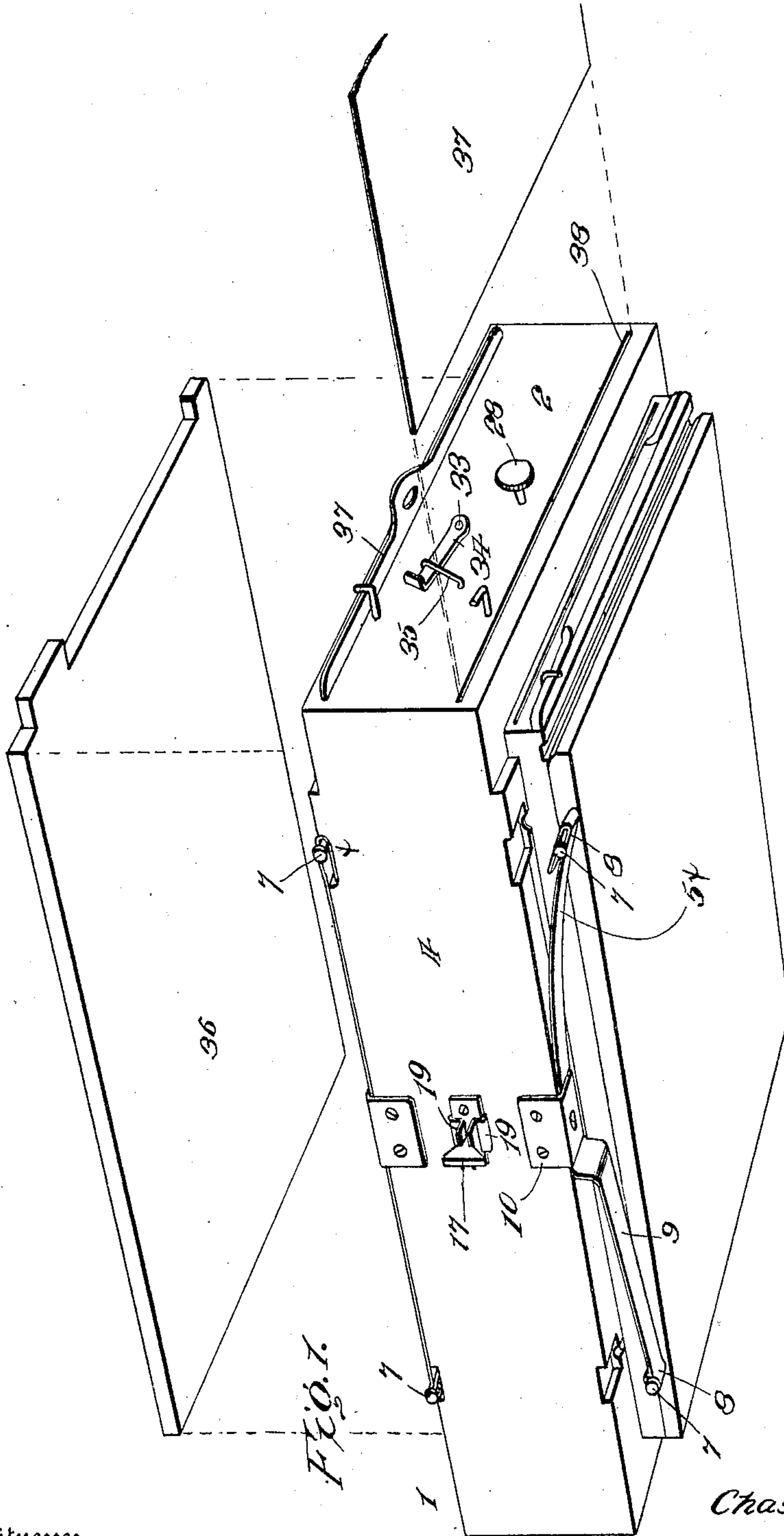


No. 828,669.

PATENTED AUG. 14, 1906.

C. P. KLENCK.
PLATE HOLDER LOADER.
APPLICATION FILED OCT. 27, 1905.

3 SHEETS—SHEET 1.



Witnesses
L. H. Schmidt
H. F. Woodson

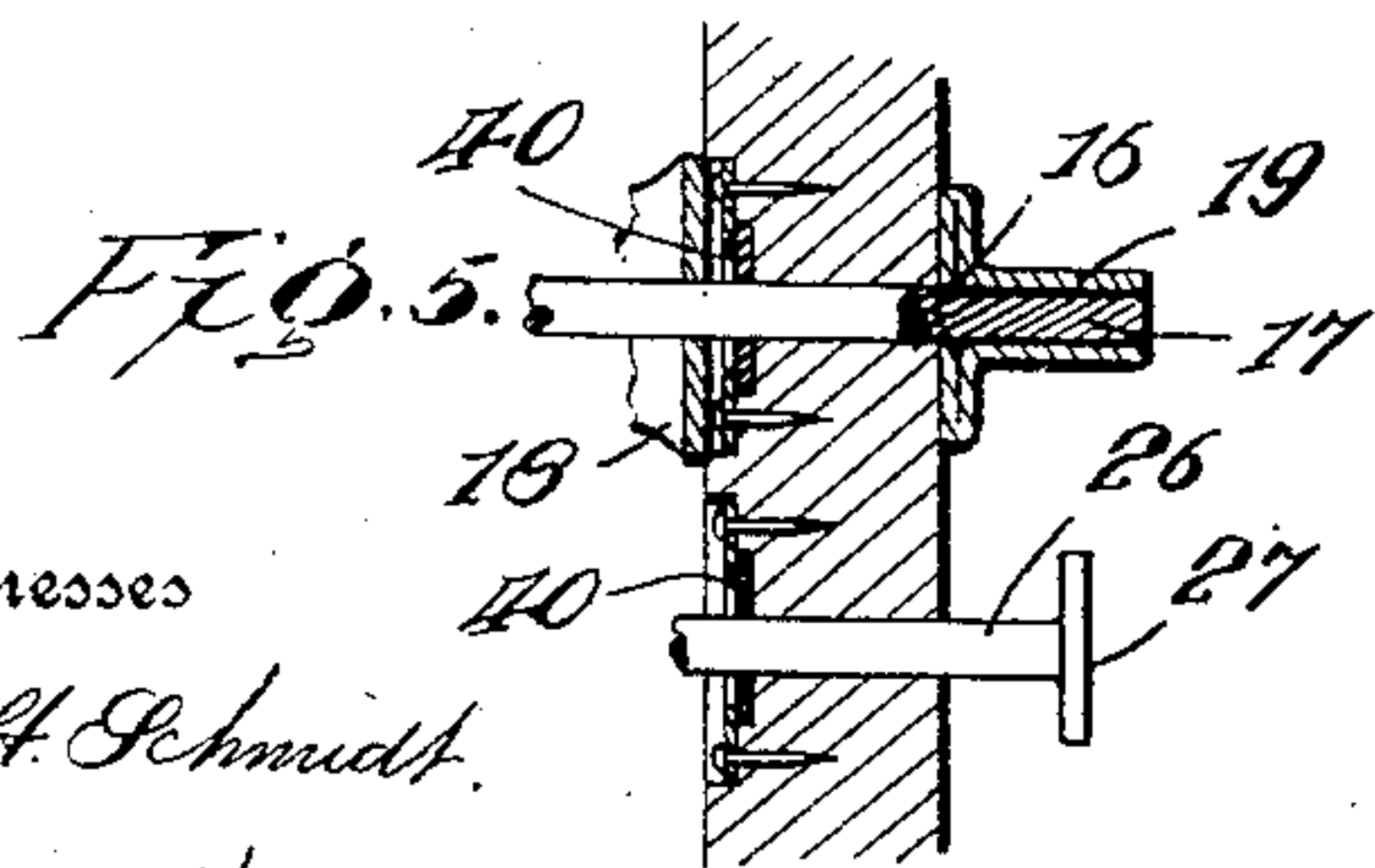
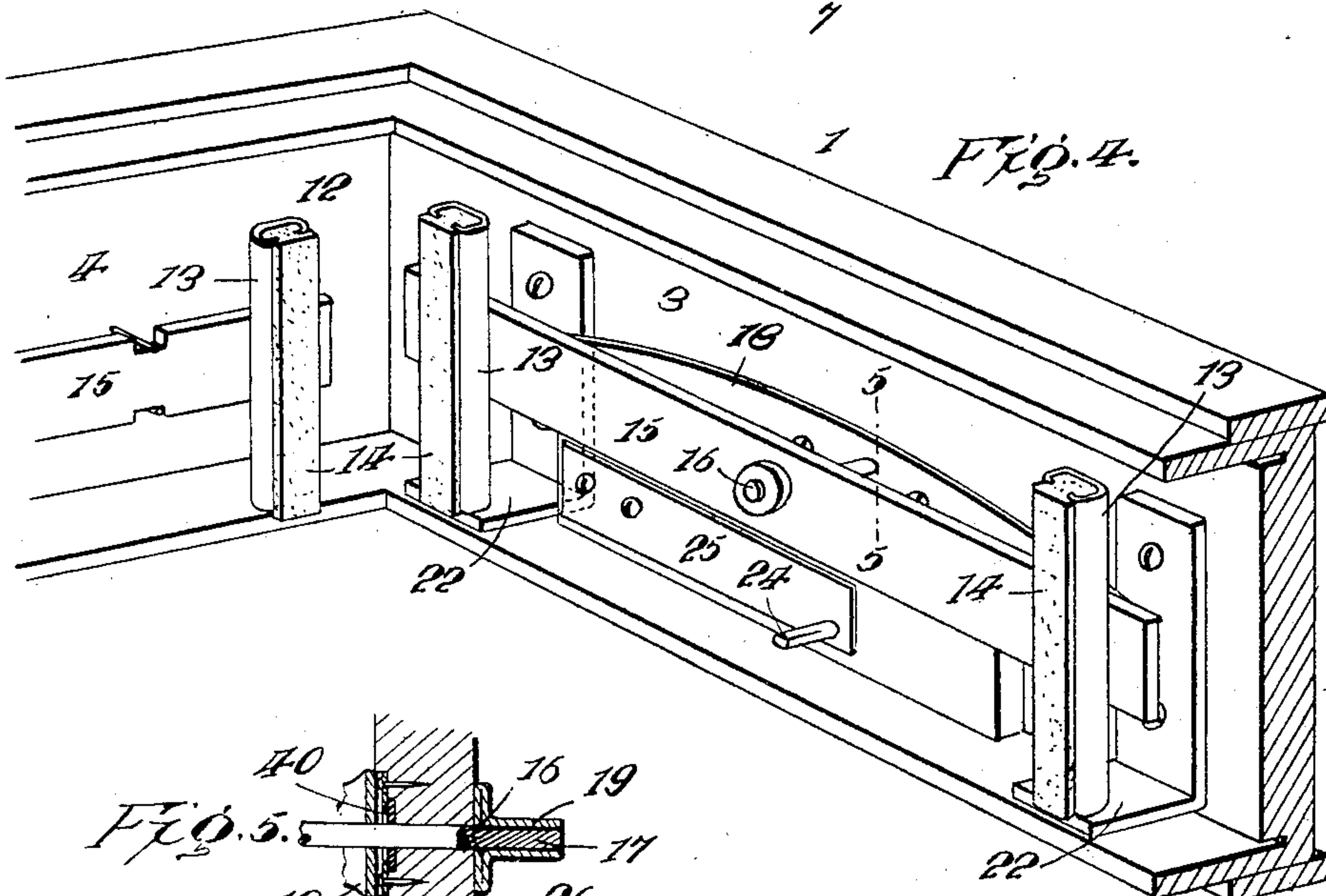
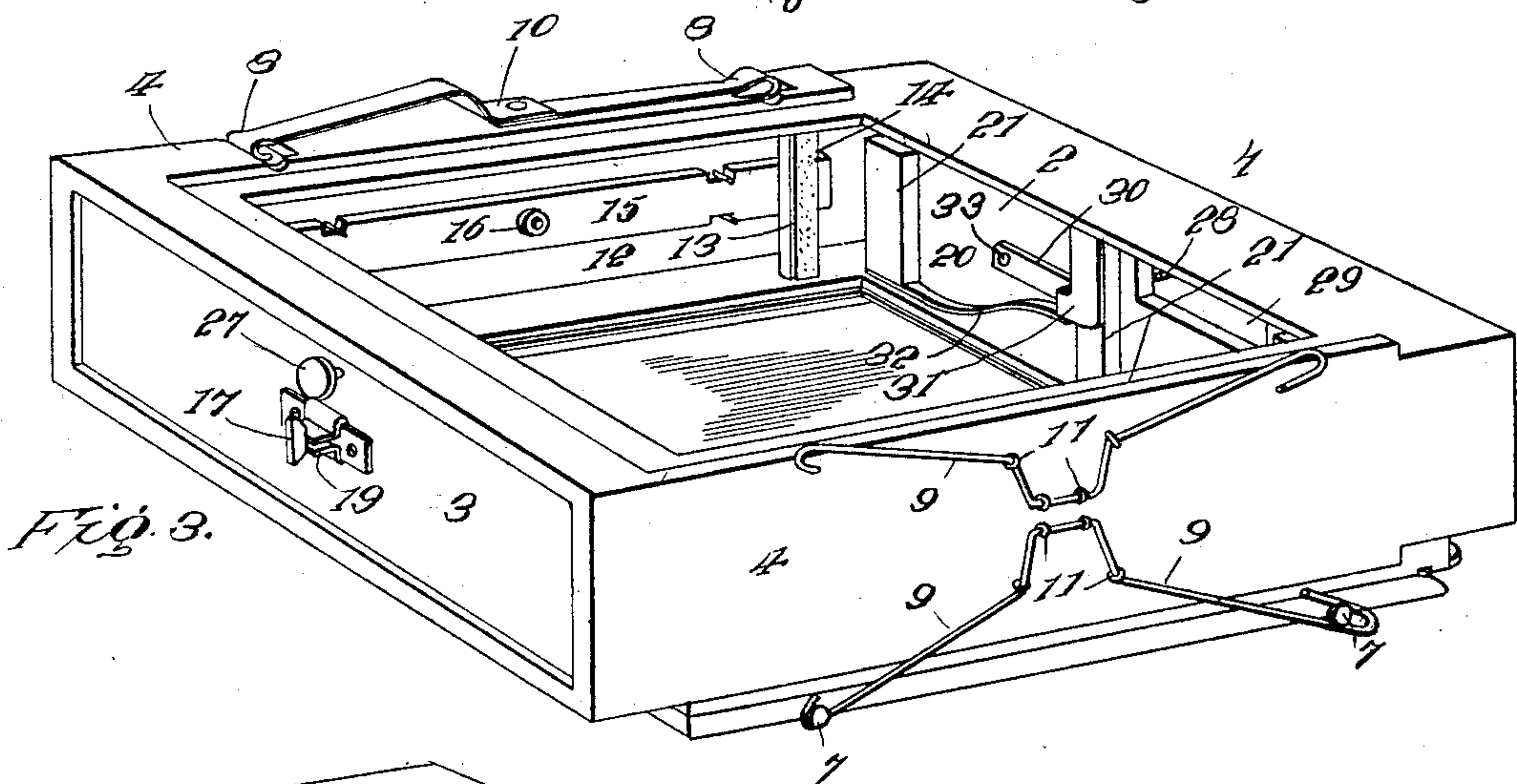
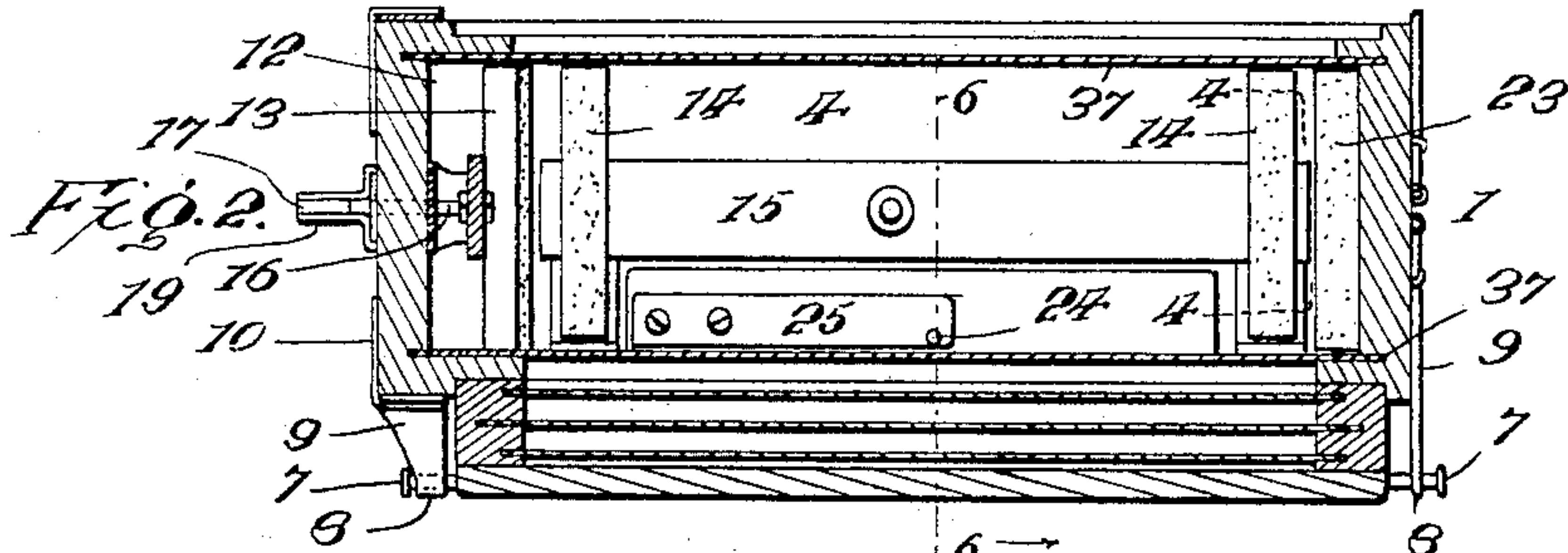
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3 SHEETS—SHEET 2.



Witnesses
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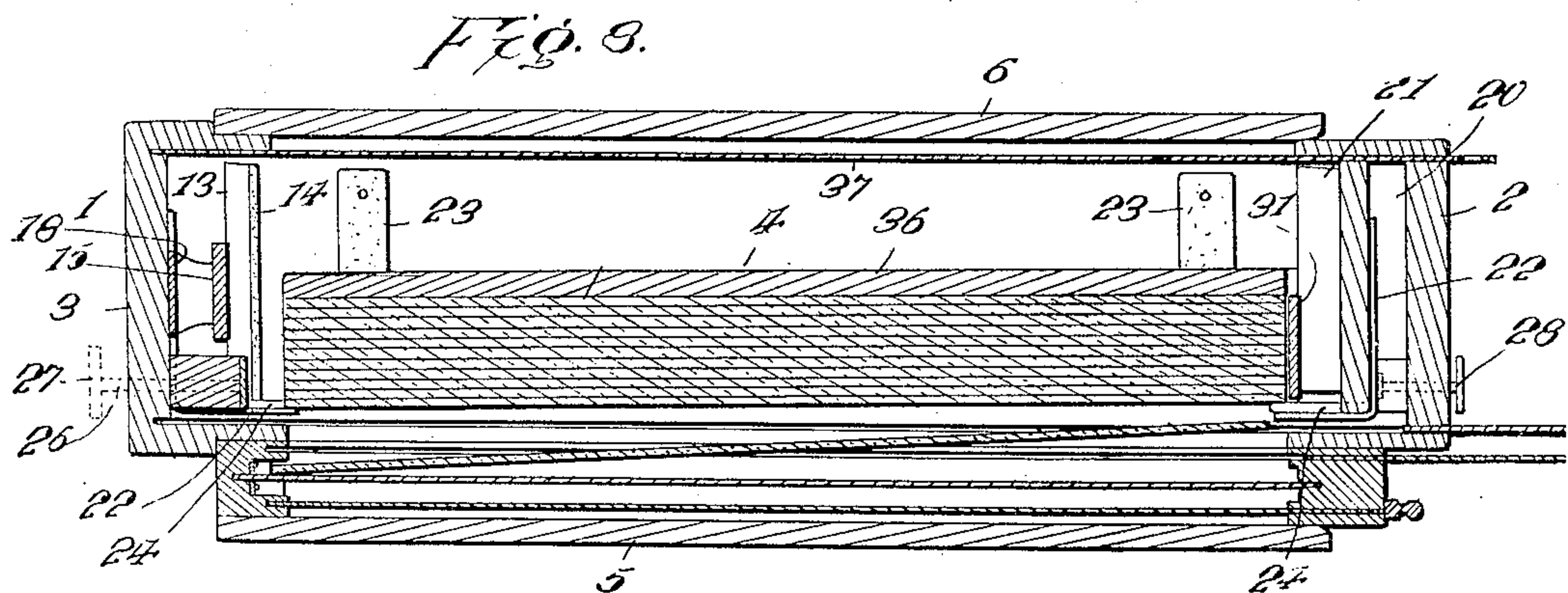
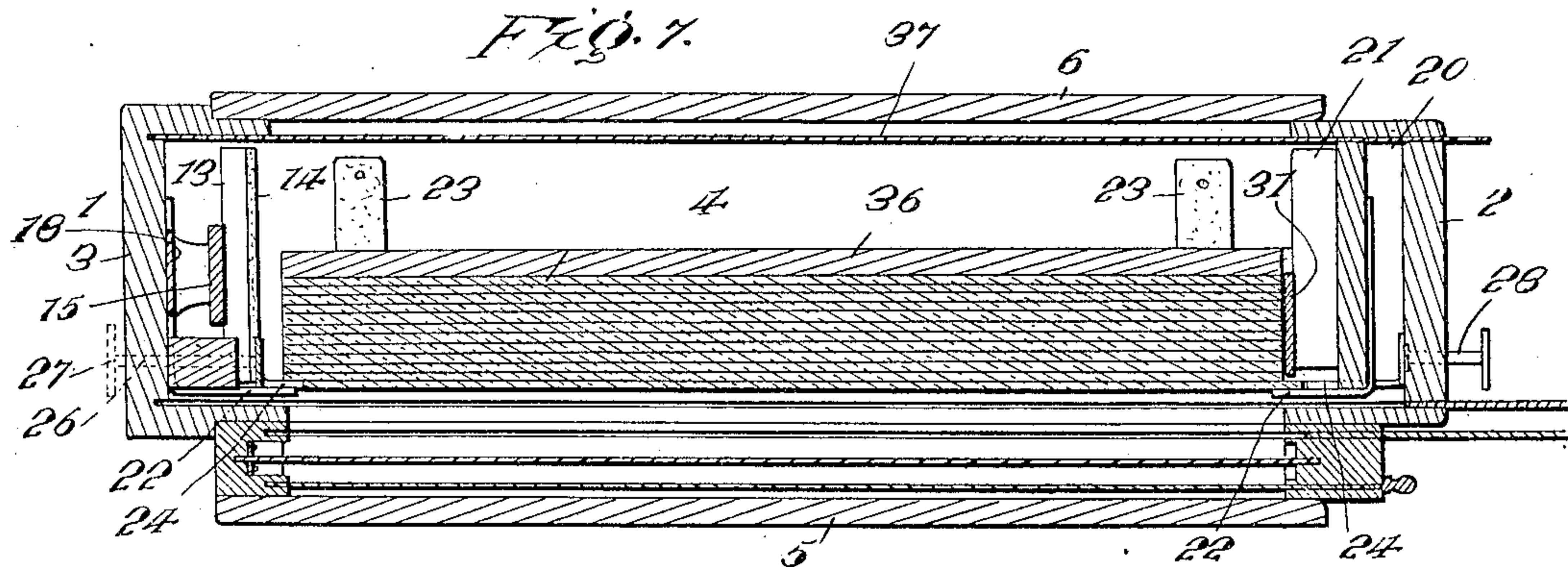
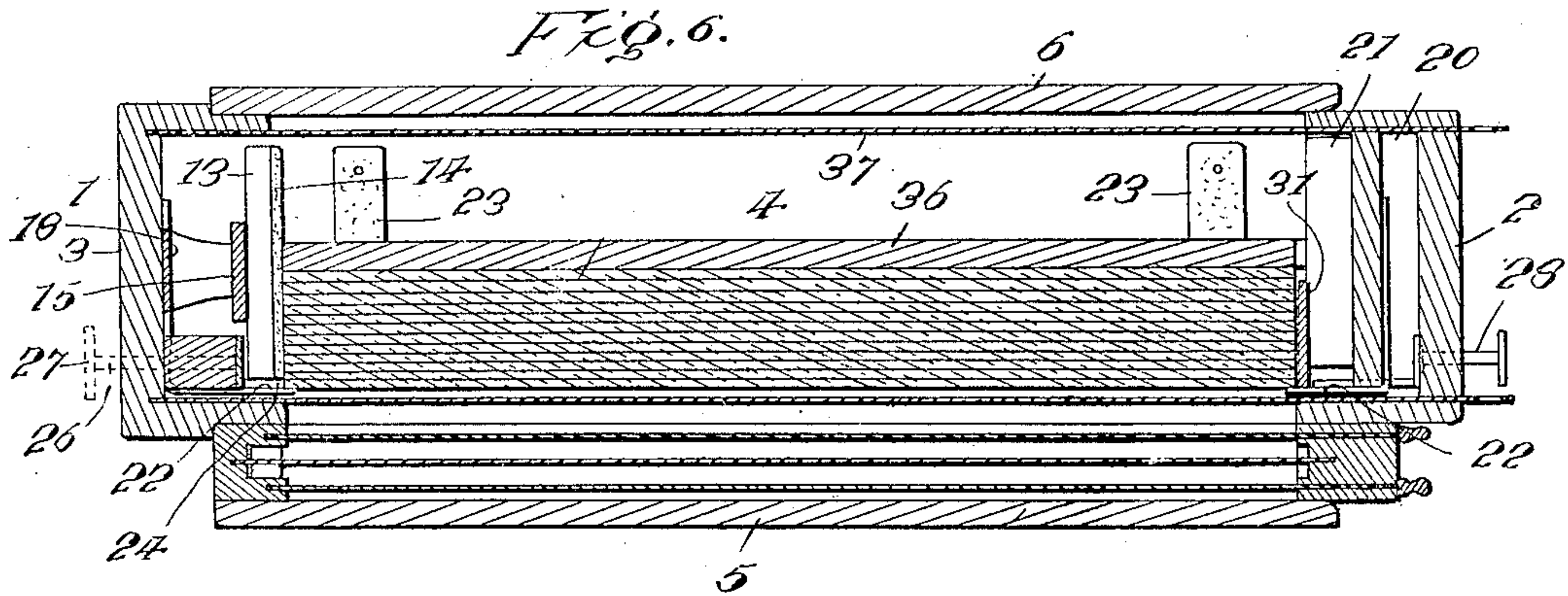
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3 SHEETS—SHEET 3.



Witnesses

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UNITED STATES PATENT OFFICE

CHARLES P. KLENCK, OF WARREN, PENNSYLVANIA.

PLATE-HOLDER LOADER.

No. 828,669.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed October 27, 1905. Serial No. 284,718.

To all whom it may concern:

Be it known that I, CHARLES P. KLENCK, a citizen of the United States, residing at Warren, in the county of Warren and State of Pennsylvania, have invented certain new and useful Improvements in Plate-Holder Loaders, of which the following is a specification.

The object of my invention is to provide an improved loader for plate-holders whereby the photographer may dispense with carrying more than one plate-holder, and thereby reduce the bulk and weight of the photographic equipment, as the one plate-holder may be successively loaded and used with a large number of plates carried in the loader and successively replaced therein after they have been exposed.

The invention consists, essentially, of a box or casing designed to contain a comparatively large number of photographic plates and provided with means whereby a single plate-holder may be so connected therewith that the plates may be transferred one at a time from the loader to the holder and, conversely, after an exposure from the holder to the loader, in broad daylight, without accidental exposure of any of the plates.

The invention consists more specifically in a box or casing of the character above set forth provided at both front and back with openings normally closed by spring-held leaves or members, so that the plate-holder may be inserted therebetween to the opening communicating with the interior of the casing, and said casing also comprises means whereby one plate at a time may be released from the loader into the holder while the other plates are held firmly therein, the releasing and transferring mechanism being provided with light-excluding valves, so that the entire operation may be performed outside of the dark room.

The plate-holder loader also embodies improved means whereby the plates in the loader, even when the latter does not contain its full complement of plates, will be held securely as against rattling or moving about within the loader, all of the mechanism being so arranged that the plates may be transferred from the loader to the holder, and vice versa, without unnecessary jarring and without any danger of breakage.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of

the means for effecting the result reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a perspective view of my improved plate-holder loader. Fig. 2 is a transverse section thereof. Fig. 3 is a perspective view of the loader, showing it in a position upside down to the position illustrated in Figs. 1 and 2. Fig. 4 is an enlarged sectional perspective view illustrating the bottom and one side of the device. Fig. 5 is a detail sectional view taken approximately on the line 5 5 of Fig. 4. Fig. 6 is a longitudinal sectional view taken approximately on the line 6 6 of Fig. 2. Figs. 7 and 8 are similar sectional views illustrating the parts in different relative positions hereinafter specifically described.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

My improved plate-holder loader comprises a casing or receptacle 1 of preferably rectangular and oblong shape, having a top 2, a bottom 3, two sides, (designated 4,) and a front and back, (designated 5 and 6, respectively.) The casing 1 is open at both front and back, the walls surrounding said openings being recessed or rabbeted on three sides to provide seats for the front and back, which are spring-held over the openings to close the same. Both the front and back are provided at opposite sides with preferably headed studs 7, projecting laterally therefrom and designed to be received under the hooked ends 8 of spring-catches 9. While these spring-catches may be of any preferred construction, they are shown at one side in the present instance as being flat plates secured at their middle by retaining-plates 10 and at the other side as being bow-shaped rods secured to the sides, preferably by staples 11, as shown, the construction of the rods providing for the lateral displacement of this pair of springs, so that they may be conveniently released from the studs of the back and front in the operation of detaching such parts, as will be hereinafter more fully described.

Both the bottom 3 and one of the sides 4 are chambered or recessed, as shown at 12, for the accommodation of laterally-operating binding devices designed to bind against an edge or edges of the photographic plates when inserted into the loader, so as to prevent

said plates from moving around when the loader is tilted or jarred while being carried. These binding devices in the present instance comprise transversely-extending bars 13, provided on their inner faces with rubber or some other similar binding-strips 14, said bars being carried at opposite ends of the longitudinally-extending plates 15, each of which is provided at its middle with a spindle 16, extending through the wall of the casing 1 to the outer side thereof and provided at its outer end with a flattened finger-piece or key 17. Leaf-springs 18 are located back of each of the plates 15, the tension of the springs being such as to force the plates and their rubber-covered transverse bars inwardly against the photographic plates, and for the purpose of holding these laterally-operating binding devices in inoperative positions I have provided two spaced-apart ears 19, projecting from the outer walls of the casing on opposite sides of the hand-operated keys 17, so that, as illustrated in Fig. 3, by grasping the said keys the binding devices may be withdrawn or retracted and the keys turned into a position at right angles with the said ears and bearing upon the outer edges of the same, so that means is thereby constituted for locking the binding devices in their inoperative position. While I have shown two of these binding devices, one at the bottom of the casing and another at one side thereof, I do not deem it essential that two be employed, as one, preferably that at the bottom, will suffice. The top 2 of the casing is also provided on its inner side with a chamber or recess 20 for the reception of sundry parts of the operating mechanism, and 21 designates spacing-bars extending transversely in said chamber or recess. Both the top and bottom interior recesses or chambers have mounted therein retaining guiding-lugs 22, projecting toward each other, as shown, and against which the outermost photographic plate of the series contained in the casing is designed to abut. The side 4 of the casing opposite the side which has the binding devices in the present instance is provided with two or more binding-strips 23 of some material sufficiently soft to prevent injury to the plate when it is pressed sidewise against the same.

At the bottom of the casing the latter is provided with a bottom edge-transferring device, which in the present instance comprises a pin 24 on the free end of a plate-spring 25, and bearing against said spring in a position to press it inwardly against its normal tension is a rod 26, which works through the bottom of the casing and projects from the surface thereof and is provided on its projecting end with a finger-piece 27. The top 2 of the casing is also provided with one of these transferring devices, (designated 28,) working through a slot 29 in the said top. The top is also provided with a laterally-

rocking lever 30, which is fulcrumed to the inner surface of the top and is provided with a laterally-extending finger 31 in the form of a flat plate or portion extending over and sliding upon the middle one of the spacing-bars 21. To another of these spacing-bars—namely, the one at the right-hand upper corner when viewing the device from the back—is secured one end of a plate-spring 32, the other end of which bears against the lever in position to rock the finger thereof forwardly, and the fulcrum-pivot 33 of the said lever projects through to the outer surface of the top 2 and is provided with a handle 34, limited in its movement by an embracing strap or staple 35.

The reference-numeral 36 designates a partition or dummy-plate which is designed to rest upon the back of the photographic plates when the latter are contained within the casing, and as the plates are successively transferred from the loader to the holder and then inserted again in the loader back of the said partition the latter thereby forms a screen in the casing of the loader, so as to keep the unexposed plates always separated from the exposed plates. It is to be understood that the corners of the box or casing 1, which is preferably made of wood, are strengthened and braced by suitable corner-pieces of brass or other metal, and that every part that requires an opening in a wall of the box or casing is surrounded by a light-excluding washer 40, as shown in Fig. 5, preferably of India-rubber, with an opening smaller than the opening it surrounds, said rubber washers being reinforced by metal washers placed over the same and preventing any entrance of rays of light into the loader. I do not claim any special features of these washers; but it is understood that they are essential to the success of any device of this character. It is also to be understood that there are preferably provided both at the front and back of the casing 1 pasteboard or other similar slides 37, designed to be entered endwise underneath the front and back through end openings 38.

In describing the practical use of my improved plate-holder loader it will be assumed that the casing 1 is entirely empty and the device is in the unloaded condition with the front and back secured thereto, just as the device would be as it came from the store. To fill the loader with its complement of unexposed photographic plates, the back is first removed by sliding it longitudinally away from the bottom until the studs adjacent the bottom snap out of their respective spring-hooks. Then by reversing the movement of the back and lifting it at the same time the studs may pass the hooks and by springing laterally those hooks that are constituted by the wire rods the two adjacent studs may be withdrawn therefrom, and then

it is obvious the other side of the back may also be released from its hooks and the back entirely withdrawn. The adjacent slide 27 is then withdrawn from the top of the box or casing, which results in exposing the interior of the latter, and the partition is removed after the binding devices have been retracted and locked in their inoperative positions. In inserting the unexposed photographic plates one at a time into the loader the plate is grasped in one hand with the film side rearmost, and it is inserted within the casing in a tilted position with its lower edge resting against the lowermost retaining lugs or projections 22. The plate is then tilted into upright position, whereupon it will fall gently into place against the outermost retaining or guiding lugs 22. The plates are in this manner inserted one after another into the holder and the binding devices, either or both of them, are allowed to spring forward against the edges of the plates, it being understood that the partition also has been inserted back of the rearmost photographic plate. Now to transfer the said plates one at a time from the loader to the holder the latter is inserted between the front of the loader and the adjacent slide 37 and the slides in the holder and loader are removed. Then the binding devices are locked in their inoperative positions, and the device is now in condition for transferring the plates from the loader into the holder, it being of course understood that the binding devices of the holder have been already retracted. In the normal operative position of the device the outermost photographic plate rests upon the retaining-lugs 22 at both the top and bottom of the loader. The lower edge of the outermost plate is in contact with the pin 24, and the upper edge of the said plate, as well as the upper edges of the other plates, is in contact with the finger 31 on the lever 30, which constitutes, as will be now described, a releasing device for the outermost plate and also as a means for normally preventing all the plates but the outermost plate from being slid upwardly. The operator now moves said lever, which frees its finger from the upper edge of the outermost plate, and thereby releases the said plate so that it is susceptible of being slid upwardly. The operator then presses the lowermost transferring device embodying the pin 24, which will cause the outermost plate to slide upwardly until its lower edge passes the retaining-lugs 22, whereupon it will be heard to drop at its lower end into the holder. The lowermost transferring device is then released and the upper transferring device pressed downwardly, which results in sliding the photographic plate downwardly until its upper edge passes the uppermost retaining-lugs, whereupon this upper edge also will be heard to drop into the plate-holder, it being of course understood that the rocking

lever is during this operation held in position against the action of its spring out of engagement with the outermost photographic plate which is being transferred. Thus it will be seen that the outermost photographic plate is first slid in one direction to release one edge from the retaining lugs or device, so as to allow one end to drop into the holder, and is then slid in a reverse direction, so as to free the other edge and allow it to fall into the holder, so that the entire plate is thus deposited in the latter. This operation is repeated as often as a plate is exposed and used, and after such exposure each of the plates is transferred again to the loader by being inserted into the back of the casing thereof. The operation of again transferring the plate from the holder to the loader is obvious, it being understood that the holder is inserted between the spring-pressed back of the casing and the adjacent slide 37, the latter being then removed, the slide in the holder being also removed, and the plate being allowed to drop back into the holder, after which the brace-board is again inserted in place, the slide of the plate-holder also inserted, and the plate-holder removed. As all the plates are exposed and used and reinserted in the casing from the back thereof, the partition or dummy-plate arrives at the front of the casing to indicate that the supply of unexposed plates has been exhausted.

It is of course to be understood that the initial supplying of the loader with unexposed plates must be performed in the dark room; but the operations of transferring the unexposed plates to the plate-holder and the subsequent operation of transferring them back again into the rear of the loader may readily be performed in broad daylight with the device of my invention.

I desire it to be known that I preferably employ with my invention a plate-holder provided with such an arrangement of clamping-spring for the plate that the said spring may be held out of its normal operative position in the holder, so that the plate may fall therein without the obstruction that the spring would otherwise present.

From the foregoing description in connection with the accompanying drawings it is manifest that I have provided a durable and efficient construction of plate-holder loader which will enable the photographer to carry with him as part of his equipment any desired number of unexposed plates and which may be used with one plate-holder and that therefore I effect by my invention important advances and economies in the art and provide an important accessory to a photographer's equipment, which is clearly a desideratum.

Having thus described the invention, what is claimed as new is—

1. A device of the character described

comprising a casing designed to contain a number of photographic plates provided with an opening arranged to be confronted by a photographic-plate holder, means for retaining said plates in said casing and means for sliding said plates in one direction and the reverse whereby to transfer them one at a time into said holder.

2. A device of the character described comprising a casing provided with an opening designed to be confronted by a plate-holder means for holding a number of photographic plates in said holder and means for sliding the outermost plate first in one direction and then in another whereby to permit it to drop first one end and then the other into said holder.

3. In a device of the character described the combination of a casing provided with an opening designed to be confronted with a plate-holder, means for holding a plurality of plates in said holder, retaining lugs or projections against which the outermost plate is designed to rest, and means for sliding said outermost plate past said projections whereby it may drop into the holder.

4. In a device of the character described the combination of a casing provided with an opening designed to be confronted with a plate-holder, means for holding a plurality of plates in said holder, retaining lugs or projections against which the outermost plate is designed to rest, and means operable from the outside of the casing for sliding said outermost plate past said projections whereby it may drop into the holder.

5. In a device of the character described the combination of a casing provided with an opening designed to be confronted with a plate-holder and provided at opposite sides with retaining projections for the plate adjacent said opening, means for sliding the outermost plate in one direction to free its edge from one set of said projections, and means for also sliding said plate in the opposite direction to free it from the other set of projections as and for the purpose set forth.

6. In a device of the character described the combination of a casing provided with an opening designed to be confronted with a photographic-plate holder and provided also with retaining lugs or projections adjacent said opening and against which the outermost plate is designed to rest, means for sliding said plate longitudinally to free it from said projections, and a releasing device normally preventing the sliding of said plate and arranged to be freed therefrom, as and for the purpose set forth.

7. In a device of the character described the combination of a casing provided with an opening designed to be confronted by a photographic-plate holder and also provided adjacent said opening with retaining lugs or projections against which the outermost

plate is designed to rest, a spring-retracted pin designed to bear against the edge of said outermost plate and provided with means whereby it may push said plate past sundry of said projections, an opposite actuating-pin designed to bear against the other edge of said plate, and a releasing device normally bearing against the edge of the outermost plate whereby to prevent the same from being slid.

8. A device of the character described, comprising a casing provided with an opening designed to be confronted with a photographic-plate holder, means for holding a plurality of photographic plates in said holder in superposed relation, means for sliding the outermost plate in one direction with respect to the other plates, said means permitting one end of said outermost plate to drop into the holder, and means for sliding said outermost plate in another direction and permitting the other end of said plate to drop into the said holder, as and for the purpose set forth.

9. In a device of the character described the combination of a casing provided with an opening designed to be confronted by a photographic-plate holder, means for transferring the plates from said casing to the holder, and a spring-pressed binding device including a spindle or shaft working through the walls of the casing and provided at its outer end with a key or thumb-piece, and one or more ears secured to said casing against which said key is designed to be turned whereby to hold the binding device in retracted position.

10. In a device of the character described the combination of a casing provided with an opening designed to be confronted with a photographic-plate holder, means for sliding one plate at a time into said opening whereby it may fall into the plate-holder, a releasing device normally preventing the movement of said plate into said opening, and means for actuating said releasing device.

11. In a device of the character described the combination of a casing provided with an opening designed to be confronted with a photographic-plate holder, means for sliding a plate longitudinally into said opening whereby it may drop into the holder, a lever designed to extend into the path of movement of said plate, and means for rocking said lever so that the plate may be slid.

12. In a device of the character described the combination of a casing provided with an opening designed to be confronted with a photographic-plate holder, means for sliding a plate into said opening to allow it to drop into the holder, a spring-pressed lever provided with a finger normally extending over the edge of the outermost plate whereby to prevent its movement into the opening, and means operable from the outside of the casing for actuating said lever whereby said upper

edge may be released, for the purpose specified.

13. In a device of the character described the combination of a casing provided with an opening designed to be confronted with a photographic-plate holder and also provided with top and bottom retaining-lugs or projections against which the outermost plate is designed to rest, means for sliding said plate longitudinally in both directions whereby its edges may be successively freed from said retaining lugs or projections and dropped through said opening into the said holder, a spring-pressed lever fulcrumed in said casing and provided with a finger normally extending over the edge of the outermost plate whereby to prevent the movement thereof, and a handle on the outer side of the casing connected to said lever, whereby the latter may be rocked to free said edge of the plate.

14. A device of the character described, comprising a casing provided at both the front and rear with openings designed to be confronted with a photographic-plate holder and also provided with top and bottom retaining lugs or projections against which the outermost plate is designed to rest, means for sliding said plate longitudinally in both

directions whereby its edges may be successively freed from said retaining lugs or projections and drop through said opening into the said holder, a spring-pressed lever fulcrumed in said casing and provided with a finger normally extending over the edge of the outermost plate whereby to prevent the movement thereof, a handle on the outer side of the casing connected to said lever whereby the latter may be rocked to free said edge of the plate, and a dummy plate or partition designed to rest upon the plates received in said casing, as and for the purpose set forth.

15. In a device of the character described the combination of a casing provided with openings designed to be confronted with a plate-holder, means for holding a plurality of plates in said holder and means for sliding the outermost plate longitudinally and successively in two directions, whereby its edges may be successively freed from the casing and drop into the holder.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES P. KLENCK. [L. s.]

Witnesses:

A. HILL,

R. W. STONE.