

No. 656,541.

Patented Aug. 21, 1900.

E. S. GRAY.
BLOWER.

(Application filed Jan. 22, 1897.)

(No Model.)

3 Sheets—Sheet 1.

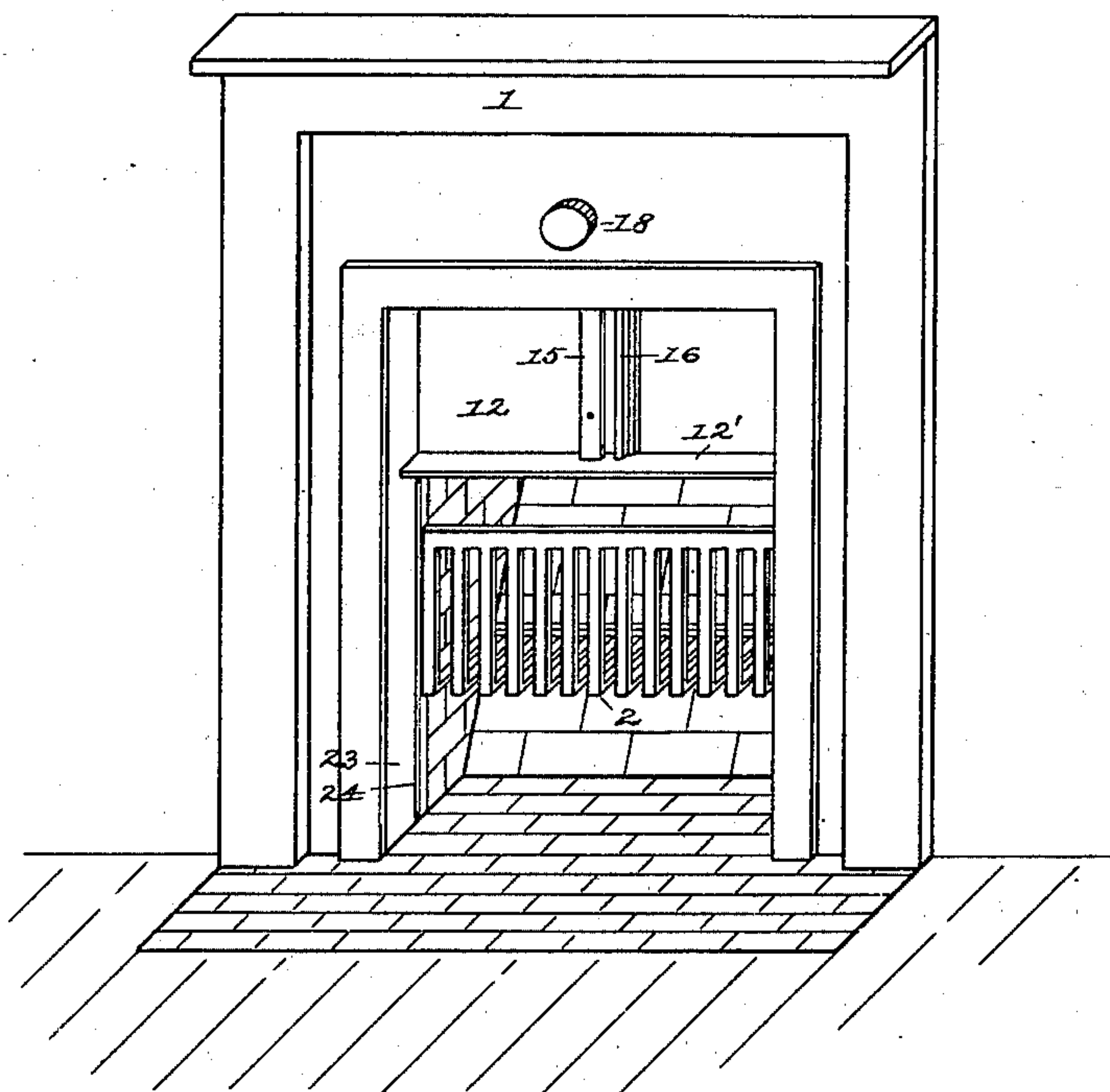


Fig. 1.

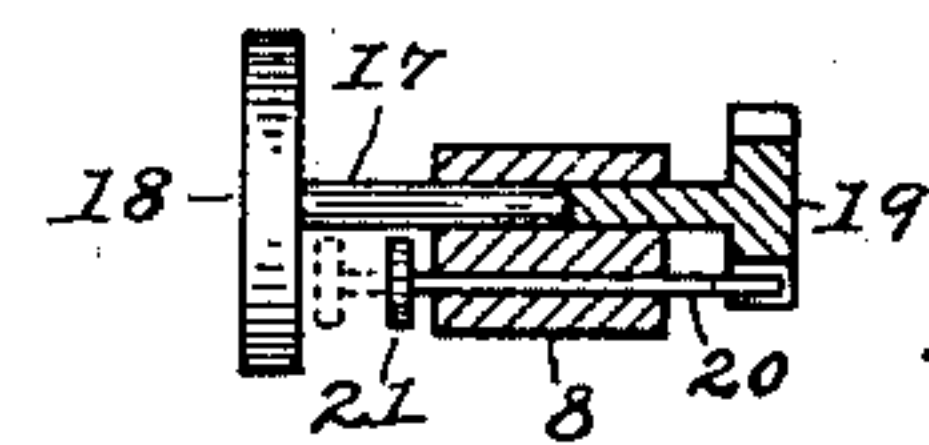


Fig. 15.

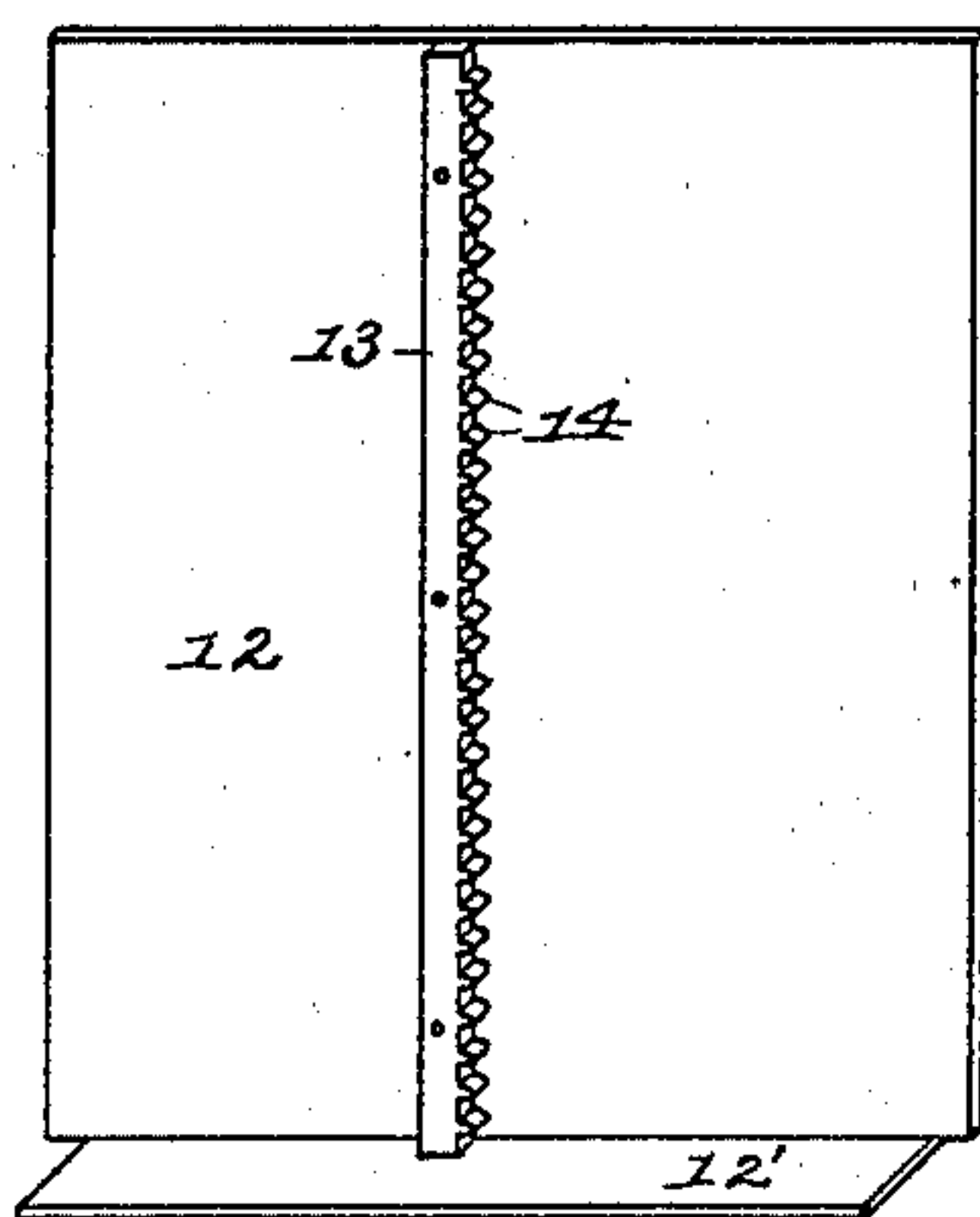


Fig. 2.

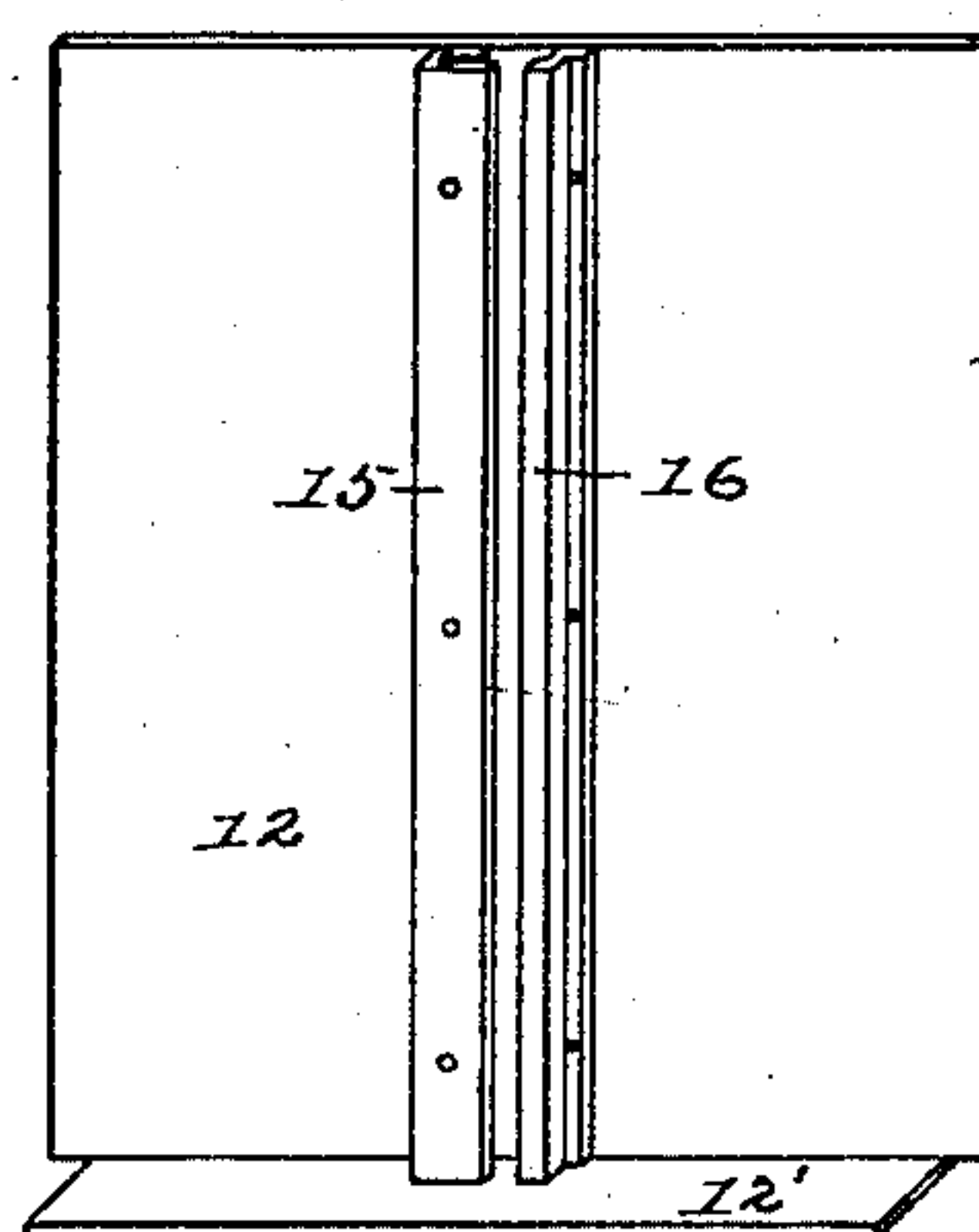


Fig. 3.

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Inventor:
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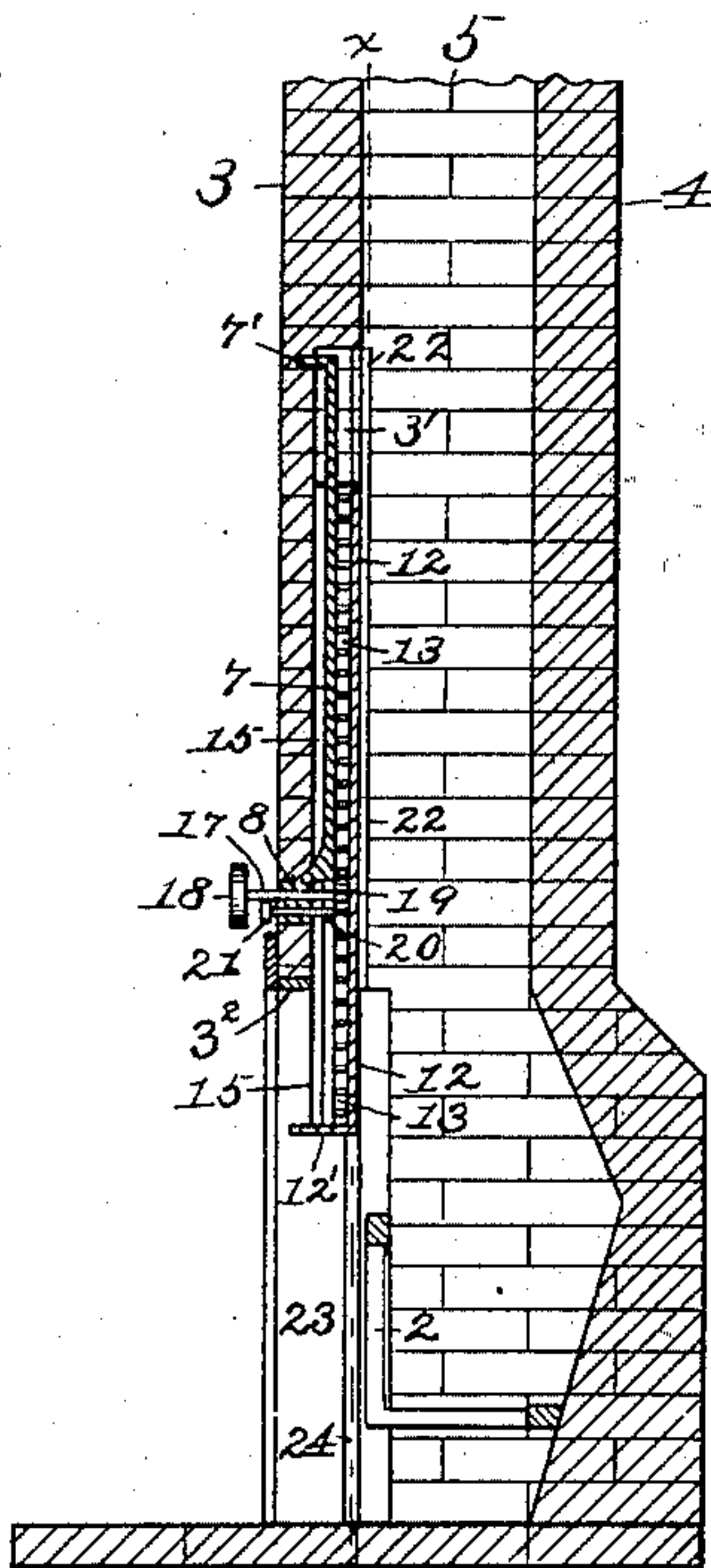


Fig. 4.

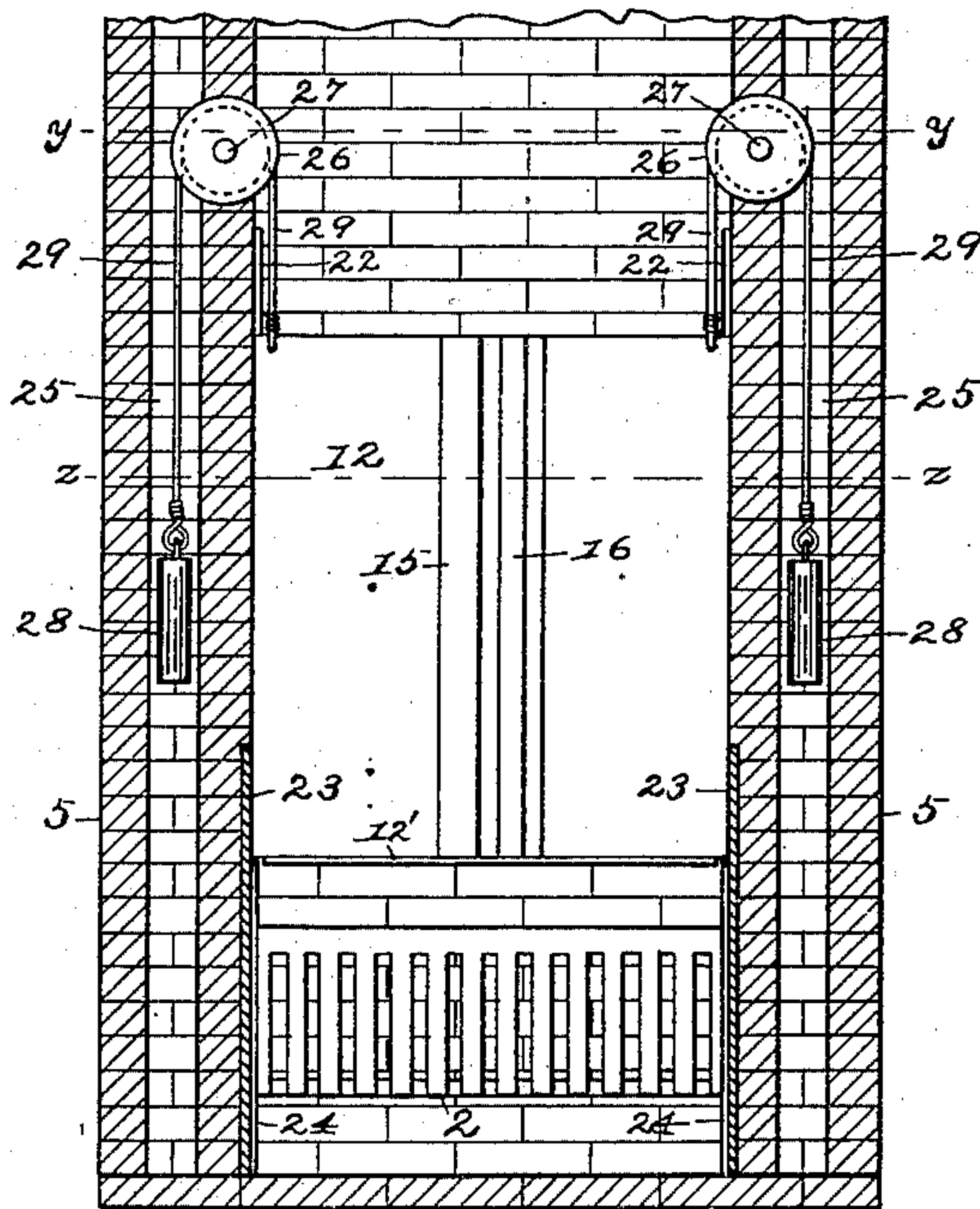


Fig. 5.

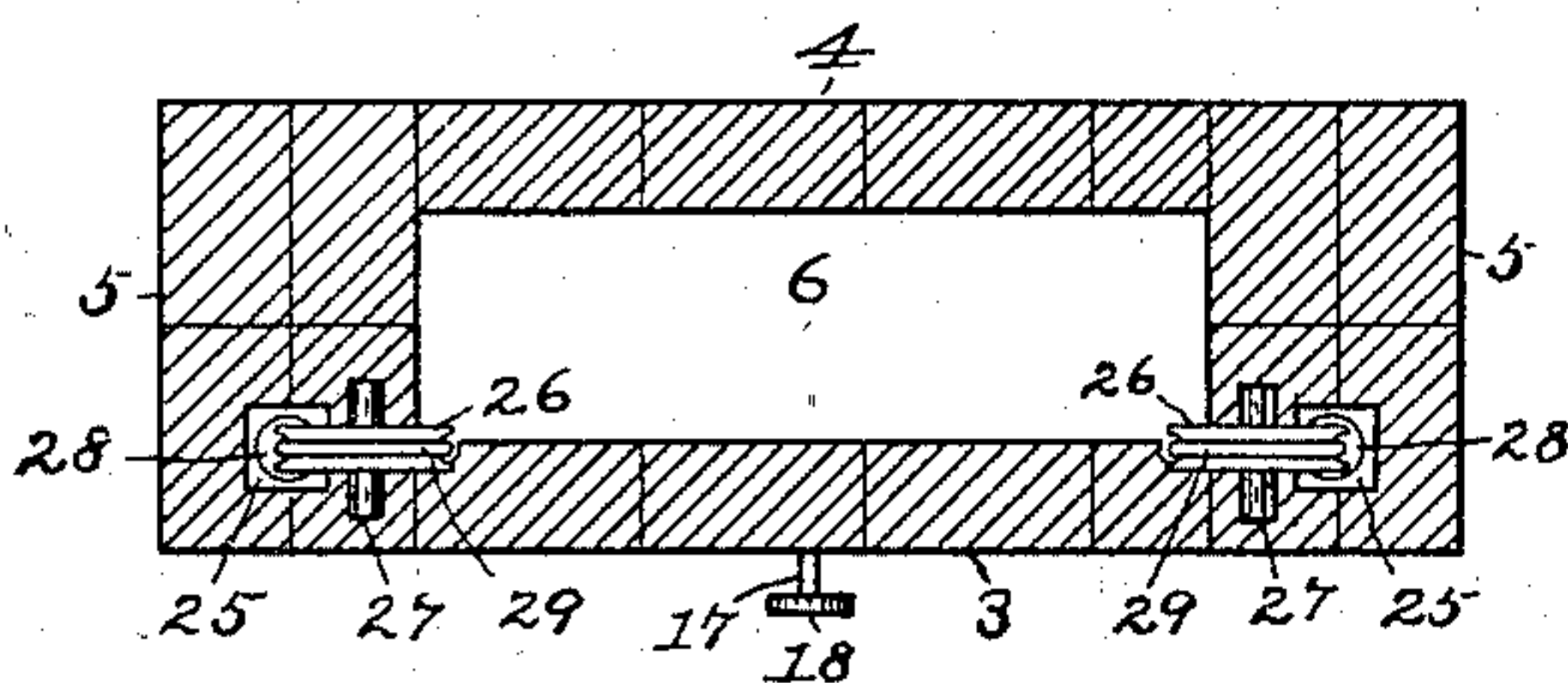


Fig. 6.

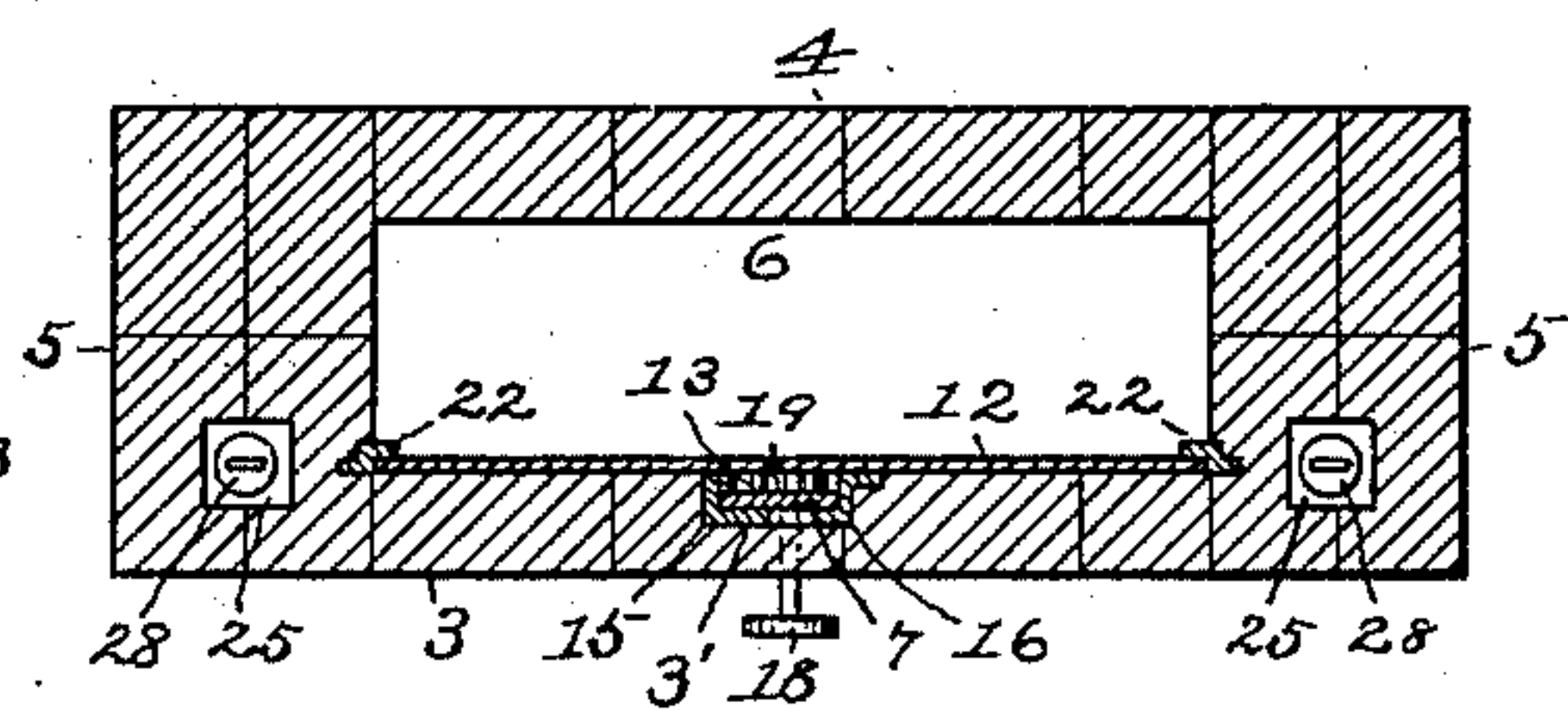


Fig. 7.

WITNESSES

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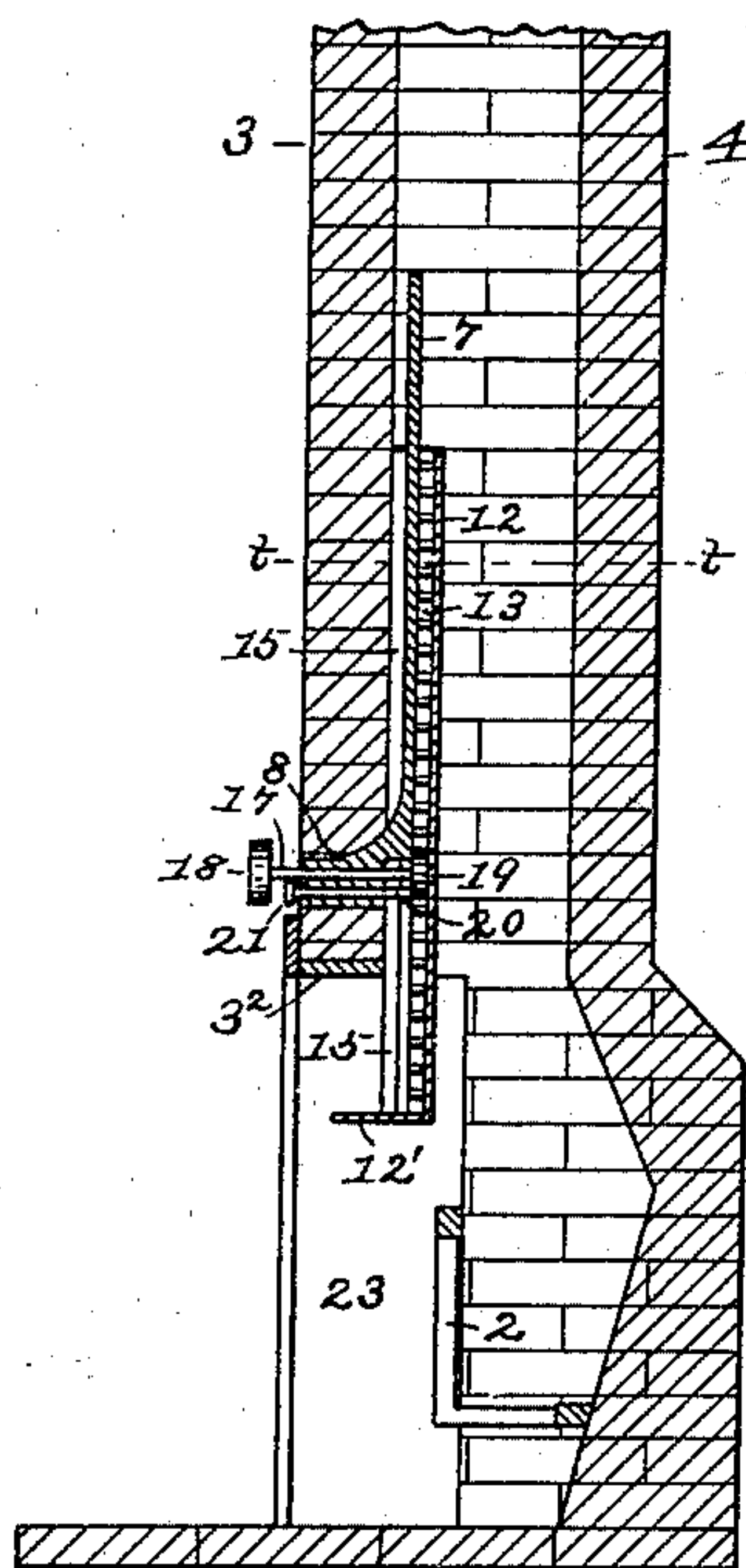


Fig. 8.

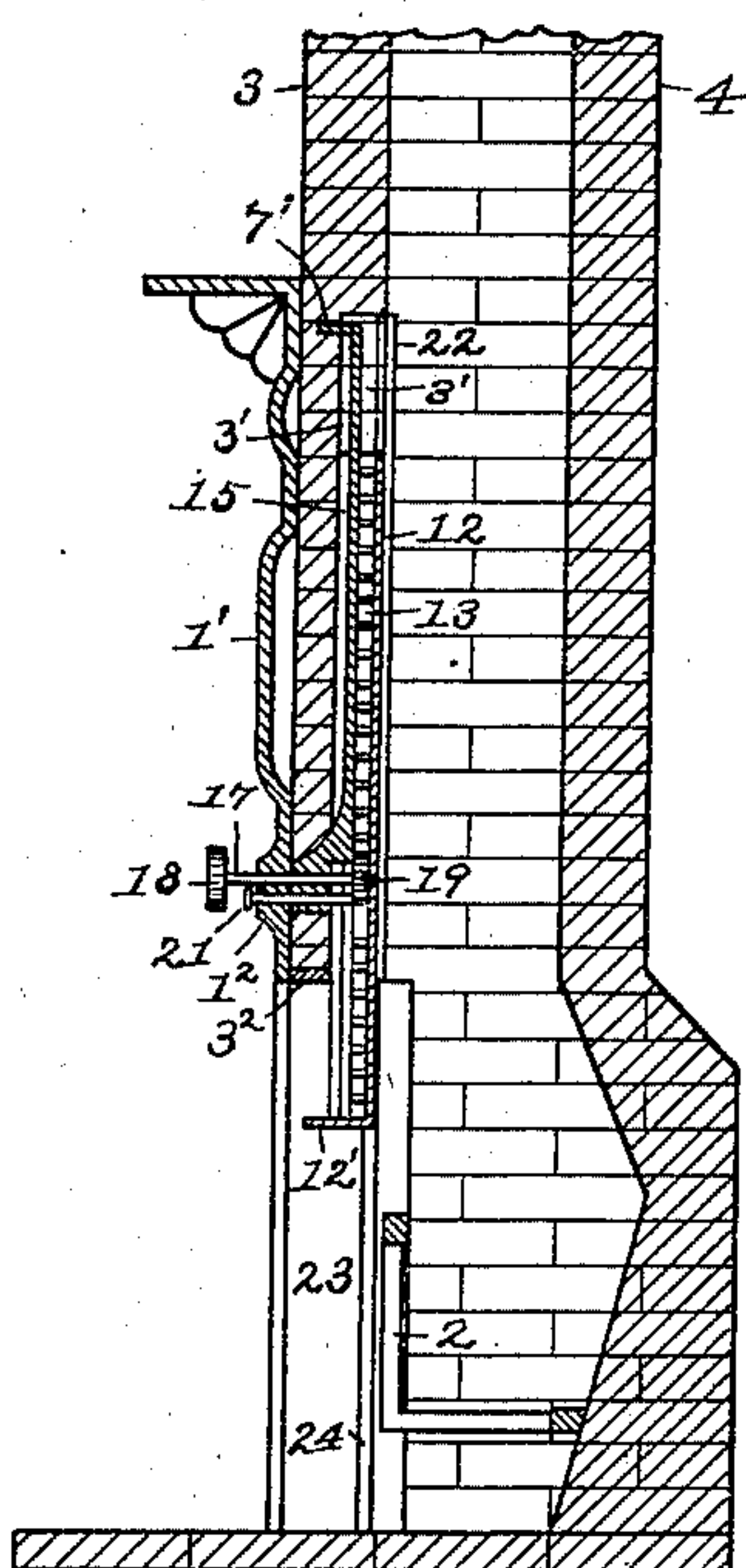


Fig. 9.

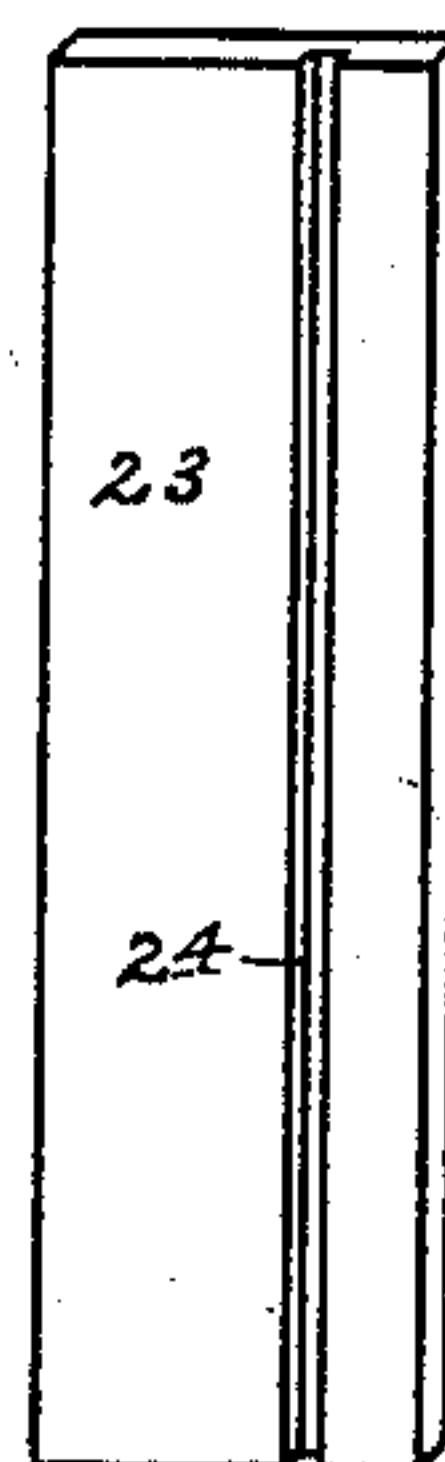


Fig. 11.

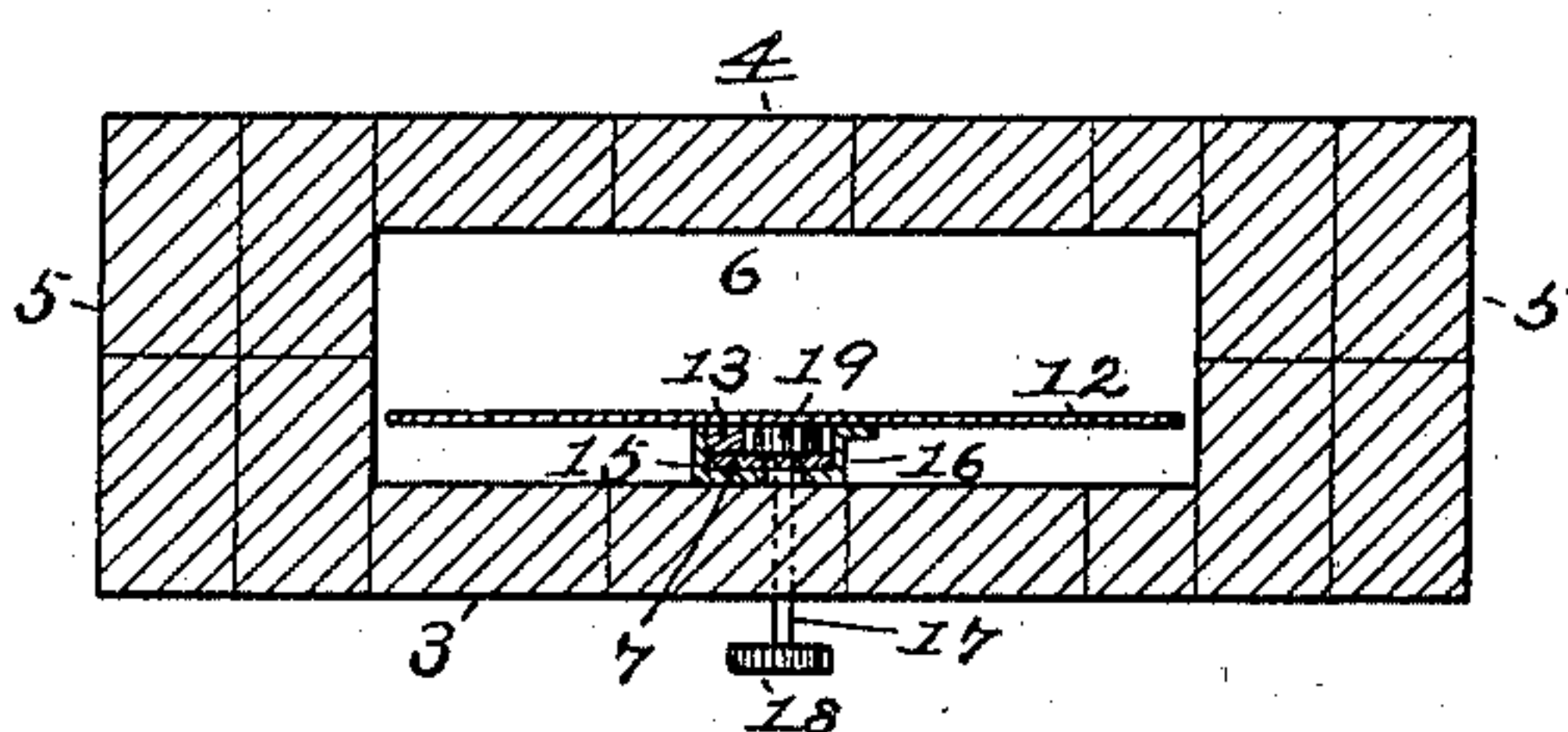


Fig. 10.



Fig. 14.

WITNESSES:

A. York
J. Napier

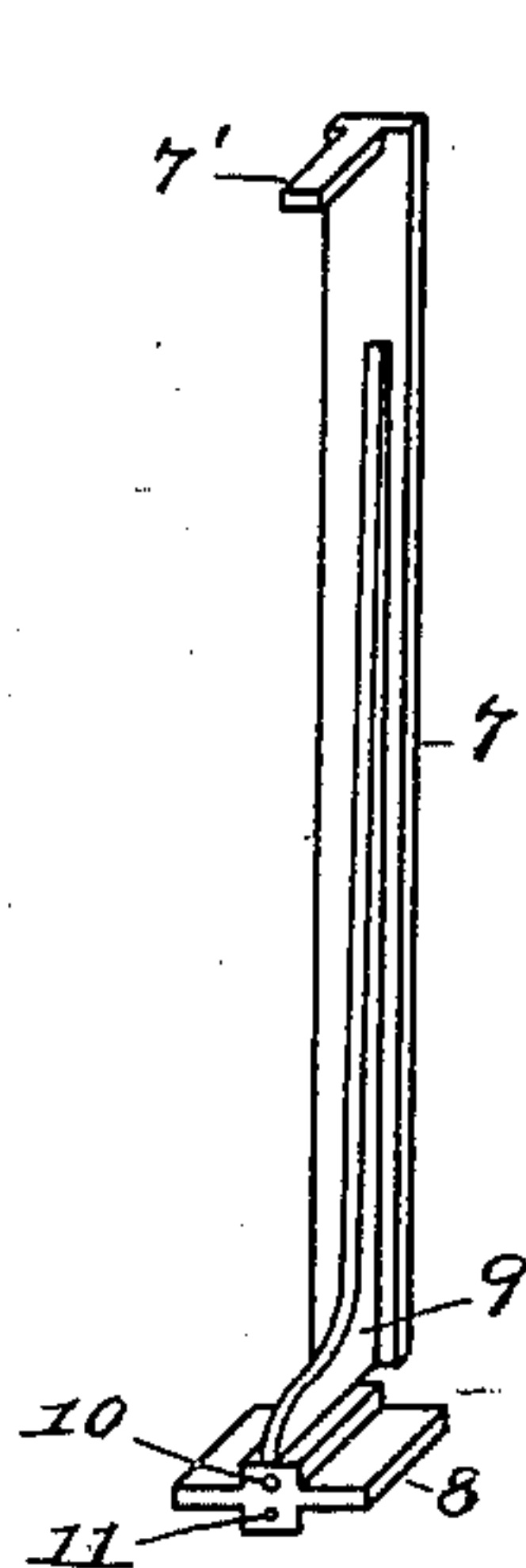


Fig. 12.

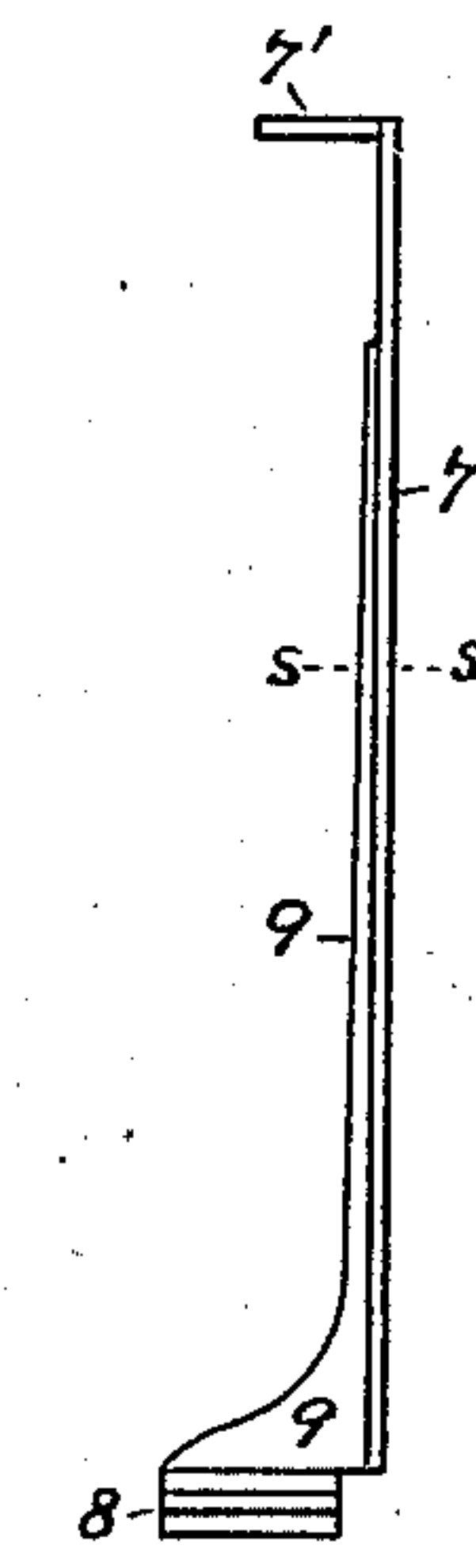


Fig. 13.

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UNITED STATES PATENT OFFICE.

EDGAR S. GRAY, OF GREENFIELD, OHIO.

BLOWER.

SPECIFICATION forming part of Letters Patent No. 656,541, dated August 21, 1900.

Application filed January 22, 1897. Serial No. 620,264. (No model.)

To all whom it may concern:

Be it known that I, EDGAR S. GRAY, a citizen of the United States, residing at Greenfield, in the county of Highland and State of Ohio, have invented certain new and useful Improvements in Blowers, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates especially to blowers for grates or fireplaces; and the object of the invention is to provide an improved blower of the character described which may be adjusted to any desired height, and thus regulate the draft of air, and also to make provision whereby the blower may be kept in the chimney when not in operative position, and thus always be ready for use.

In the accompanying drawings, Figure 1 is an oblique or perspective view showing a mantel-tree and lower part of chimney provided with grate, the blower being partly elevated. Fig. 2 is an oblique or perspective view of the blower provided with rack. Fig. 3 is a similar view showing the blower provided with angle plates or guides. Fig. 4 is a central vertical section of the construction shown in Fig. 1. Fig. 5 is a vertical section on line *xx* of Fig. 4. Fig. 6 is a cross-section on line *yy* of Fig. 5. Fig. 7 is a cross-section on line *zz* of Fig. 5. Figs. 8 and 9 are central vertical sections similar to Fig. 4, showing modified forms of construction. Fig. 10 is a cross-section on line *tt* of Fig. 8. Fig. 11 is an oblique or perspective view of one of the jamb-pieces, showing groove therein. Fig. 12 is an oblique or perspective view of the piece which is secured in front wall of chimney to guide and support the blower. Fig. 13 is a side elevation of same. Fig. 14 is a top or plan view taken in cross-section on line *ss* of Fig. 13. Fig. 15 is a detail view, partly in section, drawn to enlarged scale, and showing the locking device.

Like figures of reference indicate similar parts in the different views of the drawings.

The numeral 1 represents the mantel-tree, which may be of any desired pattern. The grate or basket 2 is hung in the usual manner.

3 represents the front wall of the chimney; 4, the rear wall; 5, the side walls, and 6 the flue.

The vertical bar 7 has a base 8, the bar and base being connected by a rib or brace por-

tion 9. The base 8 is enlarged at the center and provided with holes 10 and 11. A projection 7' at the top of bar 7, at right angles to the bar, is provided in some cases. In building new chimneys the base 8 is built or secured in the front wall 3 of the chimney, and a vertical recess 3' is made on the inner side of the front wall. In applying the device to old chimneys it is necessary to cut a hole in the front wall and insert the base 8 and anchor or secure it by means of cement or other material, thus filling the hole again. The recess 3' will generally be omitted in old chimneys. The base 8 is set in such a way that the bar 7 extends up on the inside of the chimney close to the front wall. In new chimneys the end of projection 7 is secured in the front wall. In the case of old chimneys the projection 7' will generally be omitted. The projection 7' when built in the front wall steadies the bar 7 at its upper end. When the projection is omitted, the bar 7 must depend upon the base 8 for its steadiness. When the recess 3' is used, the bar 7 will be in the recess and close to the wall.

The blower 12 is preferably made of sheet metal and is provided with a rack 13, having teeth 14. The angle-plates or guide-pieces 15 and 16 are suitably secured by rivets or otherwise to blower 12, and inclose or encompass the rack 13. These guide-pieces project out at right angles from the blower and then turn parallel with the blower, approaching but not quite touching each other. The bar 7 passes up between the rack 13 and the outer portions of guide-pieces 15 and 16. The rib 9 passes through the slot or opening between the edges of guide-pieces 15 and 16. Hence the bar 7, rib 9, and guide-pieces 15 and 16 hold the blower against lateral movement. The outer portions of guide-pieces 15 and 16 pass between the bar 7 and base 8, a space being left between the bar and base at either side of rib 9. The recess 3' in the front wall is just large enough to receive the guide-pieces 15 and 16, and thus allow the blower 12 to rest against the front wall of the chimney.

A shaft 17 is rotatably mounted in hole 10 of base-piece 8. This shaft carries a hand-wheel 18 and a pinion or toothed wheel 19. A crank may be used instead of hand-wheel

18, if desired. The pinion 19 engages the teeth of rack 13. The pinion is partly encompassed by the guide-pieces 15 and 16. A shaft or bar 20, with head 21, is movably placed in hole 11 of base-piece 8, and when pressed inward its inner end engages the teeth of pinion 19, as shown in Fig. 20. Shafts 17 and 20 pass through the slot or opening between guide-pieces 15 and 16. When iron mantels are used, as represented at 1' in Fig. 9, a boss 12 is preferably cast on the mantel, with holes for the shafts 17 and 20 to pass through, these holes registering with holes 10 and 11 in base-piece 8.

The blower 12 is bent forward at a right angle at its lower end to form the horizontal portion 12'. In new chimneys the vertical guide-pieces 22 are provided, and the edges of the blower fit between these guide-pieces and the front wall of the chimney, thus preventing lateral motion. In old chimneys the guide-pieces 22, the projection 7', and the recess 3' will generally be omitted, and the blower 12 will stand out somewhat from the front wall of the chimney, as represented in Figs. 8 and 10. The space between the blower and front wall, however, will be very small when thin sheet metal is used for the guide-pieces 15 and 16, and thin metal pieces for bar 7 and rack 13. In new chimneys the jamb-pieces 23 are provided with vertical grooves 24 immediately beneath the spaces between the guide-pieces 22 and the front wall of the chimney. The basket 2 should be set back of grooves 24, so as not to interfere with the blower. In some cases the recesses or narrow chambers 25 are provided in the side walls 5 of the chimney. Pulleys 26 are rotatably mounted on shafts 27, and weights 28 are suspended in chambers 25 by wire ropes or chains 29, attached thereto and passing over pulleys 26, their opposite ends being secured to the upper portion of blower 12. Weights 28 are just heavy enough to balance the weight of blower 12. Shafts 27 may in some cases be set parallel with front wall 3 and projected into the flue, the pulleys 26 being mounted in such a way that the weights 28 will hang in the flue near side walls 5 instead of in chambers 25, as will be readily understood.

In Figs. 1, 4, 5, 8, and 9 the blower is shown in a partly-elevated position. In order to elevate the blower to its highest position, it is only necessary to turn the hand-wheel 18, whereupon the pinion 19 will engage the teeth of rack 13 and carry the blower upward until the portion 12' reaches the lower part 3' of the front wall. The portion 12' of the blower will prevent the draft from passing up between the blower 12 and the front wall 3, and hence prevent the deposit or accumulation of soot between said blower and wall. When it is desired to lower the blower, the wheel 18 is turned in the opposite direction until the blower comes down to the desired position. When the fuel does not burn read-

ily, the blower may be lowered as far as may be necessary to secure the requisite draft and left at that position. When the blower is to be elevated or lowered, the shaft or bar 20 is drawn outward to the position shown in dotted lines in Fig. 20, whereupon its inner end is freed from the pinion 19. When the blower has been elevated or lowered to the desired position, the shaft or bar 20 is pressed in until its inner end engages the teeth of pinion 19, and then the blower is securely locked and cannot be raised or lowered until the shaft or bar 20 has been drawn outward again. It will be observed that when the blower is lowered its edges work in grooves 24 in jamb-pieces 23, and when the blower is elevated its edges work between the guides 22 and the front wall 3 when such grooves and guides are provided. When the guides 22 and the grooves 24 are used, the guide-pieces 15 and 16 might in some cases be dispensed with. When the weights 28 are used, the rack 13 and pinion 19 might in some cases be dispensed with, the weights alone being used to elevate the blower and keep it elevated.

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

1. The combination, with the front wall of the chimney, of a blower, a rack carried by said blower, a pinion meshing with said rack, the shaft of said pinion being mounted in said front wall, and a shaft or bar mounted in said front wall and having its inner end in engagement with the teeth of said pinion when the shaft or bar is pressed inward, so as to retain the blower at any desired height, substantially as set forth.

2. The combination, with the front wall of the chimney, of a blower, means for elevating and lowering the blower, a groove 24 in jamb 23, and the guide-pieces 22, to prevent lateral motion, substantially as set forth.

3. The combination, with the front wall of the chimney, of a blower, a rack carried by said blower, a pinion meshing with said rack, the shaft of said pinion being mounted in the front wall, and a guide or guides adjacent to said rack and parallel thereto, said guide or guides incasing said pinion, substantially as set forth.

4. The combination, with the front wall of the chimney, of a blower, a rack carried by said blower, a pinion meshing with said rack, the shaft of said pinion being mounted in the front wall, and a guide or guides adjacent to said rack and parallel thereto, a vertical bar partly incased by said guide or guides, whereby the blower is held against lateral motion, said bar having its base-piece anchored or secured in said front wall, substantially as set forth.

5. The combination, with the front wall of the chimney, of a blower, a vertical bar, a rack carried by said blower, a pinion meshing with said rack, and a guide or guides se-

cured to said blower adjacent to said rack and parallel thereto, said vertical bar and said pinion being partly incased by said guide or guides, whereby the blower is held against lateral motion, substantially as set forth.

6. The combination, with the front wall of the chimney, of a blower, a vertical bar having its base-piece anchored or secured in said front wall, a rack carried by said blower, a pinion meshing with said rack, the shaft of said pinion being mounted in the front wall, and a guide or guides secured to said blower adjacent to said rack and parallel thereto, said vertical bar and pinion being partly incased by said guide or guides, whereby the blower is held against lateral motion, substantially as set forth.

7. The combination, with the front wall of the chimney, of a blower, a vertical bar having its base-piece anchored or secured in said front wall, a rack carried by said blower, a pinion meshing with said rack, the shaft of said pinion being mounted in the base-piece of said vertical bar, and a guide or guides secured to said blower adjacent to said rack and parallel thereto, said guide or guides consisting of angle-plates whose edges approach but do not touch each other, the connecting portion between said base-piece and vertical bar, and the stem of said pinion, being between the edges of said guides, said vertical bar and pinion being partly incased by said guides, whereby the blower is held against lateral motion, substantially as set forth.

8. The combination, with the front wall of the chimney, of a blower, a vertical bar having its base-piece anchored or secured in said front wall, and vertical guide or guides secured to said blower, said guide or guides consisting of angle-plates whose edges approach but do not touch each other, the connecting portion between said base-piece and vertical bar being between the edges of said guides, said vertical bar being partly incased by said guides, whereby the blower is held against lateral motion, substantially as set forth.

9. The combination, with the front wall of the chimney, of a blower, a vertical bar having its base-piece anchored or secured in said front wall, a rack carried by said blower, a pinion meshing with said rack, the shaft of said pinion being mounted in the base-piece of said vertical bar, said blower having a suitable sliding engagement with said vertical

bar, substantially as set forth.

10. The combination, with the front wall, of a blower, and a central vertical bar, said vertical bar having a base-piece set substantially at right angles to the bar, said base-piece being anchored or secured in said front wall, and said blower having a suitable sliding engagement with said vertical bar, substantially as set forth.

11. The combination, with the front wall, of a blower, and a central vertical bar, said vertical bar having a base-piece set substantially at right angles to said bar, the connecting portion between said bar and base-piece being adapted to receive the guide-pieces of the blower, said base-piece being anchored or secured in said front wall, and said blower having a suitable sliding engagement with said vertical bar, substantially as set forth.

12. The combination, with the front wall, of a blower 12, and a central vertical bar 7, said vertical bar having a base-piece 8 set substantially at right angles to said bar, the connecting portion 9 between said bar and base-piece being smaller or thinner vertically than either the bar or base-piece, in order to receive the guide-pieces 15 and 16 of the blower, said base-piece being anchored or secured in said front wall, and said blower having a suitable sliding engagement with said vertical bar, substantially as set forth.

13. The combination, with the front wall, of a blower, means for elevating and lowering said blower, and a guide-piece or guide-pieces secured to said blower, said guide-piece or guide-pieces having a suitable sliding engagement with said front wall, substantially as set forth.

14. The combination, with the front wall, of a blower, means for elevating and lowering said blower, a guide-piece or guide-pieces secured to said blower, a vertical bar secured to said front wall, said guide-piece or guide-pieces having a suitable sliding engagement with said vertical bar, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

EDGAR S. GRAY.

Witnesses:

W. J. YORK,
J. HAFLER.