

No. 814,450.

PATENTED MAR. 6, 1906.

E. G. JOHANSON.
SEWING MACHINE CABINET.
APPLICATION FILED SEPT. 19, 1904.

2 SHEETS--SHEET 2.

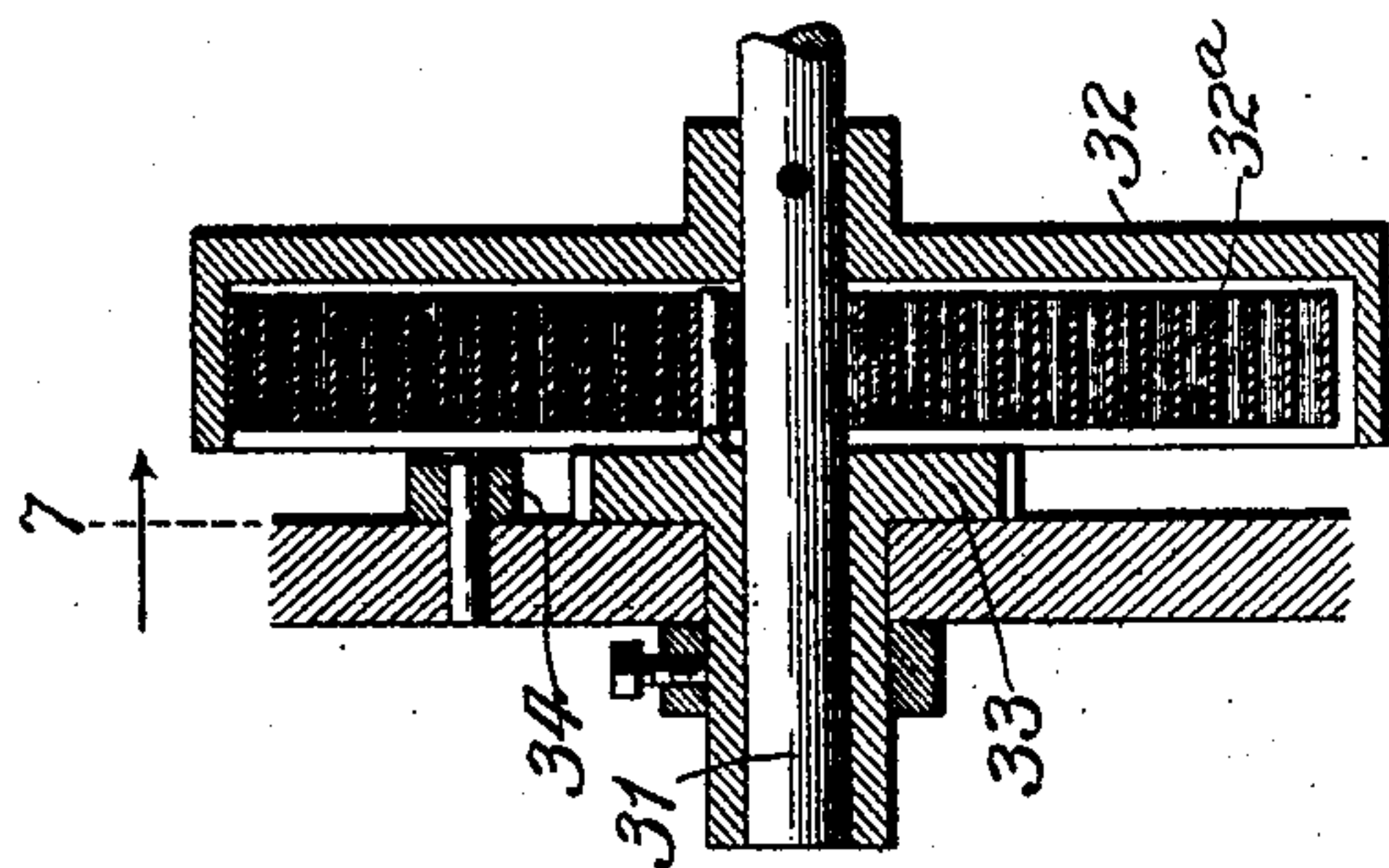


Fig. 8.

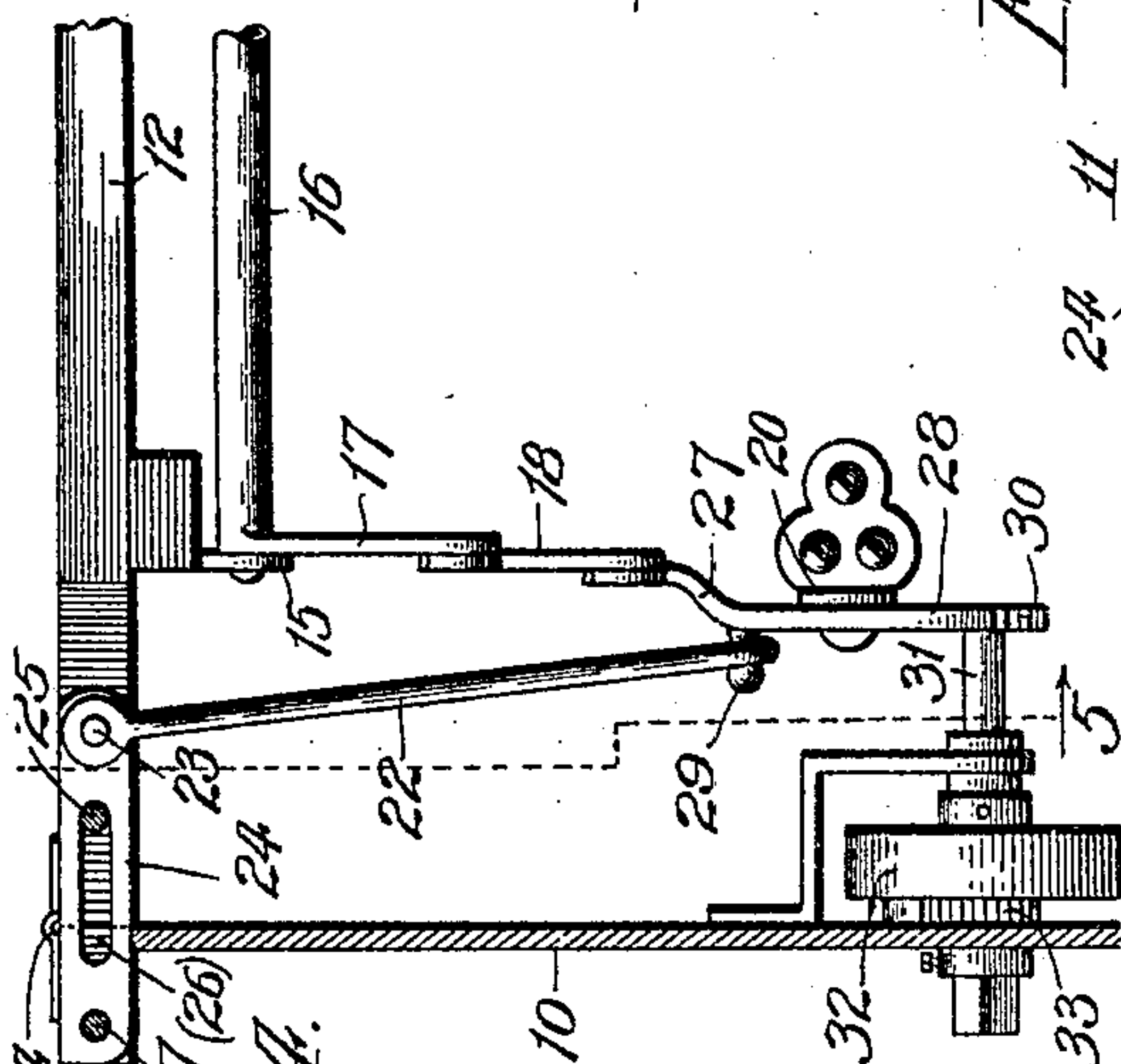


Fig. 4.

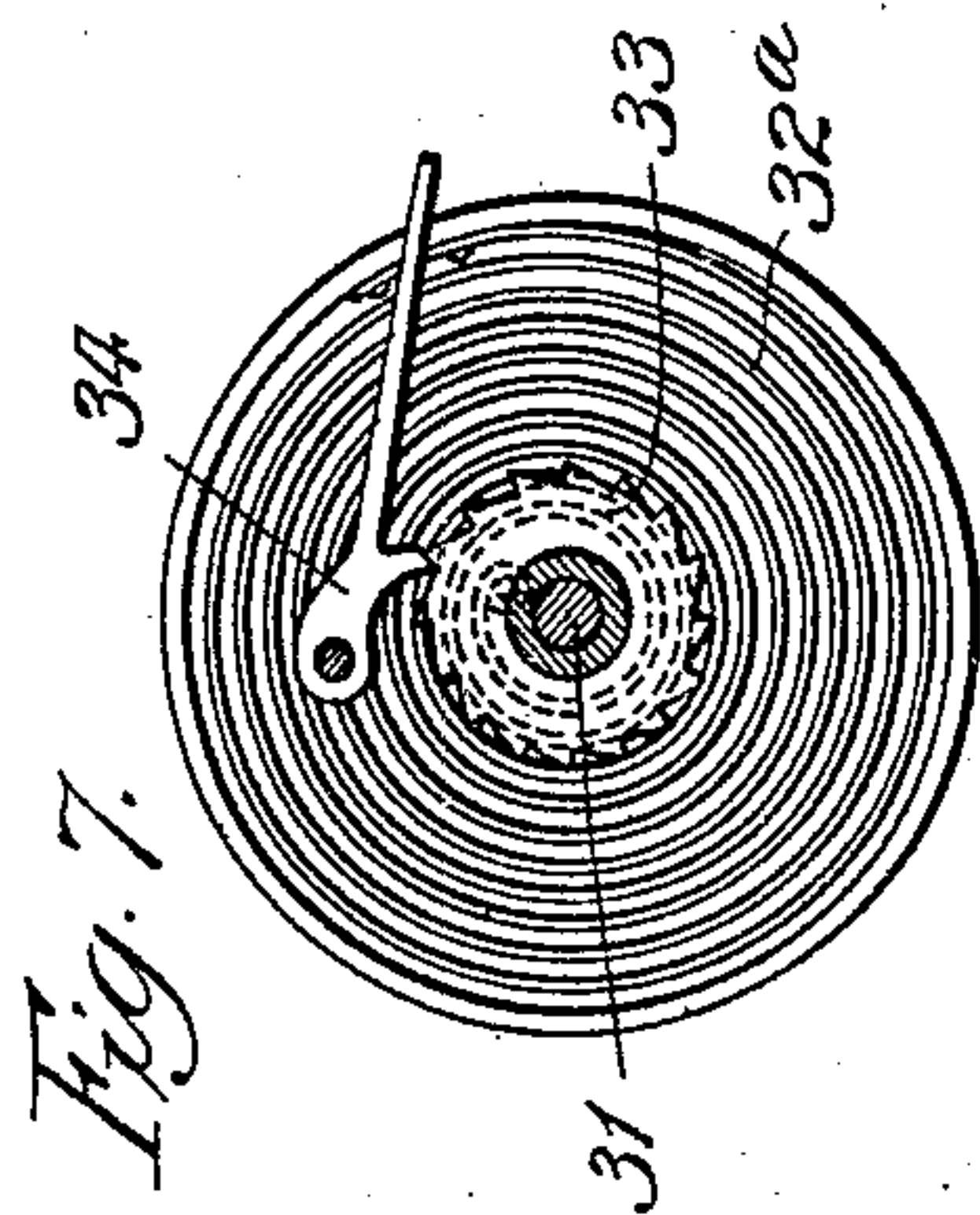


Fig. 7.

Witnesses:

F. W. H. Clay
Archworth Martin

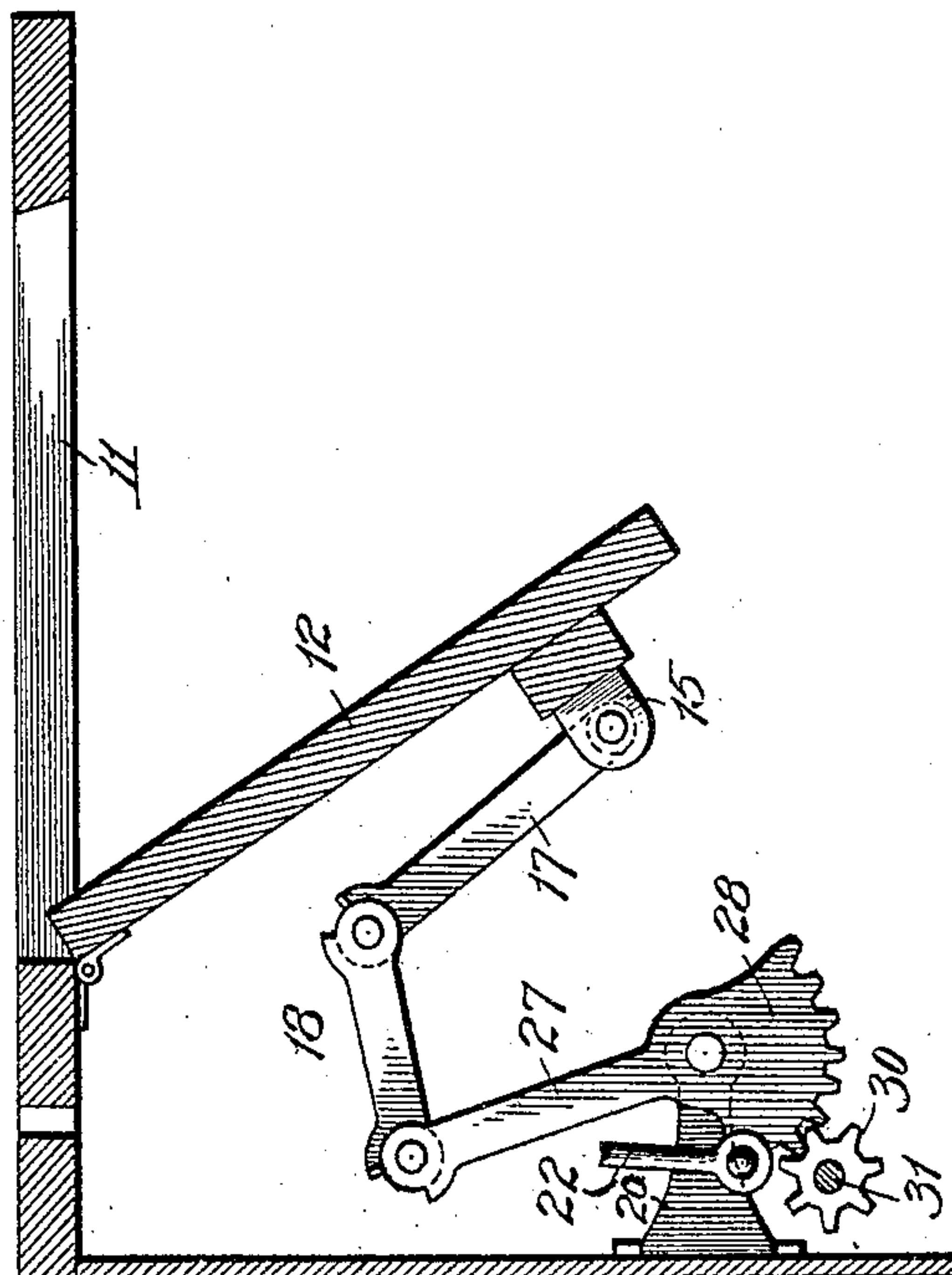
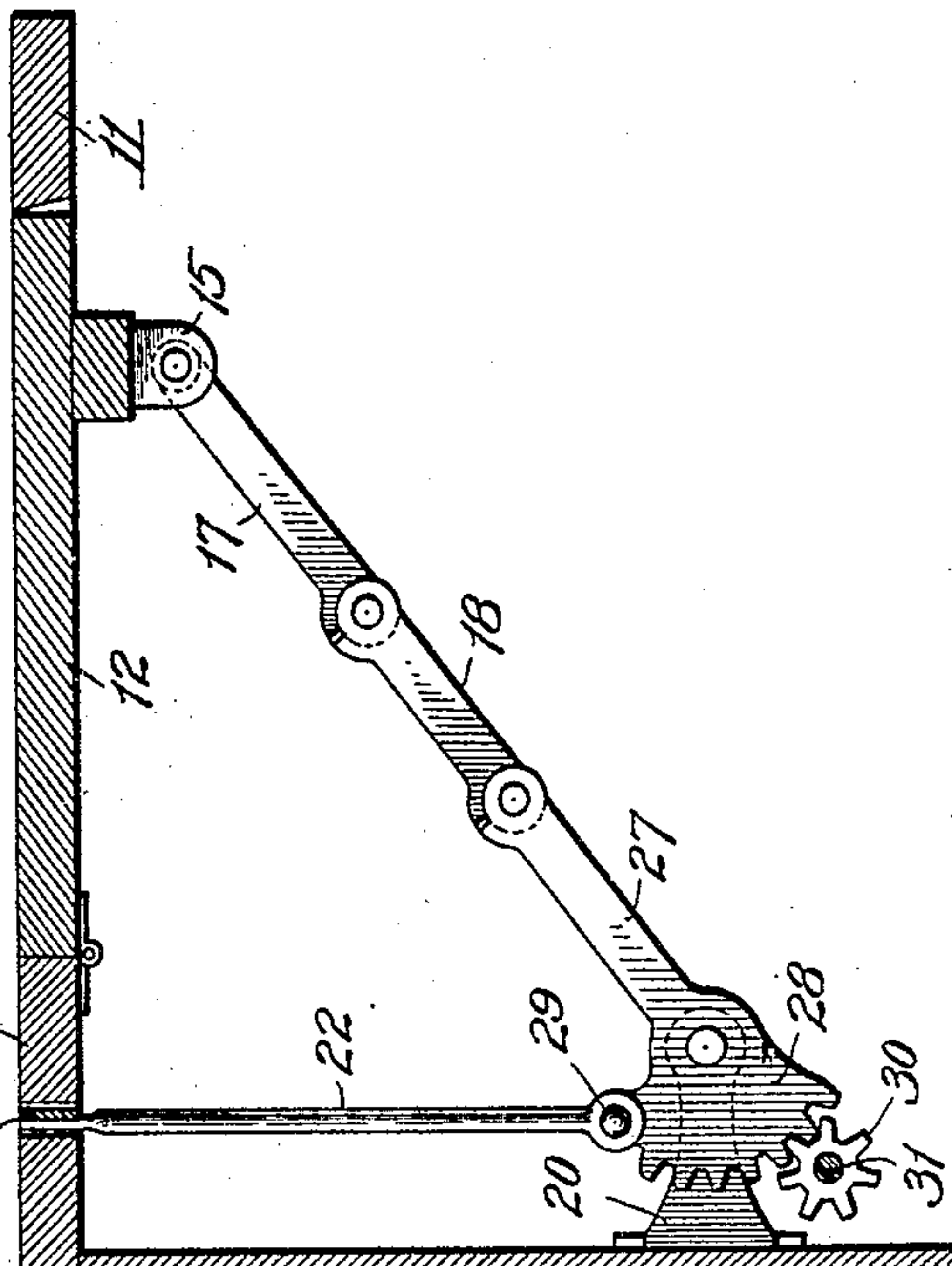


Fig. 5.

Inventor:

Emil G. Johanson
By Paul Lynnestvedt
Att'y.

UNITED STATES PATENT OFFICE.

EMIL G. JOHANSON, OF ROCKFORD, ILLINOIS, ASSIGNOR TO JOHN MARTENSON AND FRANK JOHNSON, OF CHICAGO, ILLINOIS.

SEWING-MACHINE CABINET.

No. 814,450.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed September 19, 1904. Serial No. 225,008.

To all whom it may concern:

Be it known that I, EMIL G. JOHANSON, a citizen of the United States, residing at Rockford, in the State of Illinois, have invented certain new and useful Improvements in Sewing-Machine Cabinets, of which the following is a specification.

My invention relates to cabinets or tables for carrying machines, especially such as sewing machines type-writers and the like, and particularly to such cabinets as have a supporting leaf for the machine designed to drop inside the cabinet and be closed in order to remove the machine from dust and out of the way when not in use. The objects of the invention are, primarily, to provide a folding leaf to carry the machine with a superior means for removing the machine from operative position and at the same time closing the opening in the table or cabinet, and to provide safety appliances for holding the machine in operative position and more certain mechanism for moving the various parts; and other advantages which will hereinafter appear. In carrying out the invention I prefer the mechanism illustrated in the accompanying drawings, wherein—

Figure 1 is a partial sectional view of the table or cabinet showing the supporting leaf and the operating mechanism in side elevation and the fly leaf of the table in section;

Figure 2 is a vertical section through the machine supporting leaf, the section being taken at right angles to the plane of the section of Figure 1.

Figure 3 is a section similar to that of Figure 2, showing the supporting leaf thrust upwardly into operative position flush with the table top;

Figure 4 is a partial section through the cabinet and a side elevation of the operative mechanism, similar to the view of Figure 1, but showing a modification of my devices in which a spring is used to control the motion of the supporting links;

Figures 5 and 6 are vertical sections taken along the line (5) in Figure 4 showing the operating links in side elevation, Figure 5 showing the supporting leaf down, and Figure 6 showing the leaf in place in the top of the cabinet.

Figures 7 and 8 are respectively a side ele-

vation, and a vertical section of the coil spring used for actuating or controlling the links.

Referring first to Figures 1, 2 and 3 especially, it will be seen that the cabinet 10 is provided with a fixed top 11 which has a hinged supporting leaf or section, 12, which is to fold inward and which carries the machine. At the side of the stationary top of the table 11 I have provided a hinged fly leaf 13 which folds upward on hinges 14 and covers the opening in the top of the table when leaf 12 is inside the cabinet. The leaf 12 is hinged at one side, the hinges being placed with their axes at right-angles to the hinge axis of the fly leaf 13. Leaf 12 is provided with depending studs 15 carrying a horizontal shaft 16 having two arms 17 and these latter are connected, by links 18, to bell crank levers 19, which are pivoted upon fixed studs 20 and by means of a pin 21 engages an operating link 22. It will be seen that the form of the joint between the link 18 and the two levers on its sides is what is known as a knee joint and is capable of bending only in one direction, and it will be understood that the weight of the parts will hold the three parts 17, 18, and 19 in direct alinement when the links are folded out in the position shown in Figure 3.

From Figure 1 especially it will be seen that the folding or fly leaf 13 is provided near the edge under the hinge 14 with a slot in which is carried a link 24 pivoted at one end by pin 27 and riding over pin 25 by means of an open slot 26 at the other end and is connected by means of pin 23 directly with the thrust link 22 for operating the levers heretofore described. Supposing the machine supporting leaf 12 to be upward in place in top of the table, it will be seen that upon lifting and folding over the fly leaf 13 upon its hinge the link 24 will be actuated to slowly thrust the link 22 by pin 23, this action at first being upon a long leverage which is the distance from the pin 27 to the pin 25, but as the motion proceeds the pin 27 will approach the pin 25 sliding the latter in the slot 26, thereby changing the leverage so as to let down the link 22 and the leaf 12 rapidly. The fly leaf 13 when folded over will cover the opening for accommodation of the leaf 12 in the

top of the table entirely shutting out the dust and dirt from the machine inclosed inside. It will be observed of course that in the reverse operation of raising the leaf 13 from horizontal position covering the opening in the top of the table, the power of the levers increases as the leaf 12 assumes its horizontal position where it is subject to the greatest weight and the greatest thrust necessary in order to straighten out the links 17, 18 and 19, as shown in Figure 3.

In Figures 4 to 8 I have illustrated an attachment which may be used when desired in order to counterbalance the weight of the machine upon the leaf 12. Referring especially to Figures 4 and 5 it will be seen that I have connected to the links 17 and 18 an arm 27 which is pivoted upon the bracket as before but is provided on its far side with a segmental gear 28 which is attached by means of pin 29 to the thrust rod 22 and which meshes with a small pinion 30. From Figures 4, 7, and 8 especially it will be seen that this pinion 30 is carried upon a shaft 31 which is mounted upon a side of the cabinet and is provided with a coil spring 32^a inclosed in the casing 32, which may be wound from the outside and retained in any desired position by means of the ratchet 33 and dog 34 as shown in Figure 7.

It will be understood that when the rod 22 is thrust downward in order to break the joint at the two ends of the link 18, the weight of the machine upon the leaf 12 would tend to immediately buckle the links together; this tendency may be resisted by means of the coil spring so as to make the machine descend with an easier motion and insure it against sudden jar in either moving it upward or downward. The apparatus is otherwise as heretofore described.

It will be observed that in this arrangement the top board or fly leaf 13 may be moved upward nearly a quarter of its distance before the machine is very greatly or rapidly lowered, which is an advantage in case the leaf should be accidentally moved while the machine is in operation. The use of the sliding link 20 in its narrow slot makes an efficient means of operating the entire set of links by means of the outside leaf 13 without exposing any of the mechanism on the outside of the cabinet, and it will be observed that when the leaf 13 is turned down the entire table is closed around the machine. While the device will operate the same without the coil spring 32^a I regard this as important because it counterbalances the weight of the machine and makes it easy to open and close the leaf 12 without the exertion of much power. The links 17, 18, and 19 when extended form practically a continuous thrust bar between two abutments and insure a solid support for the machine and

avoid danger of its dropping down without intentionally buckling said links. Other advantages will readily occur to those familiar with the art.

Having thus described my invention and illustrated its use, what I claim as new, and desire to secure by Letters Patent, is the following:

1. The combination with a cabinet having an inwardly folding leaf, of a set of knee jointed links supporting the same, a thrust bar attached thereto for breaking the joints of said folding links, a slotted sliding link positively engaging a pivot pin fixed in the fixed top of the table, and means operated from outside the cabinet to slide the link on the pin and thrust the thrust bar, the sliding link being adapted to change its leverage on its pivot pin as the folding leaf is thrust downward and to exert positive leverage force on the thrust bar in both directions, substantially as described.

2. In a lift and drop sewing machine cabinet, the combination with the machine supporting leaf hinged in an opening in the top, of a set of knee-jointed links pivoted to said cabinet and to the leaf to support the same, a thrust bar pivoted at one end to one of said knee jointed links and at the other end to a sliding and rotating lever, and means operated from outside the cabinet and actuating said lever, to raise the thrust bar, and means whereby the raising of the thrust bar moves the folding knee jointed links downward to a position for supporting the hinged leaf within the opening.

3. In a sewing machine cabinet, an inwardly folding leaf, a set of knee-jointed links normally supporting said leaf, a spring and connected gear for normally holding the knee-jointed links in extended position, and mechanism operated from outside the cabinet for breaking the joints of said knee-jointed supporting links to lower the table.

4. In a cabinet an inwardly folding leaf and means for supporting and moving said leaf, comprising a set of knee-jointed links normally in alinement, a lever and a connected thrust rod for breaking the joints of said links, a supplemental fly leaf and a thrust lever pivoted thereto, said lever being slidably pivoted upon the cabinet, whereby raising the supplemental fly leaf moves the sliding lever and breaks the knee-jointed links to lower the main fly leaf, substantially as described.

5. In a lift and drop sewing machine cabinet, the combination with the machine supporting leaf hinged in an opening in the top, of a set of knee jointed links pivoted to said cabinet and to the leaf to move and support the same, a thrust bar pivoted at one end to one of said knee jointed links and at the other end to a sliding and rotating lever, and means

operated from outside the cabinet and actuating said lever, to thrust the said bar downward, and means whereby the lowering of the thrust bar breaks the knee jointed links from
5 extended position and folds the same upward thus bringing the hinged leaf to a position below the opening.

In testimony whereof I have hereunder signed my name in the presence of the two subscribed witnesses.

EMIL G. JOHANSON.

Witnesses:

JOHN W. PETERSON,
ANDREW ANDERSON.