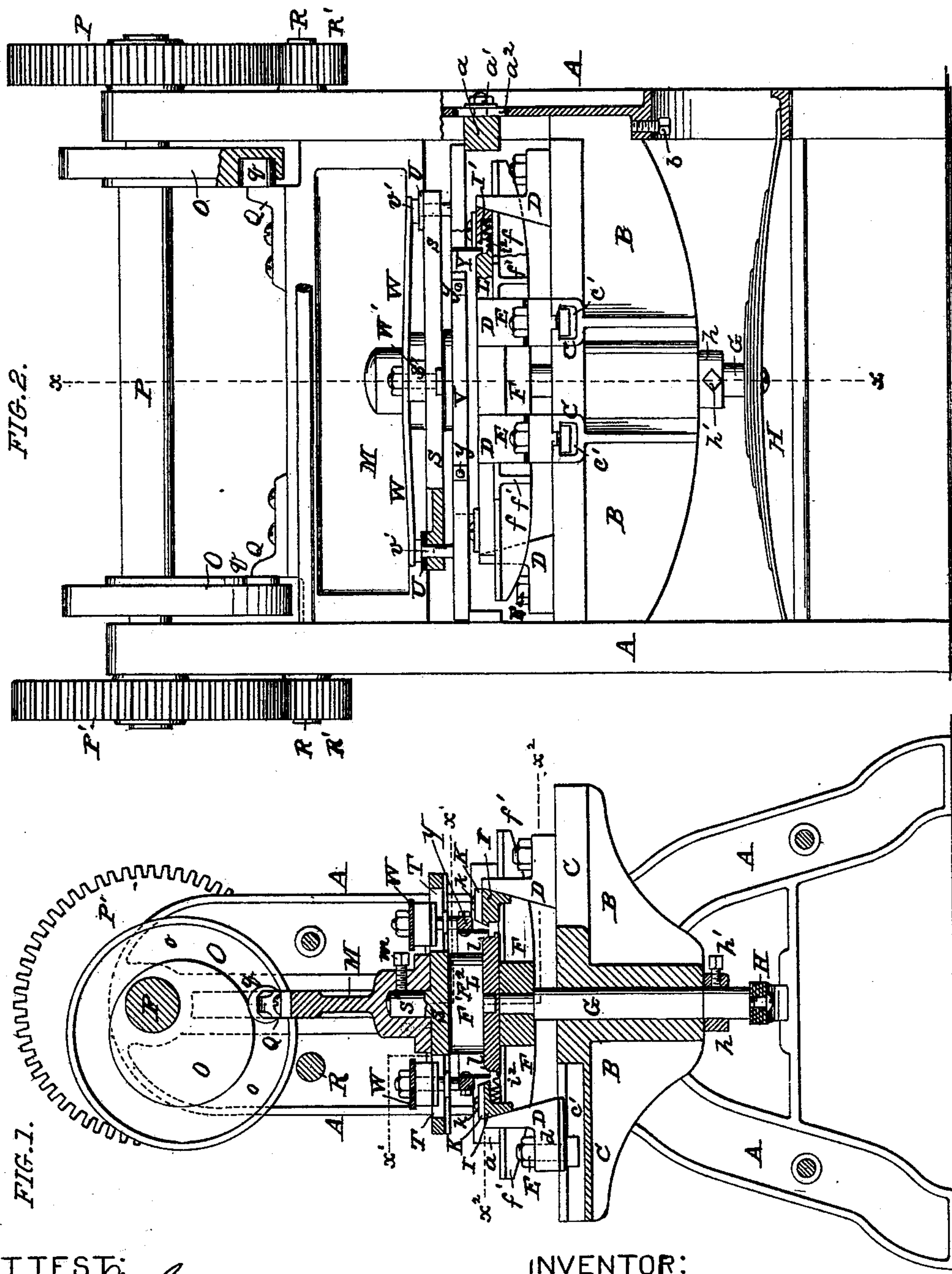


R. J. STIRRAT.
Machine for Wiring Pans.

No. 219,779.

Patented Sept. 16, 1879.



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By *Knight Bros*
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FIG. 5.

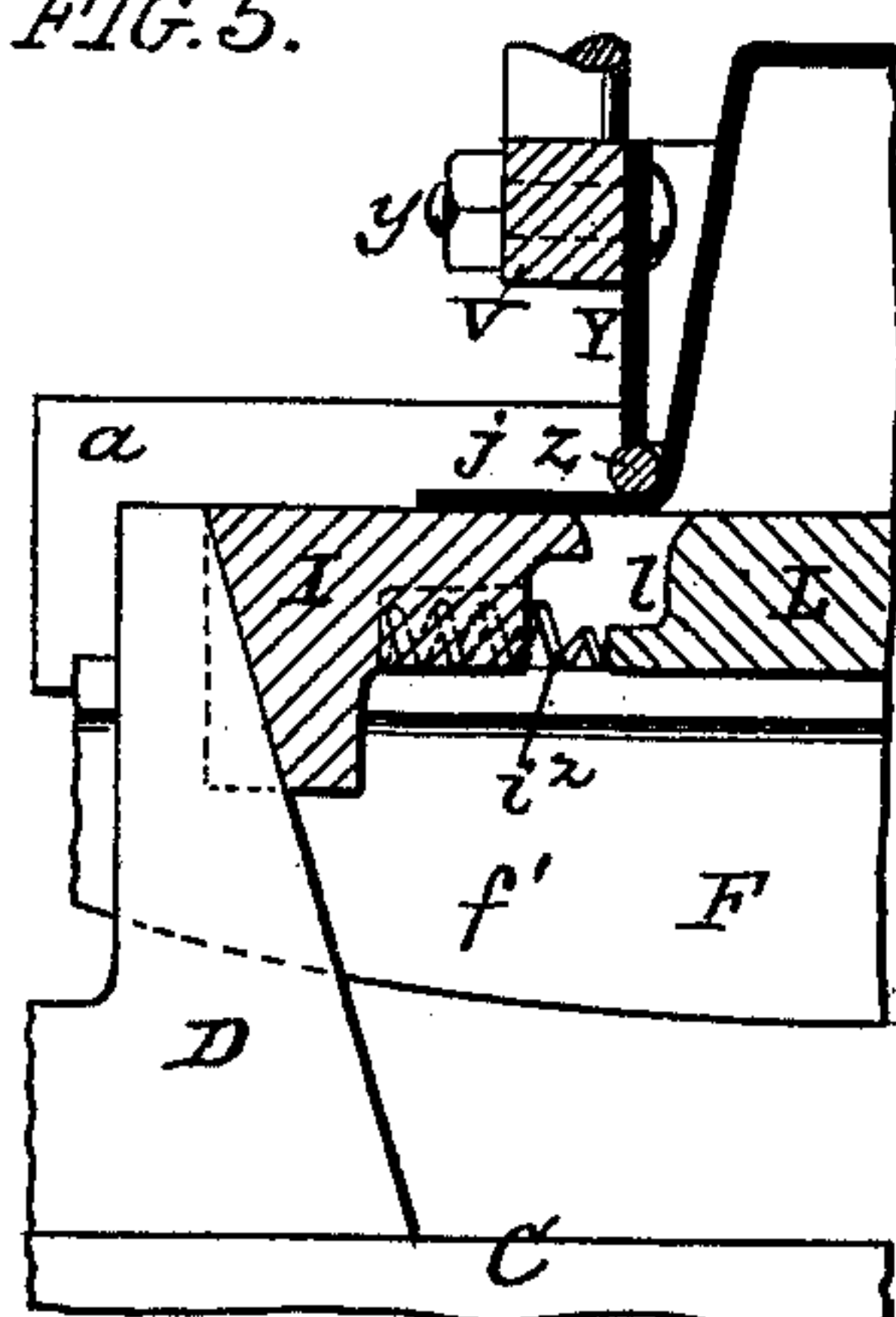


FIG. 6.

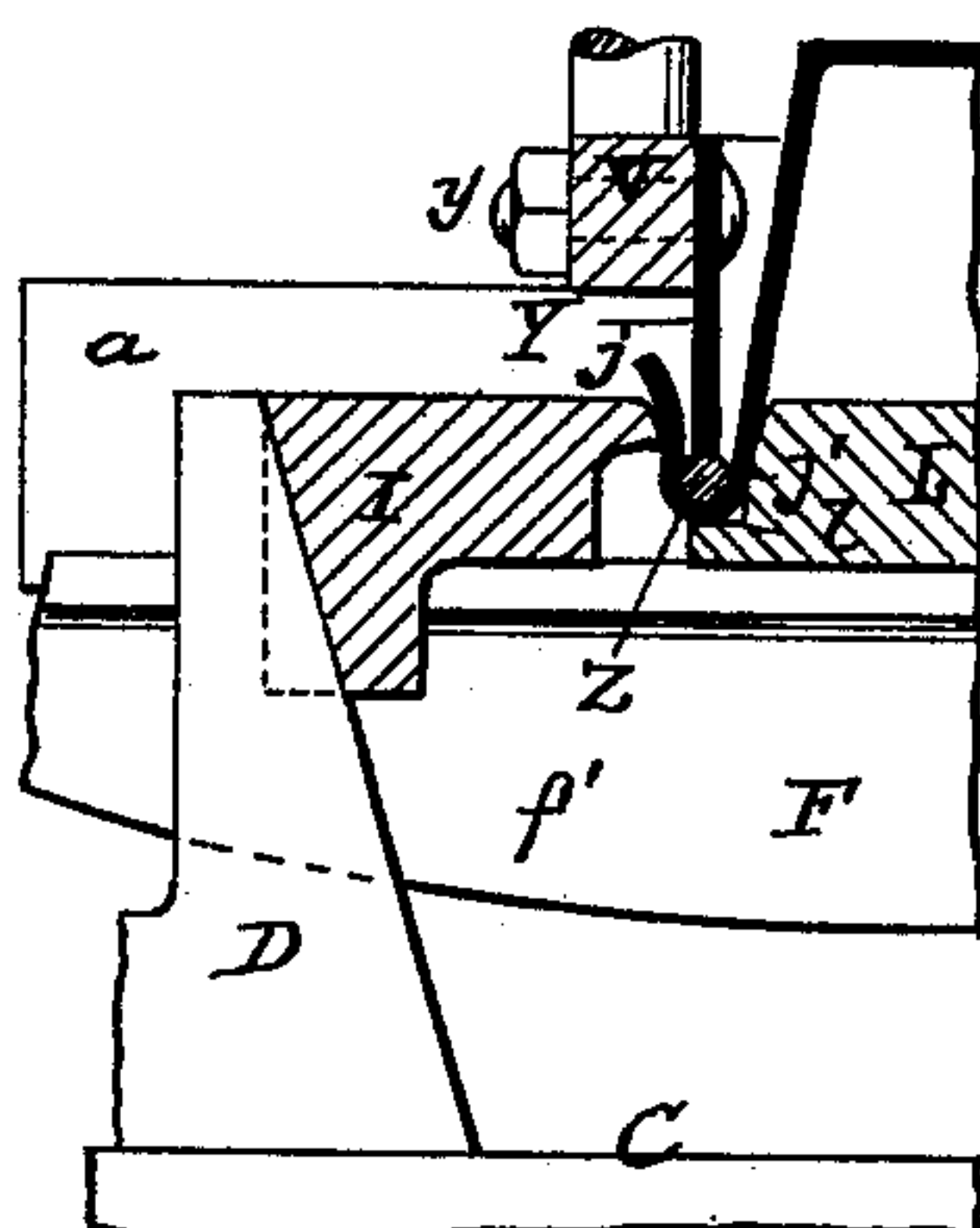


FIG. 7.

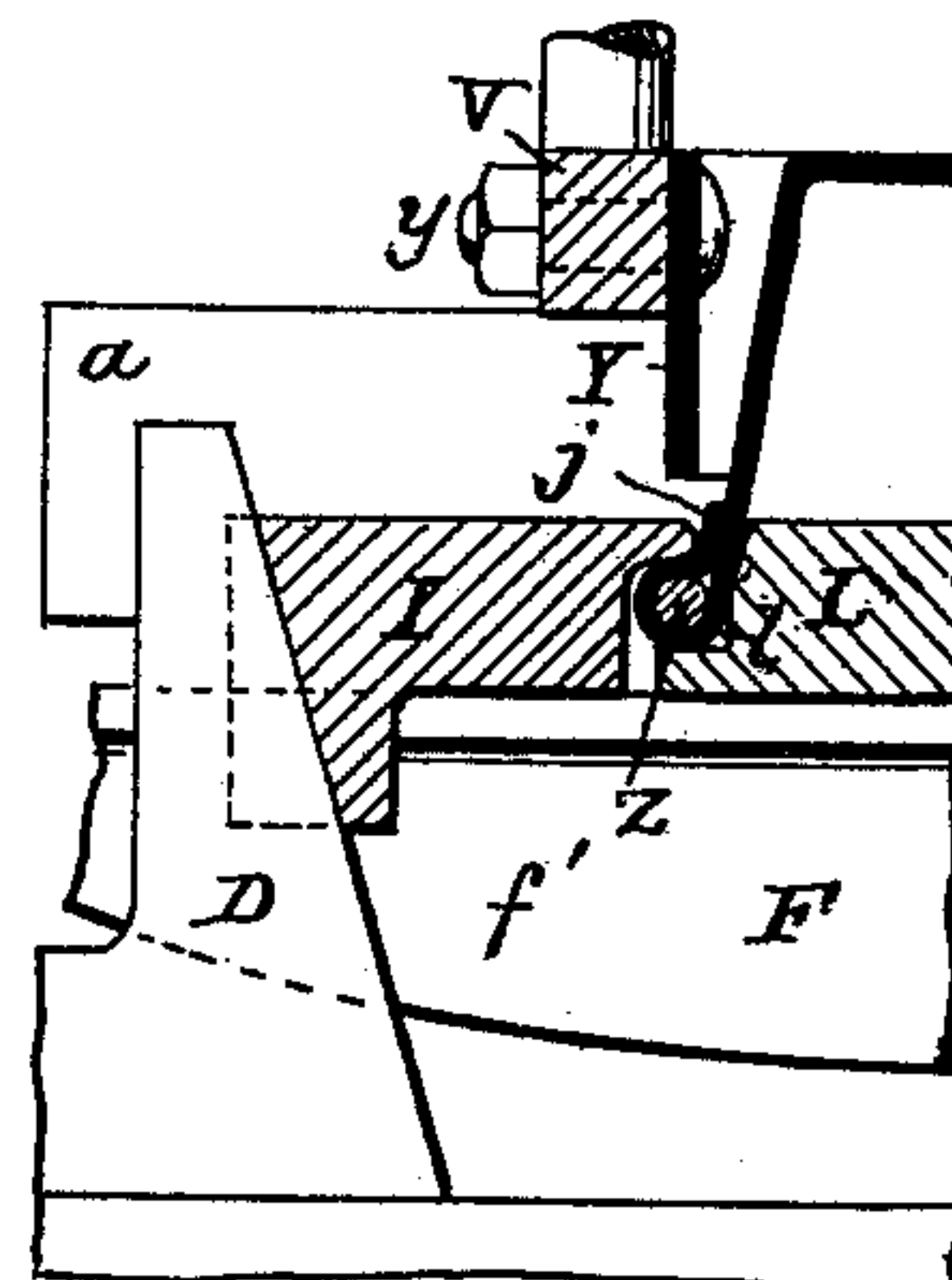


FIG. 3.

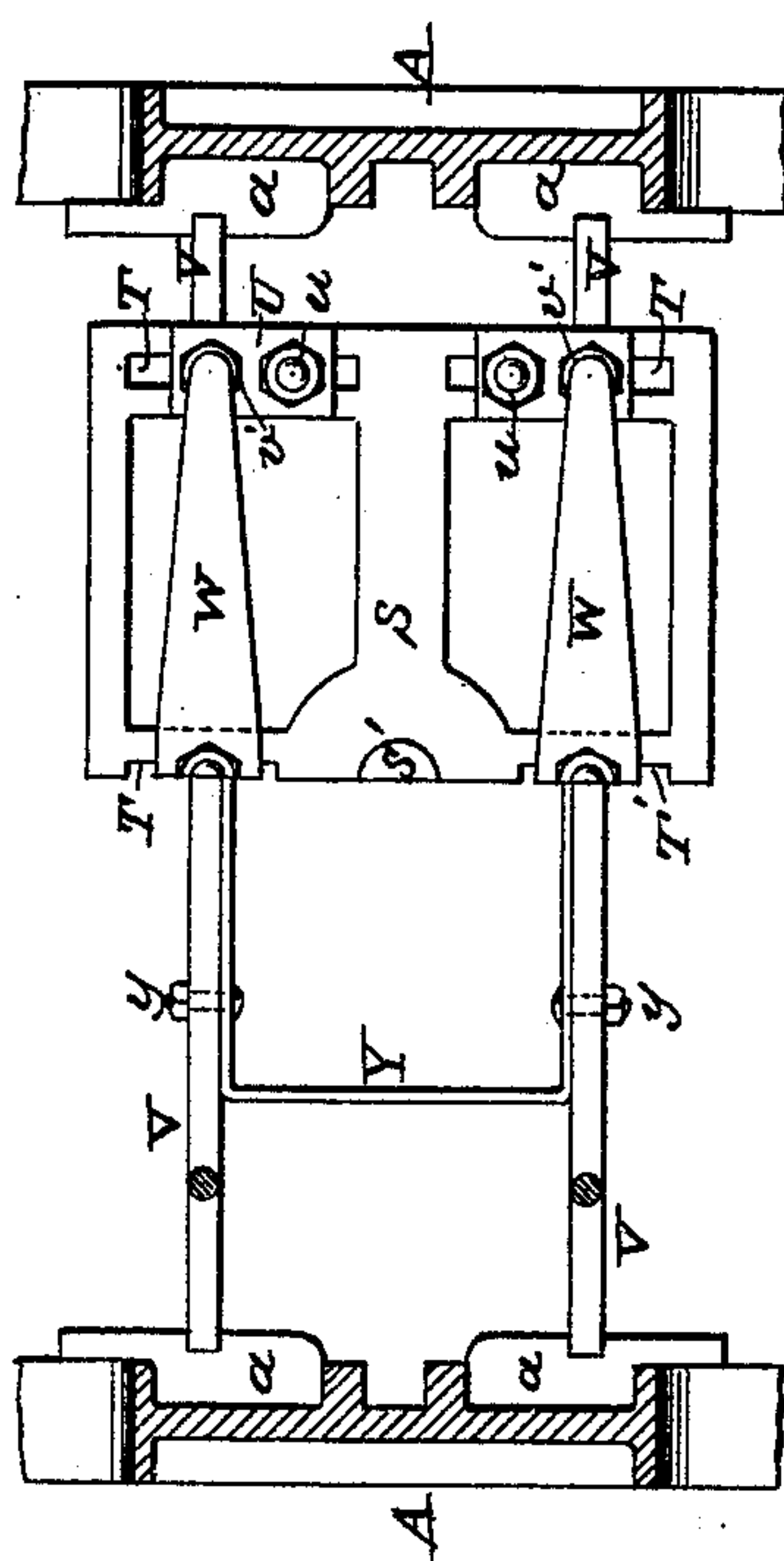
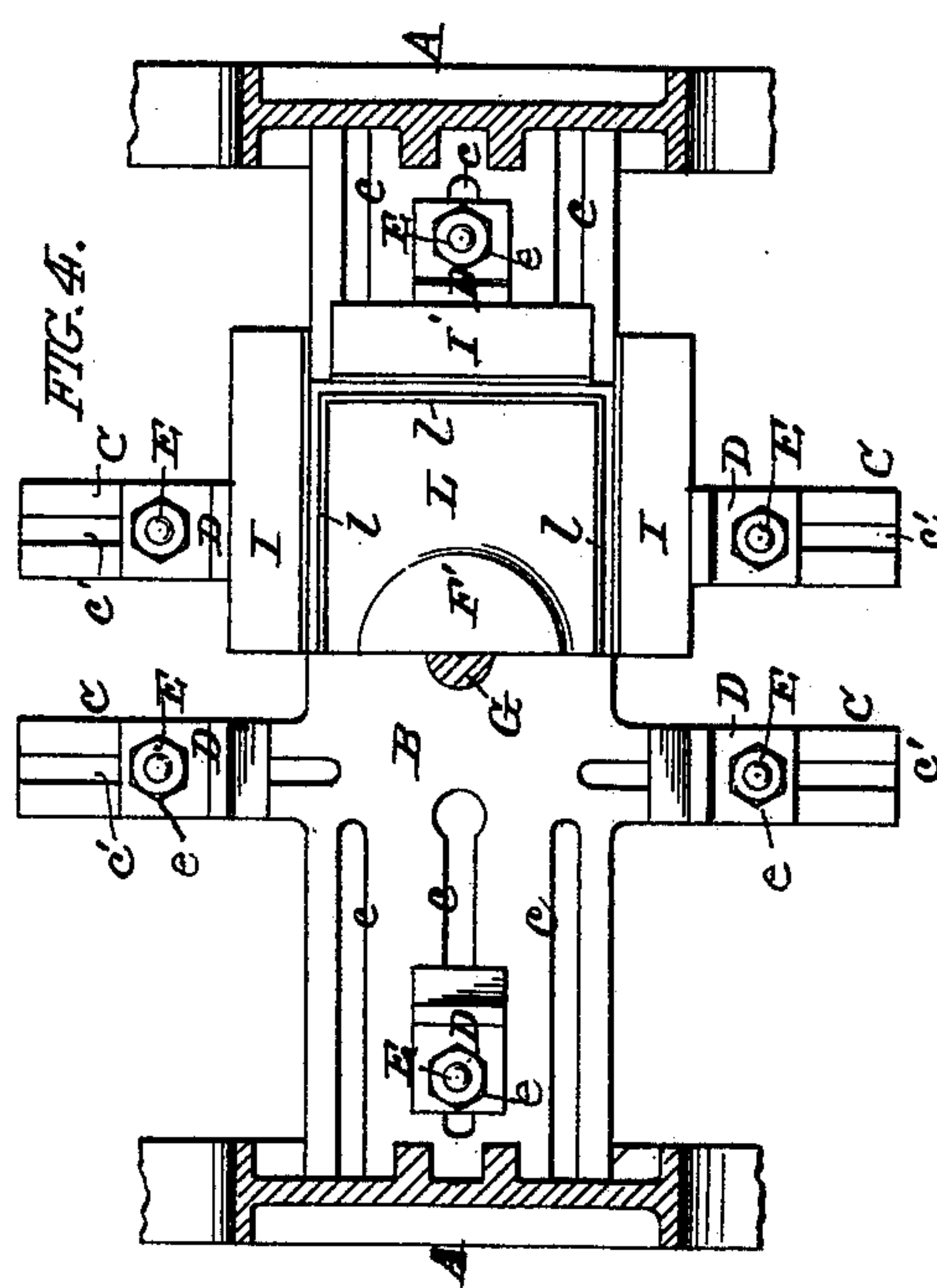


FIG. 4.



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ROBERT J. STIRRAT, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN MACHINES FOR WIRING PANS.

Specification forming part of Letters Patent No. 219,779, dated September 16, 1879; application filed July 26, 1879.

To all whom it may concern:

Be it known that I, ROBERT J. STIRRAT, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Machines for Wiring Pans, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My improvement relates to a machine more especially intended for fixing the wire in the edge of sheet-metal pans, a single machine being constructed for the wiring of pans of different dimensions; and my invention consists in the fixed table-supporting adjustable cam-blocks acting on die-bars, that operate in conjunction with a follower-frame pressing upon the wire, and a removable block supporting the pan interiorly to bend the edge of the pan around the wire. The follower-frame is attached to adjustable spring-bars upon a reciprocating head, whose descent forces down the spring-table, carrying the pan, and thus actuates the parts operating directly on the pan in wiring. The descent of the follower-frame is arrested at the proper time to free the wire from its pressure and allow the edge to be folded around it.

Figure 1 is a sectional elevation at xx , Fig. 2. Fig. 2 is a side elevation, with parts in section. Fig. 3 is a horizontal section at $x^1 x^1$. Fig. 4 is a horizontal section at $x^2 x^2$. Figs. 5, 6, and 7 are cross-sections of the dies in their various positions.

The main frame of the machine is shown at A A. This frame may be formed in any suitable manner. The two end parts of the frame are firmly connected by a fixed table, B, adjustable in vertical position by screws b , on which it rests, having longitudinal and transverse T-grooves c and c' , respectively, for the adjustable attachment of the incline-faced cam-blocks D, which force inward the dies or folding or die bars by which the edges of the pan are folded or closed over the wire.

The blocks D are made with ribs d fitting the narrower (outer) parts of the grooves c c' , and are fixed in position by screw-bolts E, whose heads occupy the inner (and wider) parts of the grooves c c' . e are the set-nuts upon the bolts E.

The transverse grooves c' are made in arms C extending from the table B.

There may be one or more of the cam-blocks D for each side and end of the pan. I prefer to use two for each.

F is a table, supported on the top of a vertical bar, G, working in a bearing-socket extending through the center of the fixed table B. The lower end of the bar G rests on a spring, H, which spring thus supports the table F. The upward movement of the table F is limited by a collar, h , upon the bar H. Said collar is secured in position on the bar by set-screw h' .

The table F has horizontal arms f and f' , extending, respectively, from its sides and ends. The arms f form alike supports and guides for the dies or folding-bars I, which support the side flanges, j , of the pan J when in position for wiring, and whose inner edges are formed to fold the flange j around the wire by an inward horizontal movement of the die-bar I.

At the ends of the bars I are blocks K, adjustably connected to the bars by means of screws k , passing through slots in blocks, and which (blocks) form guides to insure the proper position of the wire in a sidewise direction.

The bars are held down upon the arms f , and retained from endwise movement by lips which take beneath the edges of the arms.

I' are die-bars similar to I, and which act to fold in the ends j of the pan upon the wire. The bars I' are about equal in length to the ends of the pan, and the ends of bars I lap past them, as shown, (see Fig. 4,) the bars I' being changeable to suit the width of the pan, but the bars I being suited for all lengths of pan.

L is a plate attached to the top of the table F, and having all around its upper periphery a rabbet-groove, l , to receive the corner j of the top of the pan J when it is inverted upon the table, the plate being of a size to fit the interior of the pan at top.

The die-bars I and I' carry springs i^2 upon their inner edges, whose inner ends bear against the edge of the plate L, to hold the die-bars at a small distance from the plate, except when said bars are forced in by the cam-blocks D.

M is a vertically-reciprocating head, working in guides of the frame A, and actuated by means of cams O upon a shaft, P, carrying cog-wheels P and P', engaged by pinions R' upon the driving-shaft R.

The cams O have cam-grooves *o*, which receive the ends of the bracket-arms Q, extending from the head M. The arms Q carry upon their ends friction-rollers *q*, which fit neatly the cam-grooves *o*.

S is a plate attached to the under side of the head M. The means of attachment shown consists of a neck or projection, *S'*, which extends up into a central socket in the head, and is held therein by a set-screw, *m*.

The plate S has at each end two transverse slots, T, to receive adjustable brackets U, fixed to any position in the slot by a screw-bolt, *u*.

To the bracket U are secured the ends of longitudinal bars V by means of a pin, *v*, which passes through the bracket, so as to work vertically therein, and whose top has bearing against the end of the spring W, which tends to force the bar V down. The bearing of the pin against the spring is made adjustable by means of a bearing-nut, *v'*, which screws upon the upper end of the pin and forms the medium of bearing against the spring.

The springs W are made adjustable on the plate S (to suit the position of pins *v*) by being fixed to blocks *W'* adjustable in transverse slots T in the plate S. The screw-bolts W, by which the springs are attached to the blocks, pass through the slots T, and give means for fixing the springs in the proper position.

Y is a rectangular follower-frame, formed of a flat bar, and secured by bolts *y* to the bars V. The bars V are made adjustable laterally, as described, so as to accommodate them to frames Y of various widths.

In place of the frame Y, consisting of a single rectangular bar, I may use a number of blades.

The purpose of the follower-frame Y is to hold down the wire Z in position while the flange *j* is closing upon it, so that the frame must be similar in length and breadth to the wire-frame V.

It will be seen that when the flange or edge *j* reaches a certain point in closing over the wire that the pressure of the follower-frame will be no longer required, and that said follower would be in the way of the further closing of the edge over the wire. (See Fig. 6.) When the parts reach this position the downward movement of the bars V and follower-frame are arrested by the ends *v'* of the bars coming in contact with blocks *a*, adjustably fixed to the frame A by bolts *a'* passing through vertical slots *a''* of the frame.

F is a block, equal in depth to the pan J, and placed on the plate L upon the table F, to cause the downward movement of the head M and plate S to be communicated to the table F. This block is fixed in position by a stud, *F''*, entering a hole in the plate L.

The operation of the machine is as follows: The pan, ready for wiring, is placed in an inverted position upon the plate L, with the wire Z in position, and the edge *j* of metal

that is to be bent around the outside and over the wire lying flat upon the die-bars I and I'. (See Fig. 5, for the described position of these parts.) The descent of the head M and the follower-frame Y brings the parts of the machine into the position indicated in Fig. 5, with the follower-frame in contact with the wire Z. As the follower Y continues to descend it forces the wire and edge of the pan into the position shown in Fig. 6, the edge *j* being bent around the outside of the wire, and the parts of the machine in position shown in Figs. 1 and 2. At this time the ends of the bars V come in contact with the stop-blocks *a*, and the descent of the follower Y is arrested. The plate S, coming in contact with the bottom of the pan, and thus being in contact with the block *F'*, the continued descent of the head M, &c., causes the table F to descend, and the cam-blocks D force the die-bars I and I' inward into the position indicated in Fig. 7, the rib *i* closing the edge of the sheet metal completely around the wire, and completing the operation. The continued rotations of the cams O carry up the head M and parts attached thereto, and as they rise the spring H lifts the table F, and the springs *i''* move out the die-bars I and I'. When the head M and other parts are sufficiently lifted another pan is placed in position for wiring.

It will be seen that if the pan should not be placed in exact position that it would be moved into position by the descending follower Y.

I claim as my invention—

1. The combination, in a machine for wiring pans, of the follower-frame or blades Y, rabbet-grooved plate L, die-bars I and I', and cam-blocks D.

2. The combination, with the plate L and bars I or I', of the distance-springs *i''*, for the purpose set forth.

3. The frame Y, or equivalent blades, attached to adjustable spring-bars V, in combination with the stop-blocks *a*, substantially as set forth.

4. The combination of fixed table B, supporting adjustable cam-blocks D, spring-table F, supporting die-bars I and I', and grooved plate L, substantially as set forth.

5. In combination with the table B, spring-table F, and reciprocating head and plate M S, the pressure-block *F'*, for the purpose set forth.

6. The combination of the plate S, supported on reciprocating head M, and carrying horizontally adjustable spring-bars V, the spring-table F, with removable plate L and adjustable die-bars I I', and fixed table B, with adjustable cam-blocks D, substantially as and for the purpose set forth.

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Witnesses:

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C. W. H. BROWN.