

W. A. HAYWOOD.
TAG HOLDER AND STRINGER AND LOOP KNOTTER THEREFOR.
APPLICATION FILED DEC. 11, 1908.

943,972.

Patented Dec. 21, 1909.

4 SHEETS—SHEET 1.

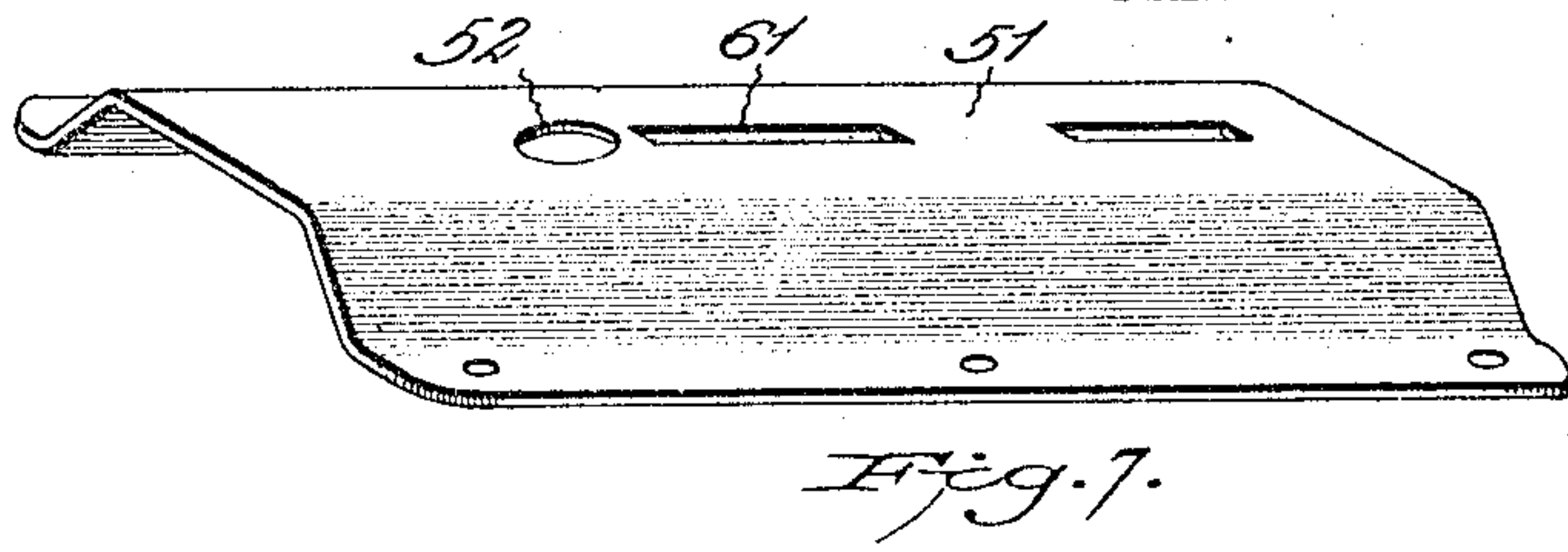
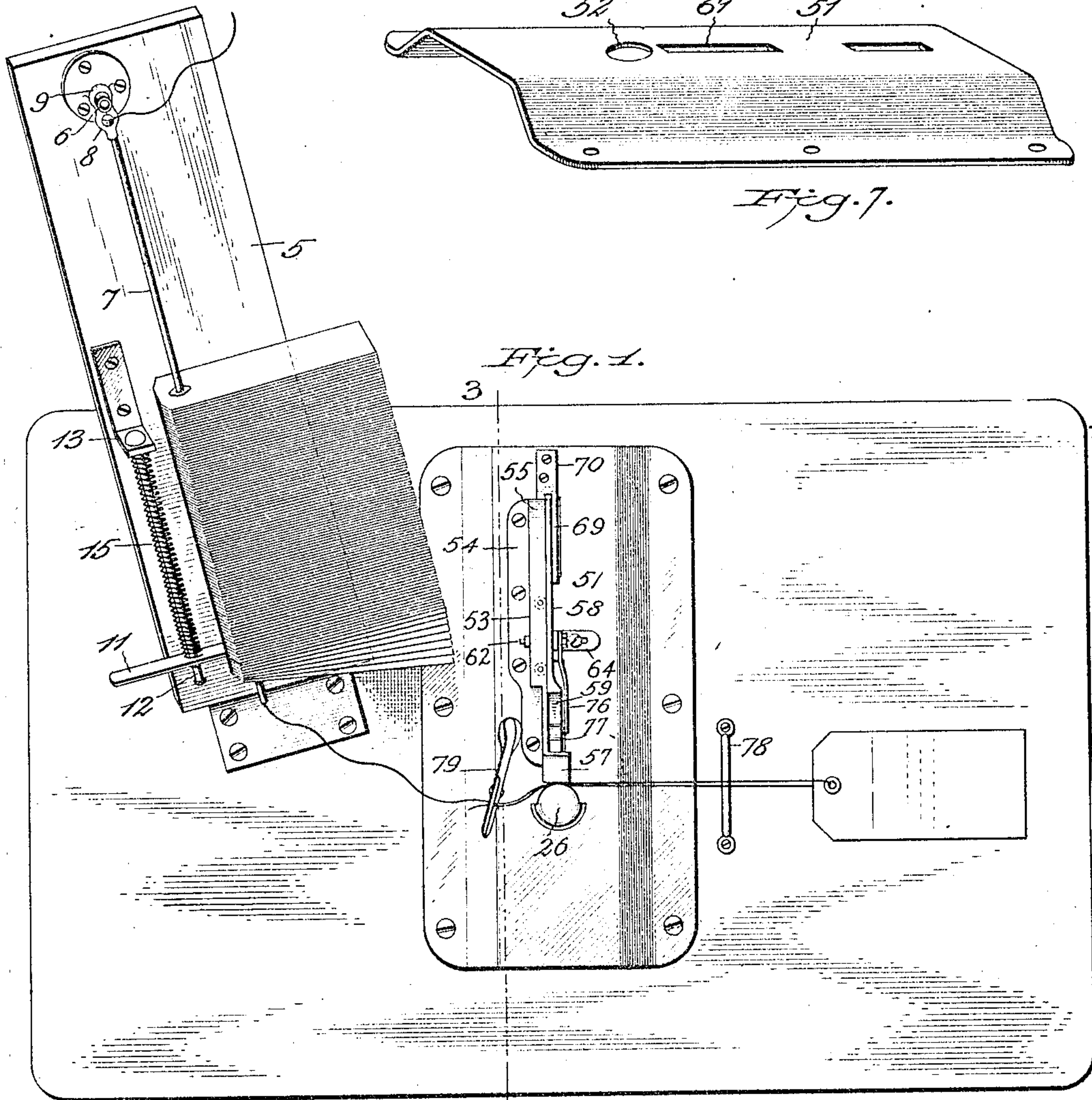


Fig. 14.

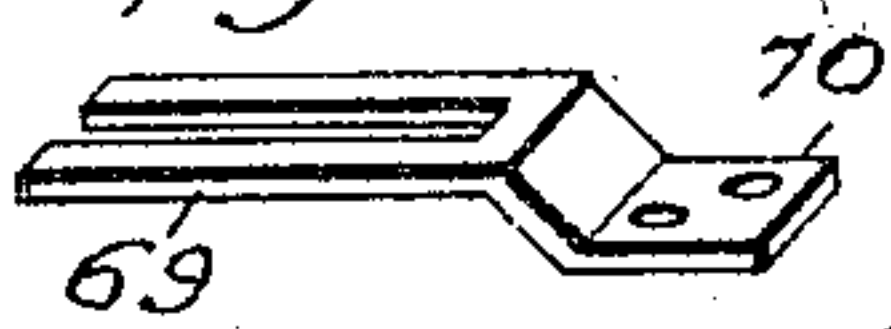


Fig. 6.

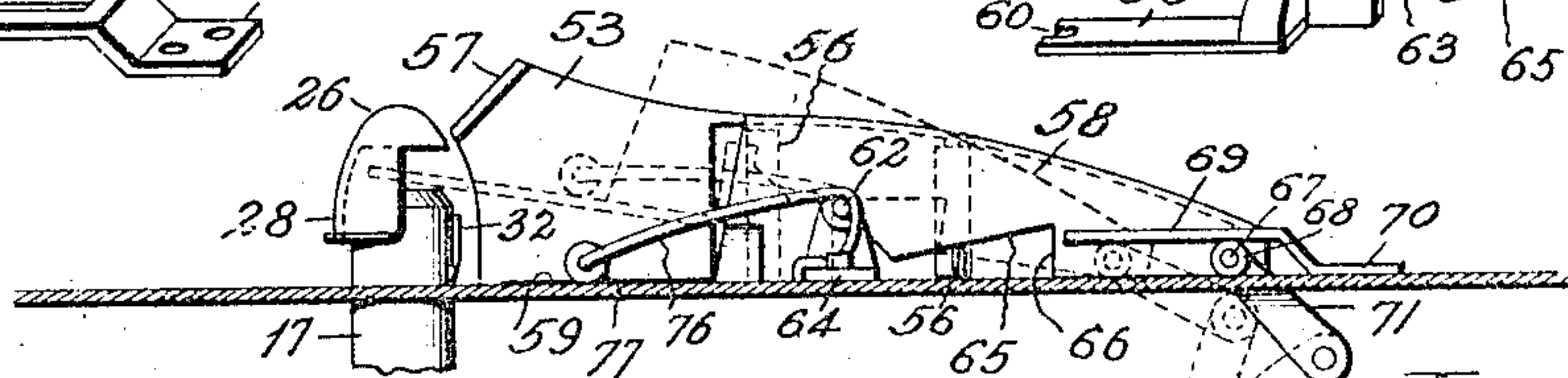
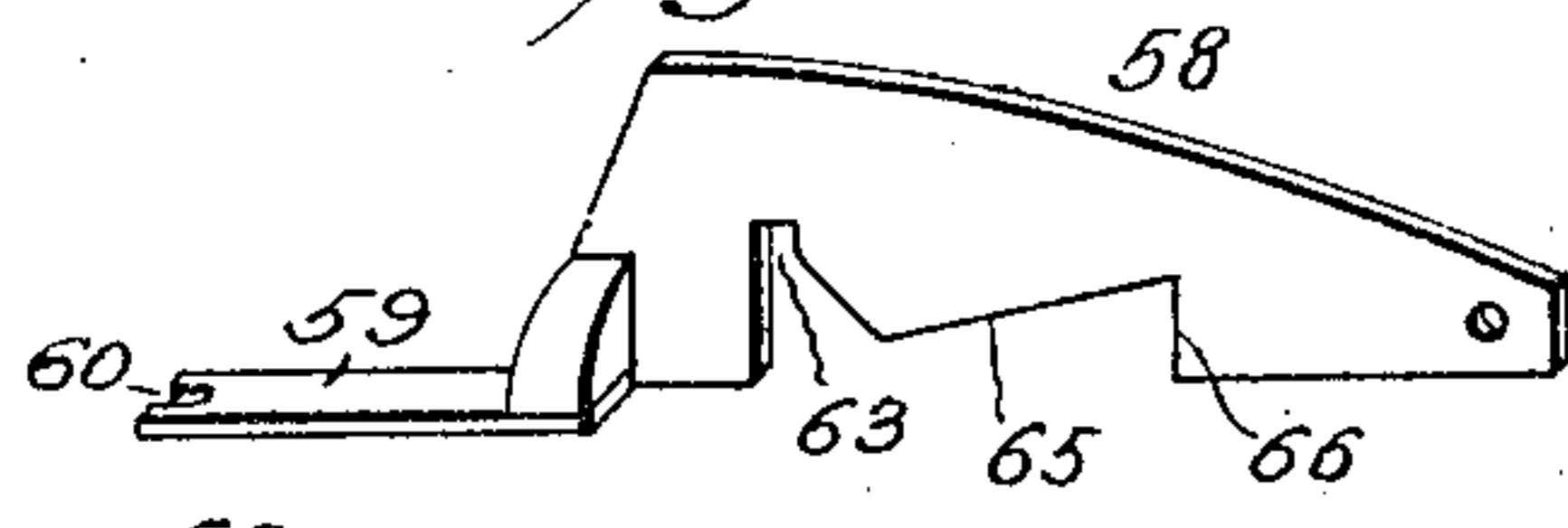


Fig. 13.



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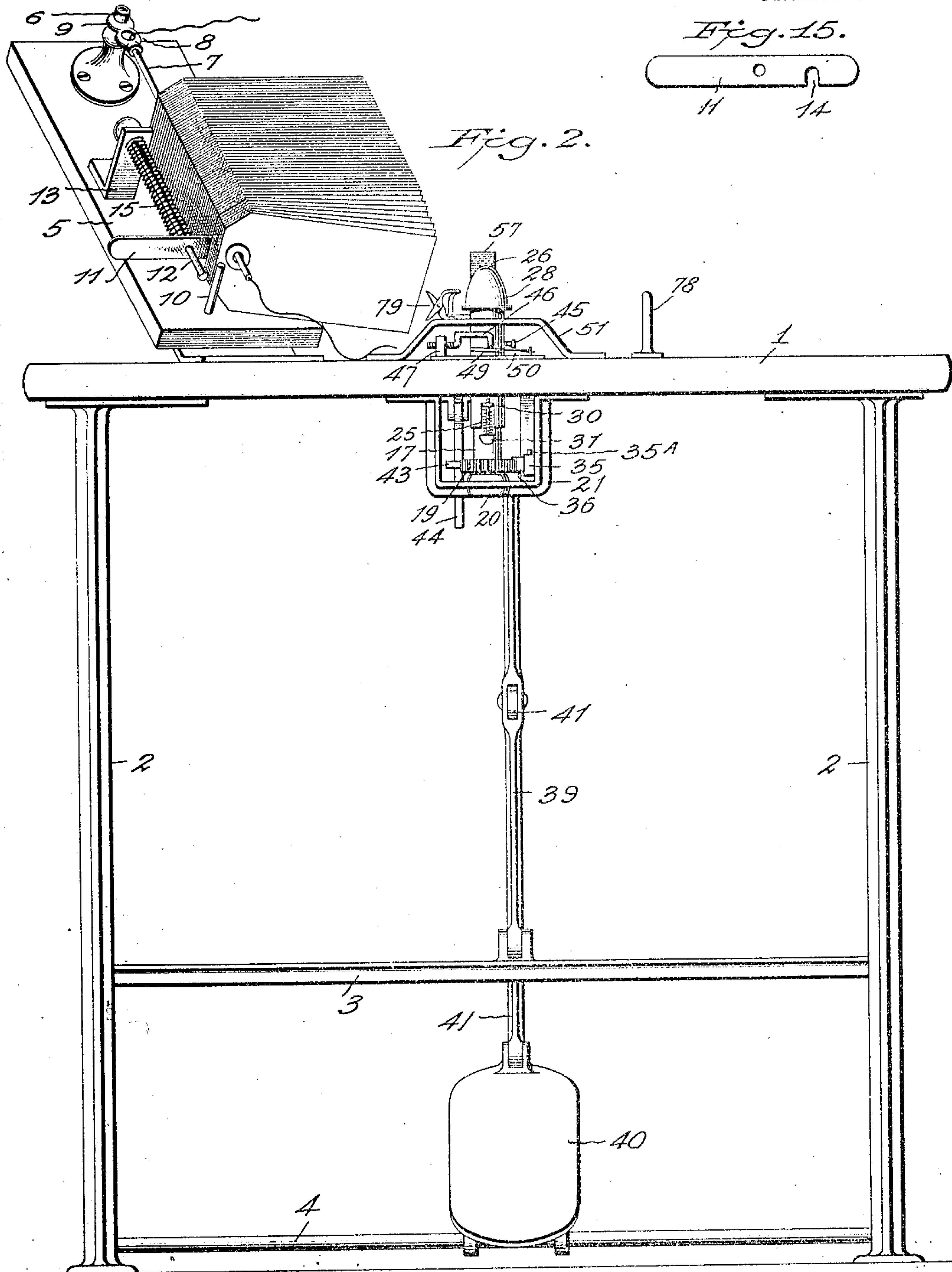
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4 SHEETS—SHEET 2



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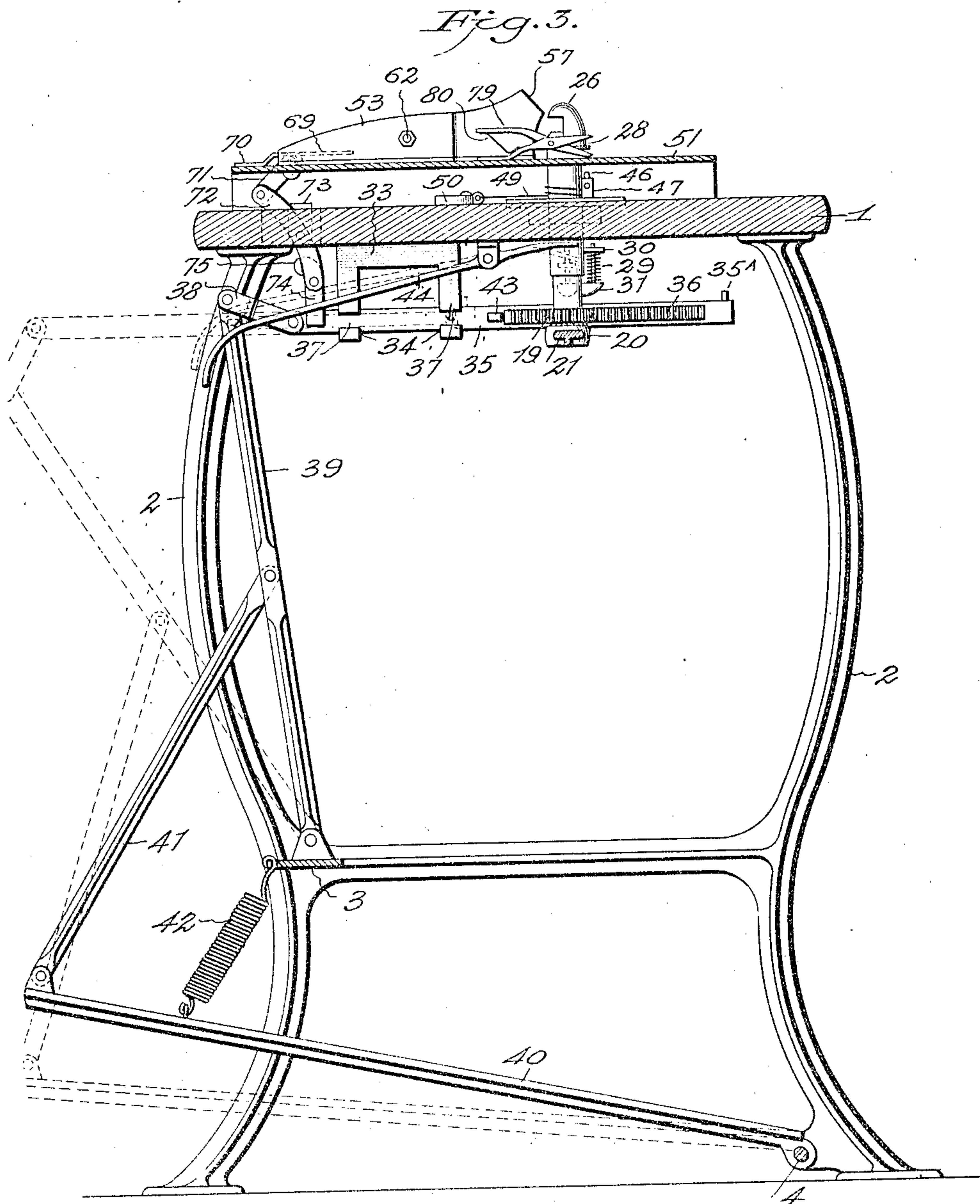
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

Fig. 4.

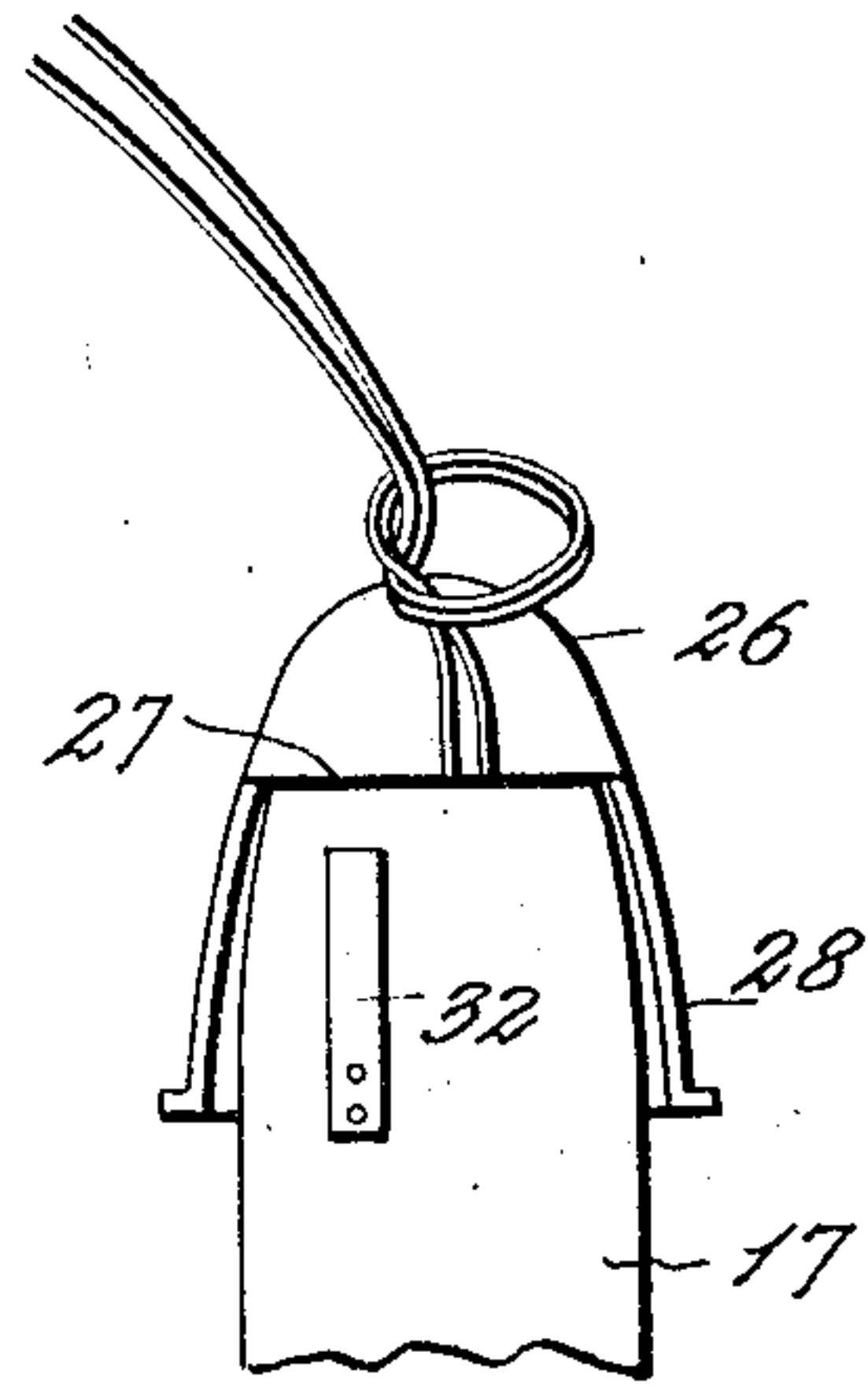
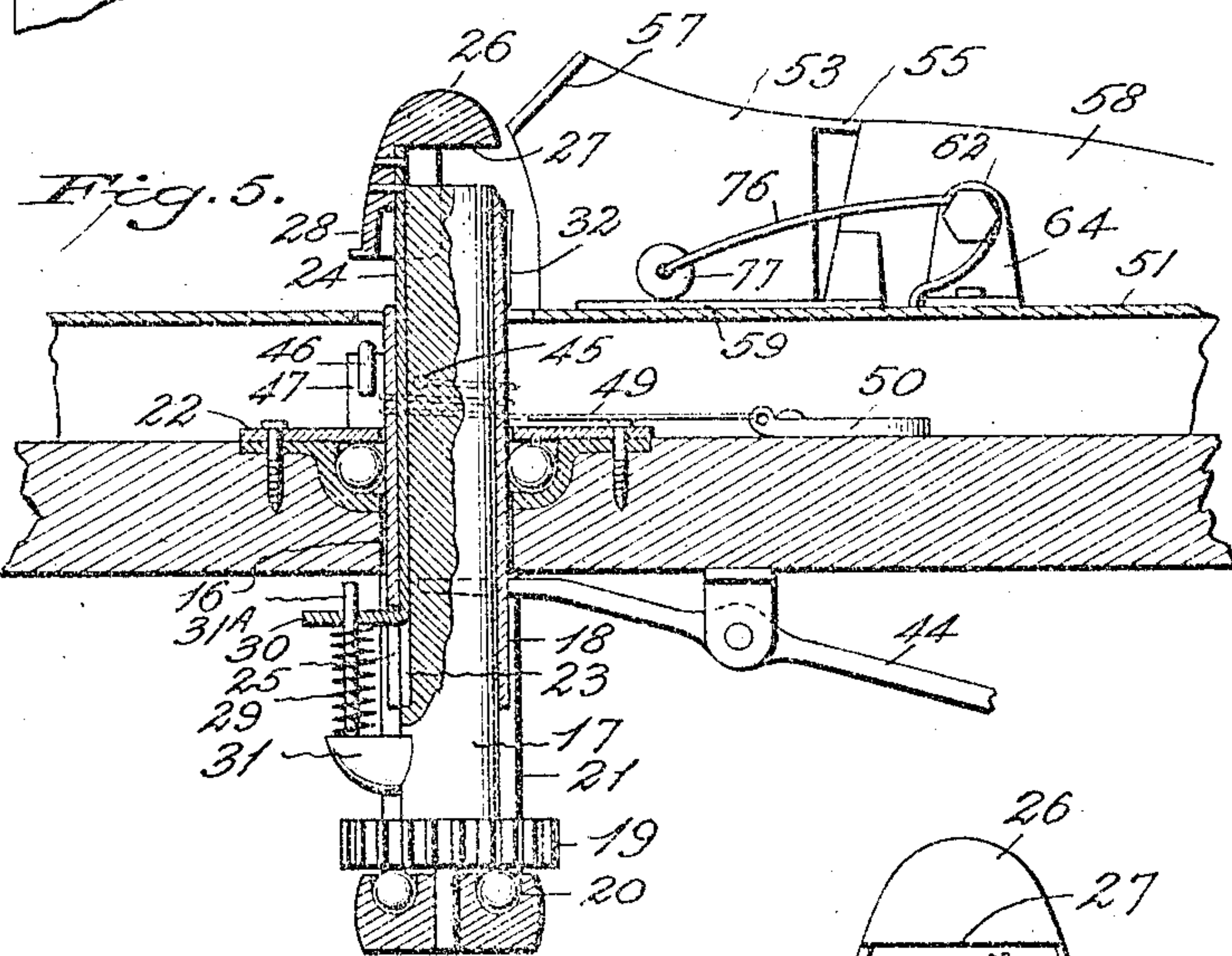
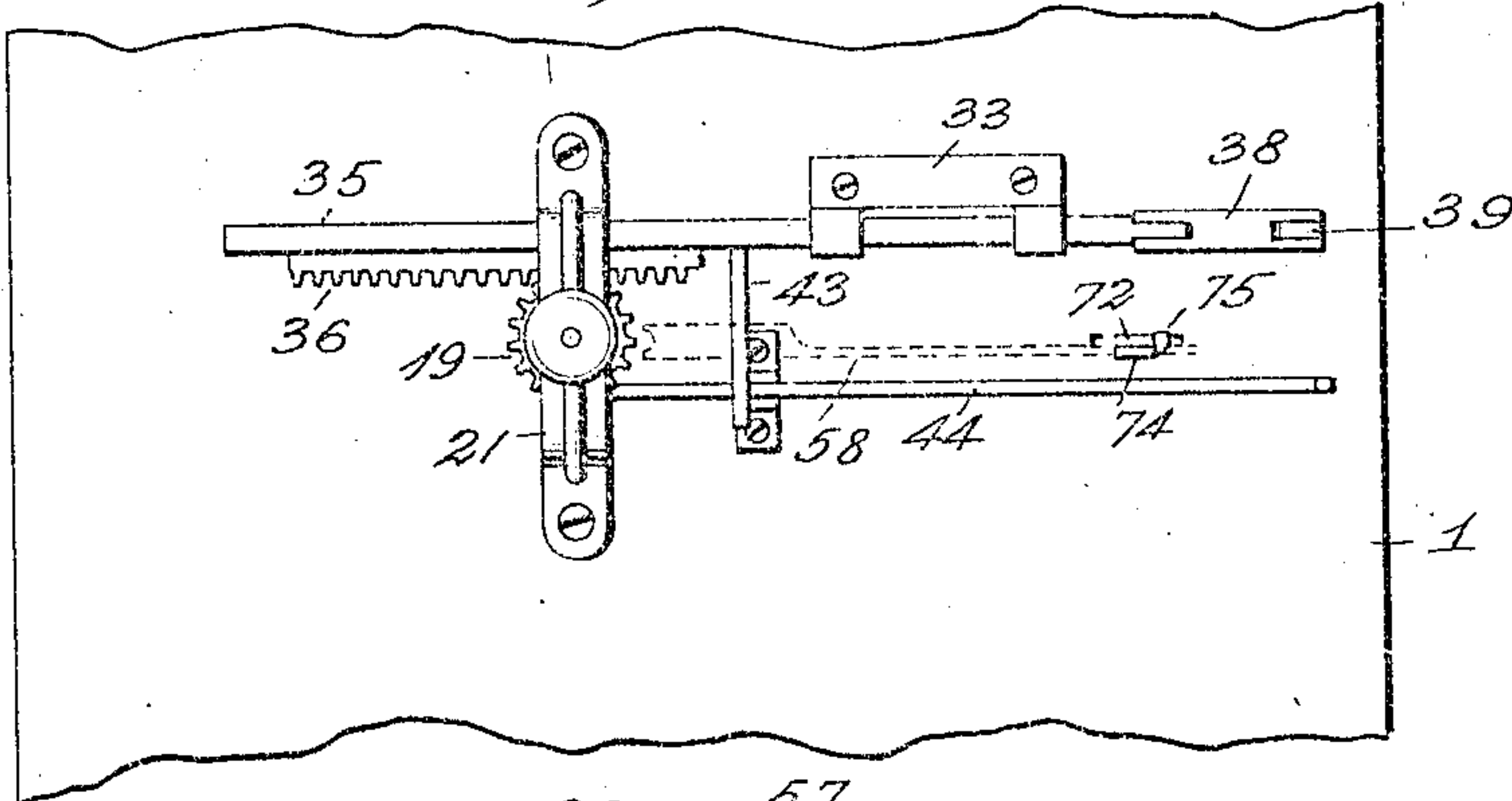


Fig. 12.

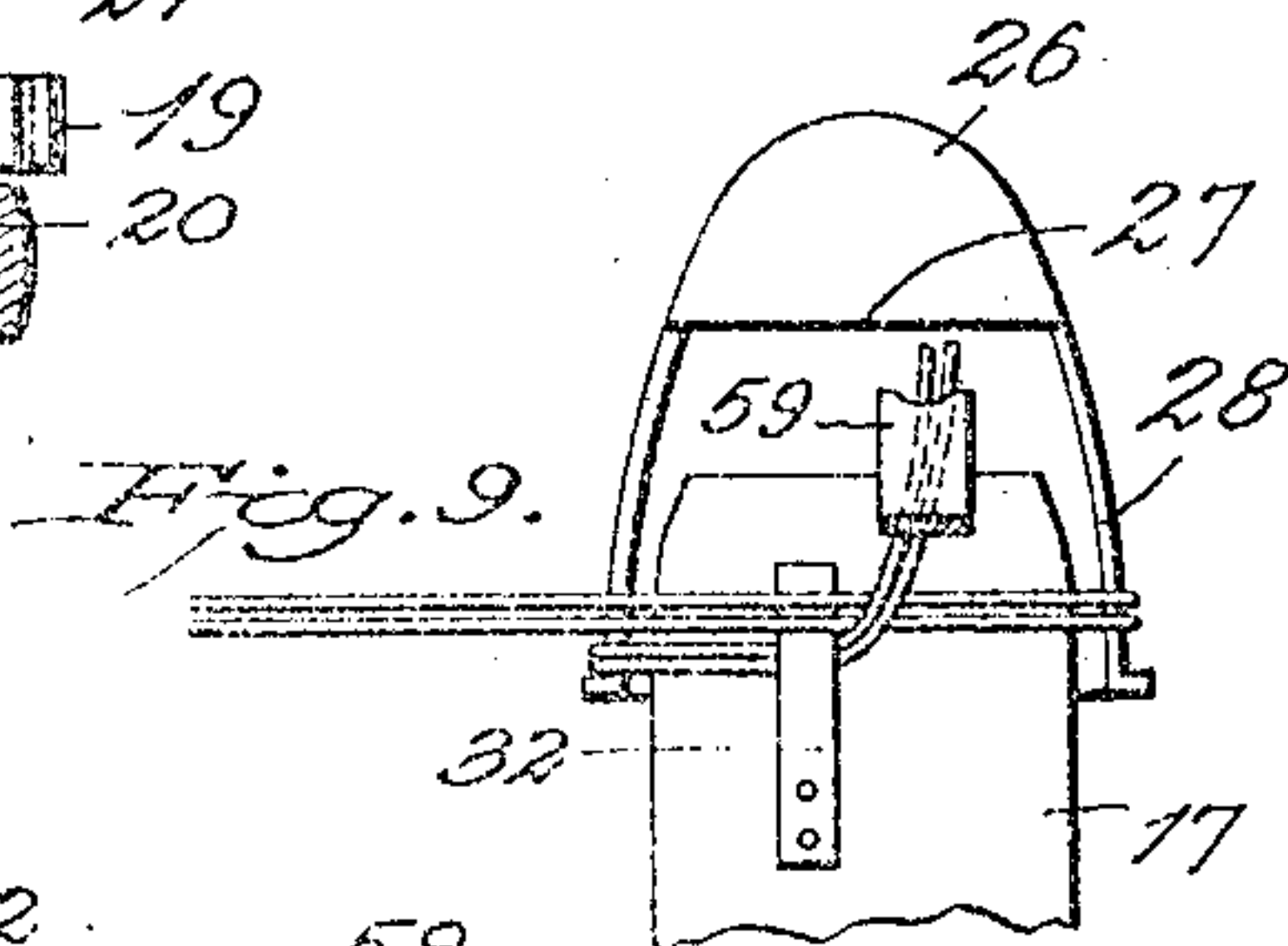


Fig. 9.

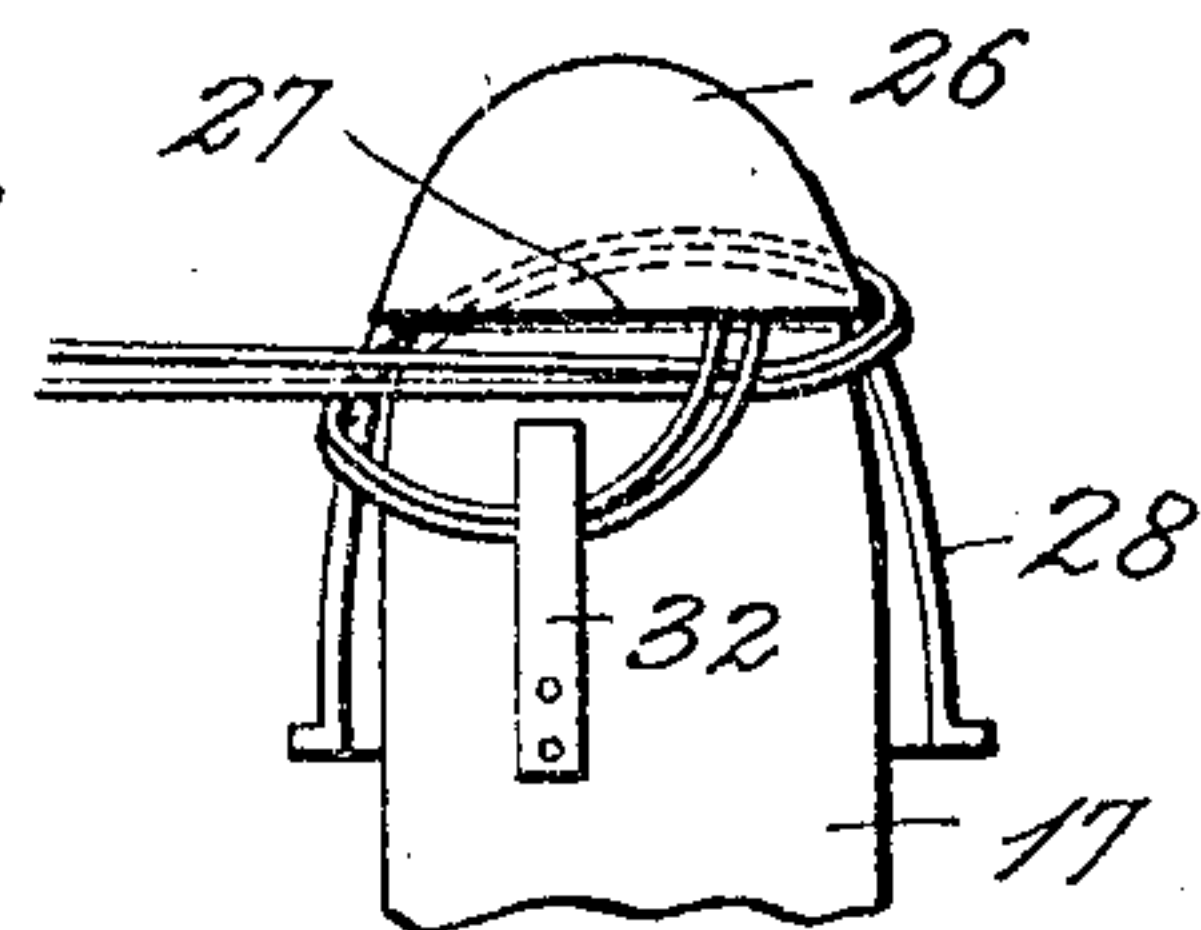


Fig. 11.

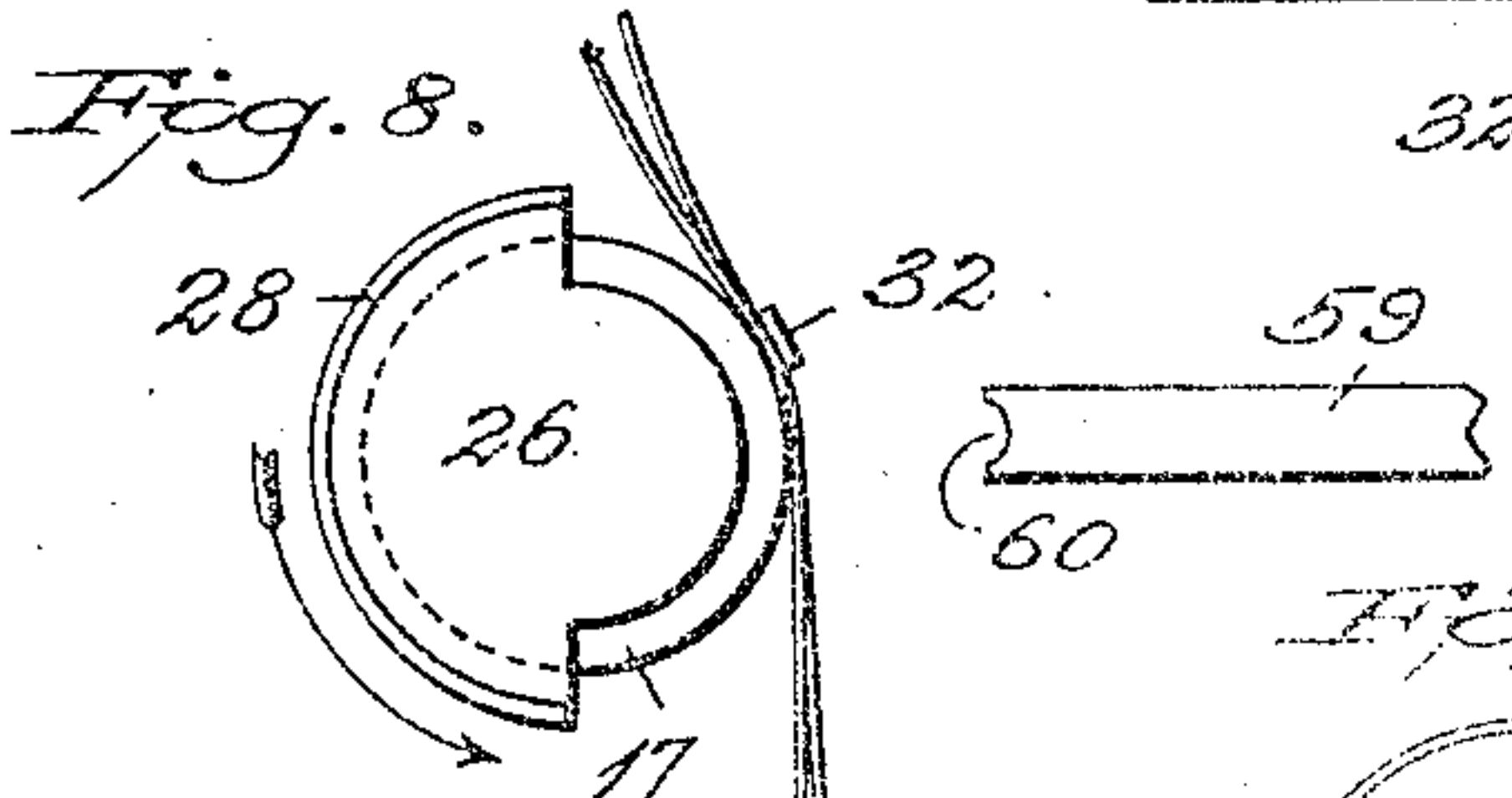
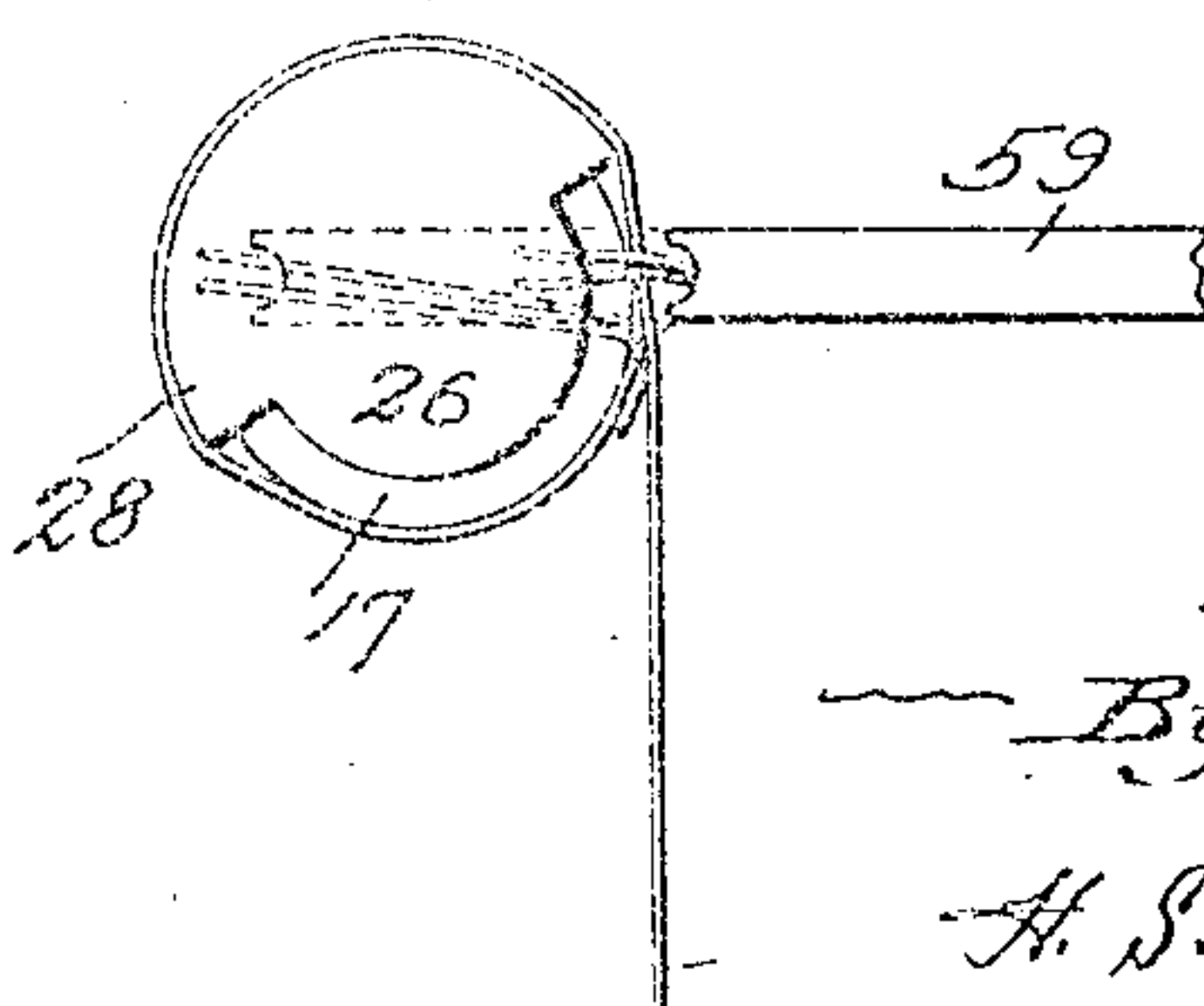


Fig. 8.

Fig. 10.



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UNITED STATES PATENT OFFICE.

WILLIAM A. HAYWOOD, OF DENVER, COLORADO.

TAG HOLDER AND STRINGER AND LOOP-KNOTTER THEREFOR.

943,972.

Specification of Letters Patent.

Patented Dec. 21, 1909.

Application filed December 11, 1908. Serial No. 467,031.

To all whom it may concern:

Be it known that I, WILLIAM A. HAYWOOD, a citizen of the United States of America, residing in the city and county of Denver and State of Colorado, have invented a new and useful Tag Holder and Stringer and Loop-Knotter Therefor, of which the following is a specification.

This invention relates to improvements in tag holders and stringers and loop-knotters therefor.

The object of the invention is to provide a machine of this character, comprising a tag holder and stringer, and a knotter, by which the loose ends of the string which is passed through the usual aperture in the tag, may be tied into a knot after a suitable length of string has been cut off, thus forming the string into a loop by means of which the tag may be secured to a trunk, parcel, or package in the usual manner.

The invention further consists in a tag holder, comprising a tubular rod upon which the tags are strung, and through which one end of a ball of twine passes, whereby, when a tag is removed from the end of the tubular rod, it passes on to the twine, the loose end of which is held by the operator, means being provided for pressing the tags against a stop adjacent to the end of the tag holding rod, whereby they are spread apart so as to be easily slipped from the end of the rod, one at a time.

The invention further consists in providing in connection with the tag holder, a knotter which is operated by a treadle, and which is adapted to knot the loose end of the twine passing through the tag, after the twine has been cut to form a loop of suitable length, mechanism operating in connection with the knotter mechanism, being employed for delivering the loose ends of the tag loop to the knotter, which is provided with a clamp, which acts at a predetermined time to hold the ends of the twine while the knot is formed.

These objects are accomplished by the mechanism illustrated in the accompanying drawings, in which:

Figure 1, is a plan view of the improved tag stringing machine, showing a tag having the twine looped through the same and engaged by the knotter, the string also passing between the blades of a cutter, by which the twine is cut to form a loop of suitable length prior to the knotting operation. Fig.

2, is a front elevation of the machine. Fig. 3, is a vertical sectional view thereof, on the line 3—3 of Fig. 1, showing the knotter and mechanism connecting it with an operating treadle. Fig. 4, is a bottom plan view of the knotter operating mechanism. Fig. 5, is an enlarged, sectional view through the knotter, showing the arrangement of ball bearings for facilitating the operation of the same. Fig. 6, is a side elevation of the mechanism for delivering the loose ends of the tag loop to the top of the knotter, in position to be clamped thereon. Fig. 7, is a perspective view of the platform which supports the mechanism which delivers the loose ends of the tag loop to the knotter. Figs. 8, 9, 10, 11, and 12, are views of the knotter and twine attached thereto, showing the different stages in the formation of the knot at the end of the tag loop. Fig. 13, is a perspective view of the pusher. Fig. 14, is a perspective view of the bracket for supporting the rear end of the pusher. And Fig. 15, is a side view of the tag-pushing blade.

In the practical arrangement of my device, the same is mounted upon a table or platform 1, which is supported upon legs 2, which are connected by a brace bar 3, a suitable distance above the floor, and by a rod 4, which connects the front legs adjacent to the floor. Upon the table is mounted a combined tag holder and stringer, comprising a board 5, which is suitably supported upon the left side of the table, and at a convenient inclination as shown. At the upper end of this board is secured a post or standard 6, upon which is mounted one end of a tubular rod 7, the other end of which extends to the lower end of the board. The upper end of the rod 7, is secured to a ring or band 8, which forms part of a similar ring or band 9, which is adapted to be slipped upon the standard 6. The hole or passage through the rod 7, communicates with the ring 8, and one end of a ball of twine is passed into the ring 8, and through the passage in the rod 7, so as to extend beyond the lower end of the rod, for a purpose to be fully explained hereinafter.

The tags are strung upon the rod 7, as shown in Figs. 1 and 2, and they are held upon the rod by an abutment post 10, which projects from the board 5, adjacent to the lower end of the rod 7, and bears against the lowermost tag, near its apertured end, as is clearly shown in Fig. 2.

To facilitate the removal of the tags from the rod, I provide a blade 11, which is mounted on a rod 12, which runs parallel with the rod 7, and this rod is secured at its upper end to a bracket 13, bolted to the board 5. The rod 12, passes through a hole in the blade, and the inner end of the blade is formed with a notch or recess 14, forming a hook by which the blade engages the rod 7, and the outer end of the blade is extended beyond the rod 12, to form a grasping portion. A coil expansion spring 15, encircles the rod 12, and is confined between the blade and the bracket 13, thereby exerting a pressure upon the blade, which tends to move it toward the lower end of the rod 12.

As many tags are placed upon the rod 7, as it will hold, but it is necessary that the tags near the lower end of the rod should be separated or spread apart, as shown in the drawings, in order that they may be easily grasped between the thumb and fingers of the right hand in removing them from the rod, and this spreading of the tags is accomplished by inserting the blade between the tags near the lower end of the rod 7, so that the lower forty or fifty tags will lie between the blade, and the post 10, and the pressure of the spring 15, against the blade, will cause the blade to compress the inner ends of the tags between itself and the post 10, which will result in spreading the tags at their outer ends in the manner shown in the drawings, and as the twine passes through and beyond the rod 7, each tag removed from the rod 7, will pass onto the twine.

In connection with the tag holder and stringer, I provide a knotter for knotting the loose ends of the twine after a sufficient length has been cut off to form a loop of the desired length, and this knotter is constructed in the following manner: Near the center of the table is formed a circular hole 16, through which a short shaft 17 is passed, which extends a suitable distance above and below the table, and a sleeve 18 is rigidly secured upon the shaft, and extends from near its lower end to the upper end thereof.

A gear wheel 19, is secured upon the lower end of the shaft 17, and this gear rests upon a plurality of anti-friction balls, arranged in a circular ball race 20, which is formed on the horizontal member of hanger 21, which is secured to the under side of the table. A ball race 22, surrounds the shaft, and fits in a recess in the top of the table, and this race is filled with anti-friction balls, which engage the periphery of the shaft. A vertical groove 23, is formed on one side of the shaft, and extends from the upper end thereof, to the bottom of the sleeve 18, and a slide 24 lies in this groove, and is held therein by the sleeve 18. The upper end of the slide 24 extends beyond the upper end of the shaft 17, and the lower

end of the slide is bent at right angles to the vertical portion, and extends out through a slot 25 in the sleeve, which slot extends from this point to the bottom of the sleeve. Upon the upper end of the slide 24, a twine clamping hood 26, is secured, and this hood comprises a clamping plate 27, which is adapted to clamp the ends of the twine between itself and the upper end of the shaft 17, and a semi-circular portion 28, which depends from the clamp and partially surrounds the upper end of the shaft. The clamp is normally held above, and out of contact with the end of the post, by a coiled expansion spring 29, which bears against the out-turned end 30, of the slide 24, and upon a lug 31, projecting from the shaft 17. This spring encircles a pin 31^A, which projects from the lug 31, through a hole in the end 30 of the slide. Near the upper end of the shaft 17, or rather, the sleeve surrounding the shaft, is secured a spring clamp 32, which is simply a short piece of thin spring metal, secured at its lower end to the sleeve, while its upper end is free, and between this spring and the periphery of the sleeve, the loose ends of the tag loop are clamped prior to the operation of forming the knot. In forming a knot, the shaft must be given a partial rotation to wind the end of the tag loop around the lower end of the hood, and the hood must be pressed down to clamp the ends of the tag loop against the upper end of the shaft, and these movements are accomplished in the following manner: Upon the under side of the table, is secured a bracket 33, having depending members, which are formed with slideways 34, in which is mounted a slide bar 35, on the forward portion of which is secured a rack bar 36, which engages and operates the gear wheel 19 on the end of the shaft 17. The rack bar is of less width than the slide bar, and the slideways have slots 37, through one side, which permit the rack bar to pass when the slide bar is moved rearward.

To the rear end of the slide bar 35, is pivotally secured one end of a short arm 38, the other end of which is pivotally attached to the upper end of a rock arm 39, the lower end of which is pivotally secured to the brace bar 3, connecting the table legs. A treadle 40, is mounted at its forward end upon the rod 4, connecting the table legs, and the rear end of the treadle is connected by an arm 41, with the rock arm 39. A contraction spring 42, connects the treadle with the brace bar 3, and by this means the treadle is normally held up, and the parts occupy the positions shown in full lines in Fig. 3. A finger 43, projects from the slide bar 35, at the rear end of the rack bar 36, and this finger is designed to contact with and lift the rear end of a lever 44, which is pivoted to the under side of the table. The forward

end of this lever lies on one side of and adjacent to the shaft 17, and in position to lie above the out-turned end 30, of the slide 24, which operates the clamping hood 26. The rack bar is of a length to rotate the shaft and hood from the position shown in Fig. 8 to that shown in Fig. 10, when the rack bar passes out of engagement with the gear wheel 19, at which instant a pin 45, projecting from the shaft 17, is engaged by a hooked arm 46, which is threaded to a post 47, upon the table, and further rotation of the shaft is checked, and the shaft is held stationary by flexible connection 49, one end of which is wound a few turns upon the shaft and secured to the pin 45, while the opposite end of the said connection is secured to a spring 50, which exerts a constant pull on the connection, which unwinds from the shaft, as the same is turned in the direction of the arrow, Fig. 8, by the rack bar.

When the shaft is stopped by the engagement of the pin 45, with the arm 46, the end 30 of the slide 24, lies directly beneath the forward end of the lever 44, and as the slide bar 35, continues its rearward movement, the finger 43 engages the lever 44, which inclines downward from its pivotal point, and terminates in an inwardly curved end. As the rear end of the lever is lifted, the forward end thereof engages the end 30 of the slide, and thereby moves the hood 26, down upon the upper end of the shaft 17, and as the finger engages the curved portion of the lever, the hood is tightly clamped upon the shaft, until the pressure upon the treadle is released, when the spring 42, lifts the treadle, whereby the parts are restored to their normal position, and as the lever 44, releases the end 30 of the slide 24, the spring 29 lifts the slide and hood out of contact with the end of the shaft. A pin 35^A in the end of the slide bar engages the end of the bracket 33, and limits the rearward movement of the slide bar.

In order to knot the loose ends of the tag loop, means must be provided for automatically thrusting the said loose ends between the end of the shaft and the clamping hood at the instant the shaft ceases to rotate, and before the hood begins to descend, and this operation is accomplished by the following mechanism:

A metal platform 51, is secured upon the top of the table, and is provided with a circular aperture 52, through which the upper end of the shaft 17 projects, and upon this platform is secured a vertical plate 53, having an out-turned flange 54, upon its lower edge, having screw holes whereby the flange may be screwed or bolted to the platform, and an in-turned flange 55 on its upper edge, having bearing holes in which are mounted the upper ends of a pair of vertical rollers 56, the lower ends of which are mounted in

apertures in the platform. The forward end of the plate lies adjacent to the upper end of the shaft and hood, and a right angled bend 57, is given to this end of the plate, which also stands at an inclination to the hood, and with the hood forms a guide for the ends of the tag loop, in placing the same in the spring clamp. The plate 53 and platform 51, run parallel with the slide bar 35, and resting upon the platform so as to bear against the rollers 56, is a cord pusher 58, comprising a flat body portion, having a finger 59 projecting from its forward end, the extremity of which extends to within a short distance of the shaft, and is provided with a semi-circular notch or groove 60. The finger 59 normally lies in a slot 61, in the platform, and a screw or bolt 62, passes through the plate 53, and through a recess 63, in the lower edge of the pusher, and its opposite end is headed, and passes through a bracket 64, secured to the platform. The rear edge of the recess 63 inclines from its upper end at an angle of about forty-five degrees, and from this termination of this edge of the recess, the lower edge of the pusher inclines upward at a slight angle as shown at 65, and terminates in a vertical shoulder 66. A pin 67, passes through the rear end of the pusher, and carries a roller 68 at each end, which rollers are adapted to bear upon the platform and upon the bifurcated end 69 of a bracket 70, which is secured to the platform. The rear end of the pusher lies in the bifurcated end of the bracket 70, and this bracket and the bracket 64 hold the pusher in position against the rollers 56. An arm 71 is pivotally attached to the pin 67, at one end, and its opposite end is pivotally connected to a lever 72, which is pivotally secured to a bracket 73, extending into an opening formed through the table. To the lower end of the lever 72, is pivotally attached a trigger 74, having a lug or projection 75 on its rear edge, which engages the rear edge of the lever, so that when the trigger is pressed in one direction, the lug acts as a fulcrum, whereby the lever is moved with the trigger, but when pushed in the opposite direction, the trigger swings on its pivot independently of the lever. This trigger lies in the path of the finger 43, on the slide bar 35, and when the said finger engages the trigger, on its rearward movement, the lever 72 is rocked on its pivot and through the arm 71, moves the pusher forward, and as the inclined edge of the recess 63 of the pusher contacts with and rides upon the pin 62, the forward end of the pusher and its finger 59 are elevated, as shown in dotted lines in Fig. 6, and as the pusher moves forward, the notched end of its finger passes in between the upper end of the shaft 17, and the clamping face 27 of the hood 26, carrying the loose ends of the

tag loop with it, as will be more fully explained hereinafter. At this point, the slide bar finger 43, escapes the trigger 74, and engages the lever 44, the forward end of which engages the end of the slide 24, and moves the clamping hood down upon the end of the shaft, as previously mentioned. When the trigger escapes the finger 43, the pusher is instantly restored to its normal position, by a spring arm 76, the forward end of which carries a roller 77, which rests upon the pusher finger 59, the opposite end of the spring being coiled upon the pin 62, and then secured in any suitable manner to the bracket 64.

In operation, the tags are strung upon the tubular rod 7, as shown in Figs. 1 and 2, and are held thereon by contact with the post 10, the twine extending through the rod and beyond its lower end. The end of the twine is grasped by the left hand, and the lower-most tag is removed by the right hand, and moved to the position shown in Fig. 1, the looped portion of the twine or cord resting upon a bridge 78, which positions it at a proper level relatively to the knotter. The two lengths of the loop, at a suitable distance from the tag, are then passed down between the guide end 57 of the plate 53, and the hood 26, into the spring clamp 32, and the continuous length of the loop is severed by a pair of scissors 79, which for convenience are rigidly secured to the platform 51, and are held normally open by a spring 80. The loop is held gently upon the bridge 78, and the treadle 40 is pressed down, and through the medium of rods 41, 39 and arm 38, the slide bar 35 is moved rearward. The rack bar 36 engages and turns the gear wheel 19, and the shaft 17 is thereby given a partial rotation, which causes the free end of the loop to be wound around the lower end of the hood, and the upper end of the shaft, as shown in Figs. 9 and 10, and the loose ends of the loop, which are held by the clamp 32, pass beneath the main portion of the loop and are held by the said clamp directly in front of the notched end of the pusher finger 59. At this point in the rotation of the shaft, the rack bar passes out of engagement with the gear wheel 19, and the spring 50, and flexible connection 49, cause the pin 45 to engage the hook 46, which prevents further rotation of the shaft. The slide bar finger 43, then engages the trigger 74, whereby the lever 72 is rocked, and the pusher 58 moved forward, and its finger elevated as before described, and the notched end of the finger catches the loose ends of the loop, lifts them over the portion of the loop encircling the hood, and pushes them in between the upper end of the shaft 17, and the hood clamp 26. The trigger then escapes the slide bar finger 43, and the pusher is instantly restored to its

normal position by the spring arm 76, and immediately thereafter the said finger engages the lever 44, which operates the slide 24 as before described, and clamps the hood upon the loose end of the loop. The loop is then pulled up with the right hand so as to disengage it from the spring clamp 32, and the portion encircling the hood slips over the top of the same, forming a knot as shown by Figs. 11 and 12. The treadle is then released and the knotter and operating parts assume their normal positions, the knotter being turned to its initial position by the re-engagement of the rock bar, with the gear wheel.

Having described the invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a device as specified, the combination with a table having a tag holder and stringer mounted thereon, of a knotting device adjacent to said tag holder and stringer, comprising a shaft mounted in said table to extend above and below the same; a clamp in sliding engagement with the shaft and adapted to contact with its upper end, and means for normally holding it out of contact with the top of the shaft, said clamp being provided with a depending loop-holding member, which partially surrounds the upper end of the shaft; a loop clamp on the shaft; means for partially rotating the shaft and loop holding member with the loop; a pusher for placing the loose ends of the loop between the slide clamp and shaft, and means for operating the pusher and for depressing the clamp at predetermined periods.

2. In a device as specified, the combination with a table having a tag holder and stringer mounted thereon, of a knotting device arranged upon the table, comprising a rotatable member, a clamp in sliding engagement with the rotatable member, and resilient means for normally holding said clamp away from said chamber; a gear wheel on said member; a rack bar in engagement with the gear wheel, and means for operating the rack; a pusher adjacent to the rotatable member to be moved to extend in between the clamp and the rotatable member; a loop holder on the rotatable member; and means connected with the rack bar for operating the pusher, and for depressing the clamp upon the rotatable member at predetermined periods.

3. In a device as specified, the combination with a table of a vertical shaft mounted therein, having a gear wheel on its lower end; a rack bar in mesh with the wheel; a vertical slide on the shaft having a step on its lower end; a clamp upon the upper end of the slide, having a depending loop receiver which partially encircles the upper end of the shaft; a loop holder on the shaft; a lever, one end of which lies adjacent to

the shaft; a finger on the rack bar in the path of the lever, and means for operating the rack bar whereby the shaft is partially rotated, and the slide step brought beneath the forward end of the lever, and the lever operated by contact therewith of the finger to depress the slide and bring the clamp in contact with the end of the shaft.

4. In a device as specified, the combination with a rotatable member, having a loop holder, and a hood in sliding engagement therewith, having a clamping face adapted to contact with the said member, but normally out of engagement therewith; of means for partially rotating the rotatable member and hood to wind a loop about the end of said member and hood; means for automatically pushing the loose ends of the loop between the clamp and rotatable member; and means for depressing the clamp to hold the loose ends of the loop while the same is slipped over the top of the hood.

5. In a device as specified, the combination with a rotatable member having a loop holder and hood in sliding engagement therewith, having a clamping face adapted to engage the end of the rotatable member, but normally out of engagement therewith; and means for partially rotating the member and hood, to wind the loop around the said member and hood; of means comprising an automatically operated finger for pushing the loose ends of the loop between the rotatable member and clamping face of the hood, after the said member and hood have been partially rotated, and an automatically operated lever for depressing the hood to clamp and hold the loose ends of the loop, while the same is being slipped over the top of the hood.

6. In a device as specified, the combination with a shaft having a gear wheel upon its lower end, a loop holder adjacent to its upper end, and a clamping hood in sliding engagement with and partially surrounding the upper end of the shaft, but normally out of contact with said end; of a rack for partially rotating the shaft to wind the loop about its upper end and the hood; a finger for pushing the loose ends of the loop between the hood and end of the shaft, after they have been partially rotated; a lever depending from the finger; a projection on the rack to engage the lever and operate the finger; a lever in the path of the said projection and operated thereby, for depressing the hood to clamp the loose ends of the loop when the same is slipped over the top of the hood; and means for operating the rack.

7. In a device as specified, a shaft having a loop holder near its upper end; a clamp in sliding engagement with the shaft, and having a depending member partially surrounding the upper portion of the shaft, and means for normally holding the clamp above

the end of the shaft; means for partially rotating the shaft to wind the loop about its upper portion, and the depending portion of the clamp; a finger for pushing the loose ends of the loop between the clamp and end of the shaft, after the said shaft has been partially rotated; means actuated by the shaft operating means, for operating the finger, and a lever actuated by the shaft operating means for depressing the clamp to engage the loose ends of the loop.

8. In a device as specified, the combination with a support, of a shaft mounted therein; a loop holder adjacent to the upper end of the shaft; a clamp in sliding engagement with the shaft, having a depending portion partially surrounding the upper end of the shaft; a spring for normally holding the clamp away from the upper end of the shaft; a gear wheel on the shaft; a rack in engagement with the gear wheel for partially rotating the shaft to wind the loop about its upper end and the depending portion of the clamp; means for stopping the shaft; a finger for pushing the loose ends of the loop between the clamp and the end of the shaft when the same has been partially rotated; a projection on the rack; a lever pivoted to the support and to the finger, and extending into the path of the projection to be operated thereby; a lever pivoted to the support and extending into the path of the projection, whereby said lever is operated to depress the clamp upon the loose ends of the loop; and means for operating the rack.

9. In a device as specified, a support; a shaft mounted in the support, having a loop holder adjacent to its upper end; a clamp in sliding engagement with the shaft, having a depending portion partially surrounding the upper portion of the shaft on a plane with the loop holder; a spring for normally holding the clamp away from the end of the shaft; a gear wheel on the shaft; a rack in engagement with the gear wheel, having a projecting finger, said rack being adapted to partially rotate the shaft to wind the loop about its upper end and the depending portion of the clamp; means for stopping the shaft; a finger for lifting the loose ends of the loop and pushing them between the clamp and the end of the shaft; an anti-friction support for the finger; a lever pivoted to the support and to the finger, and extended to lie in the path of the rack finger, whereby the said pushing finger is operated; means for restoring the pushing finger to its normal position; a lever pivoted to the support with its forward end adjacent to the shaft, and its rear end in position to be engaged by the rack finger, whereby the said lever is operated to depress the clamp upon the loose ends of the loop; and means for operating the rack.

10. In a device as specified, a support, a shaft rotatably mounted in the support, having a loop holder adjacent to its upper end; a clamp in sliding engagement with the shaft, having a depending member which partially surrounds the upper portion of the shaft on a plane with the loop holder; a step on the slide portion of the clamp and a spring in engagement with the step, for normally holding the clamp out of engagement with the upper end of the shaft; a gear wheel on the shaft; a rack in engagement with the gear wheel for partially rotating the shaft to wind the loop about its upper end, and the depending portion of the clamp; a projecting arm on the rack; a lever pivoted to the support with its lower end in the path of the rack arm; a finger pivotally attached to the other end of the lever, and adapted to push the loose ends of the loop between the clamp and adjacent end of the shaft, when the lever is engaged by the rack arm; a stop for limiting the rotation of the shaft; resilient means holding the shaft stationary after its partial rotation; a lever pivoted to the support, its forward end being above the said step, and its rear portion in the path of the rack arm, whereby the lever is rocked to engage the step and depress the clamp upon the loose ends of the loop; and means for operating the rack.

11. In a device as specified, the combination with a support; a shaft rotatably mounted in the support; a loop holder on the shaft near its upper end; a clamp in sliding engagement with the shaft, having a semi-circular depending portion partially surrounding the said upper end of the same, and a gear wheel on the shaft; of a rack in engagement with the gear wheel, for partially rotating the shaft to wind the loop about its upper end, and the depending portion of the clamp; a projecting arm on the rack; a plate having anti-friction rollers; a finger in engagement with said rollers; a lever pivotally connected to the rear end of the finger and to the support and extended to lie in the path of the rack arm, whereby said finger is thrown forward to push the loose ends of the loop between the clamp and the adjacent end of the shaft; a step on the slide portion of the clamp; a spring in engagement with the step, for normally holding the clamp out of engagement with the end of the shaft; a lever pivoted to the support, the forward end of which extends above the said step when the shaft is rotated, while its rear portion is in position to be engaged by the rack arm, whereby the clamp is depressed upon the loose ends of the loop, by the forward end of the lever; and rods connecting the rack with a treadle.

12. In a device as specified, a support; a rotatable member mounted in the support and means for rotating the same; a clamp in

sliding engagement with the rotatable member, having a depending member partially surrounding the adjacent end of the said member; a loop holder on the said member on a plane with the depending portion of the clamp; a spring for normally holding the clamp away from the end of the said member; means for partially rotating the said member to wind the loop about it and the depending portion of the clamp; a stop for limiting the rotation of the said member and clamp; resilient means for holding the said member at the limit of its rotation; a finger actuated by the rotating means, for pushing the loose ends of the loop between the clamp and rotatable member; and a lever actuated by the rotating means, for engaging the clamp and depressing it upon the loose ends of the loop.

13. In a device as specified, the combination with a support having a tag holder and stringer secured thereon, comprising a tubular rod, through which the twine is passed, and upon which the tags are strung; an abutment post adjacent to the end of the rod and a spring pressed blade for compressing the eyed ends of a portion of the tags against the said post; of a knotting mechanism for the tag loops, comprising a shaft mounted in the support adjacent to the said tag holder and stringer, having a loop holder thereon; a clamp in sliding engagement with the shaft, having a depending portion partially surrounding the adjacent end of the shaft; means for partially rotating the shaft to wind the loop about the shaft and the depending portion of the clamp; means for pushing the loose ends of the loop between the clamp and end of the shaft; and means for depressing the clamp upon the loose ends of the loop.

14. In a device as specified, the combination with a support having a tag holder and stringer secured thereon, comprising an inclined platform secured upon the support; a bracket thereon; a tubular rod removably attached to the bracket, through which the twine is passed, and upon which the tags are strung; an abutment adjacent to the lower end of the rod; a rod supported parallel with the tubular rod; a blade mounted on the last mentioned rod, having a recess for engaging the tubular rod, and a spring on the rod which presses the blade against a portion of the tags to compress their eyed ends against the said abutment; of a knotting mechanism comprising a rotatable member mounted in the support, having a loop holder, a clamp, and a spring for normally holding the clamp out of engagement with the rotatable member; means for partially rotating the said member and clamp to wind the loop upon them; a stop for limiting the rotation of the member; a finger for automatically pushing the loose ends of

the loop between the rotatable member and the clamp; and an automatically operated lever for depressing the clamp upon the loose ends of the loop.

5 15. In a device as specified, the combination with a support, a shaft mounted therein; a loop holder on the shaft; a clamp in sliding engagement with the shaft, having a depending portion partially surrounding the
10 shaft; means for partially rotating the shaft to wind the loop about its upper end, and the depending portion of the clamp; a stop to limit the rotation of the shaft and means to depress the clamp upon the end of the
15 shaft at a predetermined time; of means for pushing the loose ends of the loop between the end of the shaft and the clamp prior to the depression of the latter, including a member having a notched finger, and a recess in its lower edge, one wall of which in-
20 clines; a bracket having rollers against which said member is held in sliding engagement; a pin supported in the bracket, which extends through the recess in the
25 member; a lever pivotally attached to the member; means for rocking said lever whereby the member is thrown forward and its finger lifted by engagement of the in-
30 clined wall of the recess with the pin; and a spring for restoring the member to its normal position.

16. In a device as specified, the combination in a knotting mechanism, including a rotatable member, having a loop holder, and
35 a clamp; means for partially rotating the member and clamp and means for depressing the clamp upon the member at a predetermined time; of a device for pushing the loose ends of the loop between the member
40 and clamp, comprising a finger projecting from a body portion, said body portion having a recess in its lower edge, with an inclined face; a bracket; a pin extending from the bracket through the recess having
45 the inclined face; anti-friction means carried by the bracket with which the body portion contacts; a plate having a bifurcated end, which straddles the rear end of the body portion; a pin extending through
50 the said rear end, having a roller on each end in engagement with the bifurcated end of the plate; a lever pivotally attached to the pin and to the support; and means for rocking the lever, whereby the body with its
55 finger is moved forward, and the finger elevated by contact of the inclined recess with

the pin passing through the same; and a spring for restoring the member to its normal position.

17. In a device as specified, the combination with a support and a shaft rotatably
60 mounted therein, having a groove in one side; of a slide in said groove having an out-turned step at its lower end and means, as a sleeve, for holding the slide within the
6 groove; a clamp upon the upper end of the slide, having a depending portion which partially surrounds the upper portion of the
70 shaft; a lug on the shaft; a pin extending from the lug through a hole in the step, and an expansion coil spring on the pin which normally holds the clamp away from the
75 end of the shaft; a loop holder on the shaft near its upper end; means for partially rotating the shaft to wind a loop about the depending portion of the clamp and the upper
80 portion of the shaft; means for automatically pushing the loose ends of the loop between the clamp and the end of the shaft; and means for engaging the said step to de-
85 press the clamp upon the said loose ends.

18. In a device as specified, the combination with a table, of a bracket upon its under side having an anti-friction bearing; a
85 shaft extending through the table; a gear wheel on the end of the shaft, which rests upon the anti-friction bearing; an anti-friction bearing in the table surrounding the periphery of the shaft; a loop holder
90 on the shaft; a clamp in sliding engagement with the shaft, having a depending portion; a rack in engagement with the gear wheel for partially rotating the shaft to wind a loop about the upper end of the
95 shaft, and the depending portion of the clamp; a pin on the rack; a finger for pushing the loose ends of the loop between the end of the shaft, and the clamp; a lever connected with the finger, and operated by
100 the pin, for moving the finger forward; a lever, one end of which lies in the path of the pin, while the other end is adapted to contact with and depress the clamp, when the pin engages the said lever; and means
105 for operating the rack.

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

WILLIAM A. HAYWOOD.

Witnesses:

G. SARGENT ELLIOTT
ADELLA M. FOWLE.