

(No Model.)

2 Sheets—Sheet 1.

E. A. TRUSSELL.  
COMBINED CLIP BOARD AND BOOKBINDER.

No. 601,027.

Patented Mar. 22, 1898.

Fig. I.

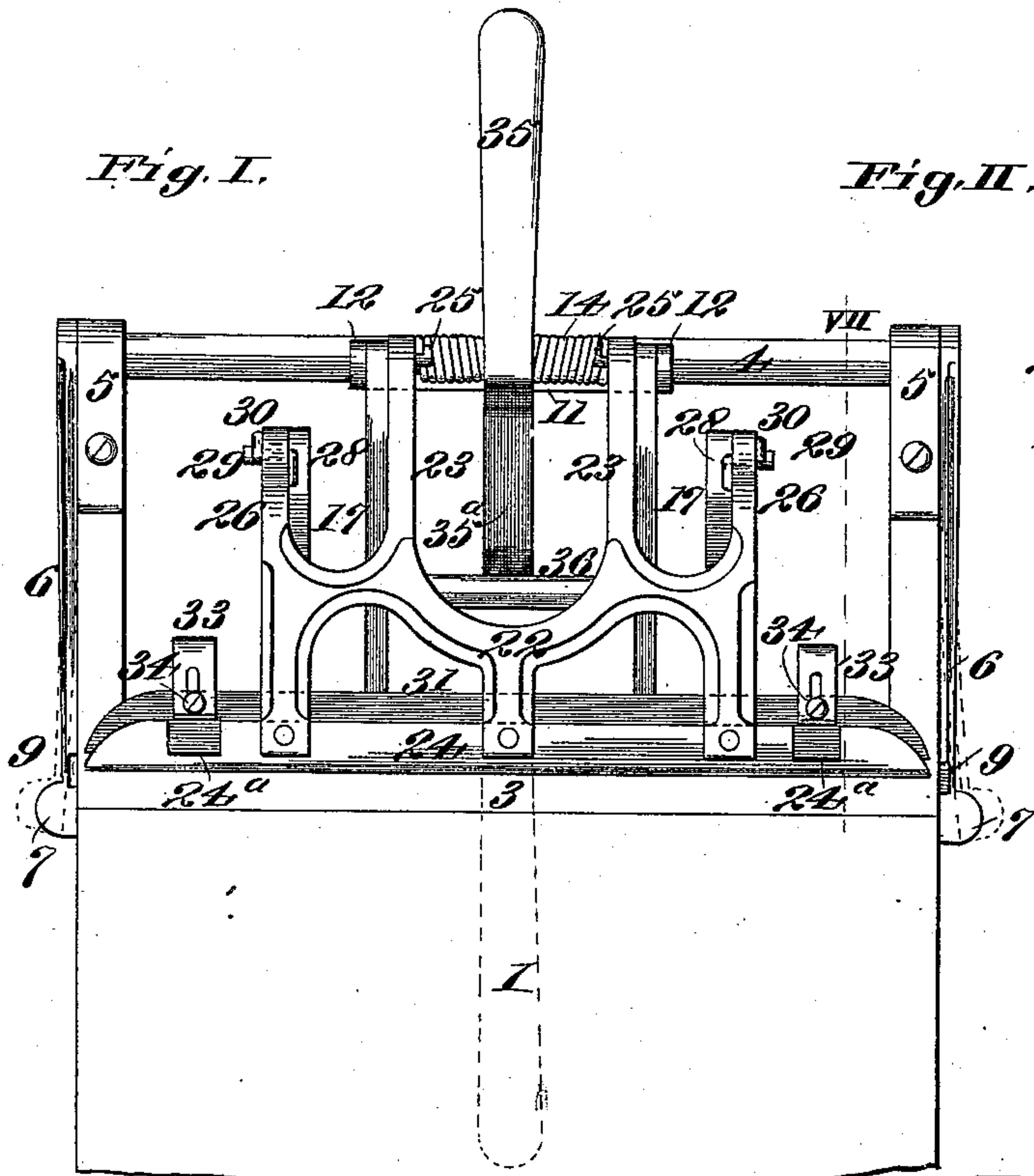


Fig. II.

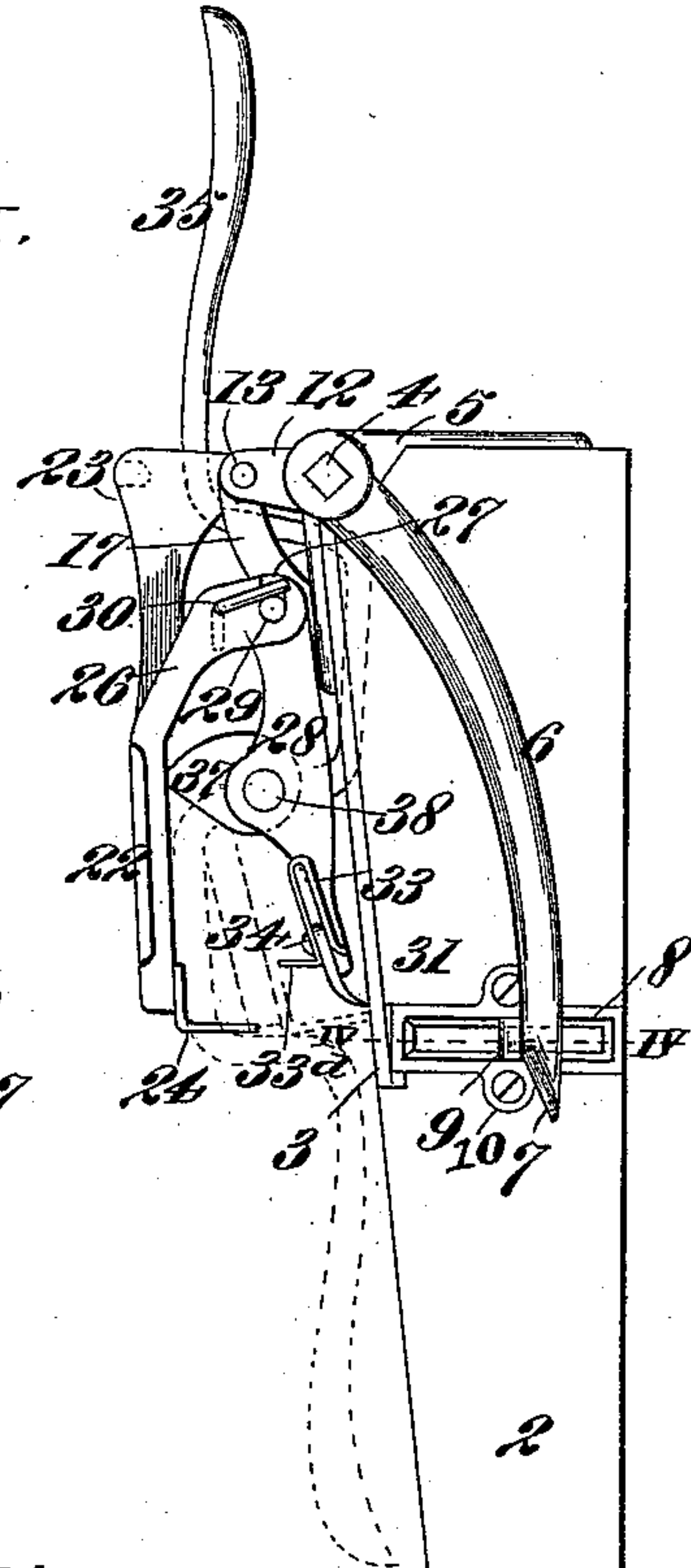


Fig. III.

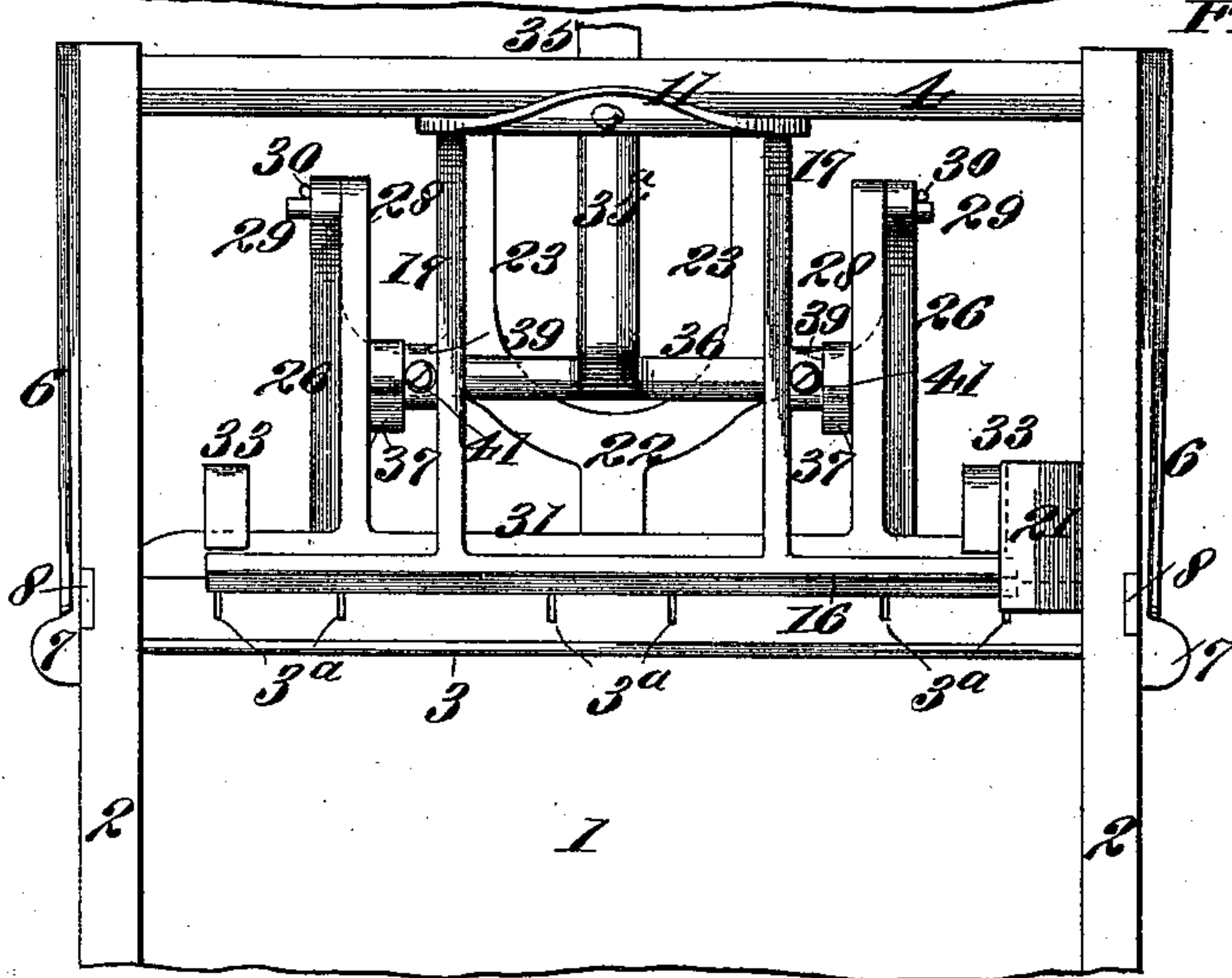
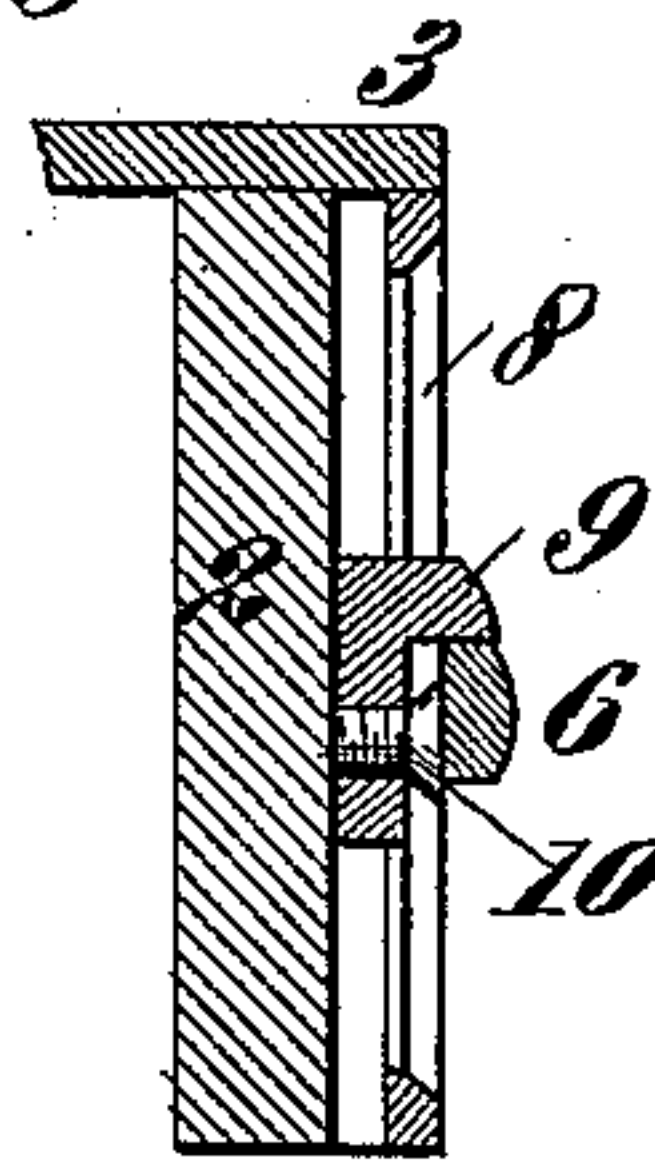


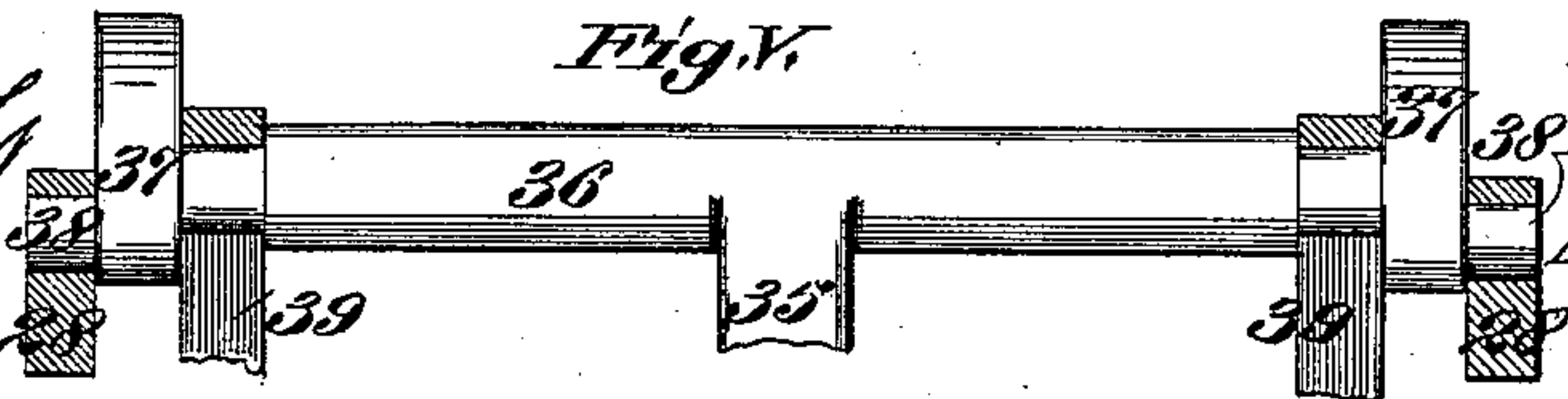
Fig. IV.



Attest;

*E. S. Knight*  
*N. Finley*

Fig. V.



Inventor;

*Emory A. Trussell*

*By Knight Bros*

*Atty's*

(No Model.)

2 Sheets—Sheet 2.

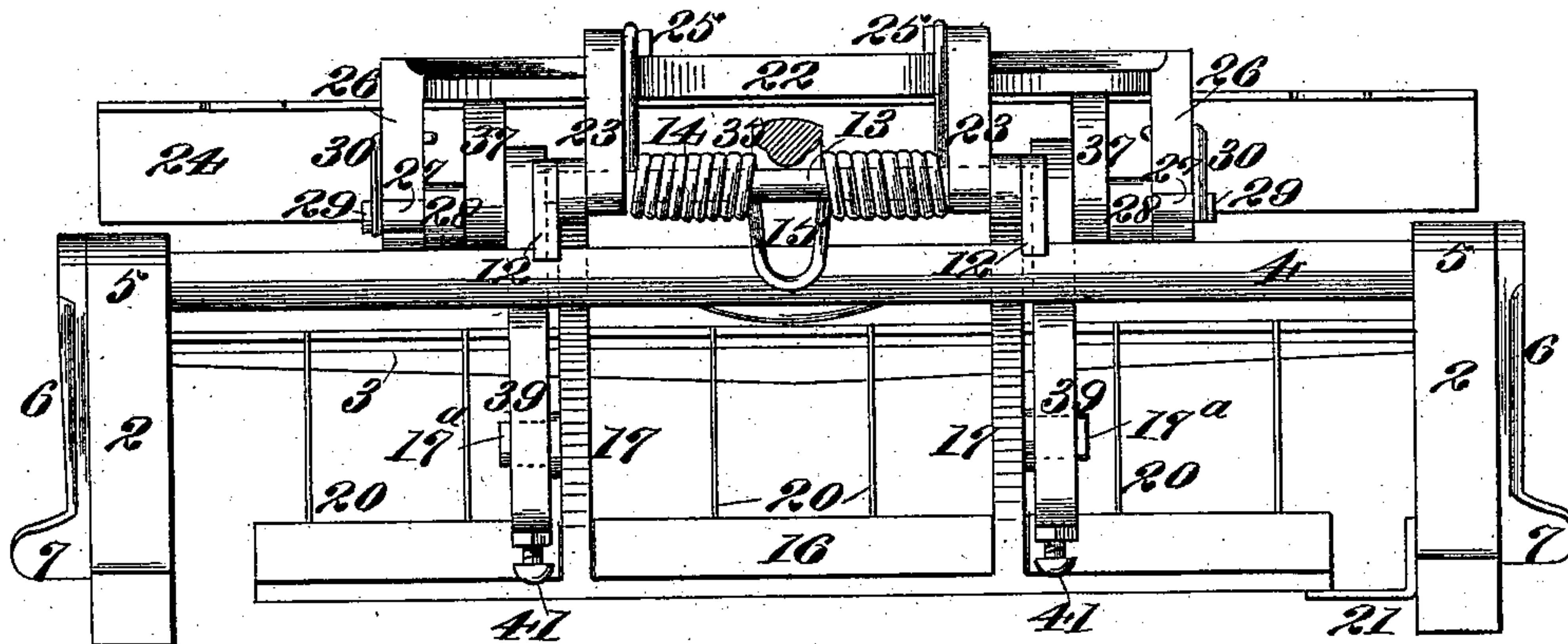
E. A. TRUSSELL.

COMBINED CLIP BOARD AND BOOKBINDER.

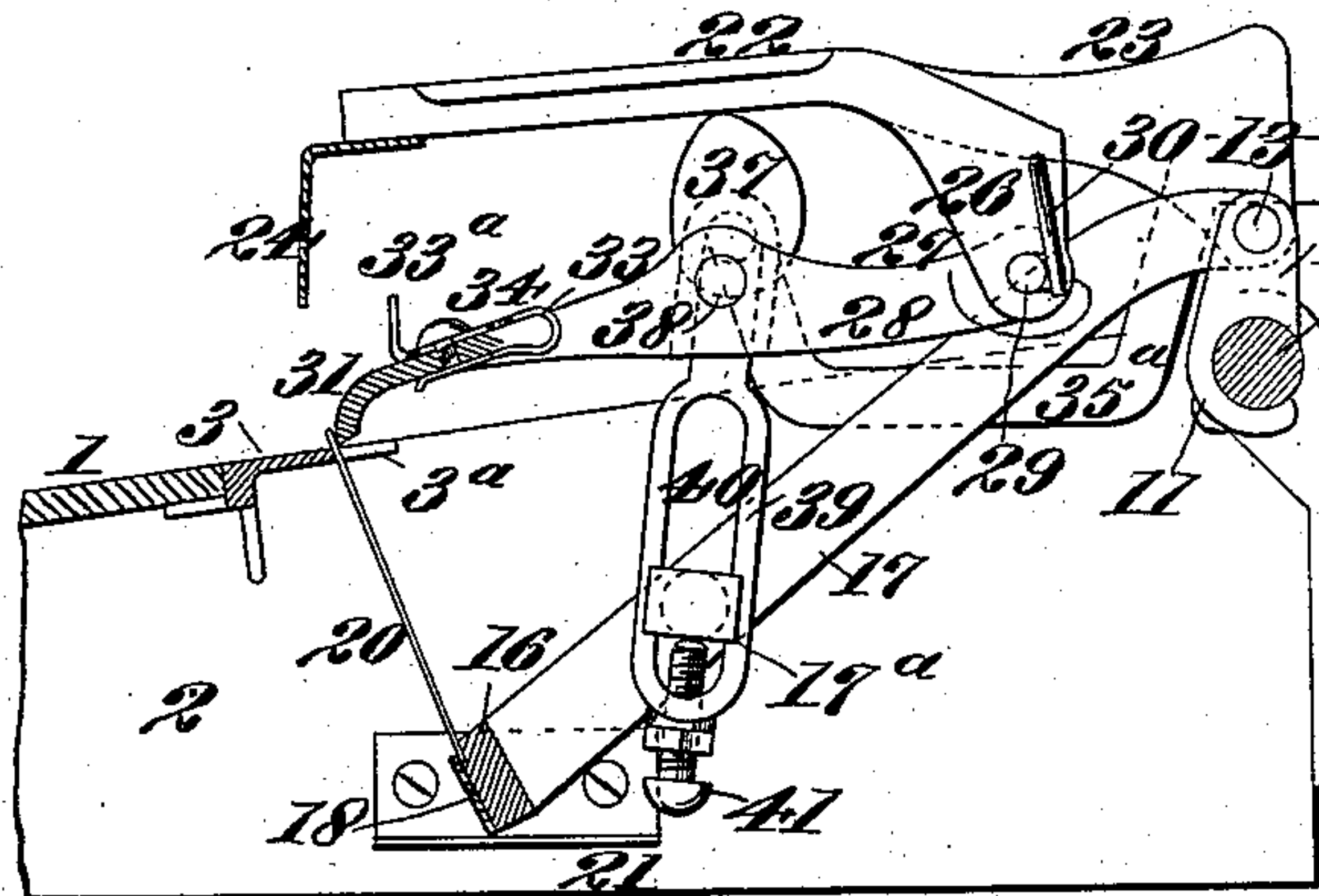
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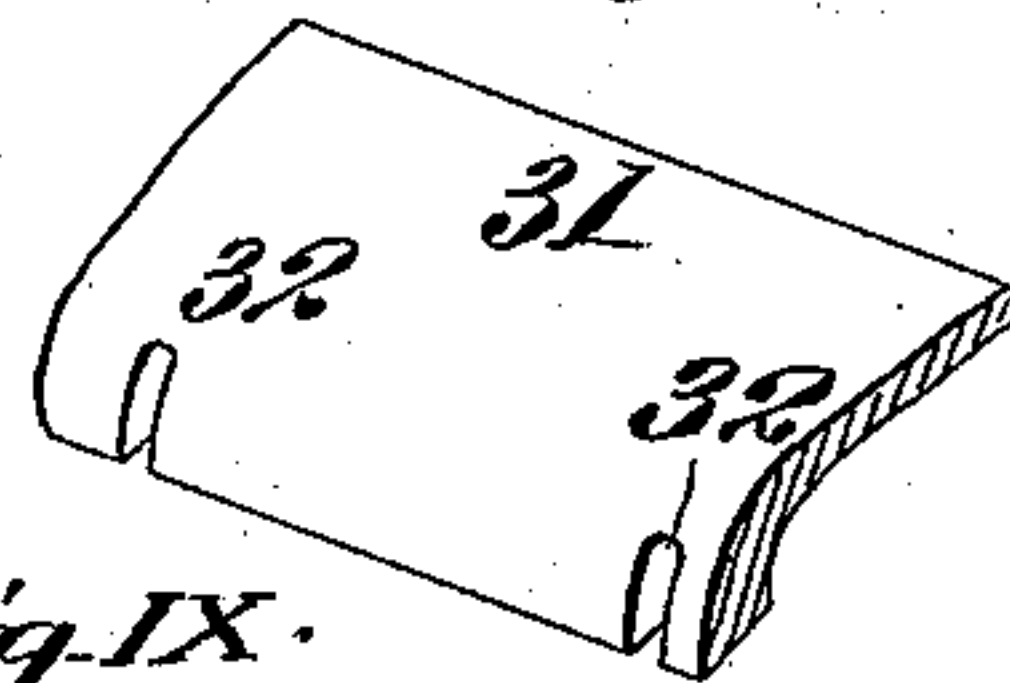
*Fig. VI.*



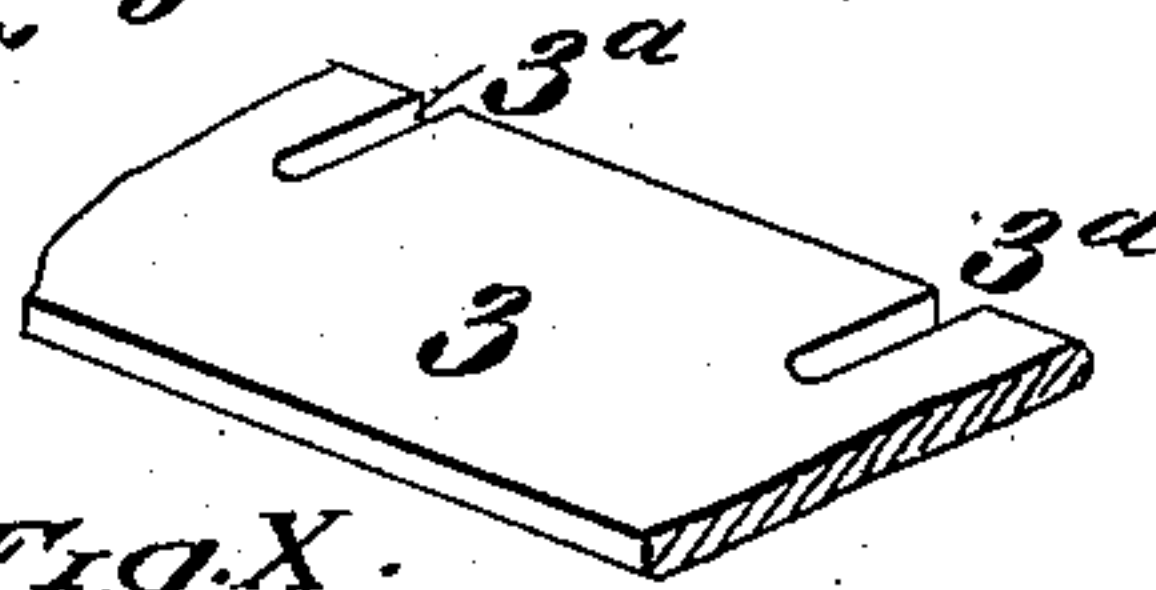
*Fig. VII.*



*Fig. VIII.*



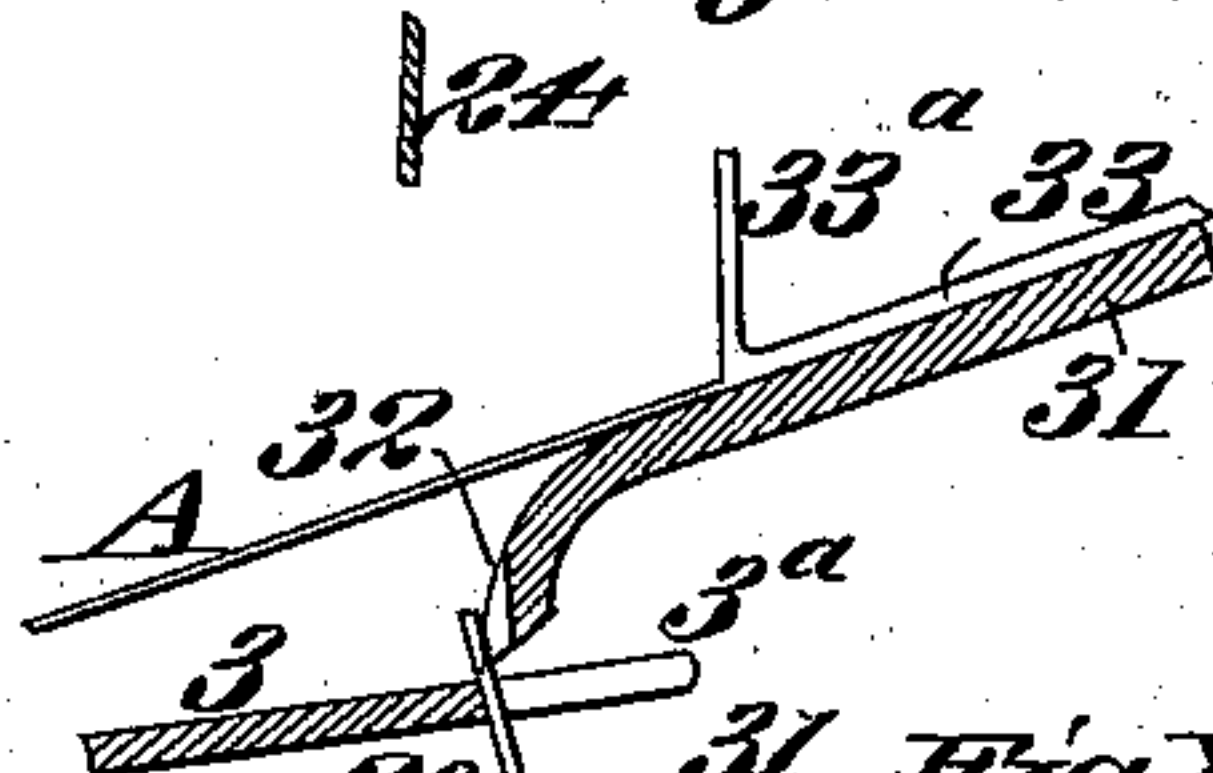
*Fig. IX.*



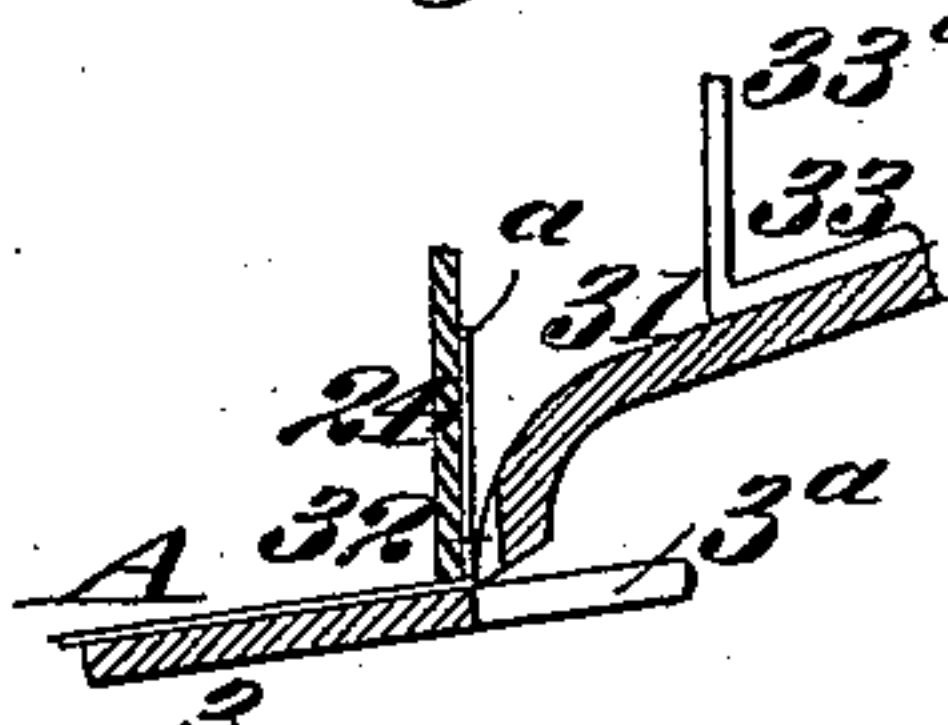
*Fig. X.*



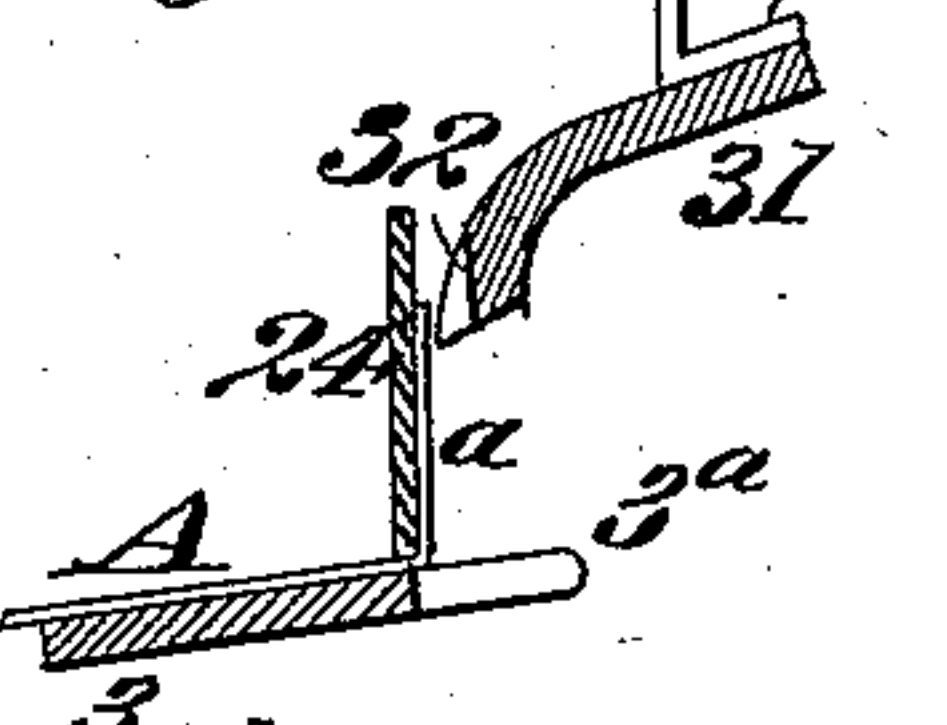
*Fig. XI*



*Fig. XII.*



*Fig. XIII.*



*Fig. XIV.*

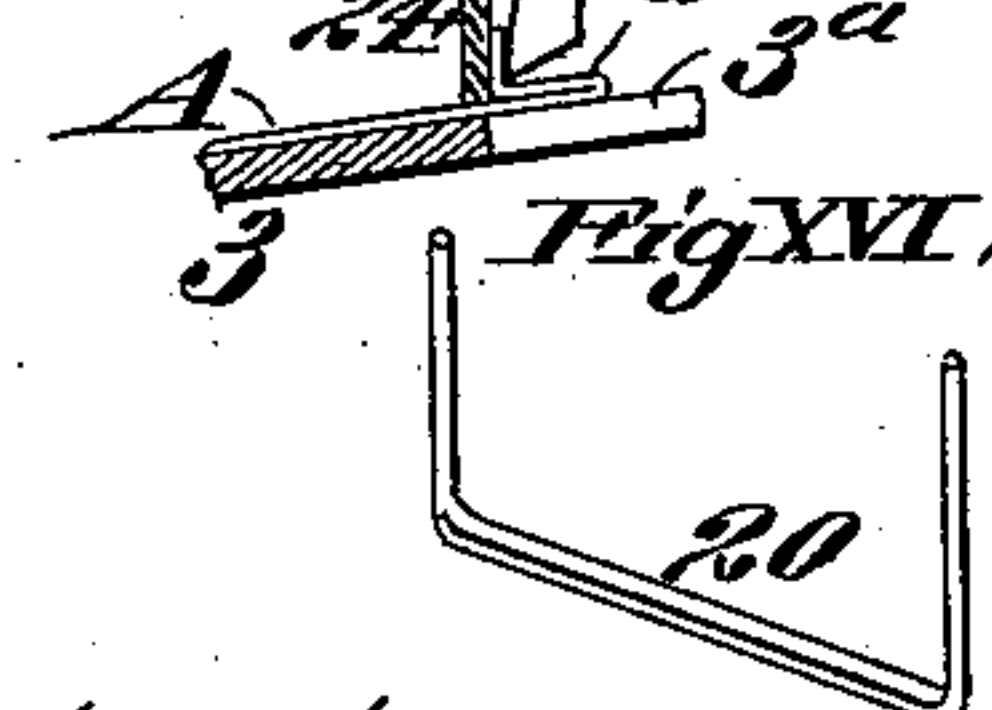
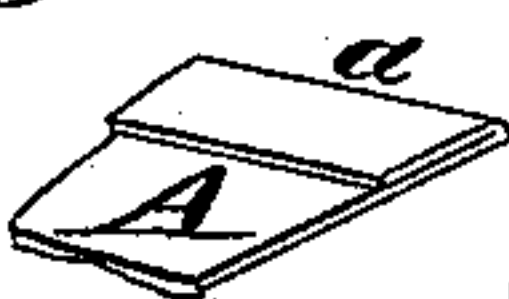
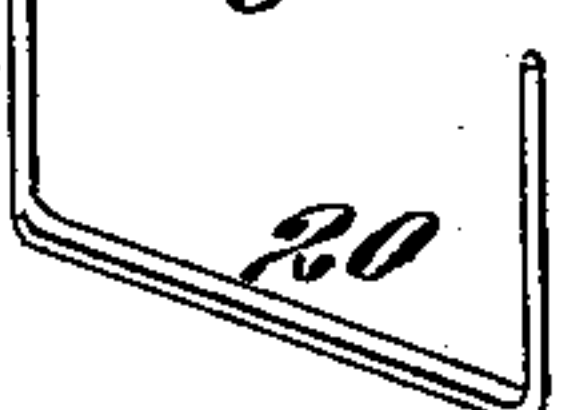


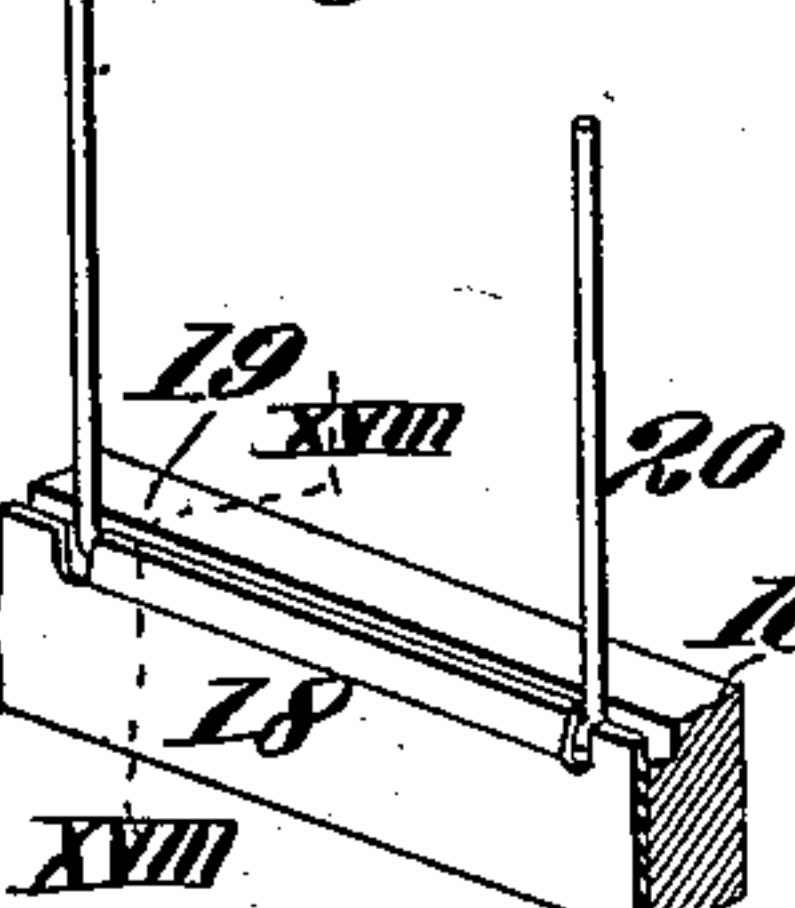
Fig. XV.



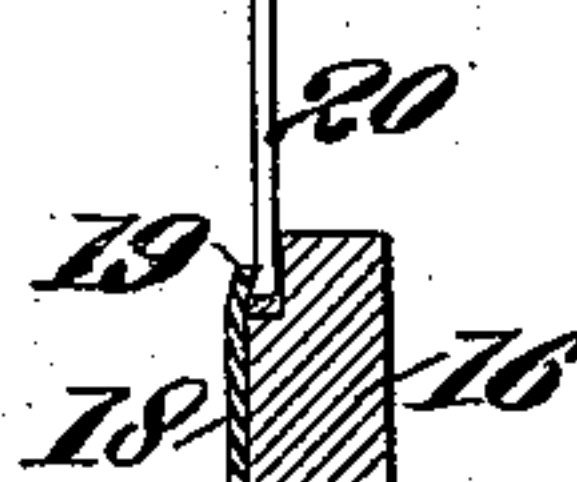
*Fig XVI.*



*Fig. XVII.*



*Fig. XVIII*



Attest:  
E. Knight  
N. Finley.

*Inventor:*  
*Emory A. Trussell*  
*By Wm. W. Bro*  
*att'y's*



# UNITED STATES PATENT OFFICE.

EMORY A. TRUSSELL, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE SIEBER & TRUSSELL MANUFACTURING CO., OF SAME PLACE.

## COMBINED CLIP-BOARD AND BOOKBINDER.

SPECIFICATION forming part of Letters Patent No. 601,027, dated March 22, 1898.

Application filed February 15, 1897. Serial No. 623,552. (No model.)

*To all whom it may concern:*

Be it known that I, EMORY A. TRUSSELL, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have  
5 invented a certain new and useful Improvement in a Combined Clip-Board and Bookbinder, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part  
10 of this specification.

My invention relates to a clip-board in combination with a staple-inserting mechanism for assembling and connecting together sheets within covers into book form.

15 My invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, Figure I is a top view or plan. Fig. II is a side elevation.  
20 Fig. III is a bottom view. Fig. IV illustrates a section taken on line IV IV, Fig. II. Fig. V is an enlarged detail view of the operating-cam shaft and cams. Fig. VI is a rear elevation. Fig. VII illustrates a vertical section taken on line VII VII, Fig. I. Fig. VIII  
25 is an enlarged detail view of a fragment of a folder-plate. Fig. IX is an enlarged detail view of a fragment of the bed-plate. Fig. X is a perspective view showing one of the slotted stops which limit the insertion of the sheets of paper into the device. Figs. XI,  
30 XII, XIII, and XIV are diagrams illustrating the different positions assumed by the clip-plate and folder-plate in confining the sheets to be connected. Fig. XV is a detail view of a fragment of the folded sheet. Fig. XVI is a perspective of one of the binding-staples.  
35 Fig. XVII is a perspective of a fragment of the staple-carrying bar. Fig. XVIII illustrates a cross-section taken on line XVIII XVIII, Fig. XVII.

In the drawings, 1 designates the top of the clip-board, and 2 its sides. The upper or rear end of the board is open.

45 3 designates a bed-plate provided with a slot 3<sup>a</sup>, that lies upon the clip-board at the upper end of the top 1.

4 designates a shaft mounted in bearing-boxes 5 on the rear ends of the sides 2 of the  
50 clip-board. To the ends of the shaft 4 levers 6 are secured, said levers being provided at

their free ends with outturned finger portions 7. In the sides 2 of the clip-board are slotted plates 8, that receive angular catches 9, adjustably secured therein by screws 10, 55 that seat in the sides of the board.

Attached to the shaft 4 is a bracket 11, provided with hanger-arms 12.

13 is a rod seated in the hanger-arms 12. On the rod 13 is a coiled spring 14, the central portion of which is formed into a loop 15, 60 that bears against the rear of the shaft 4, while the free ends of the spring extend upwardly and have a bearing hereinafter specified.

16 designates a staple-carrying bar provided with arms 17, pivotally hung upon the rod 13. The bar 16 is provided upon one side with a notched spring face-plate 18 and is recessed to form a groove 19 for the reception 70 of staples 20, the staples for convenience on insertion being laid in the notches of the face-plate and afterward turned with their points projecting upward, as seen in Figs. XVII and XVIII, where their rear edges rest 75 upon the bar at the bottom of the groove 19.

21 is a stop that limits the downward movement of the staple-carrying bar 16.

22 designates a frame having rearwardly-projecting arms 23, pivotally mounted upon 80 the rod 13, said frame carrying upon its forward end an angular clip plate or bar 24, the lower edge of which is designed to be thrown into contact with the bed-plate on the clip-board. On the arms 23 are protuberances 85 25, that form bearings for the ends of the spring 14.

26 designates arms on the frame 22, in the rear of which are slots 27.

28 designates bars pivotally hung upon the 90 arms 26 by means of pintles 29, that seat in the slots 27 of the arms 26. The pintles are held in their seats by spring-keepers 30, carried by the arms 26. These keepers permit a slight play of the pintles 29 in the slots 27. 95

The bars 28 carry at their forward ends a folder plate or bar 31, provided with notches 32. Upon this plate are slotted stops 33, adjustably secured by means of set-screws 34. These stops have their upper forward ends 100 33<sup>a</sup> upturned and are adapted to be moved forward or backward the limit of their slots,



notches 24<sup>a</sup> being formed in the clip-plate 24 to permit their forward movement.

35 designates an operating-lever carried by a shaft 36. This shaft carries cams 37, upon which are crank-pins 38, that have bearing in their bars 28 and form the pivots of said shaft 36. The cams 37 operate against the under side of the frame 22 and raise and lower the clip-plate 24 in their operation, as clearly illustrated in Figs. II and VII.

39 designates hangers pivotally hung upon the shaft 36. The hangers 39 have loops 40, that receive bosses 17<sup>a</sup> on the sides of the staple-bar-carrying arms 17, said bosses resting upon set-screws 41, located in the lower ends of the hangers and projecting into the loops 40. These set-screws are employed in obtaining the proper adjustment of the staple-carrying bar to accommodate its elevation according to the length of the staples employed in the machine.

The spring-plate 18 has portions of its upper edge bent inwardly, as clearly shown in Fig. XVIII, thereby forming a groove of less width at its top than at its base. The body of the staples 20 being of flattened form and wider than its prongs or points, they are securely held in the groove 19 between the bar 16 and the spring-plate and are rigidly sustained while being forced through the sheets of paper.

The following is a description of the operation of the device: The first step is to release the levers 6 from engagement with the catches 9 by a downward and outward pressure upon the finger portions 7 of the levers. The entire mechanism is then elevated by lifting the said levers, the shaft 4, to which all parts are directly or indirectly connected, turning in its bearing-boxes 5. The act of elevation of the operating parts brings the staple-carrying bar 16 above the level of the top of the clip-board, in which position the staples 20 are readily inserted by laying them in notches of the face-plate 18, after which they are turned into upright position in the groove 19 of the bar and are ready to be projected through the paper to be bound when the proper time arrives. The next act consists in throwing the levers 6 back into engagement with the catches 9, where they are held firmly. The lever 35 is next thrown backward into the position illustrated in Figs. I and II, a movement that causes the cams 37, carried by the lever-shaft, to operate against the frame 22 and elevate the clip-plate 24 against the action of the spring 14, whose ends bear against the rear of the arms of said frame. At this time a sheet (designated by A) of the paper to be connected with the others in the machine is fed beneath the clip-plate 24 until the edge bears against the upright ends 33<sup>a</sup> of the stops 33, that limit the feed of the paper. (See Fig. XI.) In their rearward position these stops permit a sufficient insertion of the paper to make a fold and in their forward position to receive enough of the mar-

gin of the sheets to permit the folder-plate to pass over and beyond the sheets in its upward movement, so that no fold will be accomplished on the margins of the sheets. The lever 35 is now brought forward, and the cams 37, turning under the frame 22, permit the spring 14 to exert its action upon the frame 22 and carry the clip-plate 24 into contact with the sheet of paper inserted, where it firmly confines the inserted sheet to the bed-plate 3. The inner end *a* of the confined sheet is now projected upwardly, as seen in Fig. XII. At the time the clip-plate 24 reaches its seat upon the paper the lever 35 has been thrown forward but a portion of its possible movement. The lever then being thrust downward to the limit of the forward movement, its rear crooked portion 35<sup>a</sup> is brought into contact with and fulcrumed on the upper edge of the frame 22 and by this means carries the shaft 36 upward at the same turning of said shaft and rotating with it the crank-pins 38. As the crank-pins rotate they raise the forward ends of the bars 28 and consequently elevate the folder-plate 31, carried by them. The folder-plate in its upward movement rides in contact with the surface of the end *a* of the sheet of paper A, lying against the rear of the clip-plate 24, and the spring-keepers 30 hold the folder-plate tightly to the clip-plate, the springing of the keepers permitting of the insertion of varying thicknesses of paper. A partial upward movement of the lever 35 is now made, and the cams 37, operating against the under surface of the frame 22, cause the bars 28 to descend and carry the folder-plate into contact with the bed-plate 3, in which action the plate folds the end *a* upon the body of the sheet A, as seen in Fig. XIV. A backward throw is now imparted to the lever 35, and the clip-plate 24 is elevated in the manner before described. The backward movement of the lever causes the staple-carrying bar to be raised and the staples to be projected through the slots 3<sup>a</sup> and 32 and the folded end of the sheet of paper A. Additional sheets of paper are inserted upon the first and in the same manner as the first until all of the sheets to be bound together, when, with the staples inserted through the sheets, the ends of the staples are clenched upon the sheets, and they are removed from the machine on the release of the levers 6 and the elevation of the operating parts.

It will be observed that the sheets of paper are always firmly confined in the machine and cannot slip in any manner, as at all times either the clip-plate or the folder-plate are in contact with them. One plate does not recede until the other has reached a bearing upon the sheets and the spring 14 acting upon both plates to press them downward.

In accomplishing the binding of sheets into book form a covering-board is first introduced in the same manner as the sheets of paper, and the staples are forced through said board or a flexible strip carried by it, and



the sheets following upon it are inclosed by a second covering-board applied on top of the last-inserted sheet by passing the staples through it previous to clenching their ends and removing the book from the machine. The book may then have a finishing backing-strip applied to it or is complete without such a strip.

Aside from the binding feature of the device it will be seen that the device may be satisfactorily employed as a clip-board only, papers being confined beneath the clip-plates 24 and 31.

I claim as my invention—

1. The combination of a base, a frame pivotally mounted thereon, a pair of plates or bars carried by said frame and adapted to alternately be brought into contact with said base, a pivotally-hung staple receiving and carrying bar, and means for operating said parts; substantially as set forth.

2. The combination of a base, a pair of plates or bars reciprocally mounted thereon, a spring arranged to press said plates or bars downwardly, a staple-carrier, and means for reciprocating said plates or bars and staple-carrier, substantially as set forth.

3. The combination of a base, a bed-plate provided with slots, a frame pivotally mounted on said base, inner and outer plates or bars carried by said frame, said inner plate or bar being provided with notches coexistent with the notches in said base-plate, a staple-carrier arranged to project staples through said slots and notches, and means for operating said plates or bars and said staple-carrier, substantially as set forth.

4. The combination of a base, a frame pivotally mounted thereon, inner and outer plates or bars carried by said frame, spring-keepers arranged to hold said inner plate into contact with said outer plate or bar, and means for operating said plates or bars, substantially as set forth.

5. The combination of a base, a spring-controlled frame pivoted thereon, slotted arms carried by said frame, bars pivoted in said arms, a plate or bar carried by said frame, a plate or bar carried by said bars, spring-keepers arranged to press against the pivots of said bars in said slotted arms, and means for operating said frame and bars, substantially as set forth.

6. The combination of a clip-board, a shaft journaled to said board, means for rotating said shaft in its bearings, a frame pivotally connected to said shaft, a clip plate or bar carried by said frame, a spring arranged to depress said frame, and an independently-mounted operating-lever arranged to elevate said frame, substantially as set forth.

7. The combination of a clip-board, a shaft journaled to said board, levers carried by said shaft, catches arranged to engage said levers, a frame pivotally connected to said shaft, a clip plate or bar carried by said frame, a spring arranged to depress said frame, and

an operating-lever arranged to elevate said frame, substantially as set forth.

8. The combination of a clip-board, a shaft journaled to said board, a pair of levers carried upon the ends of said shaft, slotted plates attached to the sides of said board, adjustable catches located in the slots of said plates arranged to engage said levers, a frame pivotally connected to said shaft, a clip plate or bar carried by said frame, a spring arranged to depress said frame, and an operating-lever arranged to elevate said frame, substantially as set forth.

9. The combination of a clip-board, a shaft journaled to said board, a clip plate or bar provided with pivotal connection to said shaft, a spring arranged to depress said clip-plate, a staple-carrying bar pivotally hung on said shaft, a folder plate or bar, and means for operating said clip-plate, staple-carrying bar and folder-plate, substantially as set forth.

10. The combination of a clip-board, or base-board, a shaft journaled to said board, a frame provided with pivotal connection to said shaft, a spring arranged to depress said frame, a clip plate or bar carried by said frame, a folder plate or bar pivotally connected to said frame, a staple-carrying bar pivotally hung on said shaft, and an operating-lever arranged to impart movement to said clip-plate, folder-plate and staple-carrying bar, substantially as set forth.

11. The combination of a clip-board or base-board, a shaft journaled to said board, a frame pivotally connected to said shaft, a spring arranged to depress said frame, a clip plate or bar carried by said frame, a pair of bars pivoted to said frame, a folder plate or bar carried by said bars, cams carried by said operating-shaft, and an operating-lever carried by said operating-shaft, substantially as set forth.

12. The combination of a clip-board or a base-board, a shaft journaled to said board, a frame pivotally connected to said shaft, a spring arranged to depress said frame, a clip plate or bar carried by said frame, a pair of bars pivoted to said frame, a folder plate or bar carried by said bars, an operating-shaft provided with crank-pins mounted in said bars, cams carried by said operating-shaft, a suitable carrying-bar pivotally hung upon said first-mentioned shaft, and an operating-lever carried by said operating-shaft, substantially as set forth.

13. The combination of a clip-board or base-board, a shaft journaled to said board, a frame pivotally connected to said shaft, a spring arranged to depress said frame, a clip plate or bar carried by said frame, a pair of bars pivoted to said frame, a folder plate or bar carried by said bars, an operating-shaft provided with crank-pins mounted in said bars, cams carried by said operating-shaft, a pair of arms pivoted to said first-mentioned shaft, a suitable carrying-bar carried by said arms, a pair of hangers hung upon said op-



erating-shaft, and provided with connection with said suitable carrying-bar arms, and an operating-lever carried by said operating-shaft, substantially as set forth.

- 5 14. The combination of a base and a staple-carrier hung thereon, said staple-carrier comprising a recessed bar, and a spring-plate having portions of its edge bent inwardly forming recesses of less width at the top than at  
10 the base of the recess in said bar, substantially as and for the purpose set forth.

15. The combination in a clip-board, of a base, a pair of reciprocally-mounted plates or bars, a staple receiver and carrier hinged to said base and arranged to automatically rise 15 with the elevation of the said plates or bars, and means for operating said plates, substantially as set forth.

EMORY A. TRUSSELL.

In presence of—

E. S. KNIGHT,  
STANLEY STONER.