

No. 626,319.

Patented June 6, 1899.

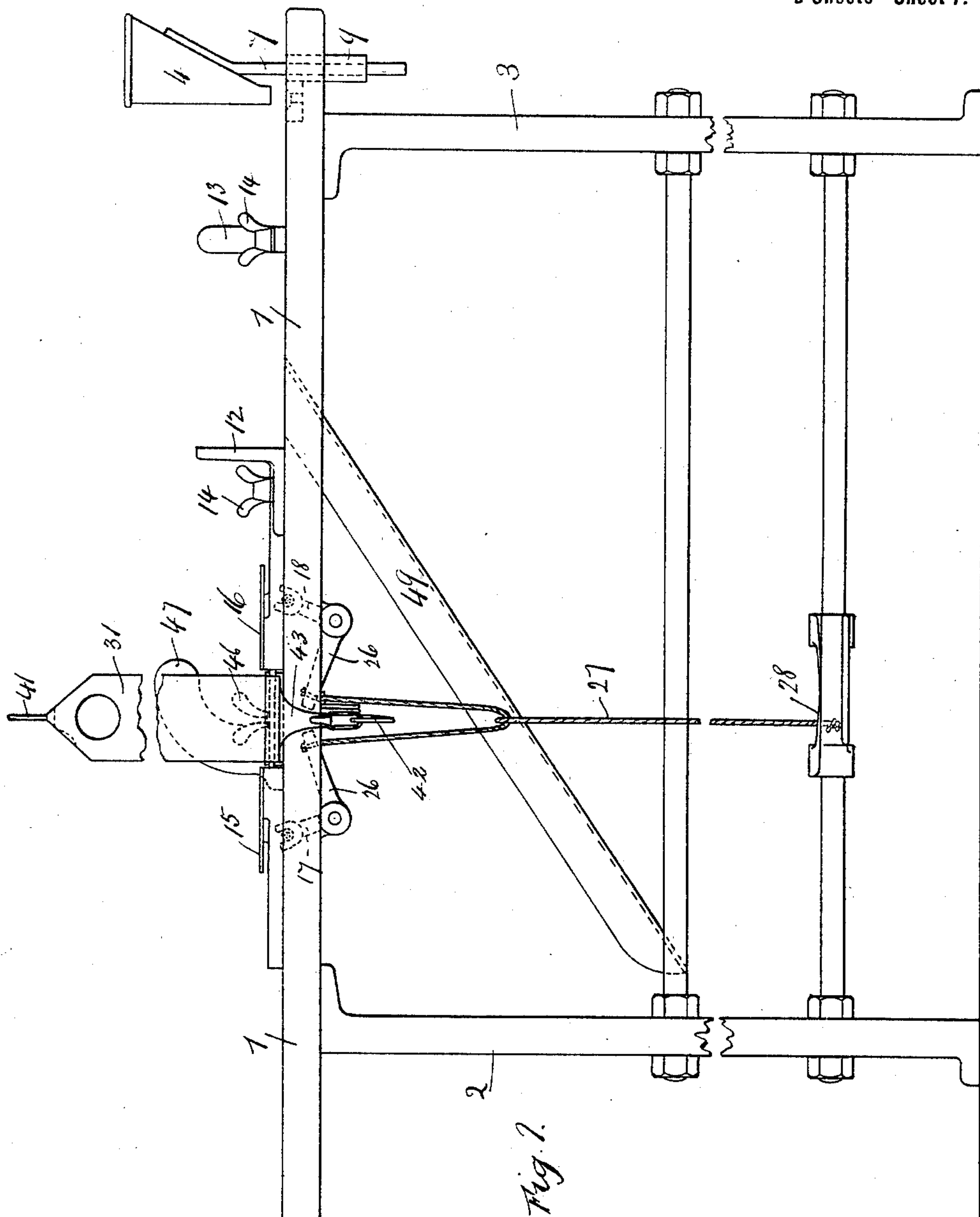
W. CARTER.

MACHINE FOR MAKING PAPER BAGS.

(Application filed Dec. 27, 1897.)

(No Model.)

6 Sheets—Sheet 1.



Witnesses:

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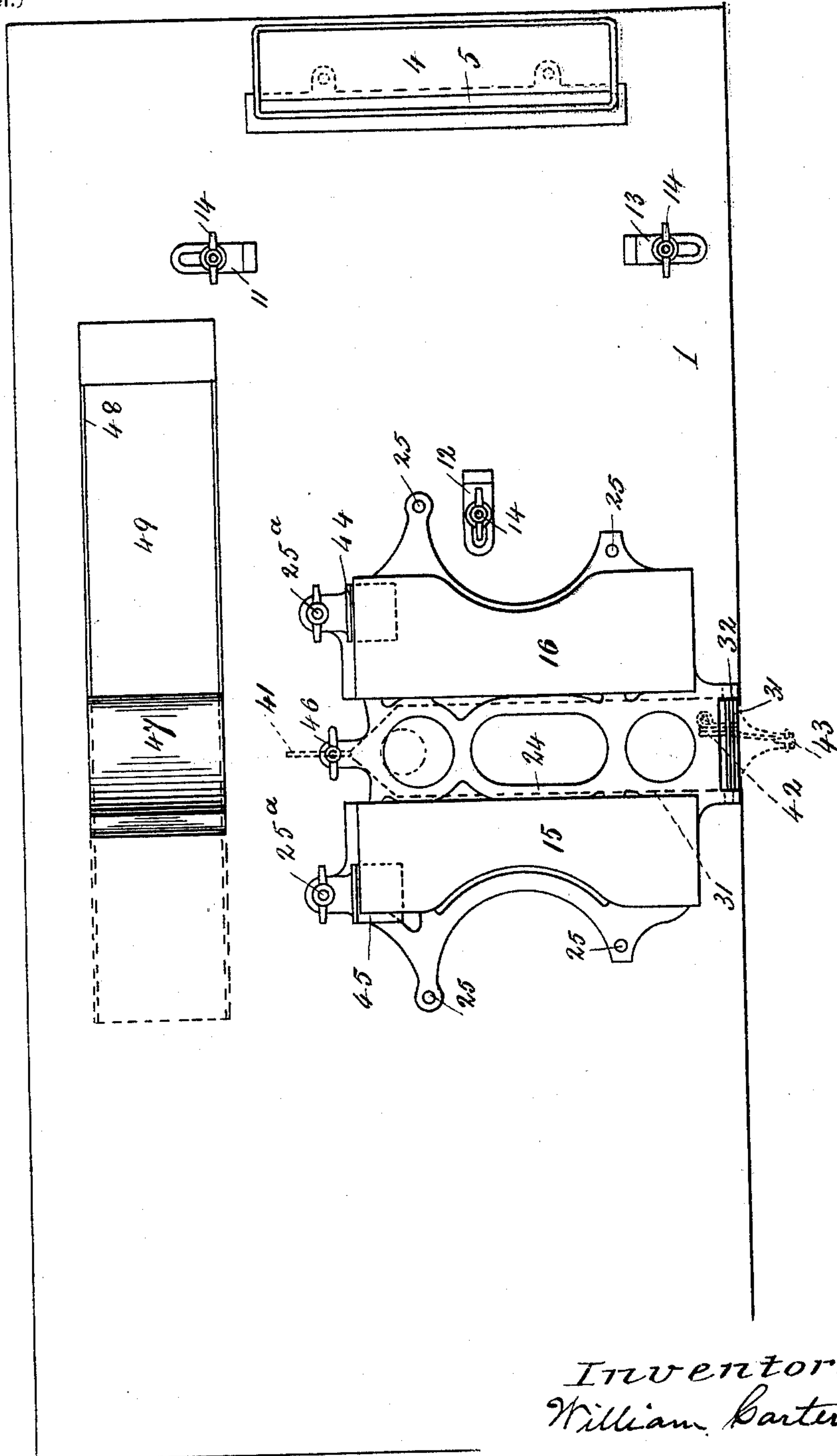
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6 Sheets—Sheet 2.

(No Model.)

Fig. 2.



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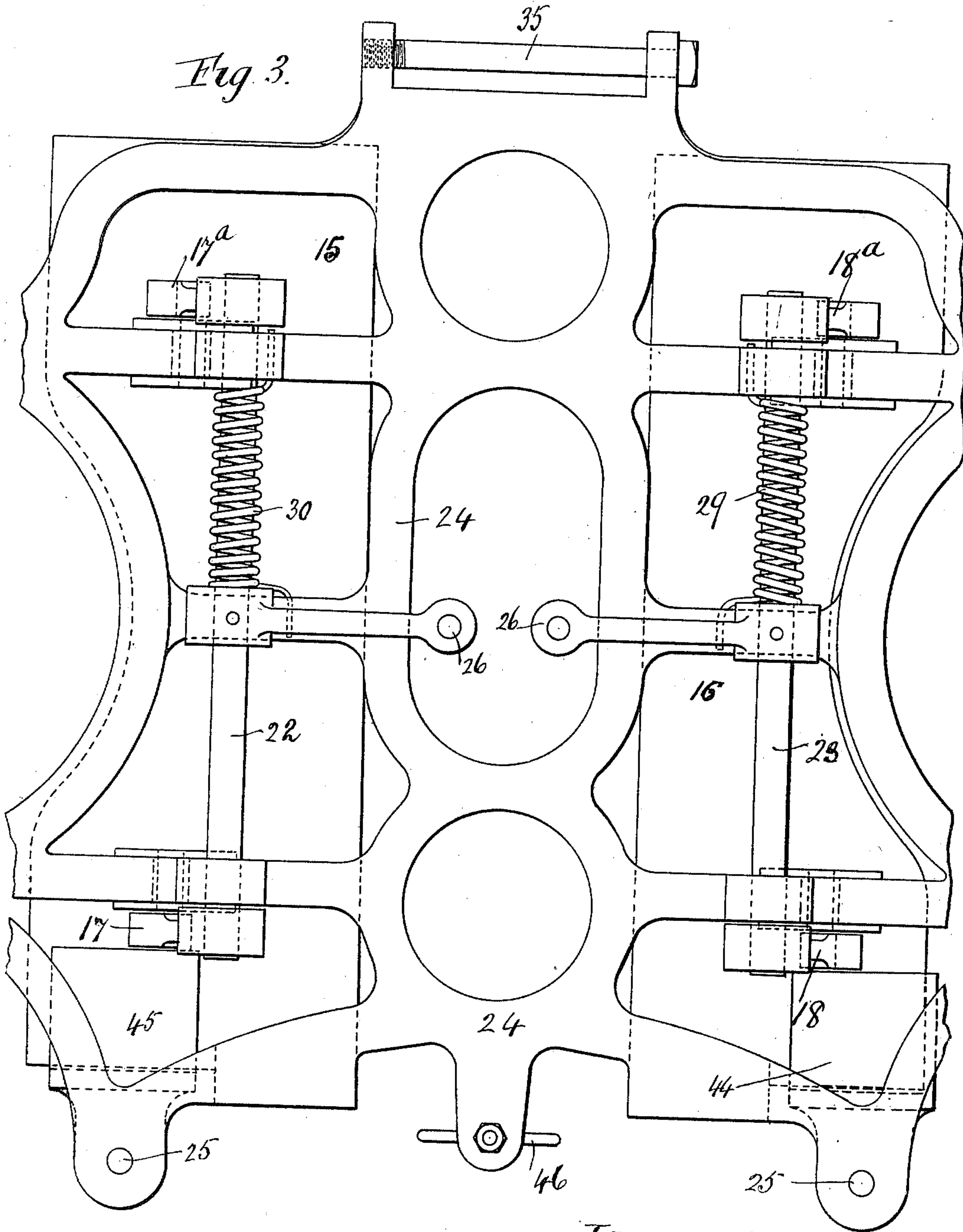
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6 Sheets—Sheet 3.



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6 Sheets—Sheet 4.

Fig. 4.

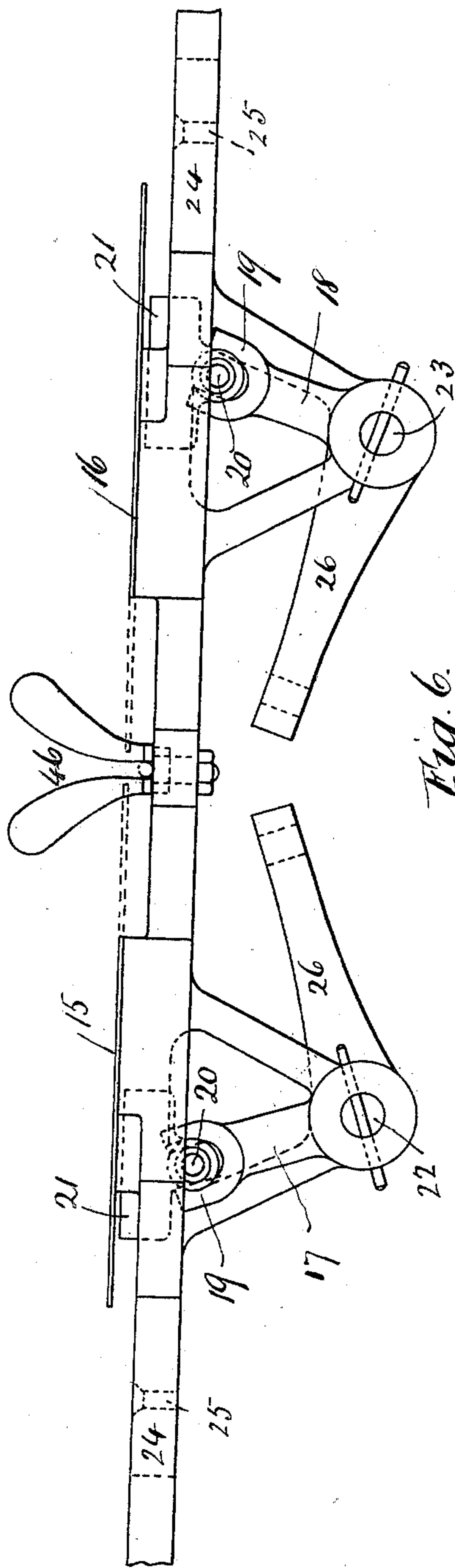


Fig. 6.

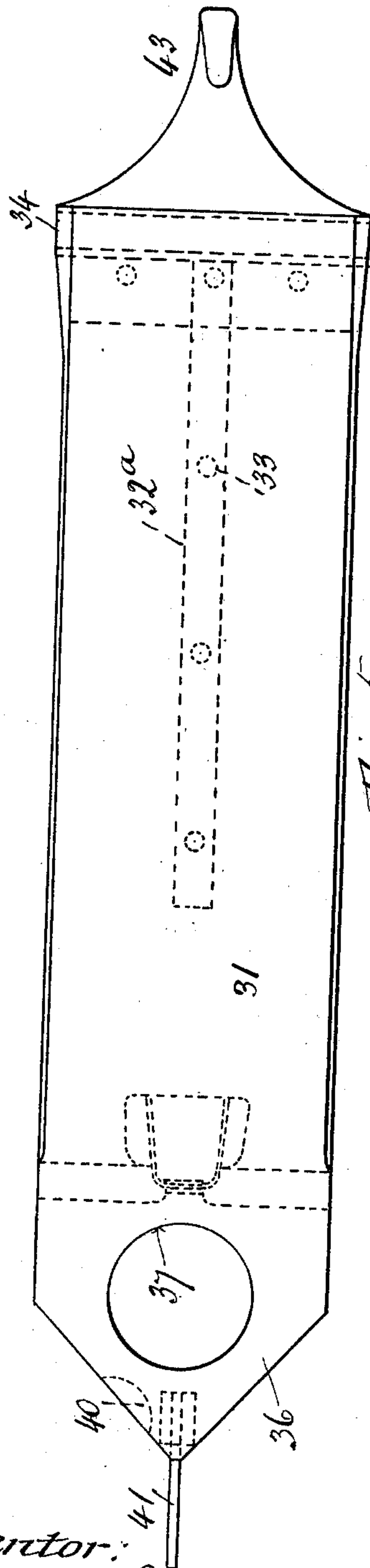
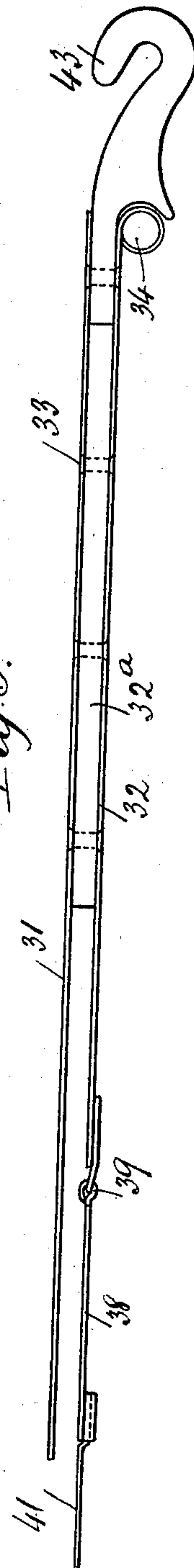


Fig. 5.



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6 Sheets—Sheet 5.

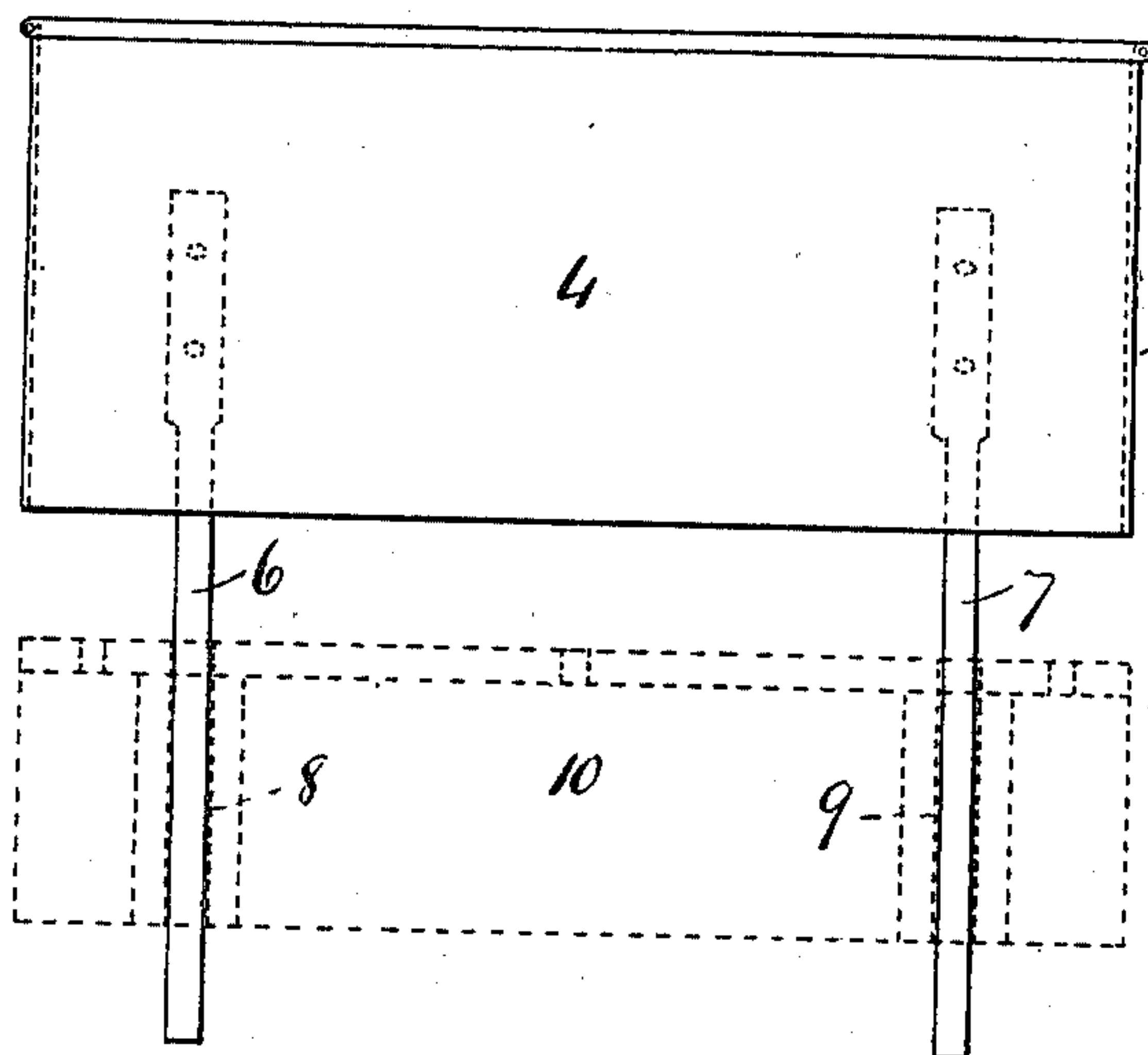


Fig. 8.

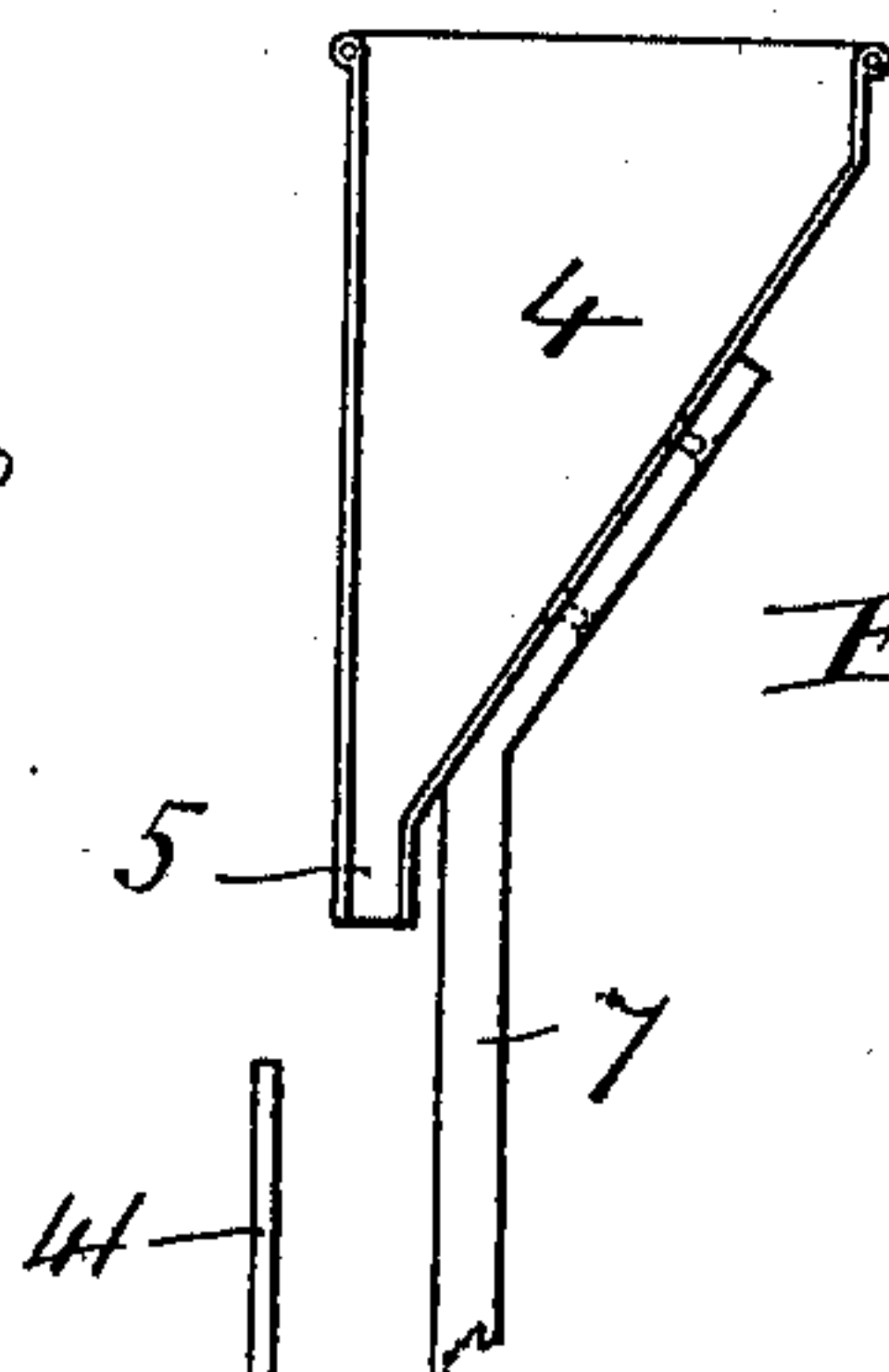


Fig. 9.

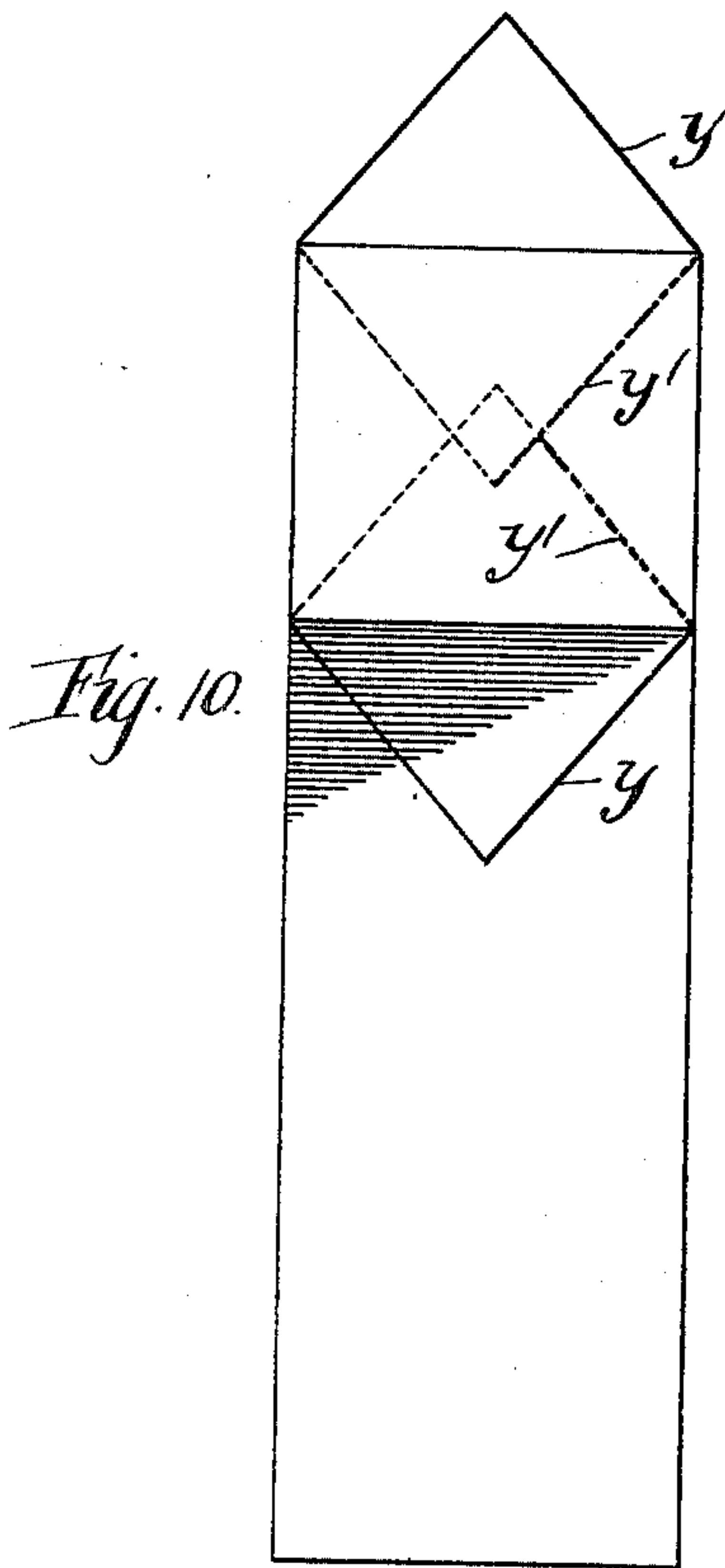


Fig. 10.

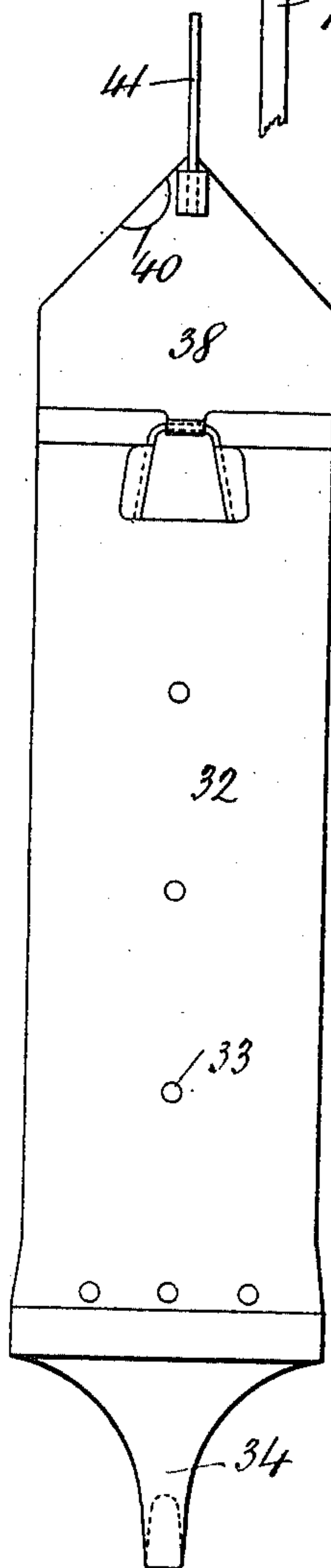


Fig. 7.

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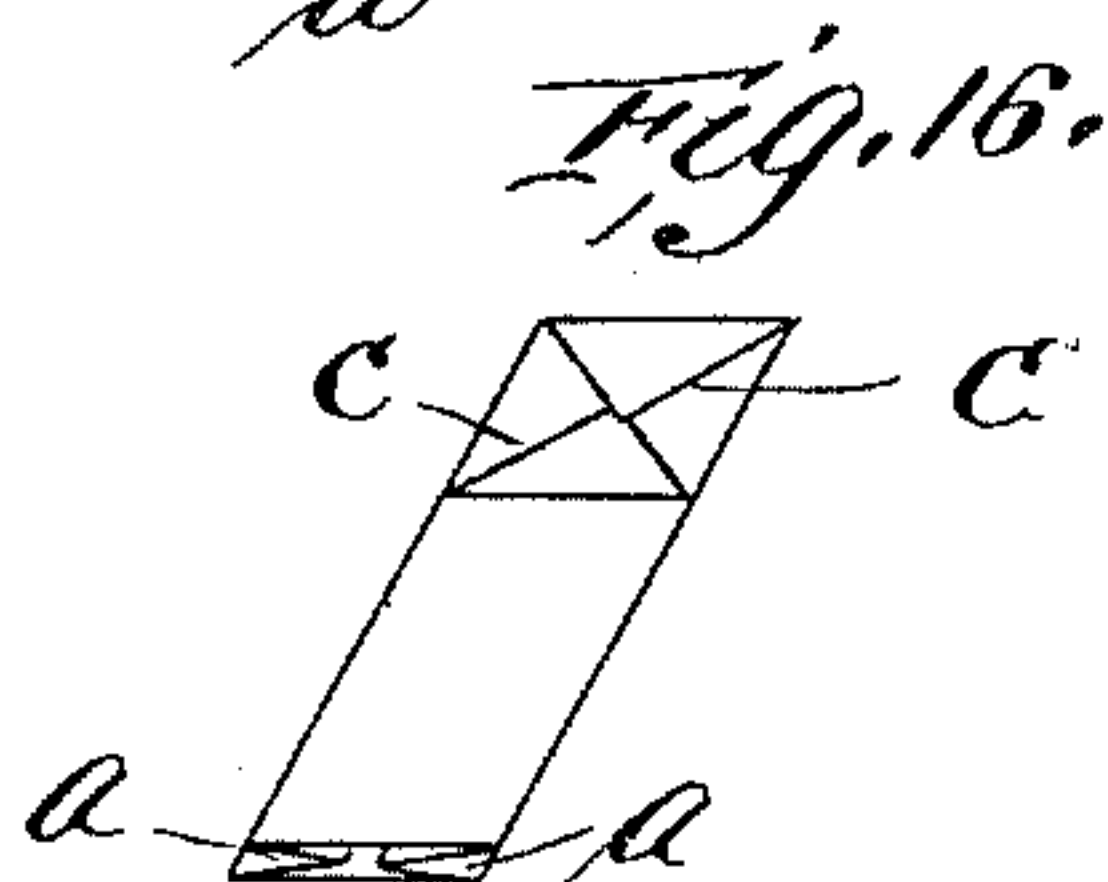
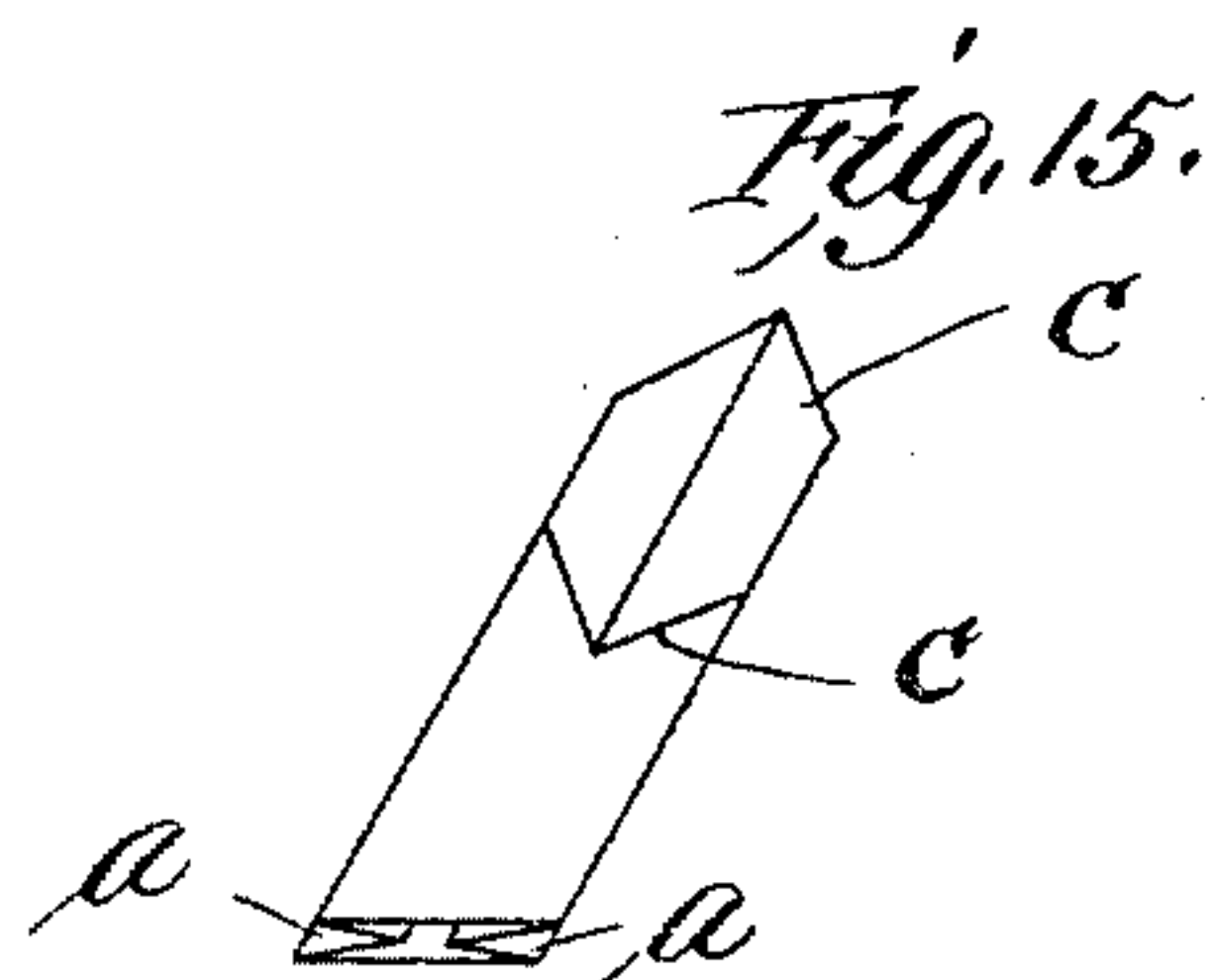
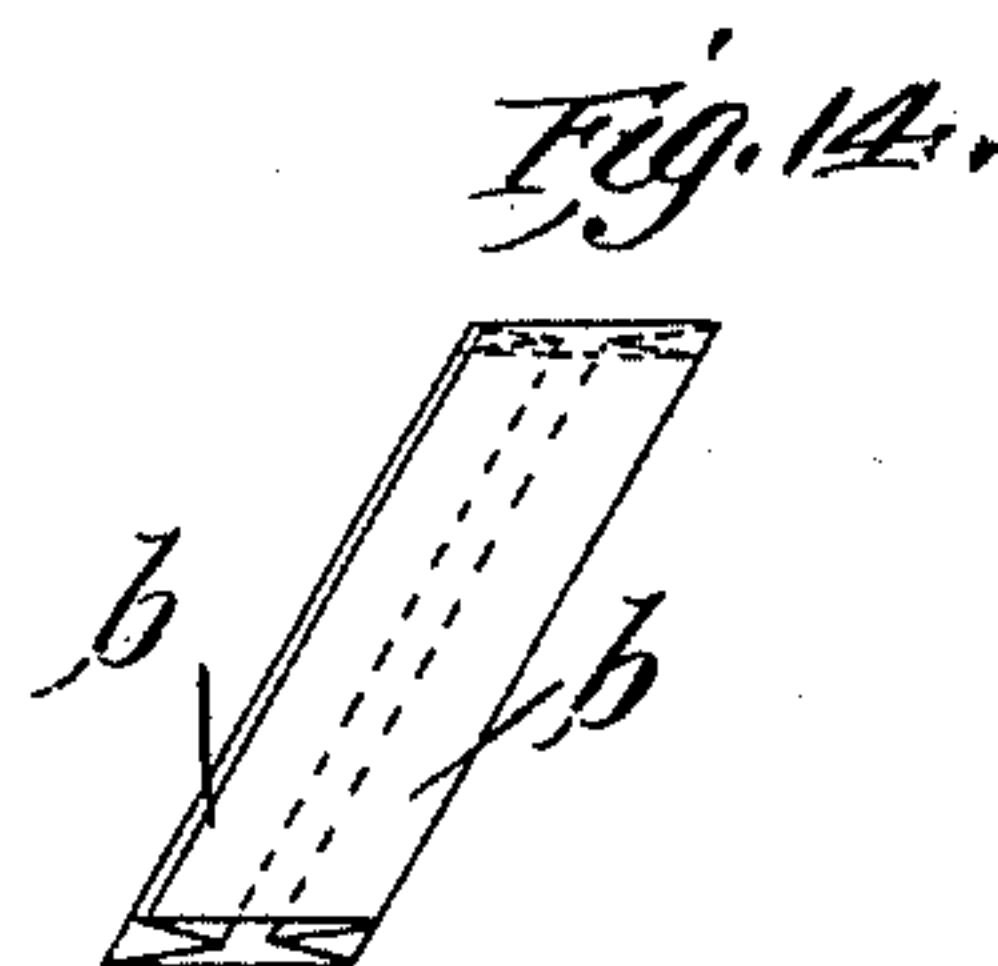
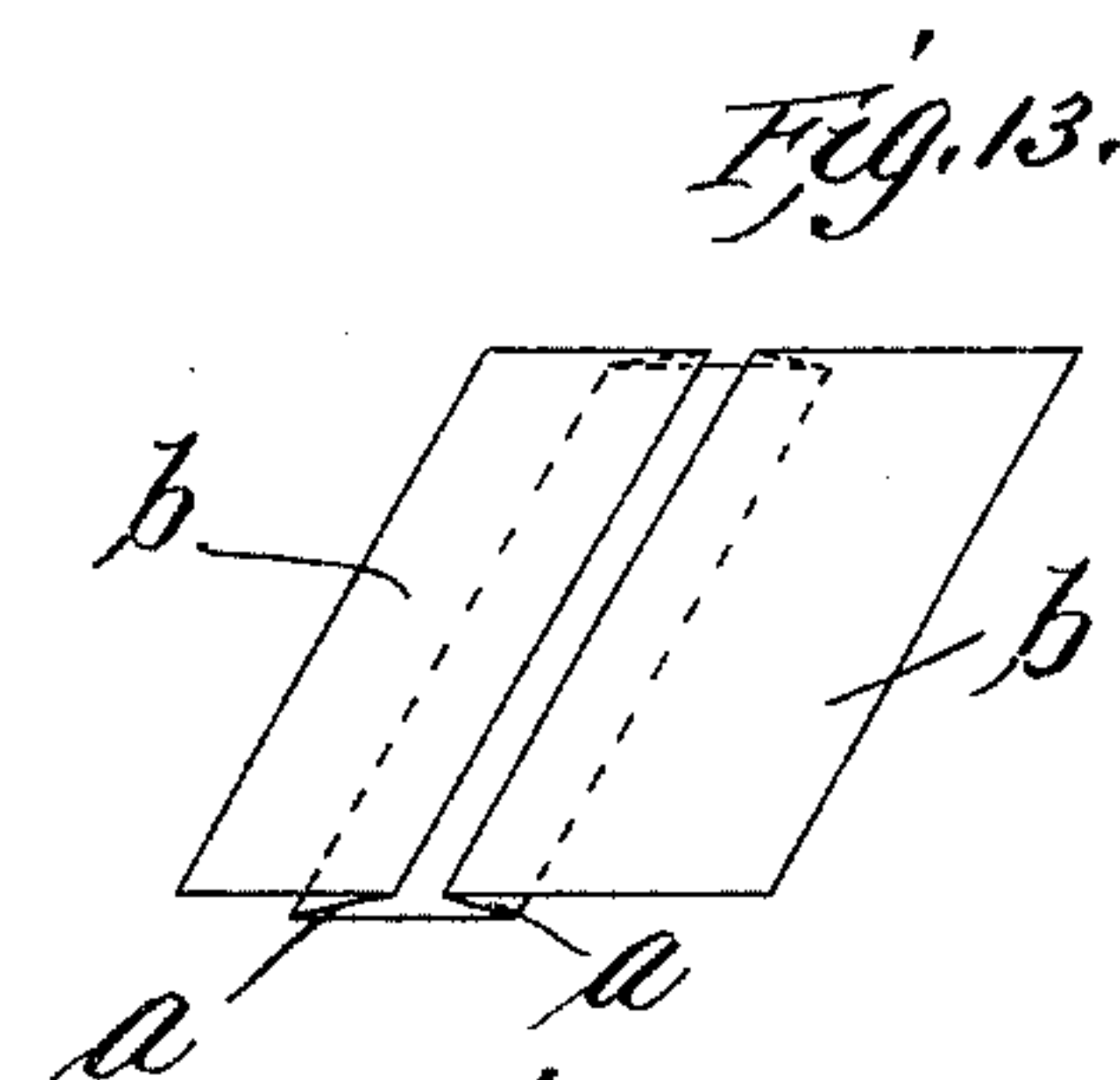
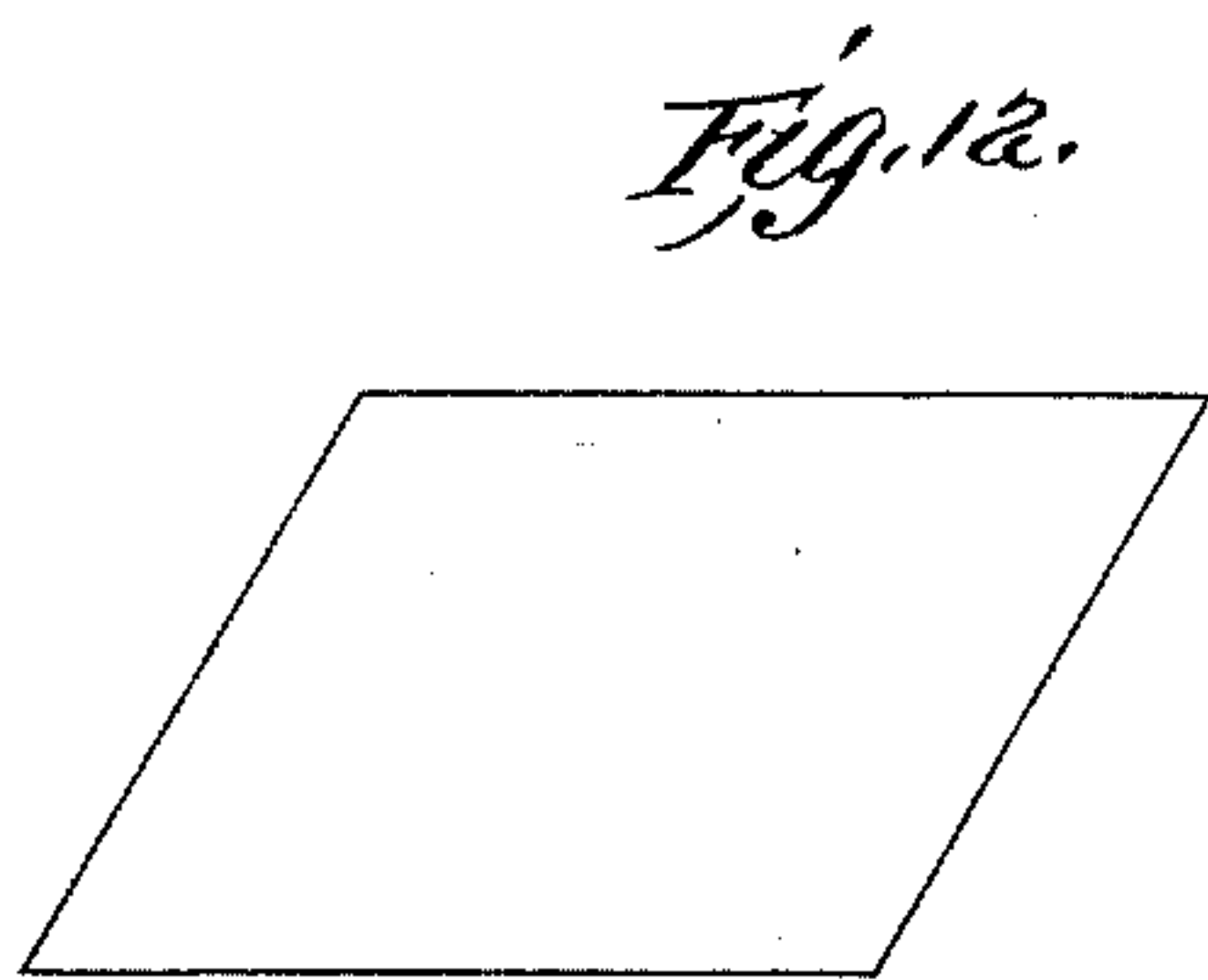
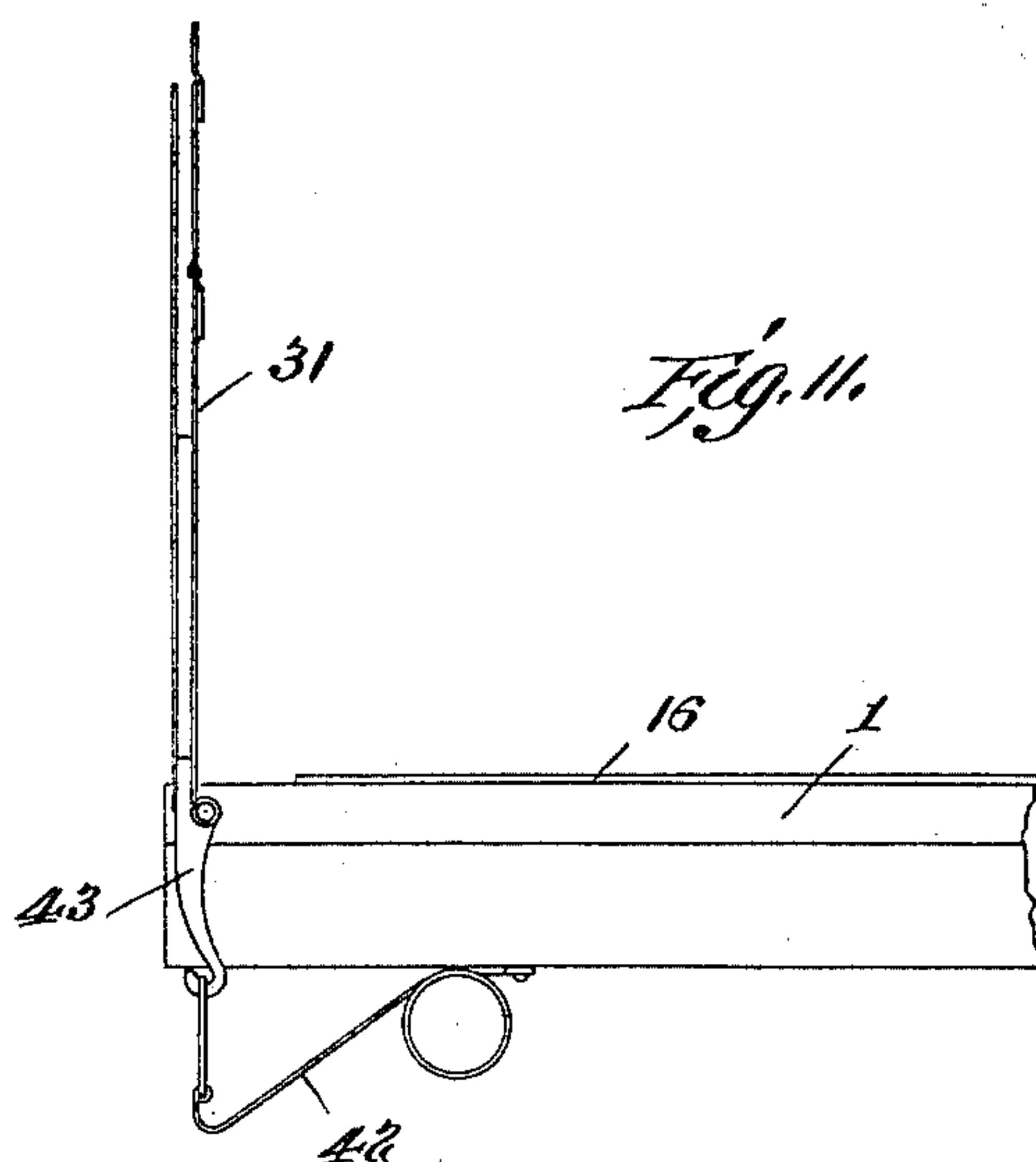
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(Application filed Dec. 27, 1897.)

(No Model.)

6 Sheets—Sheet 6.



Attest  
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James M. Spear

Inventor  
Wm. Carter  
by Richard H. Co  
Atty.



# UNITED STATES PATENT OFFICE.

WILLIAM CARTER, OF GLASGOW, SCOTLAND.

## MACHINE FOR MAKING PAPER BAGS.

SPECIFICATION forming part of Letters Patent No. 626,319, dated June 6, 1899.

Application filed December 27, 1897. Serial-No. 663,578. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM CARTER, a subject of the Queen of Great Britain, and a resident of the city of Glasgow, Scotland, have invented certain new and useful Improvements in Machines for Making Paper Bags, of which the following is a specification.

This invention relates to machines for making paper bags and such like; and it has for its object to improve and simplify the construction of such machinery.

With this invention the operations of pasting the sheets or blanks, folding them, and pressing them can all be performed on the one machine.

In order that my said invention may be properly understood, I have illustrated the same in the accompanying drawings, whereon—

Figure 1 is a front view of the machine. Fig. 2 is a plan of the machine. Fig. 3 is an enlarged inverted plan view, and Fig. 4 a similar side view, of the folding-knives and their actuating mechanism. Fig. 5 is a side view, Fig. 6 a front view, and Fig. 7 a back view, of the forming-block. Fig. 8 is a front view, and Fig. 9 a side view, of the paste vessel. Fig. 10 is a view of a paper bag made in the machine. The dotted lines  $y' y'$  indicate the bottom pieces  $y y$  as turned over so as to form the bottom of the bag. Fig. 11 is a detail of the forming-block and table. Fig. 12 shows the paper sheet as laid upon the base-plate of the machine. Fig. 13 shows the sheet with the bellows sides  $a a$  partially formed. Fig. 14 shows the bellows sides completely formed by the turning over of the ends  $b b$ , Fig. 13, of the sheet on top of the former-block 31. Fig. 15 shows the bag-blank, Fig. 14, with its triangular bottom parts  $c c$  formed by the turning over in the usual way of the triangular flap 38 of the block 31. Fig. 16 shows the bag complete, with the triangular parts  $c c$  pasted down, which can be done by the machine described in the specification of my Patent No. 611,055.

Referring to the drawings, whereon the same reference-numerals wherever repeated indicate the same parts, the machine consists of a table or bed 1, which is supported upon standards 2 3 and provided underneath with

treadle or other suitable driving mechanism. Situated at one side of the table is a paste vessel 4, which, as shown at Figs. 8 and 9, is of triangular section, with a narrow opening or slit 5 for the paste to pass through at the bottom onto the paper sheets. This paste vessel, which is capable of a vertical movement under the action of gravity or of a spring, is provided with guides 6 7, working in sockets 8 9 (see dotted lines, Fig. 8) in a plate 10, secured to the table. The guides 6 7 guide the paste vessel in its movement. The sheets or blanks of paper to be pasted are simply laid evenly upon one another, with one edge below the opening 5 in the bottom of the paste vessel, which latter, owing to its weight or the action of the spring, bears upon them and pastes each one in turn. It will be easily seen that when the top sheet of the pile is removed the paste vessel sinks down onto the next sheet of the pile and pastes it, and so on until all the sheets are pasted. Adjustable gages 11 12 13 are provided on the table for keeping the sheets or blanks in place. As will be seen, the gages are slotted and clamped in place to the table by means of sockets fitted in the table and screws with butterfly-heads 14, which pass through the slots of the gages and into the sockets.

Arranged at one side of the pasting device aforesaid is the folding mechanism, which consists of two movable folding-knives 15 16, which are capable of being traversed forward and toward each other, so as to perform the folding operation for the sides of the bags by means of arms 17 17<sup>a</sup> 18 18<sup>a</sup>, having jaws 19 at their upper ends. The jaws grasp pivots 20, projecting from the sides of slippers 21, attached to the under sides of the knives. These arms 17 17<sup>a</sup> 18 18<sup>a</sup> are pinned to two shafts 22 23, arranged parallel with each other below the base-plate 24, which latter is secured to the table by means of screws at 25. Each shaft has an arm 26, and these arms are connected by means of a chain, wire, cord, or such like 27 with a treadle 28. The knives 15 16 are automatically retracted after each forward movement by means of torsion-springs 29 30, arranged on the shafts 22 23.

Arranged between the folding-knives 15 16 is a bag-shaping and bottom-forming block,



consisting of upper and lower plates 31 32. (See Figs. 5, 6, and 7.) These plates are connected rigidly together by means of a central rib 32<sup>a</sup> and rivets 33, and they are hinged at 5 34 to a pin 35, secured to the base-plate 24. The upper plate 31 has a tapered end 36 with a hole 37 for the finger at or about the center thereof, while the lower plate 32 has a correspondingly-shaped flap 38, but without 10 the hole, hinged to it at 39. A recess 40 is cut out of the flap to enable the bag to be easily slipped off the block. The flap 38 is provided with a projecting bar 41, which serves as a handle. The bar may be made 15 with a cutting edge, so as to cut the paper at that part when so desired. The spaces between the plates 31 32 of the block at each side are sufficiently wide to admit of the entrance of the folding-knives when the paper 20 is being folded. The block is normally held in a vertical position (see Figs. 1 and 2) and up from the base-plate by means of a spring 42, which acts on a hook 43 fitted to the block. In Fig. 2 the dotted lines show the block in 25 its down position.

Adjustable gages 44 45 are provided as guides for inserting the sheets of paper in the block and folding mechanism.

25<sup>a</sup> are clamping-screws for the guides.

30 46 is a guide for the bar 41 at the end of the block.

Arranged at a convenient distance from the folding mechanism is the pressing device, which merely consists of a board or block 35 curved at its upper end and faced with brass. This block 47 is fitted to the table of the machine at the back of the folding mechanism. After the bag has been passed through the folding device and properly folded it is drawn 40 by the attendant over the upper edge of the pressing-block 47, so as to smooth down and press the folds. From the pressing-block the bags are allowed to fall down through a hole 48 in the table onto a chute 49, which delivers 45 them into a suitable receptacle.

The parts of the mechanism are so made and fitted together as to be easily taken asunder and cleaned.

The pasting device can also be adapted for 50 pasting wrappers, sheets, and such like.

When it is desired to paste two sides of a sheet, two pasting vessels may be fitted on the same frame or bed.

The *modus operandi* is much the same as 55 that usually adopted in this class of machines, viz: The paper sheet, after being pasted at one edge by means of the automatic paster, is laid on the base-plate 24 (the knives being retracted) and the block is brought down 60 upon it. Thereafter the knives are advanced so as to force the paper at each side between the plates of the block, and thereby form the "bellows" sides of the bag. This being done, the free ends of the paper (one of which 65 is pasted as aforesaid) are folded down on top of the block and made to adhere together, and

then the knives are retracted and the block brought to the vertical position by the spring, when the triangular bottom parts are shaped in the usual manner when making satchel- 70 bags. The bags are finally pressed on the block 47.

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

1. In machinery for making paper bags and 75 such like, the combination of a table, reciprocating knives fitted on the table, guides upon which the knives work, slippers provided with pivot-pins secured to the knives, 80 arms having jaws at their upper ends which grasp the said pivot-pins, and means for operating the arms, substantially as described.

2. In machinery for making paper bags and 85 such like, the combination of a table, reciprocating knives fitted on the table, guides upon which the knives work, slippers provided with pivot-pins secured to the knives, 90 arms having jaws at their upper ends which grasp the said pivot-pins, shafts carrying the arms, torsion-springs upon the shafts and means for operating the shafts, substantially as described.

3. In machinery for making paper bags and 95 such like the combination of a table, a base-plate fitted on the table, reciprocating knives carried by the base-plate, a former-block hinged to the base-plate, slippers provided with pivot-pins secured to the knives, arms 100 having jaws at their upper ends which grasp the said pivot-pins, shafts carrying the arms, torsion-springs upon the shafts and means for operating the shafts, substantially as set forth.

4. In machinery for making paper bags and 105 such like, the combination of a table, a base-plate fitted on the table, reciprocating knives carried by the base-plate, a former-block hinged to the base-plate, a projecting bar at the end of the former-block, a V-shaped guide 110 on the base-plate for the bar, and means for operating the knives, substantially as set forth.

5. In machinery for making paper bags and 115 such like, the combination of a table, a base-plate fitted on the table, reciprocating knives carried by the base-plate, a former-block consisting of two plates 31, 32, with a distance piece or rib 32<sup>a</sup> between them, the plate 31 being tapered at one end and having a hole 120 37 therein, the plate 32 having a flap provided with a bar 41, a V-guide on the base-plate for the bar 41, a spring attached to the former-block for holding it in the vertical position, and means for reciprocating the knives, 125 substantially as described.

6. In machinery for making paper bags and 130 such like, the combination of a table, a base-plate fitted on the table, reciprocating knives carried by the base-plate, a former-block consisting of two plates 31 32, with a distance piece or rib 32<sup>a</sup> between them, the plate 31



being tapered at one end and having a hole  
37 therein, the plate 32 having a flap pro-  
vided with a bar 41, a tailpiece 43 attached  
to the former-block, a spring attached to the  
5 tailpiece, and to the table, a V-shaped guide  
for the bar 41, and means for reciprocating  
the knives, substantially as set forth.

Signed at Glasgow, Scotland, this 13th day  
of December, A. D. 1897.

WILLIAM CARTER.

Witnesses:

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THOMAS M. GRACE.