

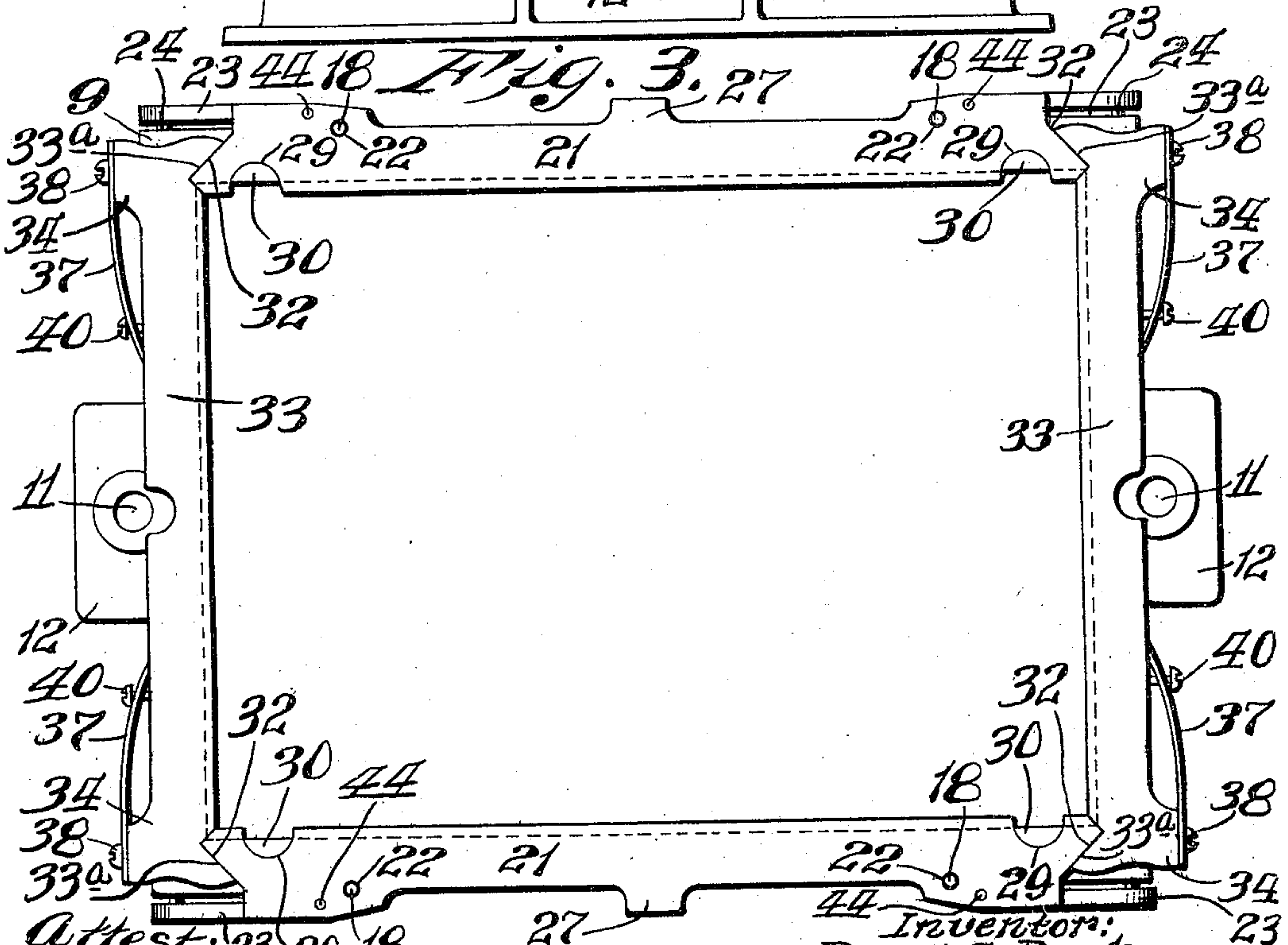
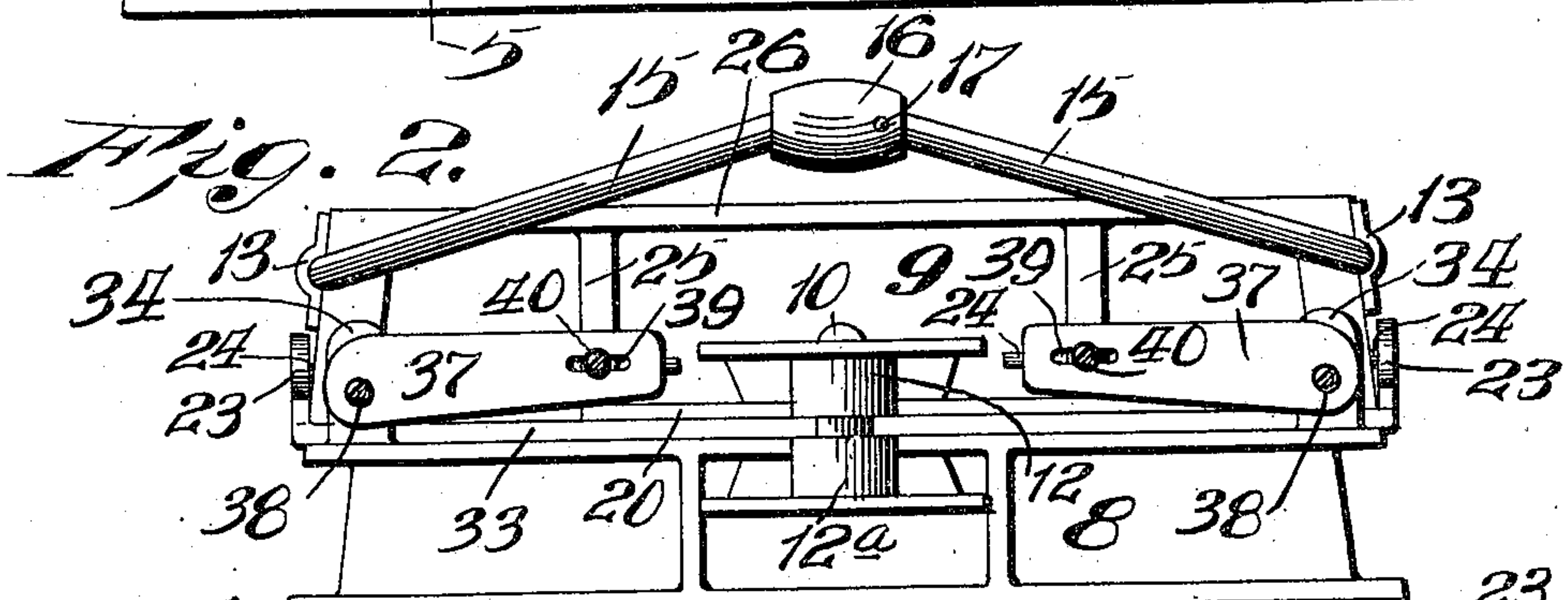
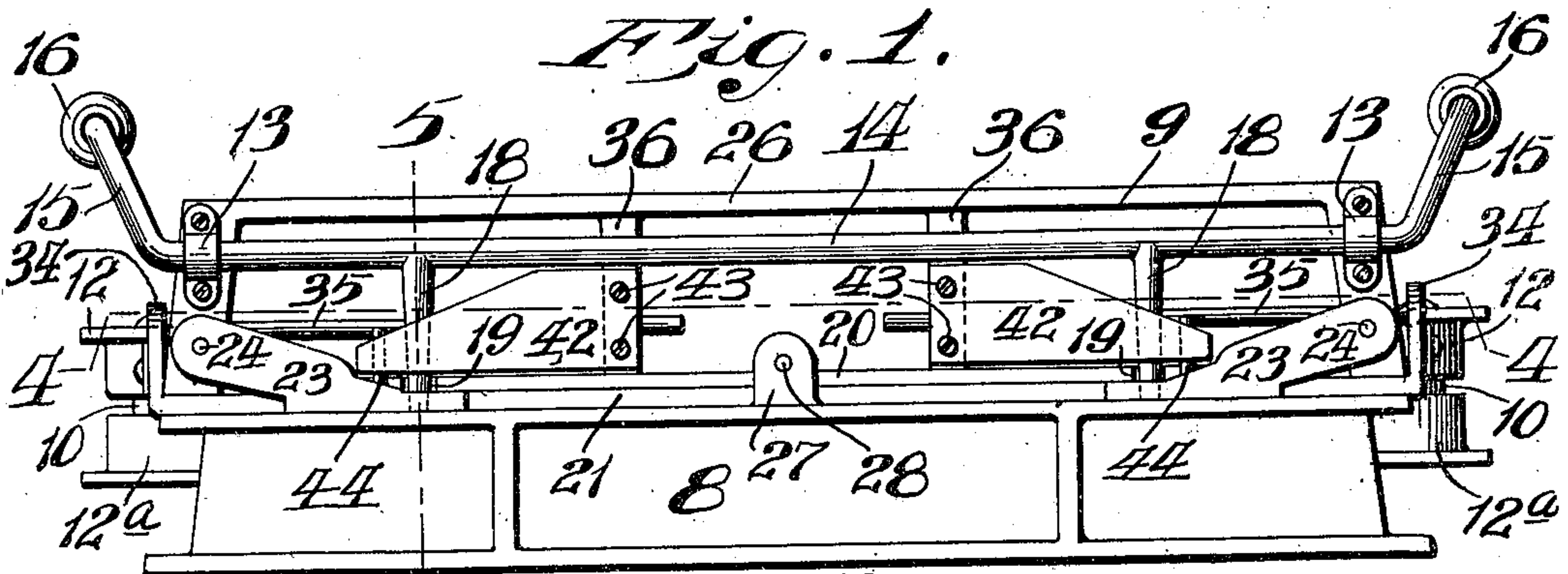
R. S. BUCH.
MOLDER'S FLASK.

APPLICATION FILED SEPT. 12, 1910.

Patented Feb. 7, 1911.

983,676.

2 SHEETS—SHEET 1.



Attest: 23 29 18
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Inventor:
Royer S. Buch.
By Bruce S. Elliott atty.

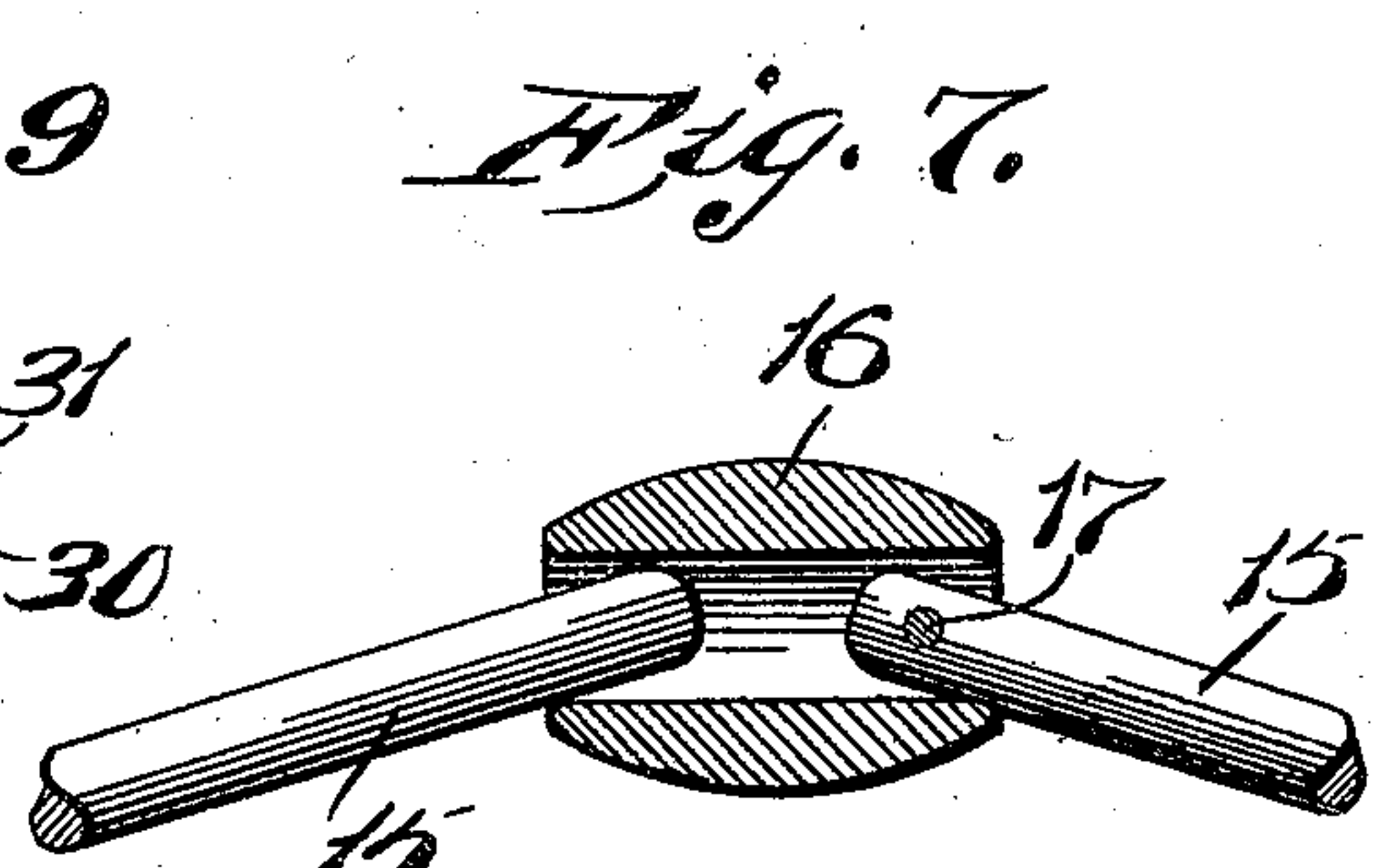
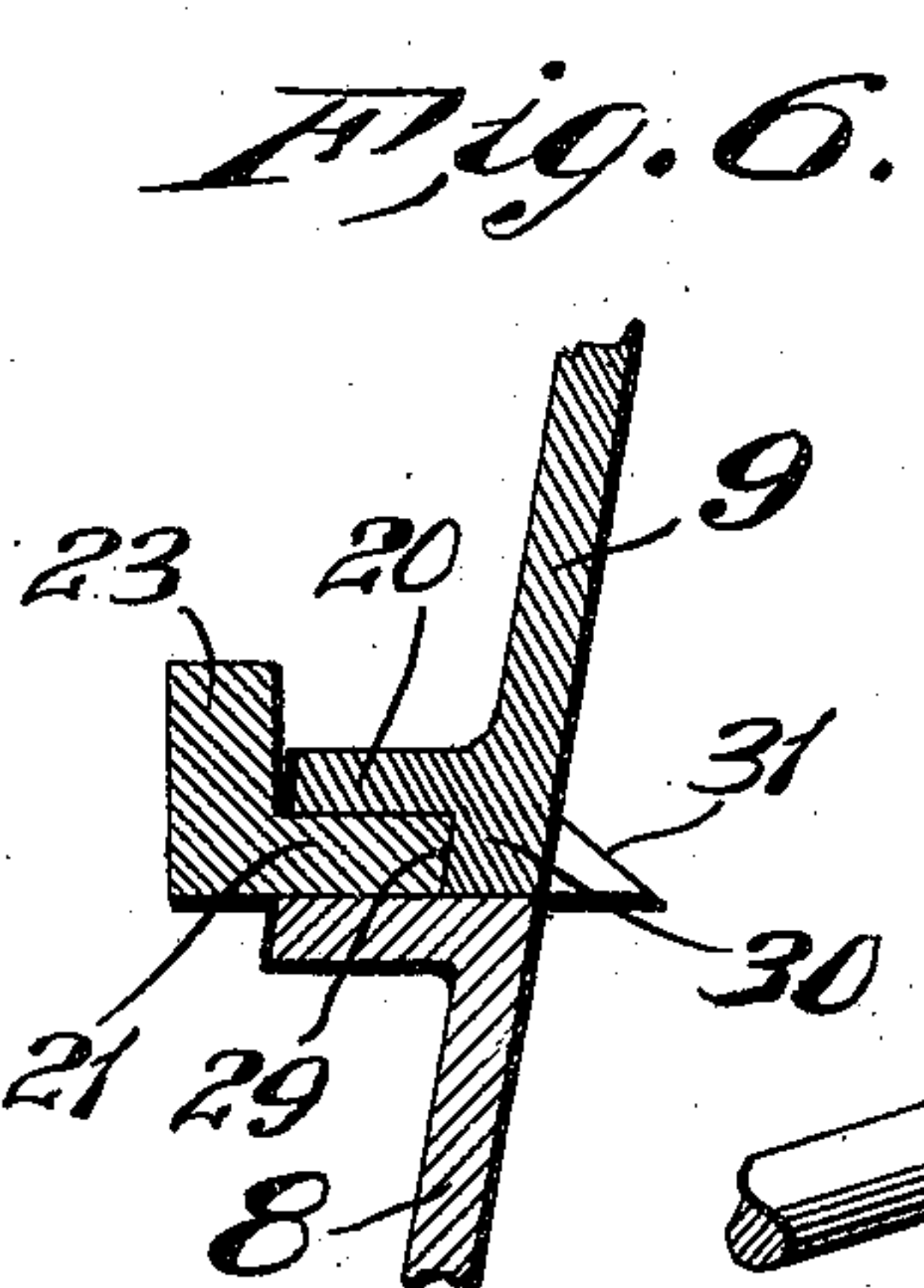
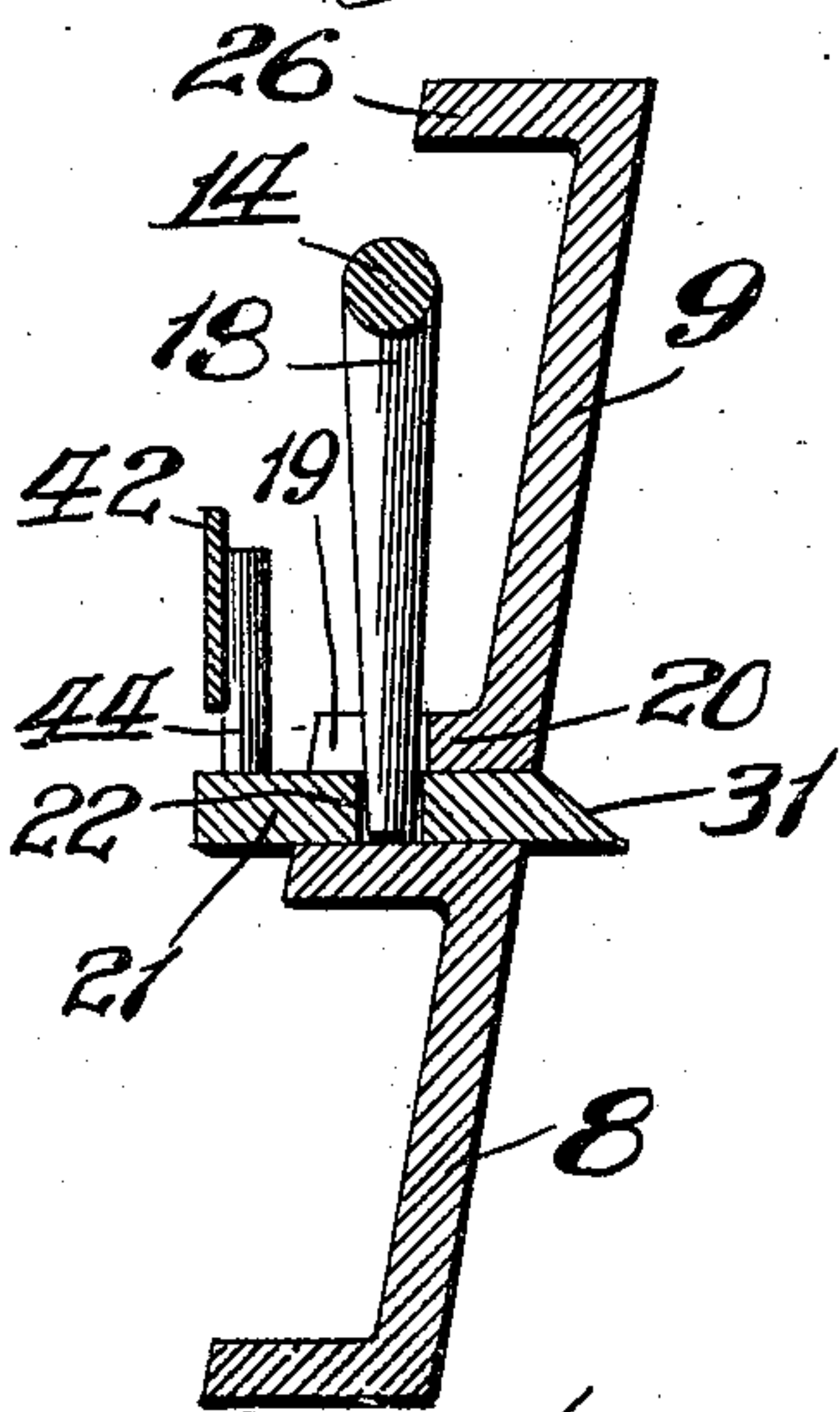
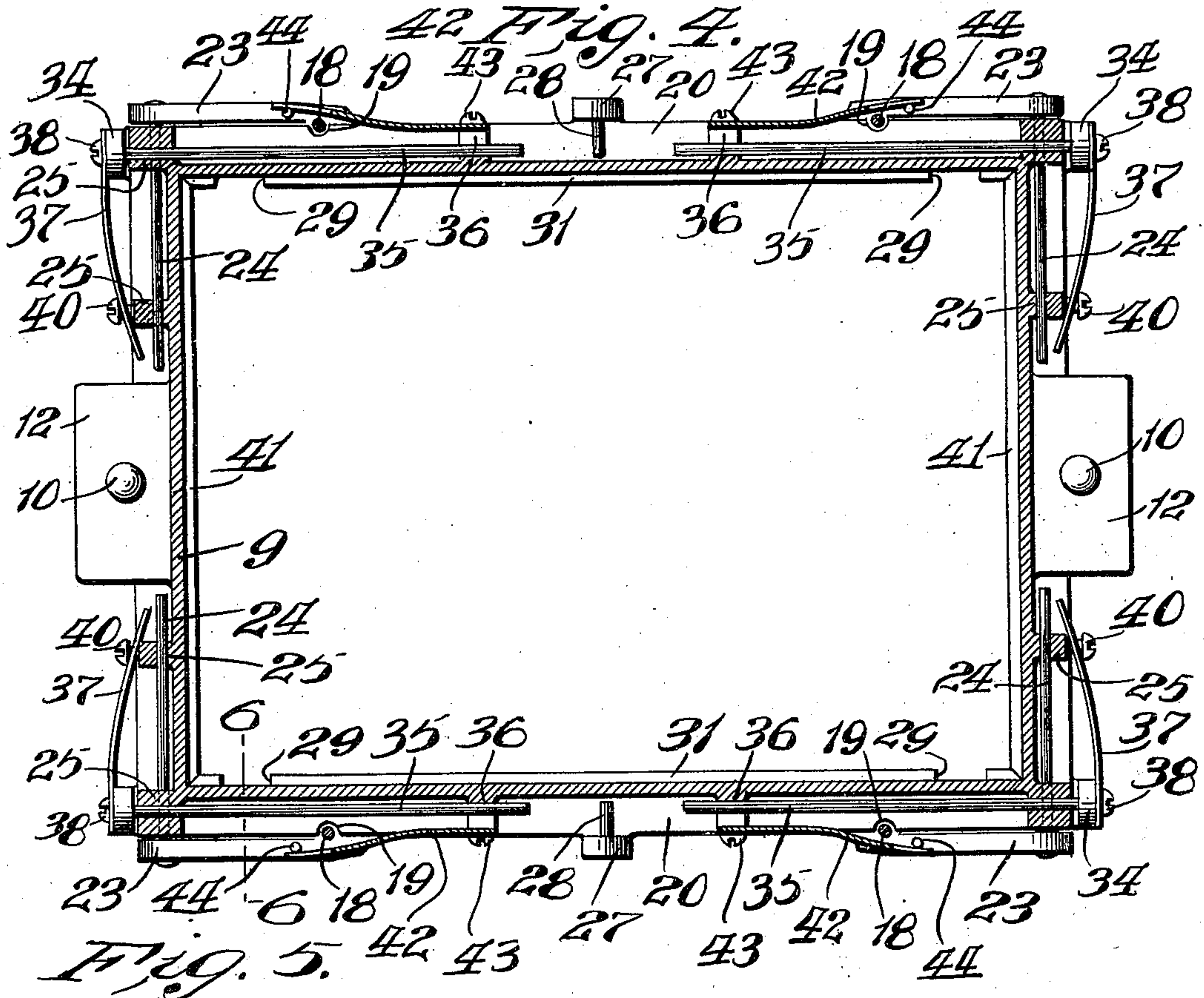
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2 SHEETS—SHEET 2.

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UNITED STATES PATENT OFFICE.

ROYER S. BUCH, OF ELIZABETHTOWN, PENNSYLVANIA.

MOLDER'S FLASK.

983,676.

Specification of Letters Patent.

Patented Feb. 7, 1911.

Application filed September 12, 1910. Serial No. 581,659.

To all whom it may concern:

Be it known that I, ROYER S. BUCH, a citizen of the United States, residing at Elizabethtown, in the county of Lancaster and State of Pennsylvania, have invented new and useful Improvements in Molders' Flasks, of which the following is a specification.

This invention relates to certain new and useful improvements in molders' flasks of the type used in making small castings. These flasks are, in practice, lifted off of the prepared mold before the casting is made, so that the same flask may be used over and over again, thus avoiding the use of a large number of flasks as is customary when making large castings, in which latter case the sand is left in the flask until the casting is cool. These small flasks are generally of metal, and are made in two parts, as usual, one being the drag and the other the cope.

The present invention has to do more particularly with the cope, and has for its object to provide novel means for retaining the sand therein during the time the upper half of the mold is being formed, and the cope placed in position on the drag after the pattern has been removed, and for readily withdrawing such retaining means to permit the flask as a whole to be lifted from about the prepared mold.

In the drawings: Figure 1 is a view in side elevation of a complete flask constructed according to my invention. Fig. 2 is a view in end elevation of the same. Fig. 3 is a bottom plan view of the cope. Fig. 4 is a section on the line 4—4 of Fig. 1. Fig. 5 is an enlarged section on the line 5—5 of Fig. 1. Fig. 6 is an enlarged section on the line 6—6 of Fig. 4; and Fig. 7 is a broken detail, partly in section, showing one of the press-blocks with the ends of the rods for operating the sand-retaining devices engaged therein.

Referring now to the drawings, 8 indicates the drag, and 9 the cope. At two opposite sides the drag is provided with upward-extending guide pins 10 which are adapted to be received in apertures 11 formed in ears 12 on corresponding sides of the cope. Similar ears 12^a are provided on the drag 8, these respective ears serving as handles, or handholds, in the manipulation of the flask, as will appear later on.

13 indicates bearings provided on the sides of the cope adjacent to the side just referred to, and in the bearings on each of these sides is rotatively mounted a rod 14, the free ends 15 of said rods being bent around the corners of the cope at substantially a right angle, and being inserted in the press-block 16, one of said ends being loosely mounted in the press-block, and the other being secured therein by a pin 17, as indicated more clearly in Fig. 7. The free end portions 15 have also normally an upward incline. Fixedly secured on each of the rods 14 are two fingers 18, the free ends of which extend through open-ended slots 19 formed in the bottom flange 20 of the cope.

21 indicates sand-retaining plates slidably mounted on the bottom of the cope, at opposite sides thereof, and provided with apertures 22 for receiving the ends of the fingers 18. At opposite ends each of the sand-retaining plates 21 is provided with an ear 23 extending upward at right angles thereto, each of said ears carrying a pin 24 which works through apertures provided in the webs 25 extending between the lower flange 20 and upper flange 26 of the drag at the ends thereof. At its center, each of the sand-retaining plates 21 is provided with an upward-extending lug 27 carrying a pin 28, which extends over and is adapted to slide upon the flange 20. By means of the pins 24 and 28, the sand-retaining plates 21 are guided to move in right lines. Each of said plates 21 is provided near each end with a recess 29, in each of which is received a stop 30 provided on the lower edge of the cope for limiting the inward movement of the plates 21. Each of the sand-retaining plates 21 is provided along its inner side with a beveled edge portion, indicated by 31, which projects a slight distance beyond the inner surface of the cope, and which acts as a support for the sand in the cope. Each of the sand-retaining plates 21 also has its opposite ends provided with an incline 32 on its outer side, which inclines engage corresponding inclined portions 33^a formed on the inner sides at the ends of sand-retaining plates 33, which are slidably mounted on the bottom of the cope at opposite ends of the latter, in a manner to be presently described. Each of the sand-retaining plates 33 is provided at opposite ends with an up-

ward-extending lug 34 which carries a relatively long pin 35 which works in apertures formed in webs 36 extending beyond the lower and upper flanges, 20 and 26 respectively, at the sides of the cope. These pins 35 hold the sand-retaining plates 33 in position on the bottom of the cope, and also secure their movement in right lines.

37 indicates a leaf-spring, one of such springs being secured at one end to each of the lugs 34, as indicated at 38. The free end of each of said leaf-springs is provided with a slot 39 which works over a headed pin or screw 40 mounted in the corresponding web 25. The springs 37 normally press the sand-retaining plates 33 inward, and said plates are moved outward by the engagement of the inclines 32—33^a against the resistance of such springs, this movement being allowed by the provision of the slots 39 in the ends of said springs. The inner edge of each of the plates 33 projects inward beyond the inner surface of the cope, as indicated at 41 in Fig. 4, and is likewise beveled in the same manner as the sand-retaining plates 21.

42 indicates leaf-springs, two of which are mounted, at one end, on the webs 36 at each side of the cope, as indicated at 43, and have their free ends bearing against pins 44 which project upward from the upper edge of the ears 23 of each of the sand-retaining plates 21. The springs 42 normally press the sand-retaining plates 21 inward, and said plates are moved outward against the resistance of said springs.

As previously indicated, the projecting edges 31 and 41 of the sand-retaining plates 21 and 33 serve to retain the sand in the cope while the latter is being lifted from the drag to withdraw the pattern and finish the mold. After finishing the faces of the respective portions of the mold the cope is placed upon the drag and the projecting portions 31 and 41 withdrawn prior to lifting the flask from about the mold. The operation of withdrawing the plates 21 and 33 is effected by the operator placing his fingers under the ears 12^a and his thumbs on the press-blocks 16 and pressing the latter downward, which operation moves the ends of the rods 14 downward, and throws the lower ends of the fingers 18 outward, thereby moving the plates 21 outward, and withdrawing their projecting edges 31 from beneath the sand. The inclined ends 32 of the plates 21 engaging the inclines 33^a of the plates 33 operate thereby to move the latter plates outward against the resistance of the leaf-springs 37. The plates are held in this position with the thumbs while the flask is being lifted, but as soon as pressure is removed the springs 37 and 42 serve to again restore the plates 21 and 33 to their normal position. In manipulating or car-

rying the cope alone, the operator will place his fingers under the ears 12 instead of the ears 12^a, as will be readily understood.

My invention presents the obvious advantage of providing means for supporting the sand in the cope at the four sides of the latter, combined with mechanism for simultaneously removing the four supports and for automatically returning them to normal position.

The cope and drag are preferably made each as a single casting, and the walls of the flask as a whole are tapered from bottom to top to facilitate withdrawing the flask from about the mold.

I claim:

1. In a molder's flask, a cope provided with four separate, but coöperating, sand retaining members, located, respectively, on the four sides thereof, and mounted to move in right lines, and actuating means for withdrawing two of said members and thereby causing all of said members to be simultaneously withdrawn.

2. In a molder's flask, a cope provided with four separate, but coöperating, spring-controlled sand retaining members, located, respectively, on the four sides thereof, and mounted to move in right lines, and actuating means for withdrawing two of said members and thereby causing all of said members to be simultaneously withdrawn.

3. In a molder's flask, a cope provided with four separate sand retaining members, located, respectively, on the four sides thereof, said members having coöperative engagement at their ends, and actuating means for simultaneously withdrawing two opposite members whereby the remaining two members will be simultaneously withdrawn therewith.

4. In a molder's flask, a cope provided with sand retaining members, located, respectively, on the four sides thereof, and mounted to move in right lines, and means for simultaneously withdrawing all of said members.

5. In a molder's flask, a cope provided with spring-controlled sand retaining members, located, respectively, on the four sides thereof, and mounted to move in right lines, and means for simultaneously withdrawing all of said members.

6. In a molder's flask, a cope provided with separate spring-controlled, coöperating sand-retaining members on the four sides thereof, mounted to move in right lines and actuating means for simultaneously withdrawing all of said members.

7. In a molder's flask, a cope provided with sand-retaining members on the four sides thereof, means for simultaneously withdrawing all of said members, and means for automatically returning all of said members to normal position.

8. In a molder's flask, a cope having sand-retaining plates slidably mounted on the bottom at the four sides of the cope, said plates having inclined engaging surfaces, means mounted on the cope for actuating two corresponding plates to move them outward, and springs also mounted on the cope and engaging the plates for normally pressing them inward.

9. In a molder's flask, a cope having sand-retaining plates slidably mounted on the bottom at the four sides of the cope, and having inclined engaging surfaces, rods mounted in bearings on two opposite sides of the cope and provided with fingers engaging the sand-retaining plates of such sides, said arms being bent at right angles and extended to the center of the adjacent ends of the cope, a connection for such ends, and springs engaging the sand-retaining plates of the cope and normally pressing them inward, the combination operating as described.

10. In a molder's flask, a cope having sand-retaining plates slidably mounted on the bottom at the four sides of the cope and having inclined engaging surfaces, rods

mounted in bearings on two opposite sides of the cope and provided with fingers engaging the sand-retaining plates of such sides, said arms being bent at right angles and extended to the center of the adjacent ends, press-blocks loosely receiving said ends, and springs engaging the sand-retaining plates and normally pressing them inward, the combination operating as described.

11. In a molder's flask, a cope having spring-pressed, sand-retaining plates located on the bottom at the four sides of the cope, said plates having at their ends pins working in bearings on said cope, whereby said plates are mounted to move in right lines thereon, and means for simultaneously withdrawing said plates.

In testimony whereof, I have hereunto set my hand in presence of two subscribing witnesses.

ROYER S. BUCH.

Witnesses:

WM. H. BAINES,
H. K. OBER.