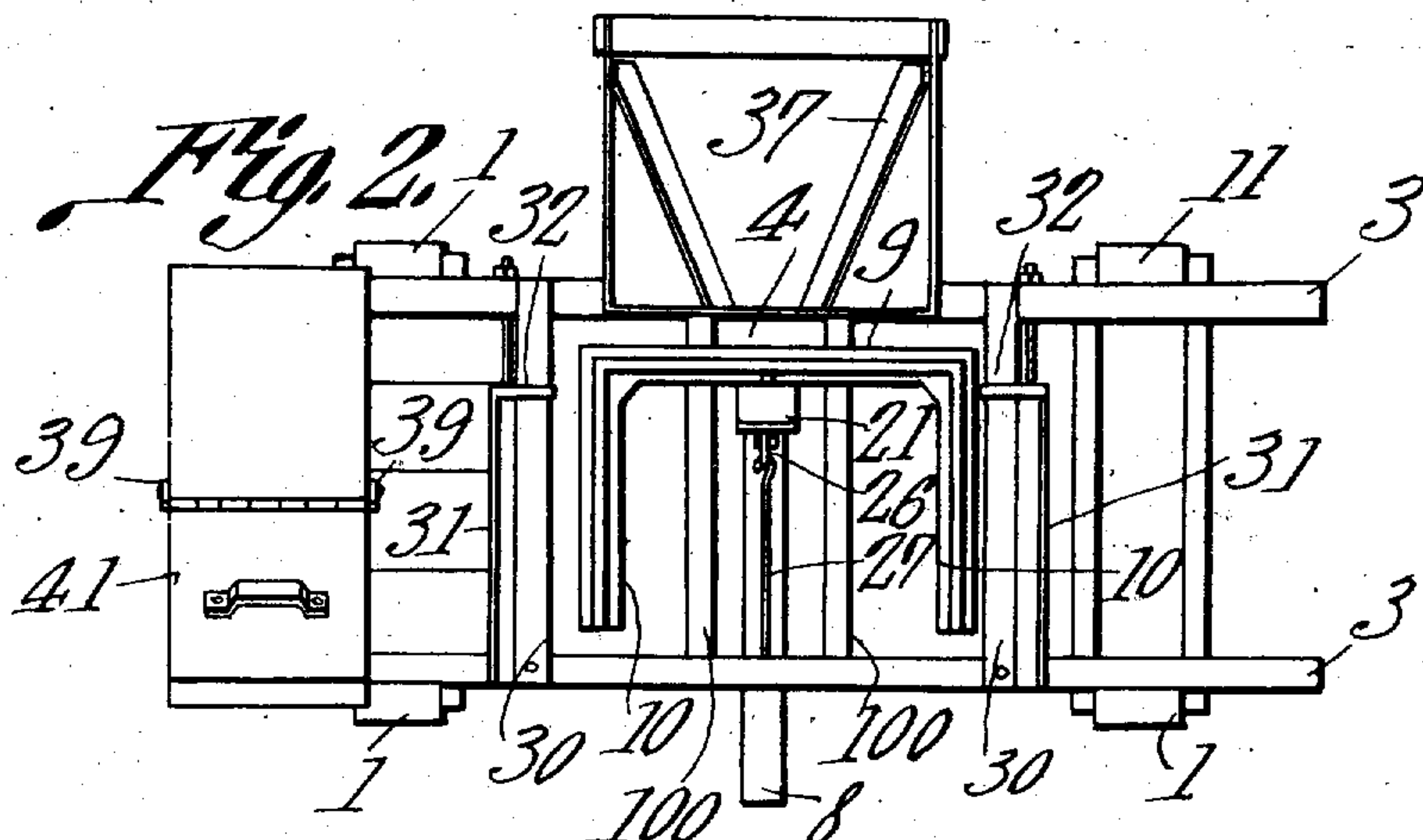
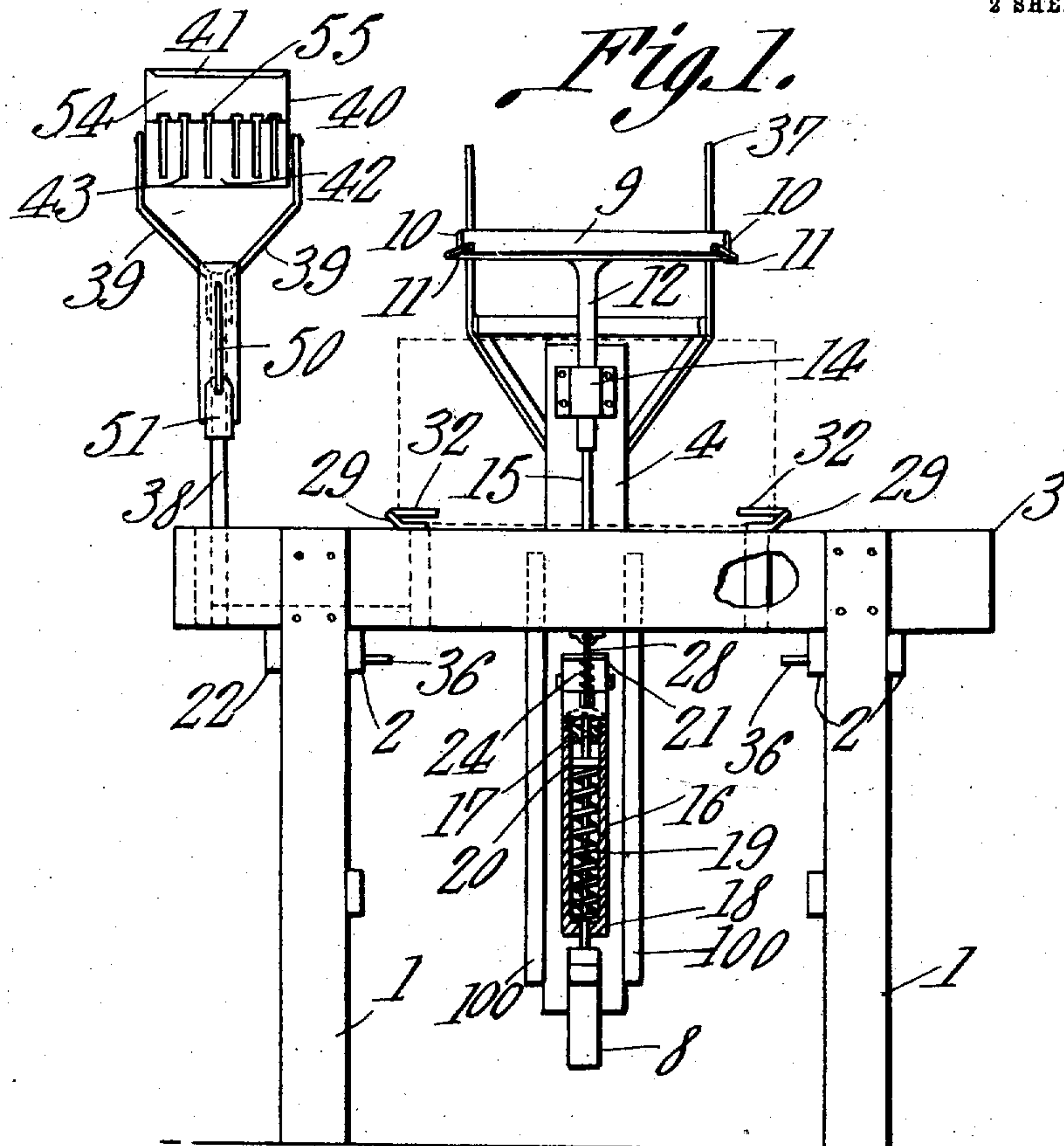


C. N. LAMBERT.
BOX CLAMPING MACHINE.
APPLICATION FILED JUNE 30, 1910.

989,161.

Patented Apr. 11, 1911.

2 SHEETS—SHEET 1.



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by

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Attorneys

Witnesses

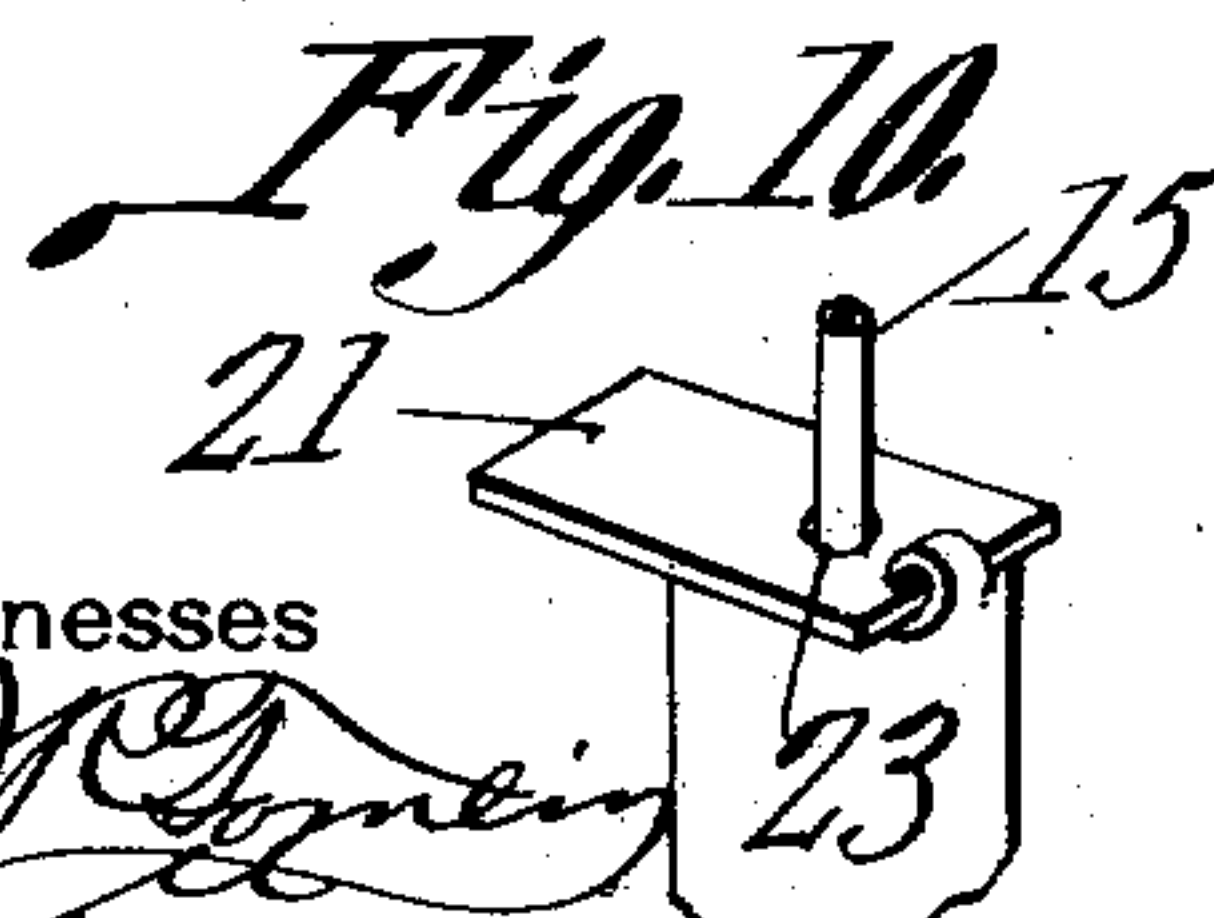
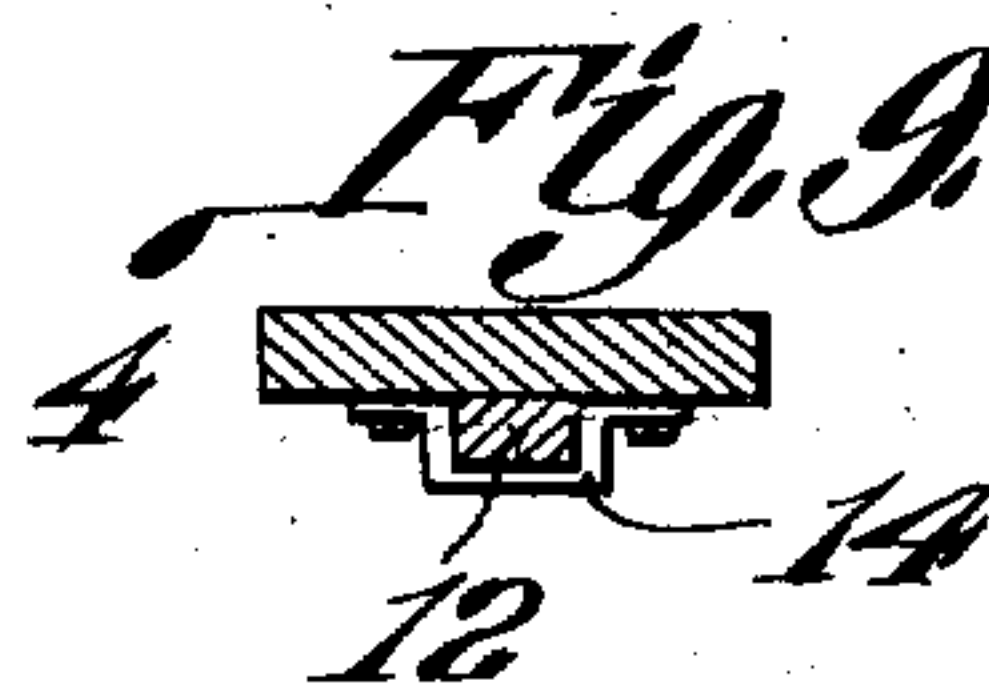
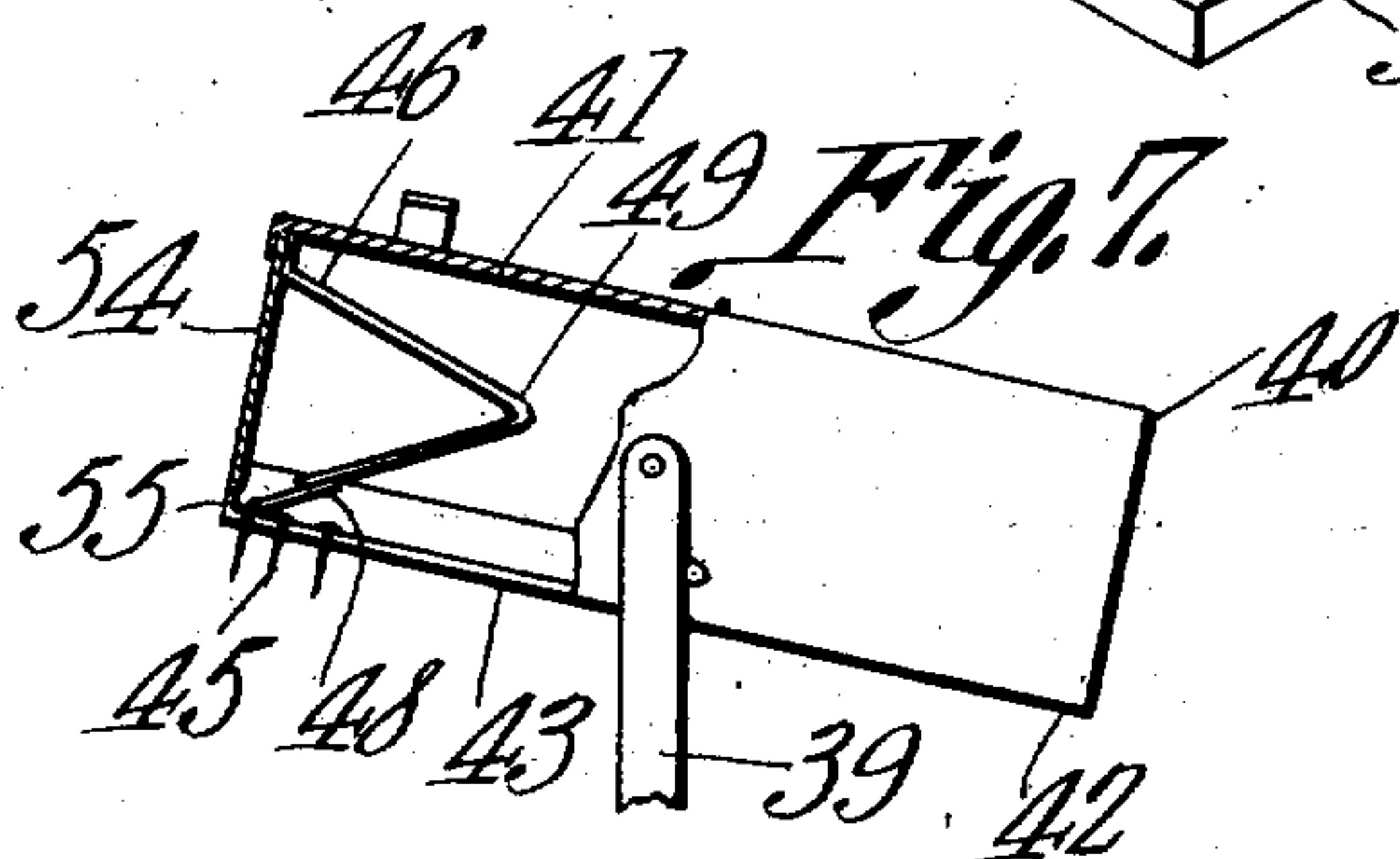
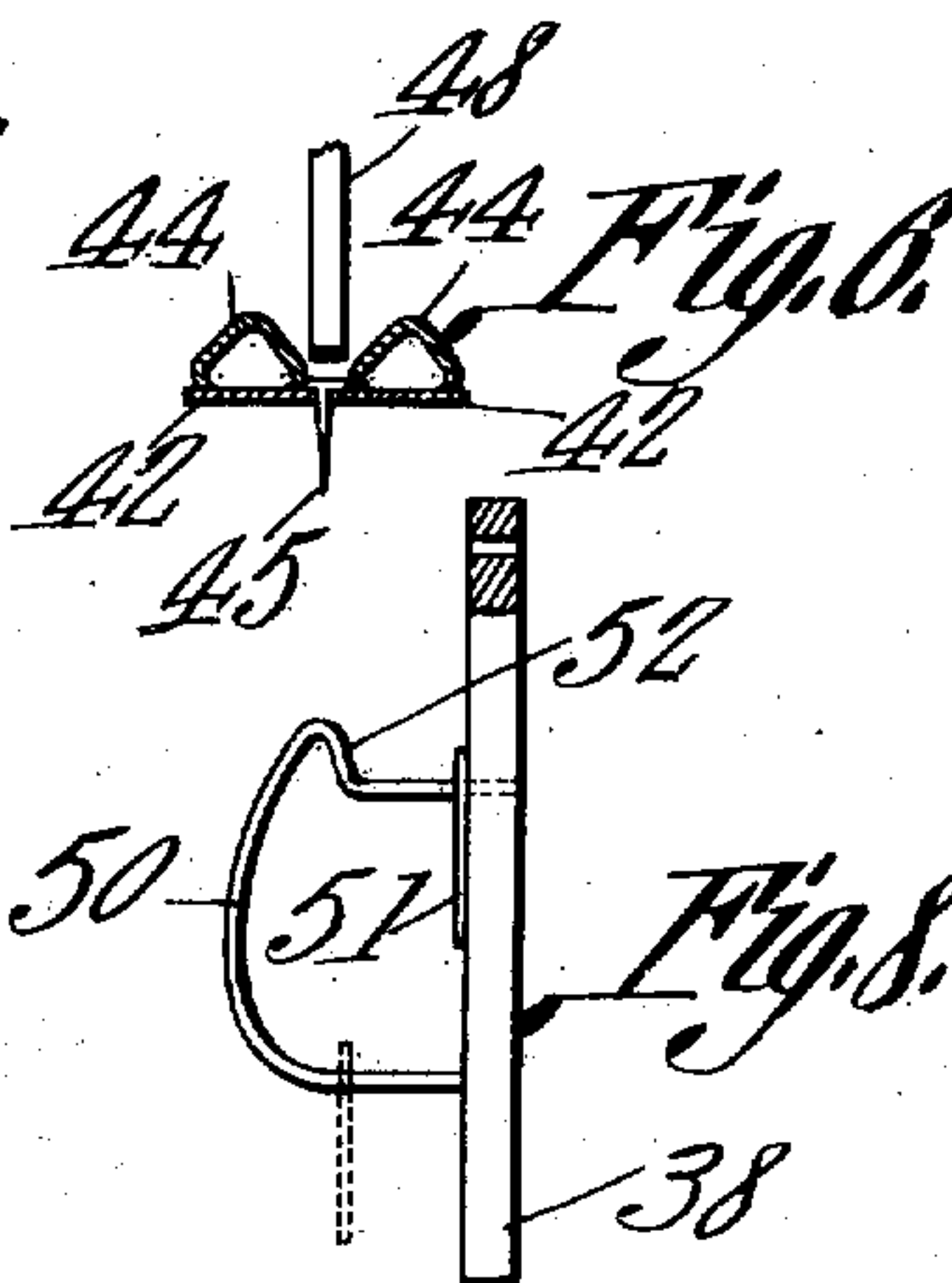
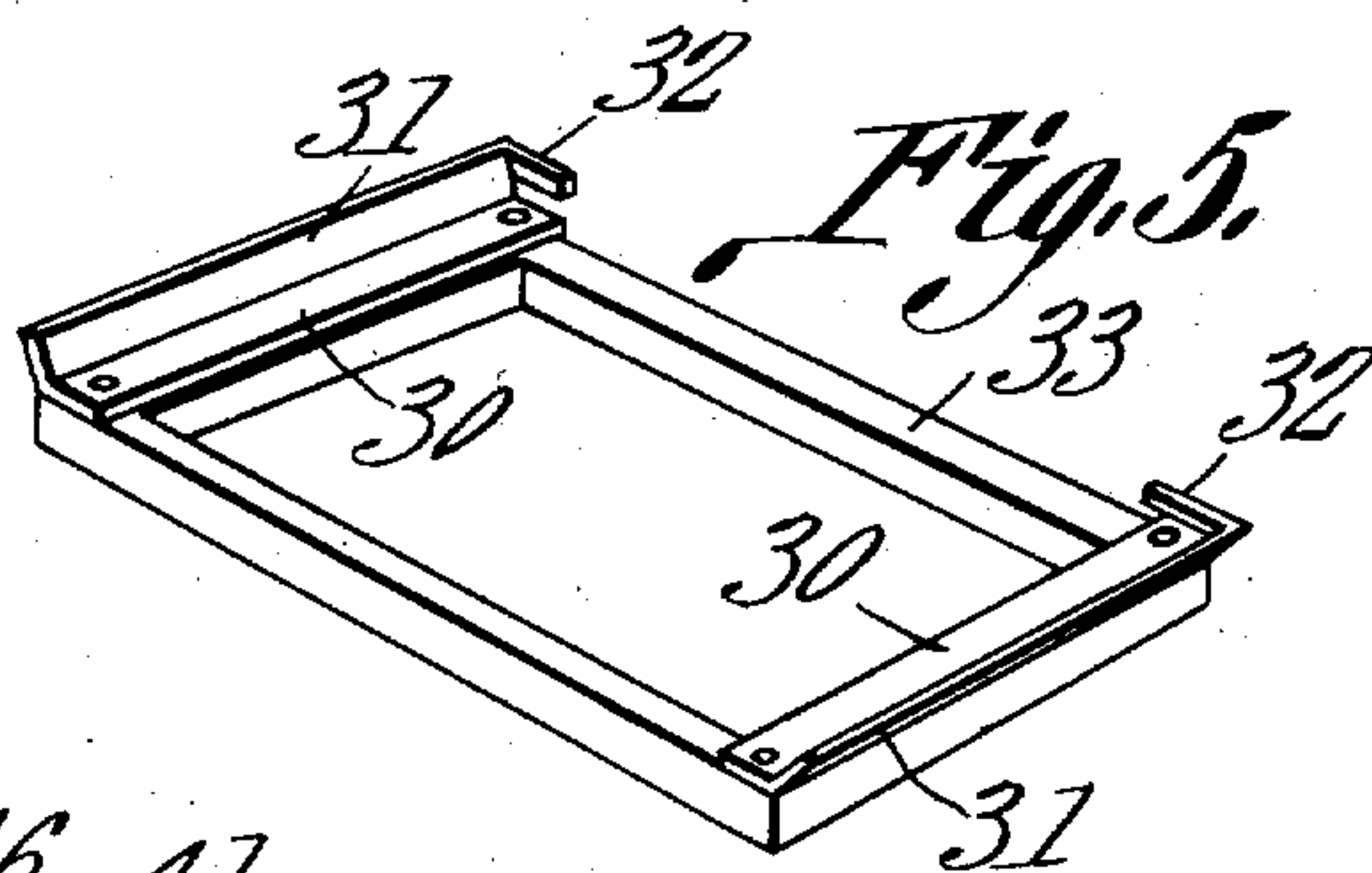
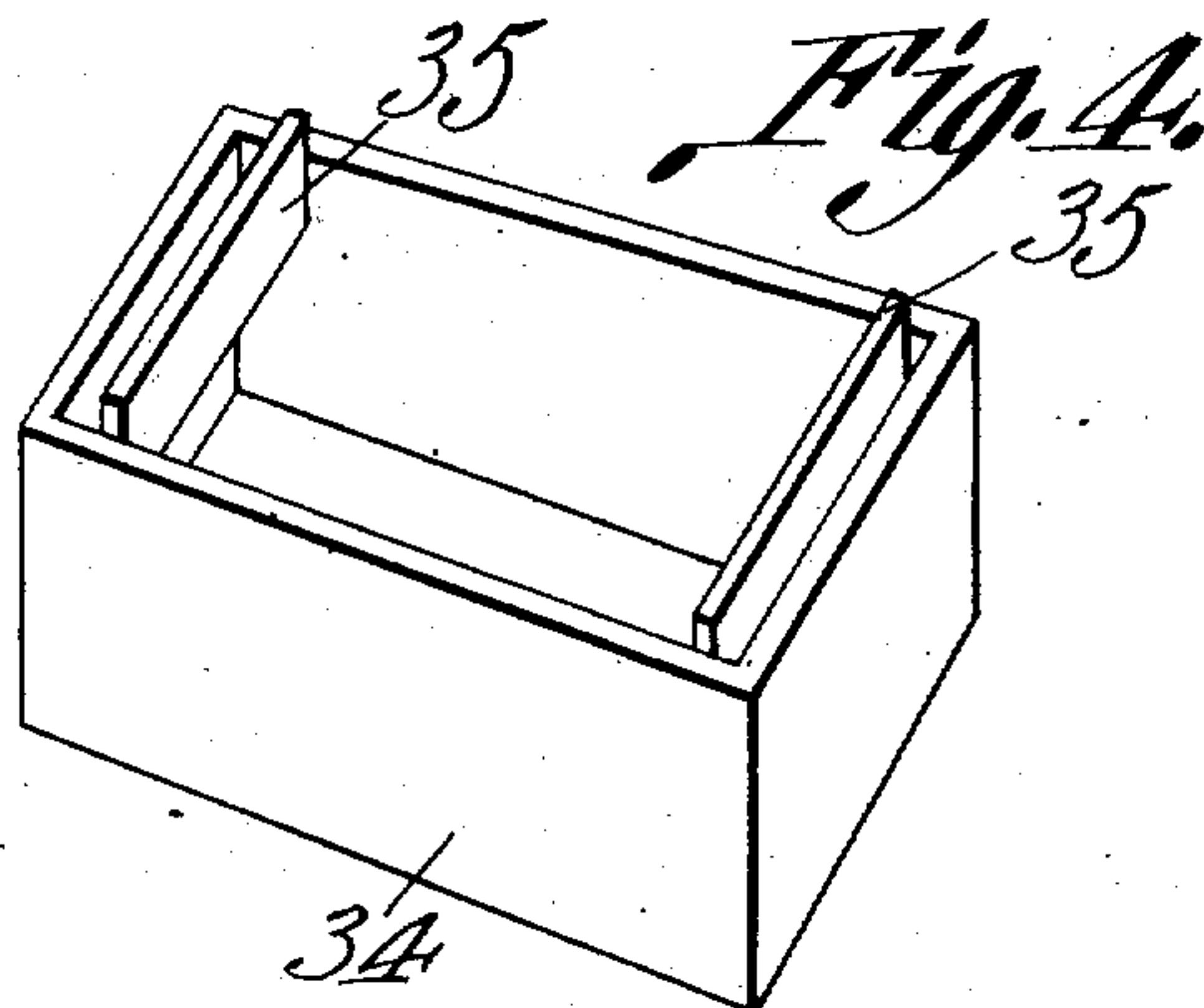
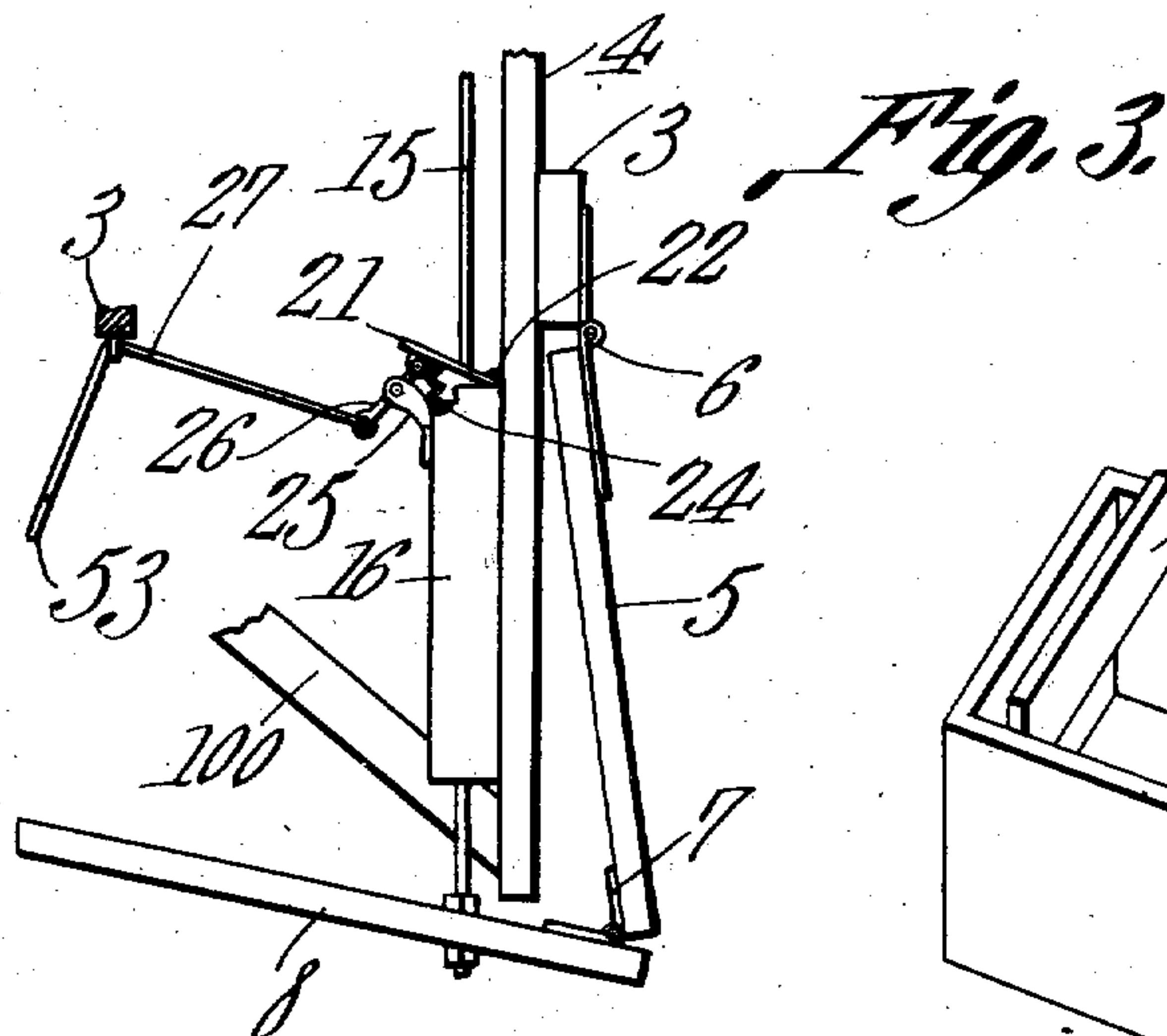
W. C. Lamb
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UNITED STATES PATENT OFFICE.

CHRISTOPHER NOEL LAMBERT, OF SEATTLE, WASHINGTON.

BOX-CLAMPING MACHINE.

989,161.

Specification of Letters Patent.

Patented Apr. 11, 1911.

Application filed June 30, 1910. Serial No. 569,761.

To all whom it may concern:

Be it known that I, CHRISTOPHER N. LAMBERT, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented a new and useful Box-Clamping Machine, of which the following is a specification.

It is one of the objects of this invention to provide a lid holder of novel and improved form, whereby a box lid may be held upon a box in such a manner as to permit a bulging of the central portion of the lid, thereby to obviate an undue crushing of the contents of the box.

Another object of the invention is to provide a box lid clamping machine adapted to accommodate boxes of different heights.

Another object of the invention is to provide a box lid clamping machine, the lid clamping member of which may readily be depressed and elevated.

Another object of the invention is to provide novel means for operating the lid-clamping member, and for holding the same in depressed position.

With the above and other objects in view, the invention consists in the novel construction and arrangement of parts hereinafter described, delineated in the accompanying drawings, and specifically claimed, it being understood, that within the scope of what is claimed, divers changes may be made without departing from the spirit of the invention.

In the accompanying drawings, Figure 1 shows the invention in front elevation; Fig. 2 is a top plan; Fig. 3 is a fragmental side elevation of the operating mechanism; Fig. 4 is a detail perspective of the spacing rack; Fig. 5 is a detail perspective of the auxiliary frame; Fig. 6 is a fragmental section of the receptacle portion of the nail holder; Fig. 7 is a side elevation of the nail holder, parts being broken away and sectioned; Fig. 8 is a side elevation of the tallying device; Fig. 9 is a transverse section of a portion of the support; and Fig. 10 is a perspective of the tiltable member.

In carrying out the invention there is provided, as a primary and fundamental element, a support, preferably taking the form of a trestle, and comprising legs 1 connected, transversely of the trestle, by cross bars 2. Longitudinally of the trestle, the legs 1 are connected by stringers 3, adapted to rest upon the cross bars 2, and if desired secured

thereto. An upright bar 4 is secured to the rear stringer 3, and prolonged to upstand above, and to depend below, the same. A strip 5 is hinged at 6 to the rear stringer 3, the lower end of the strip 5 being hingedly connected, as shown at 7, to a foot lever 8, extending forwardly from the rear of the device toward the front thereof.

The invention further includes a lid holder, the same consisting of a rear portion 9, at the ends of which are forwardly projecting arms 10. As seen most clearly in Fig. 1 of the drawing, the lower faces of the arms 10 are inclined upwardly, from their outer edges toward their inner edges; this construction being carried out for a purpose which will be described hereinafter. In Fig. 1 of the drawings, the lower, inclined faces of the arms 10 are denoted by the numerals 11. The box-lid holder further includes a polygonal shank 12, which depends from the intermediate portion of the element 9. This polygonal shank 12 is mounted for vertical reciprocation, but against rotation, in a polygonal boxing 14, secured to the bar 4 adjacent the upper end thereof. Secured in any desired manner in the lower end of the shank 12, is a depending rod 15, extended through a tubular casing 16, secured to the forward face of the bar 4. Spaced guides 17 and 18 are located within the casing 16, and in these guides 17 and 18, the rod 15 is mounted for reciprocation. A helical compression spring 19 surrounds the rod 15 within the casing 16, and rests upon the lower guide 18. There is a lug 20 upon the rod 15, and this lug, engaging the upper end of the compression spring 19, serves to force the same together. The lower end of the rod 15 is secured to the foot lever, as seen to best advantage in Fig. 3 of the drawing.

A tiltable member 21, preferably taking the form of a flat plate, is hinged at the upper end of the casing 16, this hinged union being effected in any desired manner. In this tiltable member 21, there is an opening 23, through which the rod 15 is adapted to pass. This opening 23 is but slightly larger than the diameter of the rod 15. A spring 24 is seated at one end in a suitable recess in the casing 16, the upper end of the spring being adapted to bear against the under side of the tiltable member 21, to hold the same upheld, in the position seen most clearly in Fig. 3. Owing to the fact that

the opening 23 approximates closely the diameter of the rod 15, when the tiltable member 21 is positioned as shown in Fig. 3, the rod 15 will be held against upward movement.

Secured to the casing 16, adjacent its upper end, is a bracket 25, in which is fulcrumed, intermediate its ends, a lever 26. One end of this lever 26 is pivotally connected with the free end of the tiltable member 21. A knee lever is provided, the same comprising a horizontal arm 27 and a vertical arm 28. This knee lever is fulcrumed, adjacent its angle, upon the forward stringer 3, and extends rearwardly, the rear end of the horizontal arm 27 of the knee lever being pivotally connected with the forward end of the lever 26. At its lower end, the vertical arm 28 of the knee lever, is terminated in a suitable head 53, adapted to be engaged by the knee, or by another portion of the leg of the operator of the device, with his foot, in the meantime, resting upon the foot lever 8.

Disposed transversely of the support, and secured to the upper edges of the stringers 3, are guides, denoted generally in Fig. 1 of the drawings, by the numeral 29. The guides are fashioned from angle members. Stops 32 project from the vertical flanges 31 of these angle members, to overhang the horizontal flanges 30 thereof.

If desired, an auxiliary frame, denoted generally by the numeral 33 in Fig. 5, may be provided. This auxiliary frame 33 is equipped with guides, duplicating the guides 29 upon the stringers 3.

A spacing rack 34 is shown in Fig. 4, the spacing rack being provided with upstanding cleats 35, so positioned that when the auxiliary frame 33 is rested upon the spacing rack, the cleats 35 will serve to prevent relative movement between the spacing rack 34 and the auxiliary frame 33. When the auxiliary frame and the spacing rack are not in use, they may be suspended from nails 36, inserted into the cross bars 2, and appearing most clearly in Fig. 1. A suitable rack 37, of any desired construction, may be assembled with the upper end of the bar 4, to project rearwardly, this rack 37 being adapted to receive the lids, and to hold them in a convenient position, adjacent the operator's hand.

At this point, the operation of the machine may profitably be described. A box, filled with fruit, or other merchandise, is placed upon the guides 29 of the stringers 3. These guides 29 serve to retain the box in place, so that it can be withdrawn from the front of the machine only, the stops 32 serving to prevent the rearward sliding of the box. By reason of the fact that the stops 32 are spaced above the horizontal flanges 30 of the guides 29, any saw-dust, or

other offal, which may accumulate upon the horizontal flanges 30, will be pushed off the machine, by the sliding of the box upon the guides 29, the spacing of the stops 32 above the horizontal flanges 30 of the guides, serving to prevent the accumulation of the saw-dust at the rear ends of the guides 29. When the box is thus positioned upon the guides 29, a box-lid is selected from the rack 37, and mounted upon the upper edge of the box. The foot of the operator is then placed upon the free end of the foot lever 8, and the foot lever 8 depressed. The depression of the foot lever 8 will draw the rod 15 downwardly, carrying with it the shank 12 of the box-lid holder, and causing the arms 10 to rest upon the lid of the box. By reason of the fact that the lower faces of the arms 10 are inclined, as shown at 11, the ends of the box-lid will be pressed securely upon the box, without, however, preventing the intermediate portion of the box-lid from bulging upward slightly. Thus, the ends of the box-lid may be held securely upon the box, without causing the box-lid to compress unduly, any portion of the contents of the box which may be upstanding above the contour thereof. As the rod 15 moves downwardly, the lug 20 will put the spring 19 under compression. The tiltable member 21 will be moved downwardly at its free end, into abutment with the upper end of the casing 16, the tiltable member thus being positioned substantially in a horizontal position, so that the rod 15 will slide freely through the opening 23. When the arms of the box-lid holder have been brought in contact with the box-lid, the spring 19 being under compression, the spring 24 will cause the free end of the tiltable member 21 to move upwardly, engaging the rod 15, as shown in Fig. 3, and preventing the rod from moving under the action of the spring 19. Thus, the arms 10 will be held down upon the box-lid, whereupon the lid may be nailed in place upon the box. In order to release the box-lid holder, the knee of the operator, or any other portion of his leg, is brought into contact with the head 53 of the knee lever. The free end of the horizontal arm 27 of the knee lever will thus move upwardly, tilting the lever 26, and depressing the tiltable member 21. When the member 21 is released from the rod 15, the rod 15 and the box-lid holder will fly upwardly, under the impulse of the spring 19.

It is to be noted that the knee lever may be operated without causing the person who is using the machine, to remove his foot from the foot lever 8. Thus, the operation of clamping the box-lid in place, may be carried forward with great rapidity, and without unduly fatiguing the operator.

Let reference now be had to Figs. 4 and 5 of the drawings. When a box which is some-

what shallow, is to be nailed, the auxiliary frame 33 may be placed within the guides 29 upon the stringers 3. This auxiliary frame 33 is provided, as seen in Fig. 5, with guides 5 duplicating those guides which are mounted upon the stringers 3, and thus, the box which is to be nailed, will, when superposed upon the auxiliary frame 33, be lifted slightly above the stringers 3. When a still shallower 10 box is to be nailed up, the spacing rack 34 is placed upon the guides 29 of the stringers 3, the auxiliary frame 33 being rested upon the spaced rack 34, and engaged against movement, by the cleats 32. The box which 15 is to be nailed may then be placed upon the guides of the auxiliary frame 33. By employing the members 33 and 34, boxes of different heights may be nailed up, without unduly fatiguing the operator by compelling 20 him to give an unnecessary vertical movement to the box-lid holder.

In connection with a machine constructed as above described, a nail holder of the sort hereinafter set forth, may be employed. 25 Passing now to a description of such a nail holder, it will be seen that from one end of the support, a standard 38 rises. This standard carries, at its upper end, spaced arms 39, between which a receptacle 40 is mounted, to 30 pivot transversely of the machine. This receptacle 40 may be provided at its forward end, and upon its top, with a hinged lid 41. In the bottom 42 of the box, there are a plurality of longitudinally extended slots 43. 35 These slots 43 are of sufficient width, so that the body portion of a nail 45 may slip through them, the head of the nail, however, engaging the bottom portion 2 of the box, to prevent the nail from falling entirely out 40 of the box. The end wall 54 of the box is provided with a series of openings 55, alined with the slots 43 in the bottom of the box, these openings 55 being of a sufficient size to permit the head of the nail to pass there- 45 through. Secured to the bottom 42, and extended from the rear of the box toward the front thereof, are a series of guides 44, the upper faces of which are inclined, so as to cause the nails to slide readily into the slots 50 43. Secured to the front portion 54 of the receptacle, and extended rearwardly, is a plate 46, bent sharply upon itself at 49, and extended toward the front and toward the bottom of the box. To the lower edge of this 55 plate 46 are secured a plurality of spring fingers 48, the same being inclined at an angle of about 45°, downwardly, from the back of the box toward the front thereof. These spring fingers register between the 60 guides 44, and are extended to points adjacent the bottom 42, the said fingers 48 serving to prevent the nails from sliding out of the openings 55. Obviously, however, the nails may readily be withdrawn, manually, 65 from the spring fingers 48. Since the box is

pivotally mounted, as shown, the box may be readily tilted, to cause the nails which are therein to fall into depending positions, as seen most clearly in Fig. 6 of the drawings.

A tallying device is provided, the same being 70 discernible in Fig. 1, and seen most clearly in Fig. 8. This tallying device consists of an arcuate strip 50, the ends of which are thrust into the standard 38. A plurality of indicators preferably numbered tags 51, 75 are strung upon this arcuate strip 50. In its upper portion, the arcuate strip 50 is bent to define a shoulder 52. In operating the indicator, the tags 51 may all be positioned to the rear of the shoulder 52. As one box is 80 completed, the tag numbered 1 may be slid over the shoulder 52 and permitted to assume the depending position shown in Fig. 8, tag after tag being thus manipulated, as 85 the boxes are nailed up.

The box clamping machine hereinbefore described, will find a wide variety of applications. It is peculiarly adapted for nailing up fruit boxes, the spacing rack 34 and the auxiliary frame 33, serving to accom- 90 modate those boxes in which fruits of different sorts are packed, so that a single machine may be employed for packing apples, pears, peaches, and the like. It is to be understood that there may be any number of the arms 95 10 upon the box-lid holder, so that when an unusually long box, such, for instance, as a lemon box, is to be manipulated, the lid of the box, may, if desired, be held down upon the box, by more than two elements. 100

Having thus described the invention, what is claimed is:—

1. In a device of the class described, a box-support; and a lid holder mounted for reciprocation in the support, the lid-holder 105 including spaced arms, the lower faces of which are upwardly inclined from the outer edges of the arms toward the inner edges thereof to permit a bulging of the box-lid when the arms are pressed thereagainst. 110

2. In a device of the class described, a support; spaced guides thereon having elements operating to limit the horizontal sliding of a box to a single direction only; an auxiliary frame adapted to be placed 115 upon the guides of the support and fitted with guides duplicating those of the support; a spacing rack adapted to be interposed between the frame and the support, to rest upon the guides of the support, the 120 frame and the rack having interlocking elements to prevent relative movement between the frame and the rack; and means for holding a lid upon a box when the latter is rested upon any of the guides. 125

3. In a device of the class described, a support; spaced guides upon the support, consisting of angle members provided at one end with stops outstanding from one of the 130 flanges of each of said angle members, and

spaced from the other flange thereof; and means for holding a lid upon a box when the latter is rested upon the guides.

4. In a device of the class described, a support; a lid-holder mounted for reciprocation in the support; means connected with the support and adapted to be actuated by the foot of the operator to depress the holder; resilient means for elevating the holder; a locking device for maintaining the holder in depressed position; and tiltable means above the depressing means, for rendering the locking device inoperative, the tiltable means being positioned to be engaged by the leg of the operator, when the foot of the operator is upon the depressing means.

5. In a device of the class described, a support; a lid-holder mounted for reciprocation in the support; resilient means for raising the lid holder; a tiltable member through which the lid holder is extended; resilient means for tilting said member to maintain the holder depressed against the action of the holder raising means; a foot lever pivoted to the support and operatively connected with the holder to depress the same; and means upon the support actuable by the leg of the operator to tilt said member, thereby to set the holder free for actuation by its raising means.

6. In a device of the class described, a support; a lid-holder mounted for reciprocation in the support; a foot lever operatively connected with the holder to depress the same; means for raising the holder; a

tiltable member adapted to engage the holder; resilient means for tilting said member to engage the holder to maintain the holder depressed; a lever pivotally supported intermediate its ends and pivotally connected at one end with the tiltable member; and a bent lever fulcrumed intermediate its ends and engageable at one end by the leg of the operator when his foot is upon the foot lever, the bent lever being pivotally connected with the other end of the lever whereby the tiltable member is actuated.

7. In a device of the class described, a support; a casing thereon; a compression spring located within the casing; a tiltable member pivoted to the support and provided with an opening; a lid-holder mounted for reciprocation in the support and connected with the spring and extended through the opening; means for operating the holder to compress the spring; resilient means for operating the tiltable member to clamp the holder when the spring is compressed; and means for operating the tiltable member to set the holder free; the casing constituting a stop for the tiltable member, so to position the same that the holder may slide freely through the opening.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CHRISTOPHER NOEL LAMBERT.

Witnesses:

ERNEST M. FARMER,
C. J. FARMER.