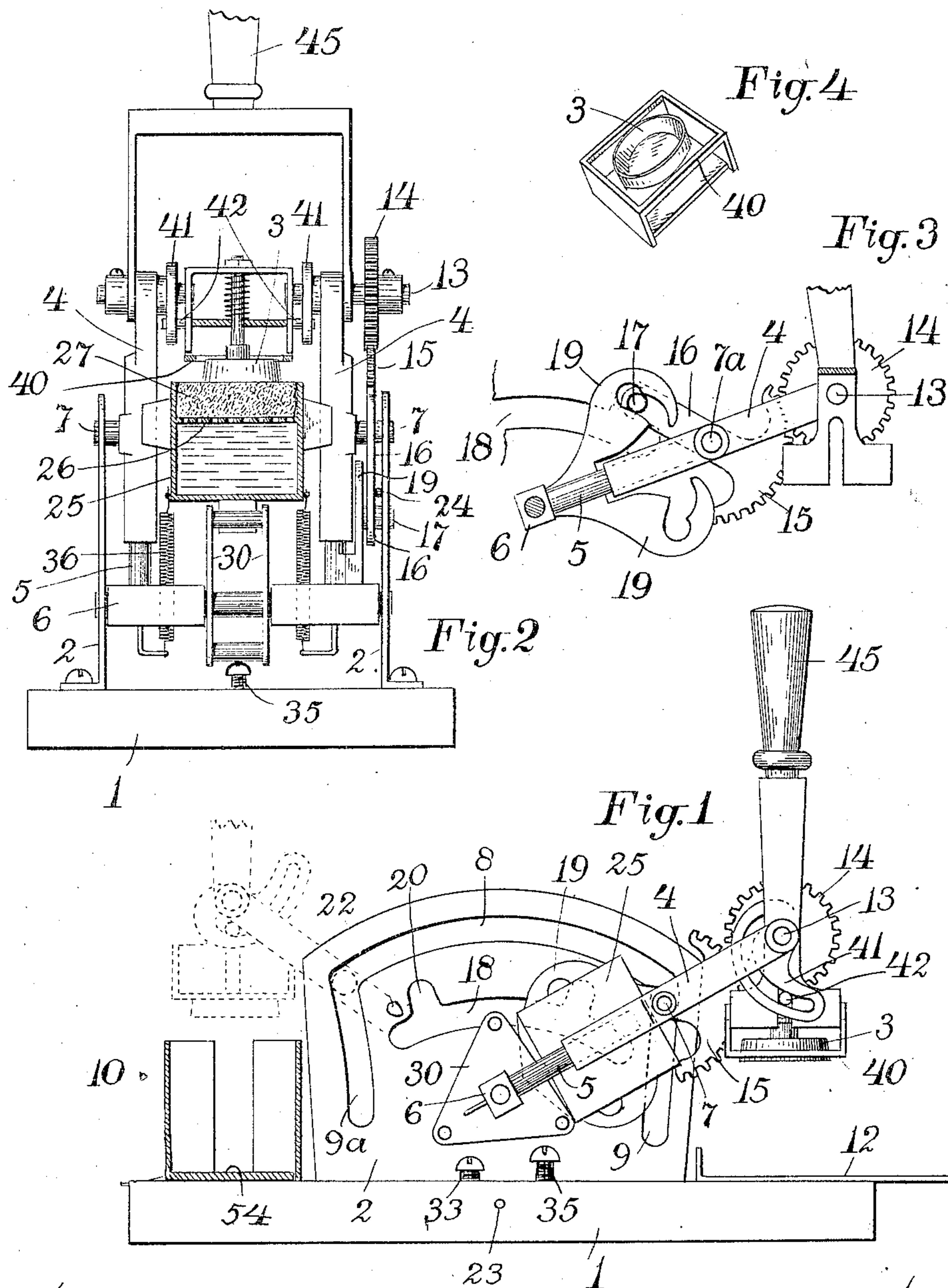


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APPLICATION FILED JULY 3, 1908.

940,497.

Patented Nov. 16, 1909.

2 SHEETS—SHEET 1.



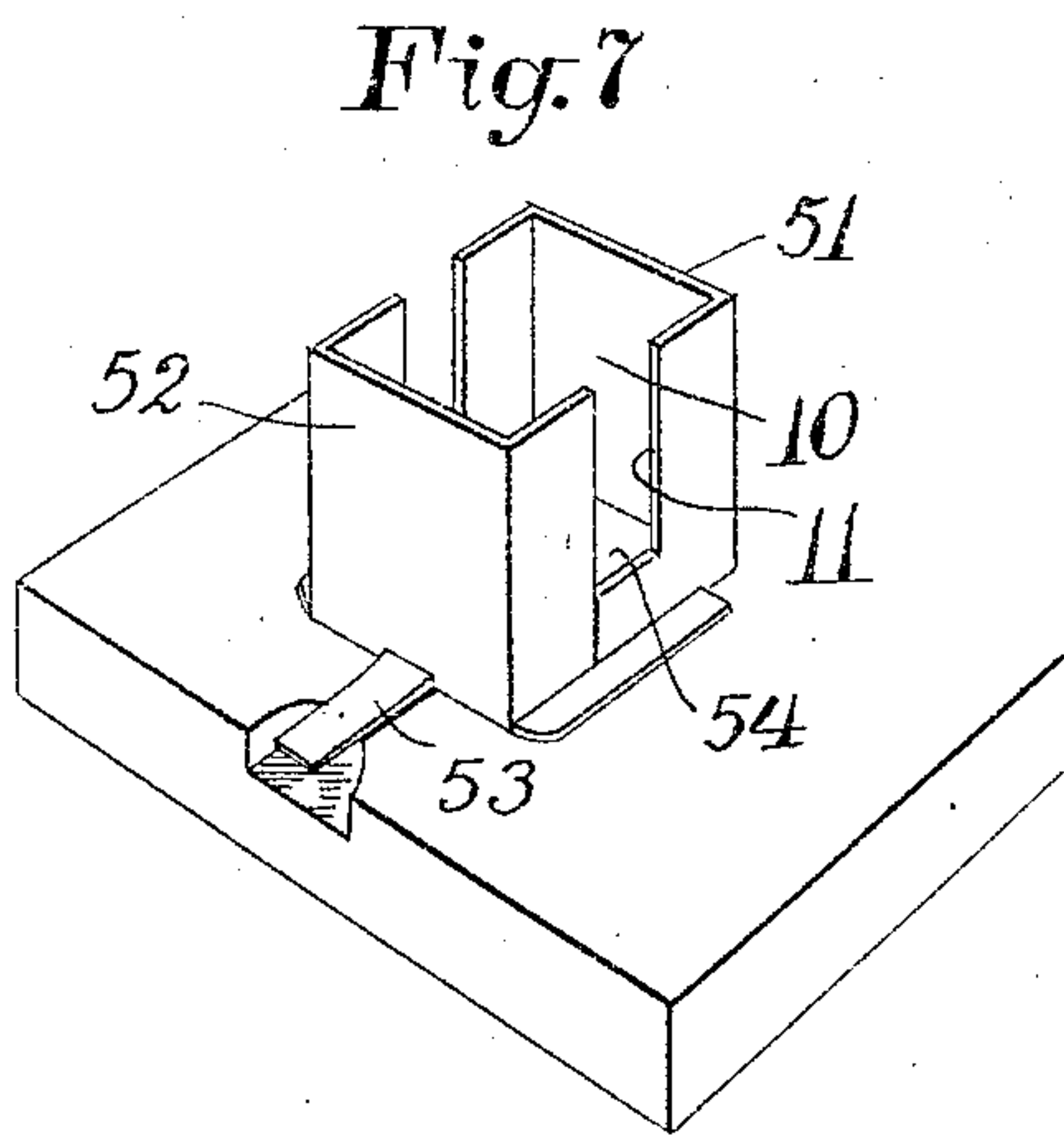
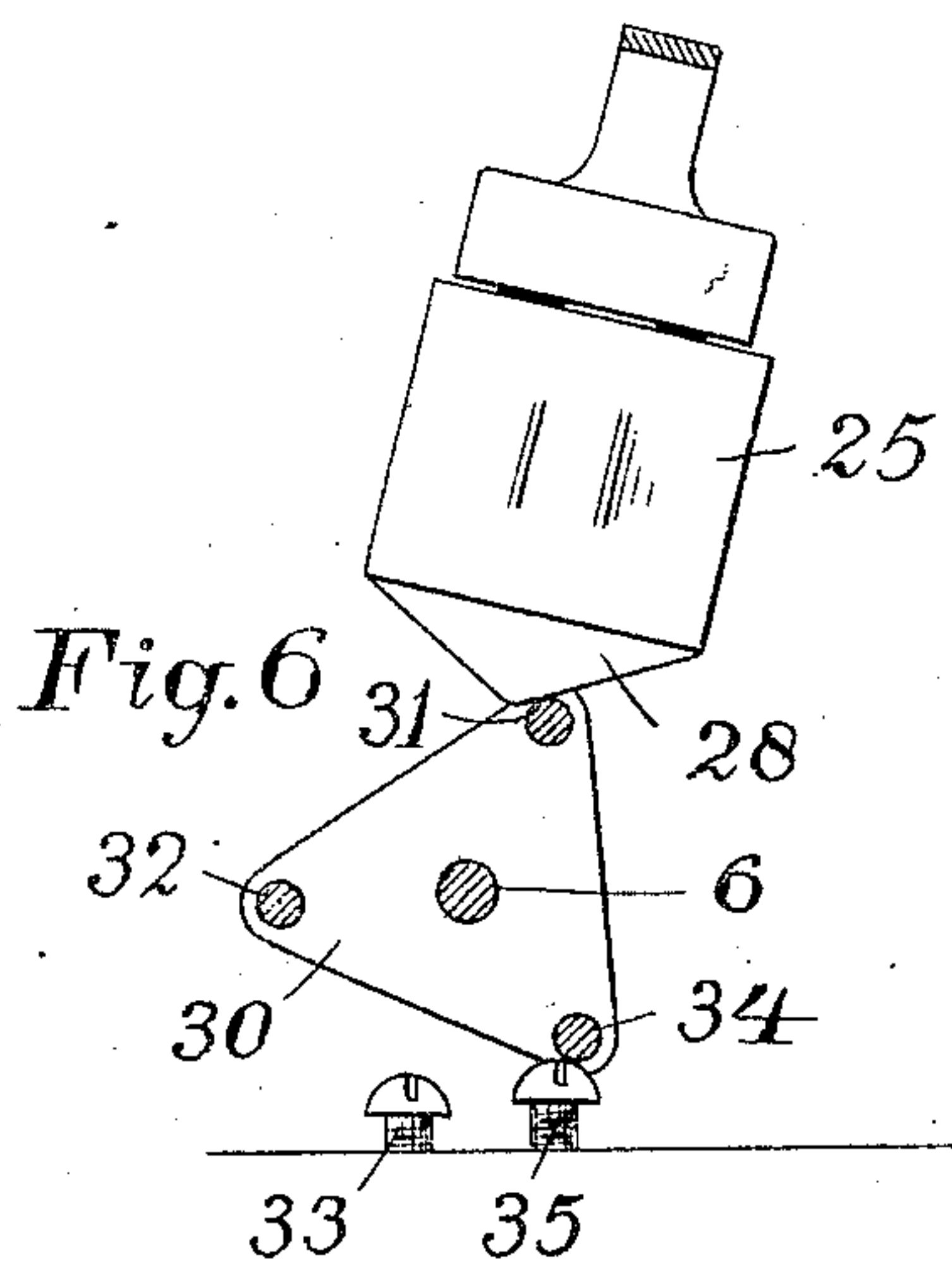
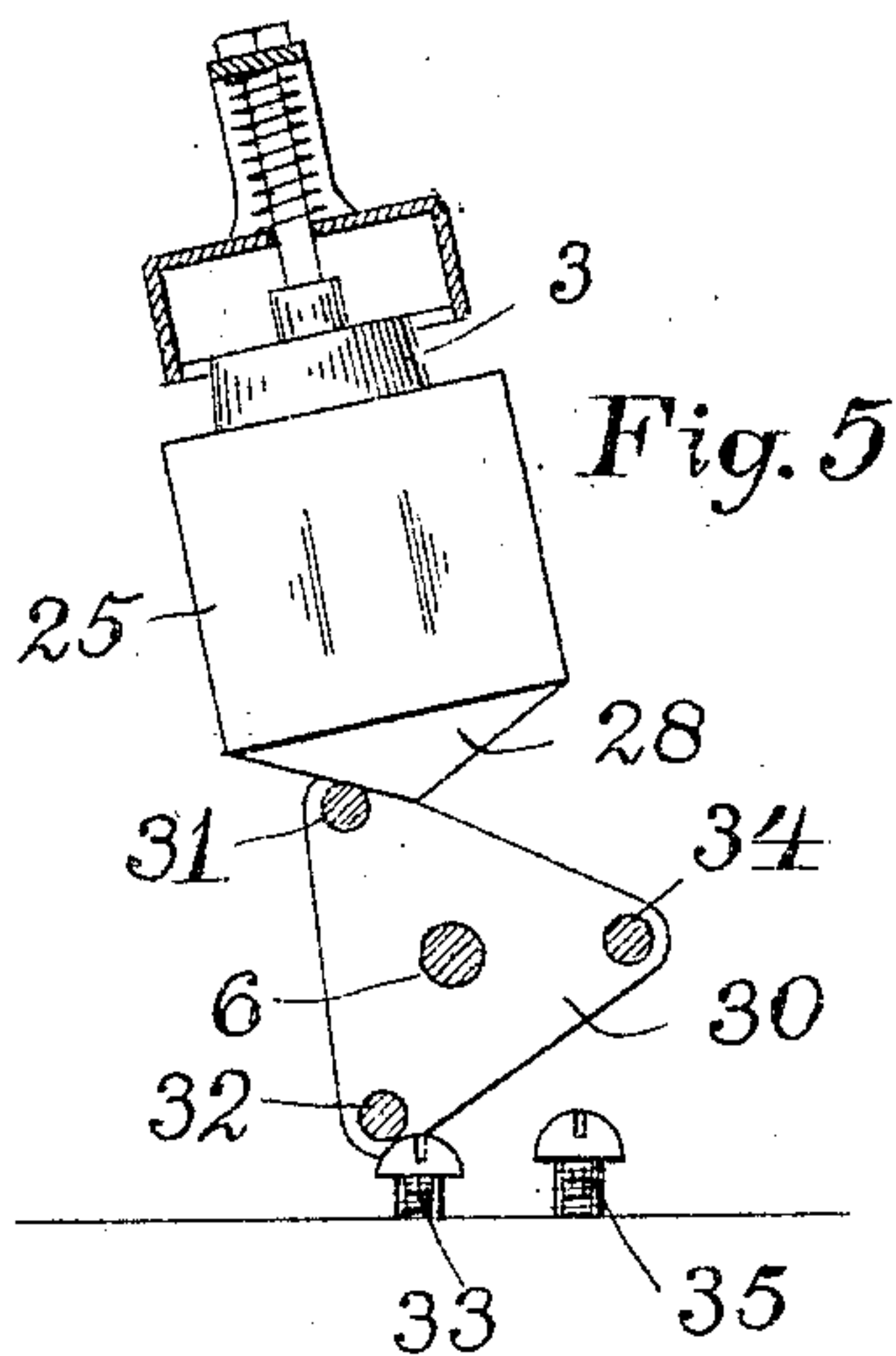
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# UNITED STATES PATENT OFFICE.

WILLIAM Z. BEAN, OF WEST MEDFORD, MASSACHUSETTS.

AUTOMATIC STAMP MOISTENER AND AFFIXER.

940,497.

Specification of Letters Patent.

Patented Nov. 16, 1909.

Application filed July 3, 1908. Serial No. 441,843.

*To all whom it may concern:*

Be it known that I, WILLIAM Z. BEAN, a citizen of the United States, and residing at West Medford, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Automatic Stamp Moisteners and Affixers, of which the following is a full, clear, and exact description.

10 The object of this invention is the construction of an improved device for automatically seizing the topmost of a pile of postage stamps, or other gummed slips; moistening the same, and then affixing it to the envelop or other desired surface.

Referring to the drawings forming part of this specification, Figure 1 is a side elevation of the device, with a part thereof in section and one of the side-frames removed. Fig. 2 is an end elevation of the device. Fig. 3 is a detail view of the parallel-motion mechanism. Fig. 4 is a perspective view from beneath of the stamp-seizing and pressing means. Fig. 5 is a sectional side view of the stamp-moistening arrangement at one step of its operation. Fig. 6 is a similar view at another step in its operation. Fig. 7 is a perspective view of the stamp-holder.

30 The device embodying my invention is mounted upon a suitable base 1, and substantially all the mechanism is located between and supported by the side-frames 2; the essential features of the same comprising the seizing, transporting and pressing means, and the moistening device. The seizing means consists essentially of the so-called "vacuum-tip" 3 adapted to be pressed down upon the top-most stamp and to cause the same to adhere thereto by atmospheric pressure. The tip and stamp being then removed from the pile of stamps, is carried past a moistening device by which the gummed face of the stamp is wet, and thence to the envelop upon which it is pressed. The vacuum tip is thus transported by means of the oscillating arms 4 each of which is telescopic and the interior section 5 of which is rigid with the shaft 6 terminally supported by the side-frames 2. The tubular sections 4 are provided with antifriction rolls 7 traversing the slots 8 in the side-frames; and the terminations of said slots descend in substantially vertical branches 9 and 9<sup>a</sup>. Thus guided in said slots and branches, the outer ends of the tubular arm-sections 4 are

made to preserve a predetermined path as they are swung from one extreme to the other. Such predetermined path is at its terminals substantially vertical, especially where the tip 3 is to descend into the stamp container 10, for this purpose the slots 9<sup>a</sup> being formed with a slight curvature and increased inward inclination as compared with the branch-slots 9, as shown in Fig. 1. This inclination and curvature is needed in order that the outer ends of the arms shall not reach farther out when in a horizontal position than when in the inclined one shown in dotted lines. At the point where the tip descends to the envelop placed upon the plate 12, it is hardly so necessary for accuracy of vertical movement, the main consideration being that the tip shall be maintained in a perfectly horizontal position in order to press the stamp evenly on the envelop. To thus preserve a horizontal position of the seizing and affixing means at each extremity of the arms' swing, said means is made rigid with a shaft 13 turning in the ends of the arms 4, and on one end of said shaft is fixed a spur gear 14 meshing with a segmental gear 15 turning on the pintle 7<sup>a</sup>, as in Fig. 3. The tail 16 of this segment is provided with an antifriction roll 17 entering the slot 18 in the side-frame 2 next thereto, while in line with said roll but at the opposite face of said tail, is another projection or roll designed to engage the irregular arms 19 rigid with the arm-section 5.

Near the ends of the slot 18 are the branches 20 rising therefrom as shown in Fig. 1; and when the segment is brought to substantially the position shown in said figure by the oscillation of the arms 4, a small lug 24 on the tail 16 meets a tooth 22 projecting from the side-frame in such a manner that the continued lowering of the said arms and hence of the pintle or rolls 7, forces the extremity of said tail upward, with its roll or pin 17 entering the branch 20. At the same time said pin or roll enters the recess in the fork 19 as shown in Fig. 3, as said tooth and lug disengage by the further depression of the arms 4. By the action of the segment 15 as its tail is thrown upward as above described, the gear 14 in mesh therewith is given a sufficient turn to bring the tip 3 to a horizontal position, while the subsequent control of the segment by the fork 19 causes the tip to maintain its horizontal position during the remainder of



its descent to the stamps at one side, or to the envelop at the other. When the arms rise, withdrawing the tip from the envelop or from the stamp-pile, the tooth 21 engages the lug 22 and brings the tail 16 into substantial parallelism with the arms 4, thereby turning the gear 14 and the tip 3 enough to make the face of the latter at right angles to said arms.

Inasmuch as the shaft 6 is eccentric with the slots 8, the center of curvature of the latter being located quite a distance below said shaft, as at 23, the passage of the pin-tles or rolls 7 along said slots will make the arms 4 telescope on the arms 5 a considerable distance nearer said shaft. The forks 19 being fixed to the arms 5, while the segment 15 is carried by the arms 4, said telescoping will cause the pin or roll 17 to sink between the forks 19 into the V between them. This serves to insure the parallelism of the axis of tip 3, and the arms 4 during the intermediate portion of said arms' swing.

The moistening portion of the device is constructed as follows: Slidable between and on the tubular arm-sections 4 is the water receptacle 25 having a perforated shelf 26 at a distance from the upper edge of the container to accommodate the thick block of felt 27. To raise this receptacle and moistened felt block or pad into contact with the stamp carried by the tip 3 during the intermediate portion of said tip's journey, the receptacle is provided with a cam-surface 28 fixed beneath it, as shown in Figs. 1, 5 and 6; and the shaft 6, with a triangular tumbler 30 mounted loosely thereon. When the arms 4 are swung toward the stampbox 10, as in Fig. 5, said cam surface 28 comes against the cross-bar 31 of the tumbler and turns the latter until its cross-bar 32 meets the screw-head 33. The tumbler being now unable to turn farther, the cam surface mounts up the cross-bar 31 and thereby elevates the receptacle until its felt pad touches the edges of the tip 3. As the arms 4 continue in their movement toward the left until the apex of the cam surface passes the cross-bar 31, the tumbler is turned thereby with its cross-bar 34 approaching the screw-head 35; such movement being imparted thereto by the downward pull given both by gravity and the two coiled springs 36 (Fig. 2). These springs pass freely through suitable openings formed transversely in the shaft 6, and are anchored at their lower ends to elbows rigid with said shaft. This downward movement of the receptacle brings it and its pad far enough away from the tip 3 to allow of the latter's being turned to its horizontal position as the stamp-box is reached. During this left-hand swing of the arms 4, there is no stamp clinging to the tip 3, and

the only object in causing the moist pad to touch the tip's edges is to give the latter a better vacuum hold upon the stamps than would be the case were the tip dry when pressed thereon.

When the arms 4 are swung in the opposite direction, following the tip's seizure of a stamp, the cam-surface and the tumbler act in the same manner as before, with the exception that the screw-head or stop 35 is sufficiently higher than the stop or screw-head 33 to hold the cross-bar 31 substantially higher than before, inasmuch as the tumbler cannot turn so far as before, and said cross-bar is more nearly directly above the shaft 6. This of course insures that the receptacle 25 is pressed much farther than before; enough so to compress the rubber tip and allow the moist pad to press the stamp against both said tip and the rectangular frame 40 which surrounds said tip; this frame being preferably of substantially equal size and proportions to the outlines of the stamps most often used. This therefore moistens the stamps near their edges as well as elsewhere and so insures their better adhesion to the envelop to which they are applied. Normally said frame 40 is held far enough from the edges of the tip 3 to permit the latter to be suitably pressed upon the pile of stamps to get a secure vacuum grip upon the topmost one thereof. When the stamp is to be affixed to the envelop, however, it is necessary for the edges of the stamp to be pressed thereagainst both in securing a proper adhesion, and also to keep the stamp from being pulled away from the envelop upon the withdrawal of the tip. To do this, the frame 40 is made automatically movable toward and from the shaft 13, and the preferable manner of doing this is by means of the cam-grooves 41 rigidly held by the arms 4, and the pins 42 entering said grooves and connected with said frame. Fig. 1 shows in full lines said grooves and pins disposed for depressing said frame to nearly its lowest extent relative to the edges of the tip 3; while the dotted lines show said cam-grooves disposed for raising the frame relative to the tip. Inasmuch as the gear 14 is rigid with said shaft, and said gear is given a rotation of substantially ninety degrees during the swing of the arms 4, while the cam pieces 41 are rigid with said arms, the travel of the pins 42 in said cam pieces gives to the frame 40 a substantial movement with respect to the edges of the tip or picker 3.

For operating the device manually, the handle 45 is provided; the same being loosely mounted on the shaft 13 to allow it to retain an upright position throughout the entire swing of the arms 4.

I prefer to have the stops 33, 35 adjustable vertically in order to permit the tumbler 30



to be varied in its effect on the moistener pad, and so to compensate for the latter's compression from long use. It will be noted that said pad is kept wet by the constant tipping to which the receptacle 25 is subjected at each extreme of the tip's movement. The receptacle is replenished with water either by pouring the same into and through the pad 27, or by providing a suitable closable opening through a side of the receptacle.

I prefer to have the stamp receiver 10 in two separable parts, the inner 51 of which is fixed, while the other 52 is removable and normally held in place by a suitable catch, as the spring catch 53. The removable section 52 is formed with a floor 54 which withdraws with it, in order that a pile of stamps which have been placed in the receiver can at any time be removed with said section to allow of a like section with a pile of stamps of different denomination being substituted for the other.

In using this stamp affixer, the operator grasps the handle 45 with his right hand, and thereby swings the arms 4 and connected parts from one extreme to the other; at the same time removing the stamped envelopes and inserting the unstamped ones with his left hand.

What I claim as my invention and for which I desire Letters Patent is as follows, to wit:—

1. The combination with a receiver for stamps and the like, of a yielding vacuum tip adapted to be pressed upon the contents of such receiver and also upon the articles to be stamped, of means for automatically pressing such stamps away from said tip when it is applied to the articles but inoperative when the tip is applied to the stamps.

2. The combination with a receiver for stamps and the like, of a stamp-engaging member adapted to adhesively seize the stamps, means for pressing said member upon the contents of said receiver and also upon the article to be stamped, and a moistening device pressed against the engaging face of said member both before and after it has seized a stamp.

3. The combination with a receiver for stamps and the like, of a yielding vacuum tip adapted to be pressed upon the topmost stamp in such receiver, and then upon the article to which such stamps are to be applied, and a frame about the tip adapted to sink below the level of the tip when the latter affixes the stamps, but not when the tip attaches itself to the stamps.

4. The combination with a receiver for stamps and the like, of a yielding vacuum tip, a swinging frame loosely carrying the same into position for application within said receiver and also upon the articles to

be stamped, and a moistening pad adapted to be brought into contact with the stamp being conveyed by said tip on its way to said articles.

5. The combination with a receiver for stamps and the like, of a swinging frame, a stamp seizing device carried thereby, a water receptacle sliding on said frame and provided with a moistening pad in its upper end, and means for moving said receptacle toward said stamp-seizing device.

6. The combination with a receiver for stamps and the like, of a swinging frame, a vacuum tip carried by the latter and adapted to be held throughout its travel with its face downward, a moistening pad movable toward and from the said tip, and means for raising said pad into bare contact with said tip during the latter's travel toward said receiver and into a more forcible contact therewith during its opposite travel.

7. The combination of a terminally supported shaft, a frame rising therefrom, a stamp-seizing device carried by said frame, a moistener box slidable on said frame, a triangular cam fixed to the bottom of said box, a triangular frame loosely mounted on said shaft, and adjustable stops for limiting the play of said triangular frame, and means for bringing the stamps and moistener into contact during the intermediate portion of said frame's swing.

8. The combination with a swinging frame, of a shaft carried at the free end thereof, a vacuum tip rigid with said shaft, a rectangular frame about the tip, pins connected with said frame, groove-cams rigid with said shaft and entered by said pins, and means for giving said shaft a partial turn during the swing of said frame.

9. The combination with side-frames, of swinging arms pivotally held by said frame, each arm consisting of two telescopic sections, grooves or slots in said side-frames each nearly concentric with the pivot of said arms, each slot terminating in substantially vertical branches, a projection from each movable arm-section entering one of said slots, and a pivotally held member at the extremities of said arms; said slot branches and projections serving to give a vertical path to said member during the latter parts of the said arms' swings.

10. The combination with side frames, of swinging arms pivotally held by said frames, each arm consisting of two telescopic sections, one of said frames having two slots nearly concentric with the pivots of said arms, a shaft carried in the extremities of said arms, a member rigid with such shaft, a spur gear fixed on said shaft, a segmental gear pivoted to one of said arms in mesh with said gear and formed with a tail, a projection in alinement with the pivot pin



of said segment entering one of said slots, and a projection from the tail entering the other of said slots.

11. The combination with side frames, of  
5 swinging arms pivotally held by said frames, each arm consisting of two telescopic sections, one of said frames having two slots nearly concentric with the pivots of said arms, a shaft carried in the extremities of  
10 the outermost arm-sections, a stamp-holding member rigid with said shaft, a spur gear fixed on said shaft, a segmental gear pivoted to one of said outer arm-sections, the same being in mesh with said gear and formed  
15 with a tail, a projection in alinement with the pivot pin of said segment entering the outer of said slots, and a projection from the tail entering the other of said slots; the last named slot having an extension near  
20 each end thereof, and a lug near the conjunction of each said extension and main slot, and said tail having a projection posi-

tioned to engage said lug at certain positions.

12. The combination with side frames, of 25 swinging arms pivotally held by said frames, a shaft carried at the outer extremities of said arms, a stamp-holding member rigid with said shaft, means for insuring a horizontal position to said stamp-holding member during the latter parts of said arms' 30 oscillations, a cam connected with said shaft adapted to be reversed in terminal positions, a horizontal frame about the stamp-holding member, and means engaging said cam causing the latter to vertically shift said frame 35 with respect to the said member.

In testimony that I claim the foregoing invention, I have hereunto set my hand this 26 day of June, 1908.

WILLIAM Z. BEAN.

Witnesses:

ARTHUR W. JONES,  
ERNEST A. FESSENDEN.