the beams 22 to the beam 5 preferably by means of the bolts 19 and angle-plates 20. Flanges 21 are bolted to the flange or body portion 21^a of the T-beam 5, as clearly indicated in Fig. 3, while the other flange of the angle-iron 20 is similarly bolted or riveted to the web of the smaller T-beam 22. This firmly unites T-beam 22 to T-beam 5. The other end of the T-beam 22 rests upon the web of the T-beam 26 and the web 29 of the T-beam 22 and that of the beam 26 is united by the plate 28, which is bolted at 27 to the web 29 of the T-beam 22 and also to the web of the beam 26. The T-beam 26 rests at its lower end upon the next succeeding T-beam 22, being attached thereto by the angle-plate 24, fastened by bolts 23 to the body portion of the next succeeding T-beam 22 and by bolts 25 to the web of the vertical T-beam 26. The flanges 30 of the T-beams 22 have the rods 16 resting upon them and running from one of said smaller T-beams 22 to the next, which is located at a suitable distance away, and the wire-netting 15 is then laid upon these rods 16 and the plaster composition 17 spread thereon. In this way is formed upon an iron framework a solid step-like fireproof succession of supports for rows of seats. These seats may be of any desired form, but are preferably such as indicated in Fig. 2. The stem 31 supports the chair-seat 32, as well as the back 33, and is provided at its base with the flanges 34, through suitable perforations in which the bolts or pins 35 penetrate to fasten same to the floor. The seats are, however, preferably attached to the floor in the manner indicated in Fig. 6, in which the stem 31 of the seat is shown formed with the tongue 36 below the flanges 34, which tongue 36 fits into a cup or socket 37, having the outturned flanges 38, through which the screws or pins 39 pass to unite same to the floor.

The balustrade 40 at the front of both galleries is formed in the following manner: T-beams 41 are embedded in the floor 42 of the lowest portion of said galleries and have attached to them by rivets or bolts 43 the curved T-beam 44, the major portion of which projects vertically and bears on its front the

ornamental plaster-work 45 and is surmounted by the horizontal and longitudinal angle-irons 46, upon which rests and to which is connected the wooden beam 47, suitably upholstered at 48. The web 49 of the T-beam 44 has riveted to it at 50 the angle-iron 51, supporting the opera-glass holder 52, which is an additional convenience for those sitting in the front row in the balconies. The angle-iron 46 and beam 47 are attached to the T-beams 44 in this way: The angle-plate 53 is riveted at 54 to the rib 55 of the T-beam 44, and through a perforation in the horizontal portion 55 of said angle-plate 53 rivets 56 pass and also through perforations in the horizontal portion 57 of the angle-iron 46 and into the beam 47. The T-beams 58 are riveted to the columns 1 and 7 and also at 59 to the web 49 of the T-beam 44 and is itself again secured by means of the plate 60, riveted at 61 to said T-beam 58 and at 62 to the additionally-supporting beam 63, which in turn is secured to the columns 1 and 7, spaced apart at suitable intervals. In the balustrade construction are the curved I-beams 64, which are riveted, by means of angle-plates 65, to the I-beams 4 and 8 and are additionally secured by the brace-plates 66.

Behind the seats 11 are formed in the risers 13 a series of ventilation-orifices 67, which are constructed in the following manner: Openings 68 are left in the plaster-work 69 and their opposite edges covered with channel-irons 70. To these channel-irons 70 are riveted the angle-irons 71 by the rivets or bolts 72, and the forward end of the opening 68 is faced with a frame 73, bearing the lattice 74, the frame 73 being attached at 75 and by the same bolt or rivet which fastens the angle-iron 71 to the channel-iron 70.

The angle-irons 76 run from one vertical T-beam 26 to another and form the support for the rods and wire-netting upon which the tiers 12 are plastered.

Having thus described my said invention, what I claim, and desire to secure by Letters Patent, is—

1. In a fireproof construction the combination of the supporting columns and walls, beams running from column to column, beams running from the columns to the walls, horizontal beams and vertical beams both connected to said last-mentioned beams and supporting wire-plaster tiers for seats, substantially as described.

2. In a fireproof construction the combination of supporting columns and walls, beams running from column to column, beams extending from the wall to said columns, beams connected to said columns and supporting a balustrade, substantially as described.

3. In a balustrade the combination of an upright T-beam having a curve at its base, horizontal T-beam riveted thereto and connected to the supporting-columns of a theater-balcony, substantially as described.

4. In a balustrade the combination of a plu-

5 rality of horizontal beams connected together,
vertical T-beams curved at the lower end and
attached thereto, said vertical T-beams bear-
ing ornamental plaster-work and having fixed
10 at their top a bolster-bearing beam and sup-
ported by said vertical T-beams by an inter-
posed horizontal angle-iron attached to said
T-beams by angle-plates riveted to said T-
beams and to said angle-irons, substantially
as described.

15 5. In fireproof constructions the combina-
tion of the supporting columns and walls,
beams running from one to the other spaced
apart and supporting wire-plaster ceilings,
horizontal and vertical beams of smaller di-
mensions attached to said first-mentioned
beams and forming a step-like construction
to support the seats, said beams of smaller
20 dimensions supporting wire-plaster risers and
tiers, the latter forming air-spaces between
said ceilings and said risers and tiers, and
ventilation-openings from said air-spaces
comprising an opening faced with channel-

irons, angle-irons, and a plate having its cen-
ter formed of reticulated material or other- 25
wise perforated fastened through said angle-
irons to channel-irons, substantially as de-
scribed.

6. In a fireproof theater construction the
combination of supporting-framework com- 30
posed of columns and beams spaced apart,
metal rods extending between the different
portions of said framework, wire-netting
placed upon said rods, a fireproof plaster
spread upon and around said reticulated ma- 35
terial and said rods, sockets sunk in said plas-
ter and suitably fastened therein to receive
the tongues 36 of theater-seats arranged in
rows, substantially as described.

In testimony whereof I have affixed my sig- 40
nature, in presence of two witnesses, this 20th
day of May, 1903.

HERMANN L. KUBBERNUSS.

Witnesses:

MAUD E. LETCHER,
TERESA MURPHY.