

May 9, 1933.

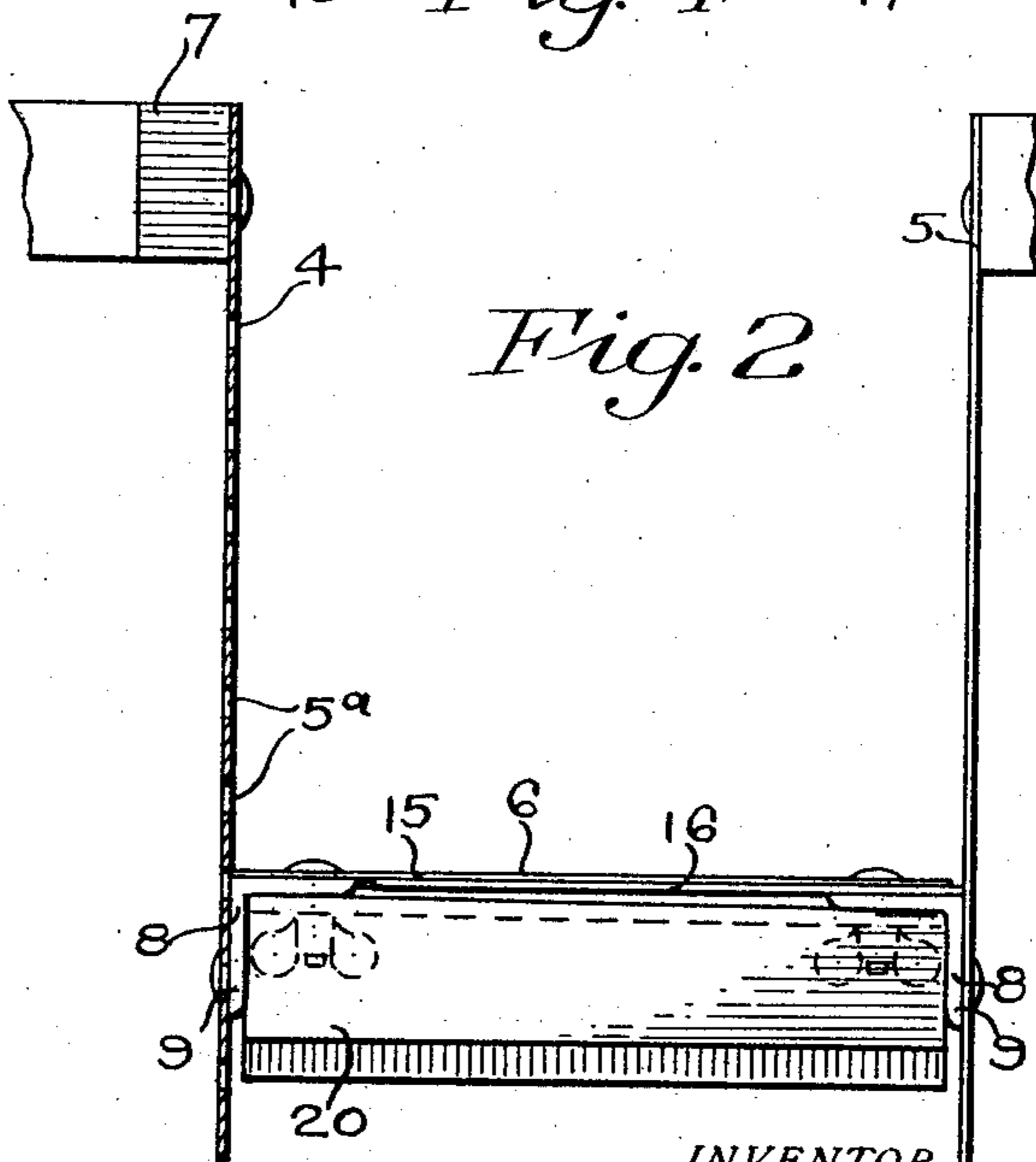
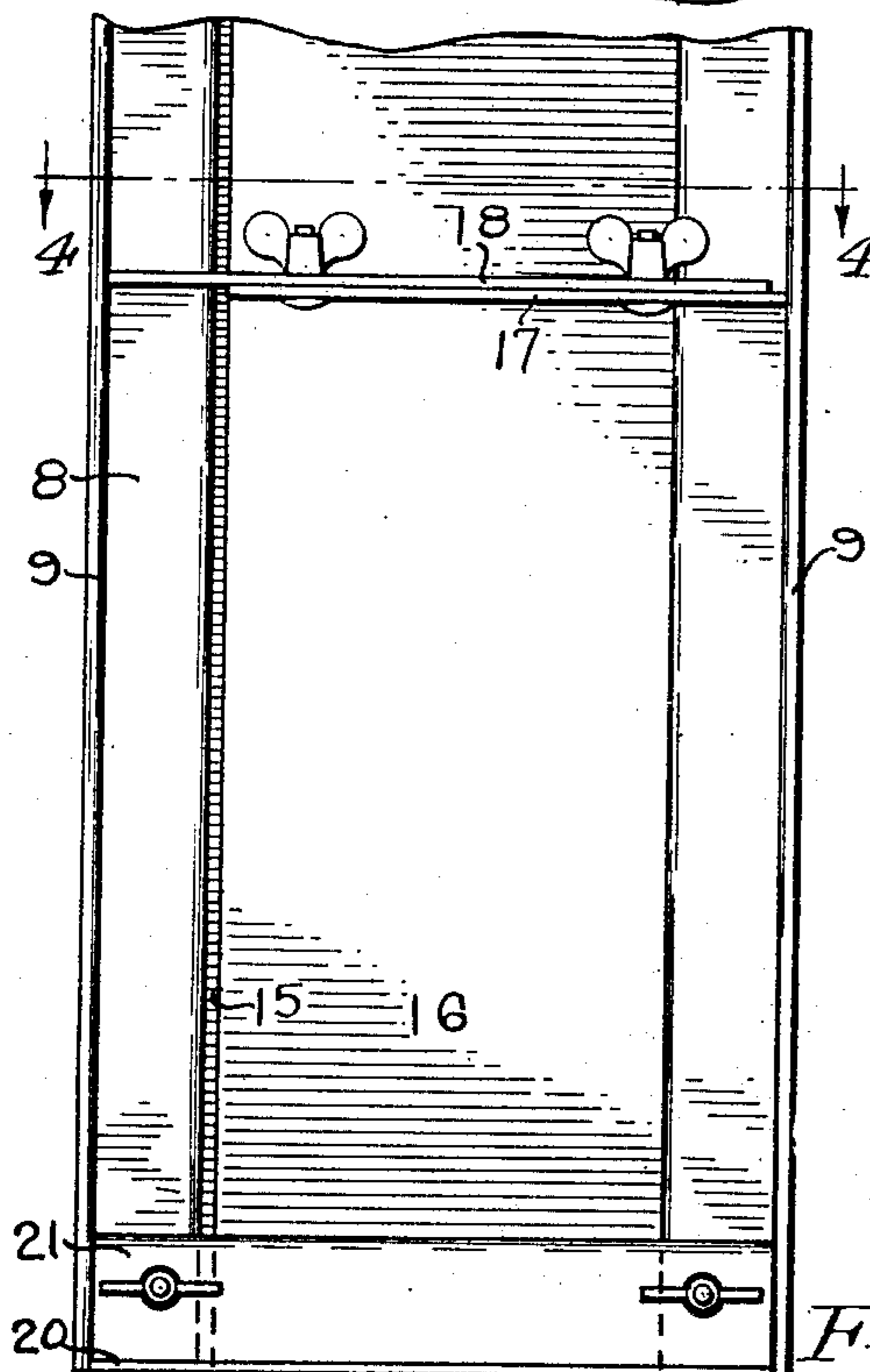
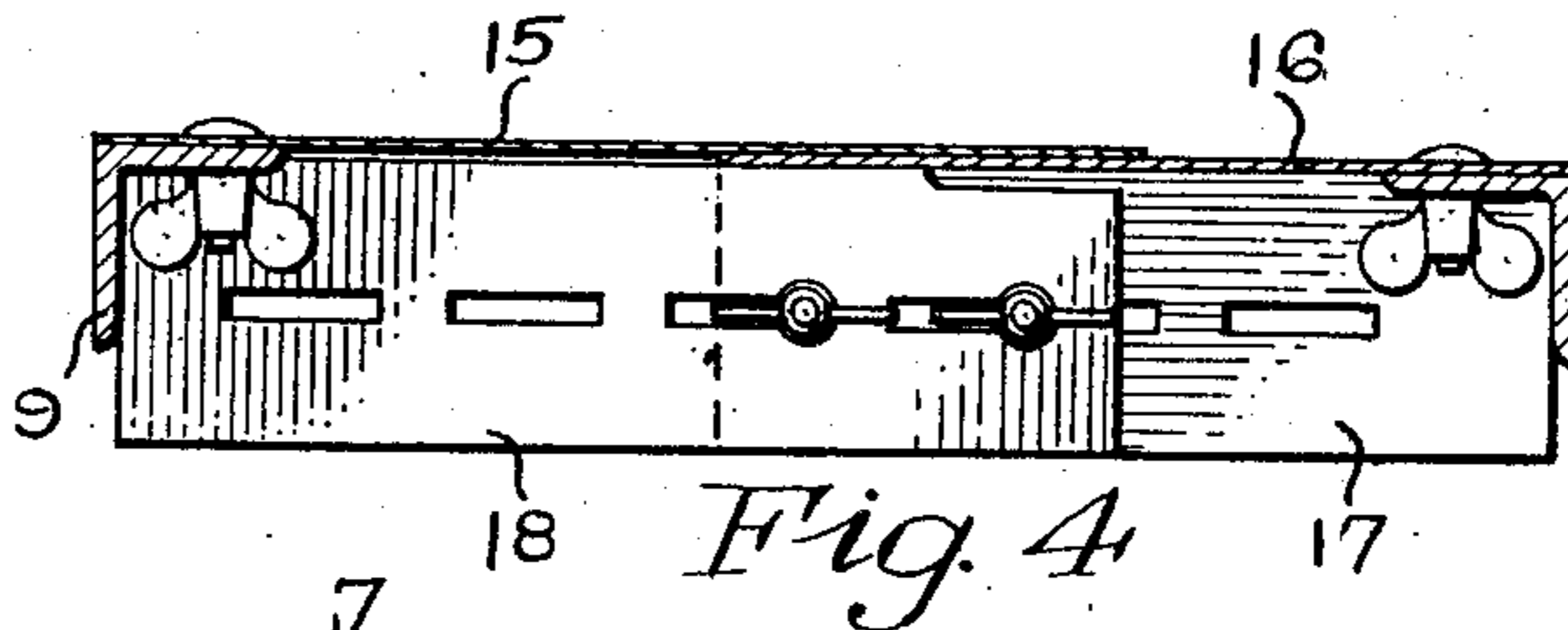
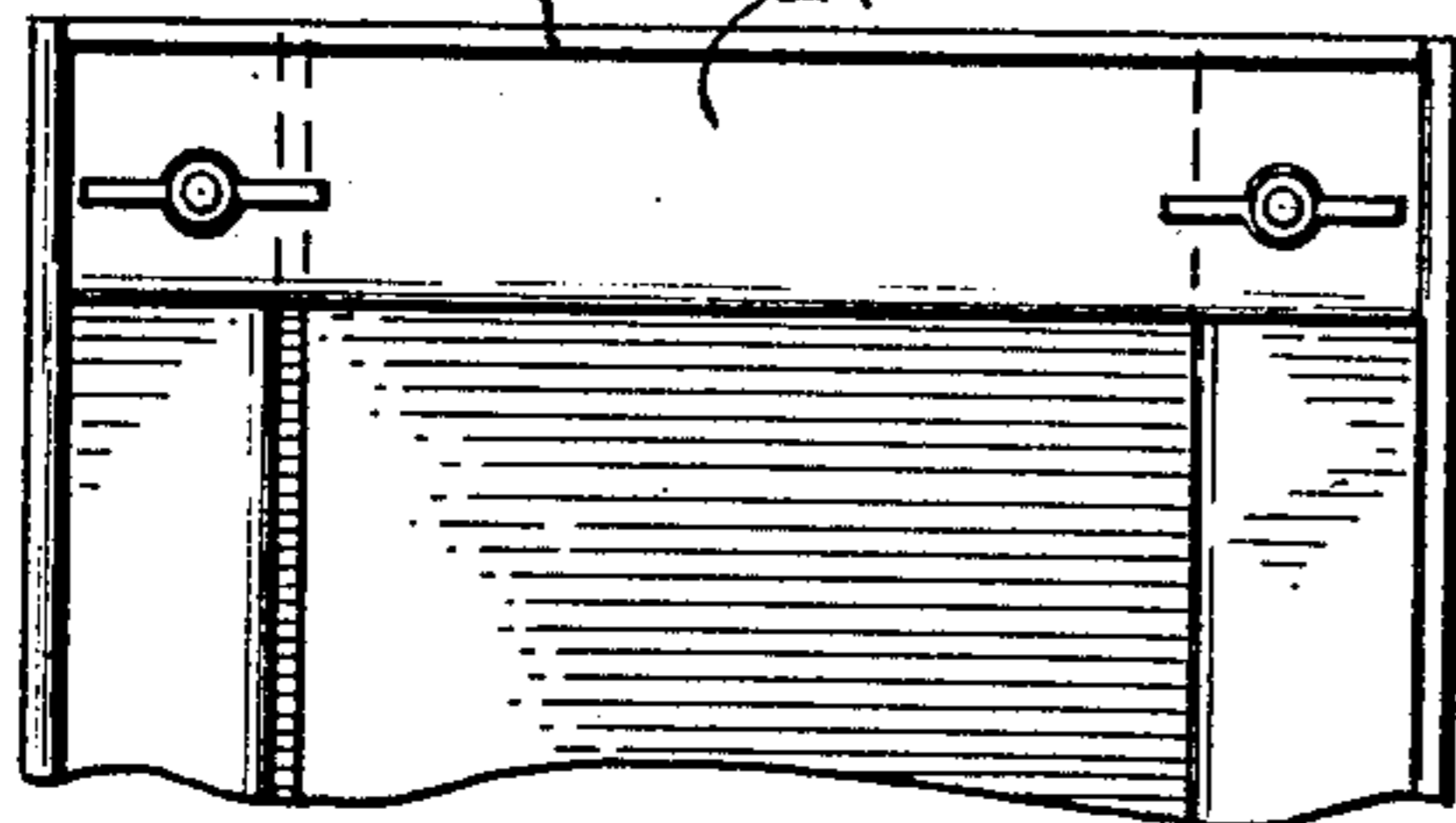
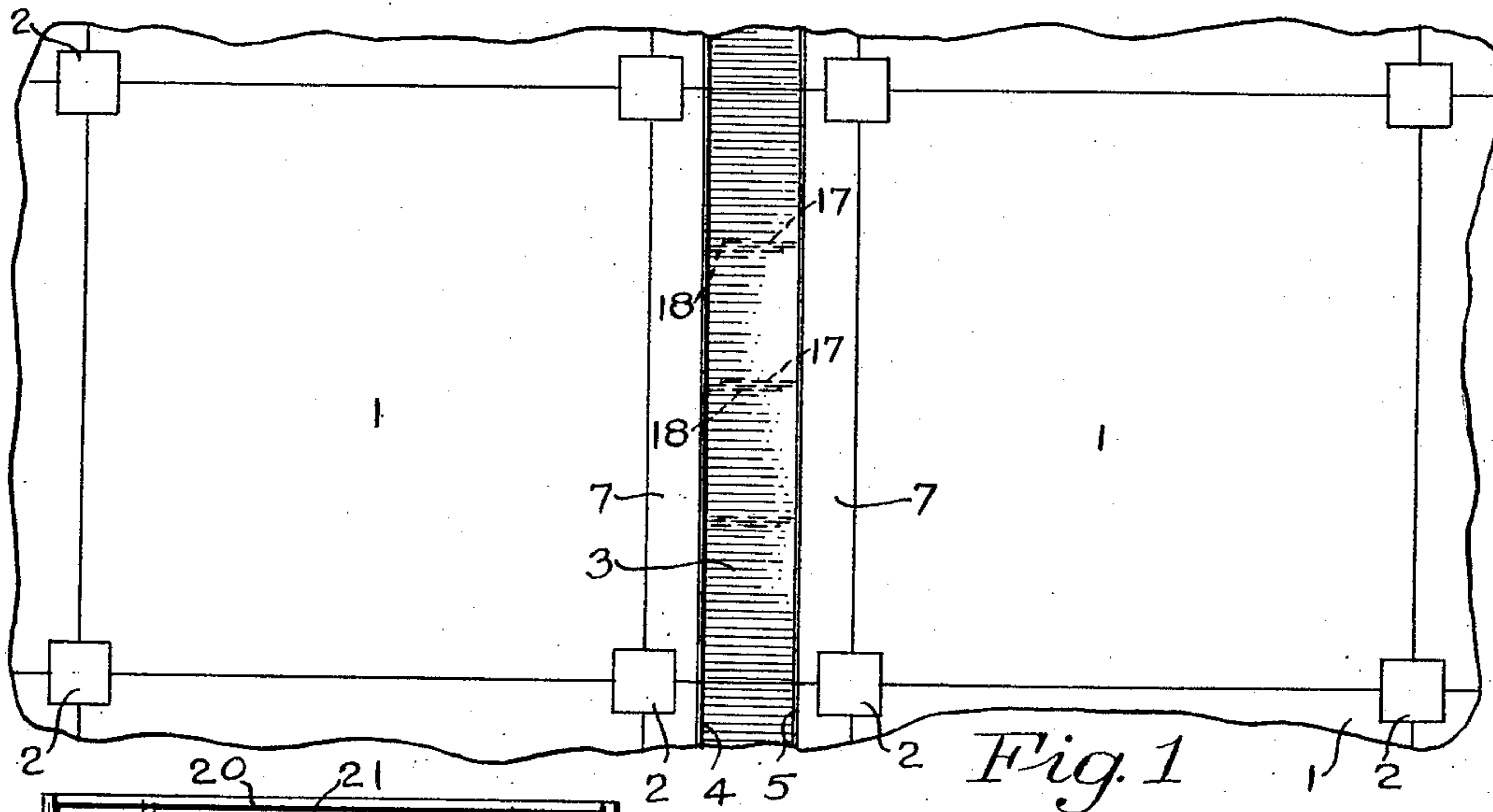
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1,907,878

APPARATUS FOR FORMING CONCRETE FLOORS

Filed March 13, 1930

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

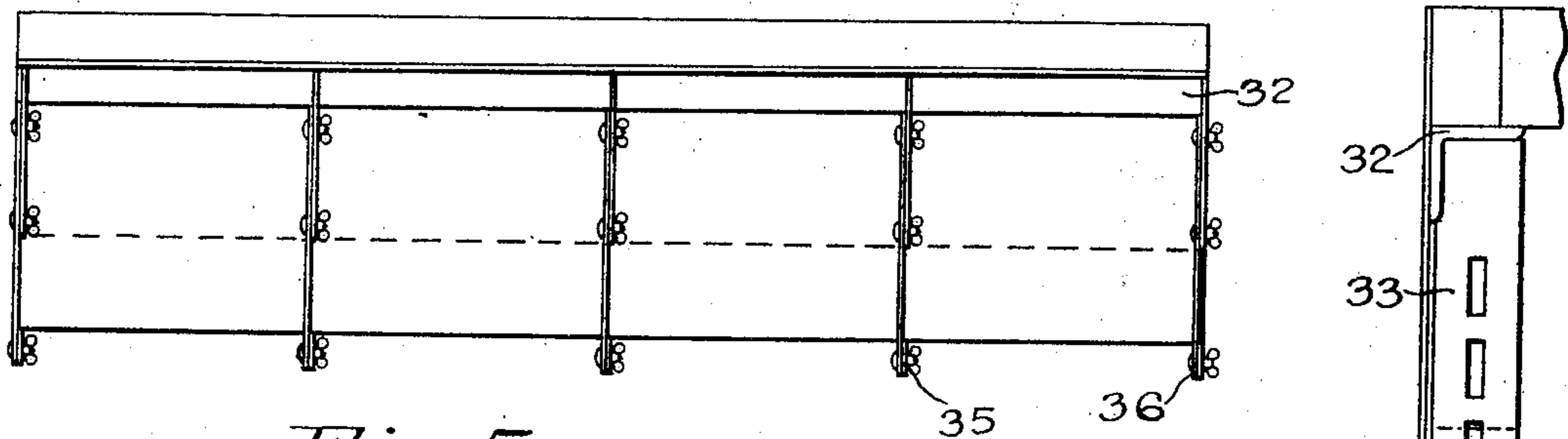


Fig. 5

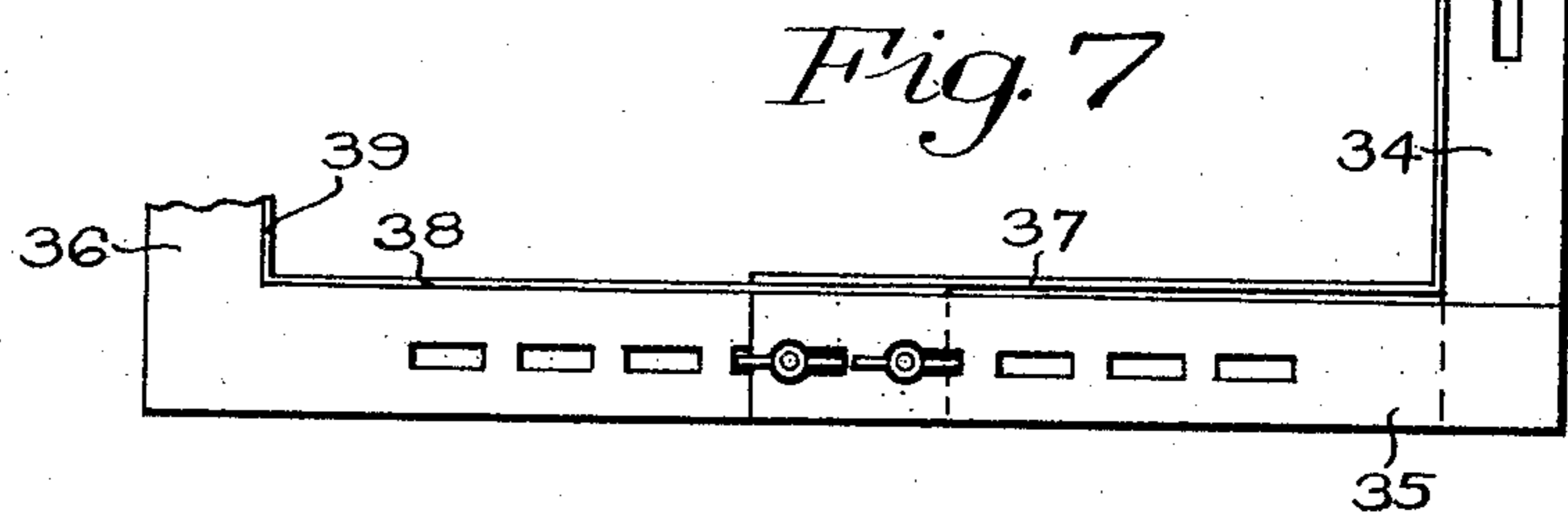


Fig. 7

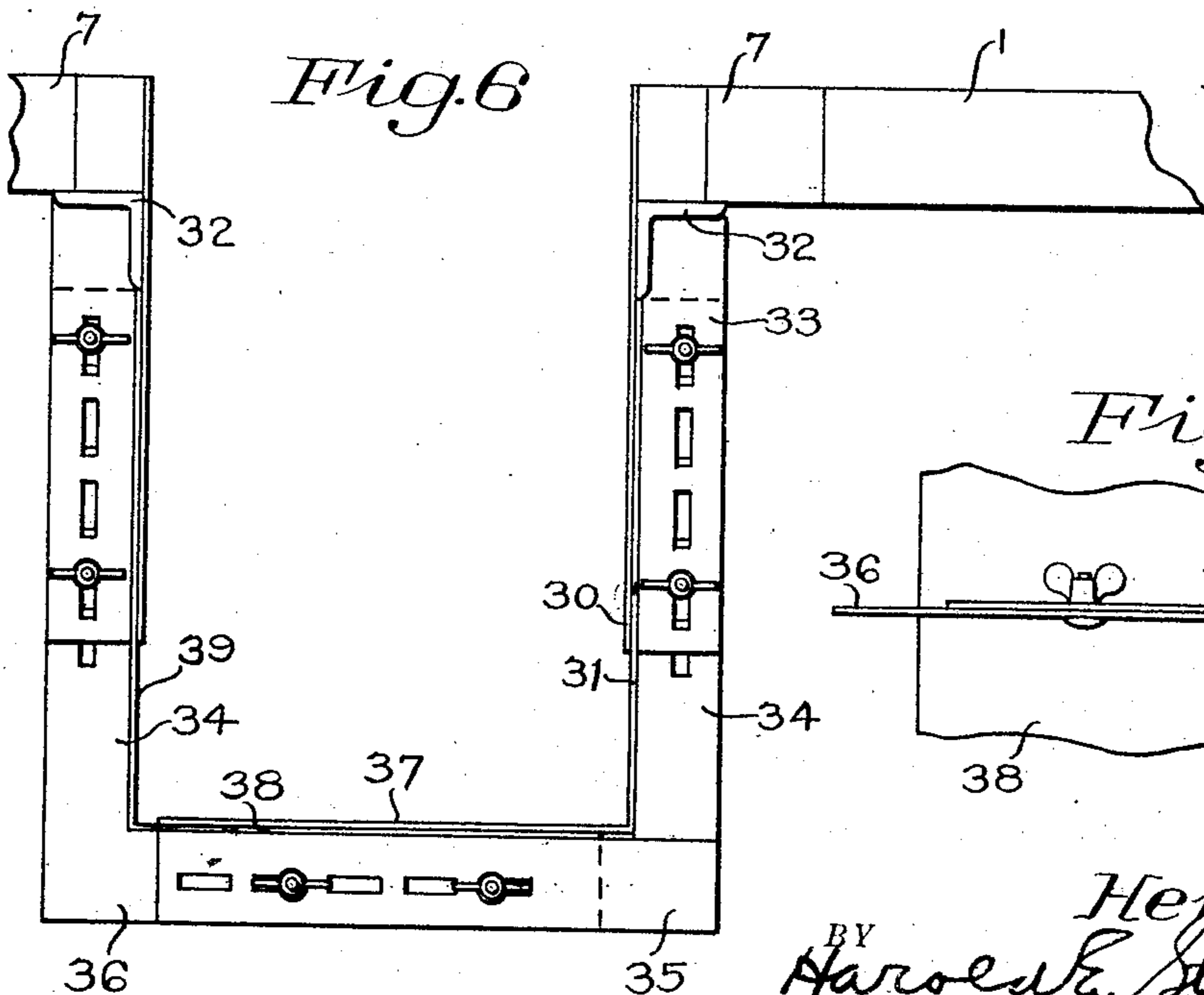


Fig. 6

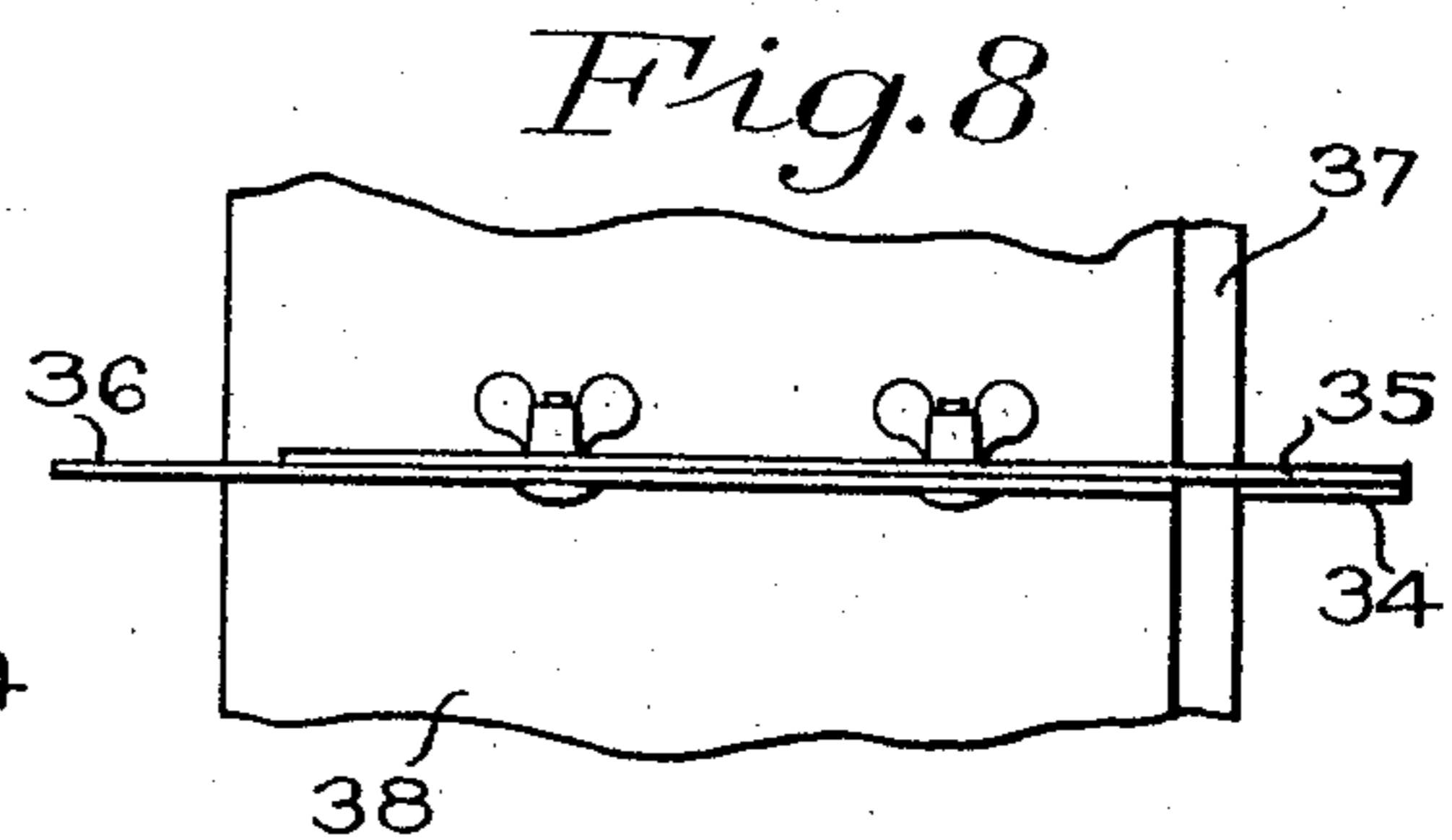


Fig. 8

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APPARATUS FOR FORMING CONCRETE FLOORS

Application filed March 13, 1930. Serial No. 435,467.

This invention relates to apparatus for forming concrete floor molds and particularly to adjustable forms for forming beam and girder molds on which the floor is supported.

5 The principal object of the invention is to provide forms for beam and girder molds which are adjustable so that the same forms may be used in constructing beam and girder molds for beams and girders of various
10 sizes.

A further object of the invention is the provision of beam and girder molds which can be quickly adjusted for molding beams or girders of various depths or thicknesses
15 and which can be quickly assembled in the floor mold.

To these and other ends, the invention consists in the construction and arrangement of parts that will appear from the following
20 description when read in conjunction with the accompanying drawings, the novel features being pointed out in the claim following the specification.

In the drawings:

25 Figure 1 is a fragmentary plan view of a concrete floor mold illustrating one embodiment of the invention;

Figure 2 is an end elevation of the beam form shown in Figure 1, slightly enlarged
30 and partly in section;

Figure 3 is a fragmentary inverted plan view of the same;

Figure 4 is a section on line 4—4 of Figure 3, looking in the direction of the arrow
35 at said line;

Figure 5 is a side elevation of a beam form illustrating another way of carrying out the invention;

40 Figure 6 is an enlarged end elevation of the beam form shown in Figure 5;

Figure 7 is a similar view showing the parts in another position of adjustment, and

Figure 8 is a fragmentary detail of parts shown in Figures 6 and 7.

45 Referring more particularly to the drawings, in which like reference numerals refer to the same parts in all the views, 1 represents a floor form of well known construction. In Figure 1, a plurality of the forms
50 1 are shown assembled on shores 2 in rows,

and arranged between two adjacent rows is a beam or girder mold generally referred to by the numeral 3. The beam mold is constructed of forms of substantially the same
55 length as the adjacent floor forms and is adapted to be assembled in the floor mold and supported on the adjacent shores.

The beam form is preferably constructed of sheet material and comprises side walls 4 and 5, connected by a bottom wall 6. The
60 side walls 4 and 5 are suspended from T-shaped forms 7 having downwardly projecting flanges to which the upper edges of the side walls of the beam are secured by any
65 suitable means, such as bolts. The forms 7 are adapted to fit around the heads of the shores 2 on which they are mounted and engage the sides of the adjacent floor forms 1, as clearly shown in Figure 1.

The bottom wall 6 may be secured to the
70 side walls as a unit, and in this embodiment comprises a pair of angle irons 8, arranged along the side edges of the bottom wall and secured to the underside thereof, preferably by welding. The angle irons 8 have
75 downwardly extending flanges 9 flush with the side edges of the bottom wall and adapted to engage the inner walls of the side members to which they may be secured
80 by any suitable means, preferably by bolts arranged in openings in the flanges and side walls.

It is desirable to form beams and girders of different vertical depths under varying
85 conditions for carrying different loads. To this end, the side walls 4 and 5 may be provided with a plurality of openings 5^a in each of several horizontal planes for cooperation with the bolts which secure the bottom wall thereto. By this construction, the
90 bottom wall may be secured to the side walls in any one of several horizontal planes for varying the depth of the resulting beam or girder mold.

It is also desirable to form beams or gird-
95 ers of different widths or thickness either for the purpose of carrying different loads or, as sometimes happens, to fill a small fractional opening in the floor mold such as the remaining space, when as many unit
100

floor forms 1 as possible have been assembled in the floor space. By properly arranging the floor forms 1, this narrow opening may be added to the width of the beam or girder opening, and a wider beam or girder assembled therein. To adjust the beam or girder forms to different widths or thicknesses, it is only necessary to make the bottom wall adjustable in width, since the side walls are suspended vertically a greater or less distance apart, and the bottom adjusted to fit between them. To this end, the bottom wall comprises two parts 15 and 16, each of said parts having one of the angle irons 8 secured thereto, whereby it is secured to the respective side walls of the beam. The inner edge of one of the parts, the part 15 in the embodiment illustrated, overlaps the inner edge of the other part 16.

Secured to the bottom of the part 16, preferably by welding, and arranged substantially perpendicular to its side edge to extend transversely of the beam form is a bar 17. A similar bar 18 is secured to the part 15 in a like manner, so that its inner end overlaps the inner end of the bar 17. By reference to Figure 4 of the drawings, it will be noted that the inner edge of the part 16 lies between the inner edge of the part 15 and the bar 18 secured thereto. For this reason the bar 18 is secured to the part 15 at its outer edge only, and is free therefrom at its inner edge to provide a clearance for the part 16. The bars 17 and 18 are each provided with a plurality of aligned openings or slots which register with each other for the reception of bolts or other suitable means for securing the bars to each other for retaining the parts in adjusted position. It will be understood that as many pairs of the bars 17 and 18 may be employed with the beam forms as may be required, and it will be also noted that they serve to reinforce the bottom of the beam forms intermediate their ends. The slots in the bars 17 and 18 are so arranged that they are never entirely out of alinement, irrespective of the adjustment of the parts.

The bottom walls 6 are provided with downwardly projecting flanges 20 at their ends and flush therewith, so that the flanges on adjacent forms lie in contact with each other so that they may be secured together by bolts or other suitable means. Secured to the ends of the angles 8 by bolts or other suitable means and connecting said angles are the bars 21. The flanges 20 may be made integral with the bars 21 which serve to cooperate with the bars 17 and 18 in retaining the parts in adjusted position. When the forms are adjusted to different widths, the bars 21 are detached, and the bolts which secure the bars 17 and 18 together are loosened or removed if a great

degree of adjustment is required, leaving the parts 15 and 16 of the bottom free to be adjusted toward or from each other. When properly adjusted to the width of the beam opening, the bars 17 and 18 are again secured together and the bars 21 replaced with other bars of a proper length to correspond to the new width of the bottom.

In Figures 5 to 8 inclusive is shown another way of carrying out the invention. In this construction, the side walls are adjustable vertically so that they do not project below the bottom of the beam form when a shallow beam or girder is to be molded. In this embodiment, each of the side walls comprises two parts 30 and 31, each having a T-shaped form 7 secured thereto flush with its upper edge whereby it may be assembled with the forms 1 in the floor mold. Secured to the outer surfaces of the parts 30, preferably by welding, and arranged parallel with and spaced from their upper edges are the angle irons 32, to each of which is secured, also by welding, a plurality of bars 33 substantially perpendicular to the angles 32. The bars 33 extend downwardly over the outer surface of the part 30 but are separated therefrom a distance substantially equal to the thickness of the material to provide a clearance for the part 31. The part 31 also has a plurality of bars 34 secured to its outer surface preferably by welding. The upper ends of the bars 34 overlap the lower ends of the bars 33 and both bars are provided with slots, so that the slots in one bar register with the slots of the other bar for the reception of bolts, whereby they may be secured together.

Integral with or secured to the bars 34 by welding are inwardly extending arms or bars 35 and 36. The bars 35 and 36 are arranged on the lower ends of the bars 34 and are substantially perpendicular thereto. The inner ends of the bars 35 and 36 overlap each other and are slotted for the reception of bolts whereby they may be secured together. The bottom wall of the beam form is also made in two parts, one part 37 being carried by and adjustable with the arms 35 from which it is spaced a distance substantially equal to the thickness of the material to provide a clearance for the other part 38 which is secured to and adjustable with the arms 36. The part 37 of the bottom may be made integral with the adjacent side wall 31 and the part 38 with the adjacent side wall 39, or they may be made in separate parts secured to the arms 35 and 36 respectively.

The slots in the parts 33, 34, 35 and 36, like those in the bars 17 and 18 are so arranged that some of the slots in one part register with some of those in the overlapping part, so that the overlapping parts may be secured together in all positions of adjustment. By loosening or removing the

bolts which secure the parts 33 and 34 together, these parts may be adjusted relatively to each other until the desired beam depth is attained; then by reinserting the bolts, the parts may be secured together in the newly adjusted position. In the same manner, the parts 35 and 36 may be adjusted toward and from each other to vary the horizontal thickness of the beam or girder form. By this construction, beam or girder forms are provided which can be readily adjusted within certain limits to meet ordinary requirements as to depth or thickness, and which can be readily assembled with the usual floor forms to form a beam or girder mold.

Although the invention has been described with reference to two particular embodiments thereof, it will be understood that this application is intended to cover such changes or modifications as come within the spirit of the invention or scope of the following claim.

I claim:

Apparatus for forming concrete floor molds comprising a plurality of shores, floor forms adapted to be mounted directly on said shores to form a floor mold, the top of each shore constituting a part of the floor mold, the floor forms being spaced apart to receive a beam, beam molds for said space each comprising vertically adjustable side walls and a laterally adjustable bottom wall, and forms secured to the tops of said side walls engageable with the said floor form supporting shores to support the beam form thereon in said opening, the last mentioned forms lying in the same plane with and adjacent to the floor form and the tops of the floor form supporting shores.

In witness whereof, I have hereunto signed my name.

HENRY W. ROOS.