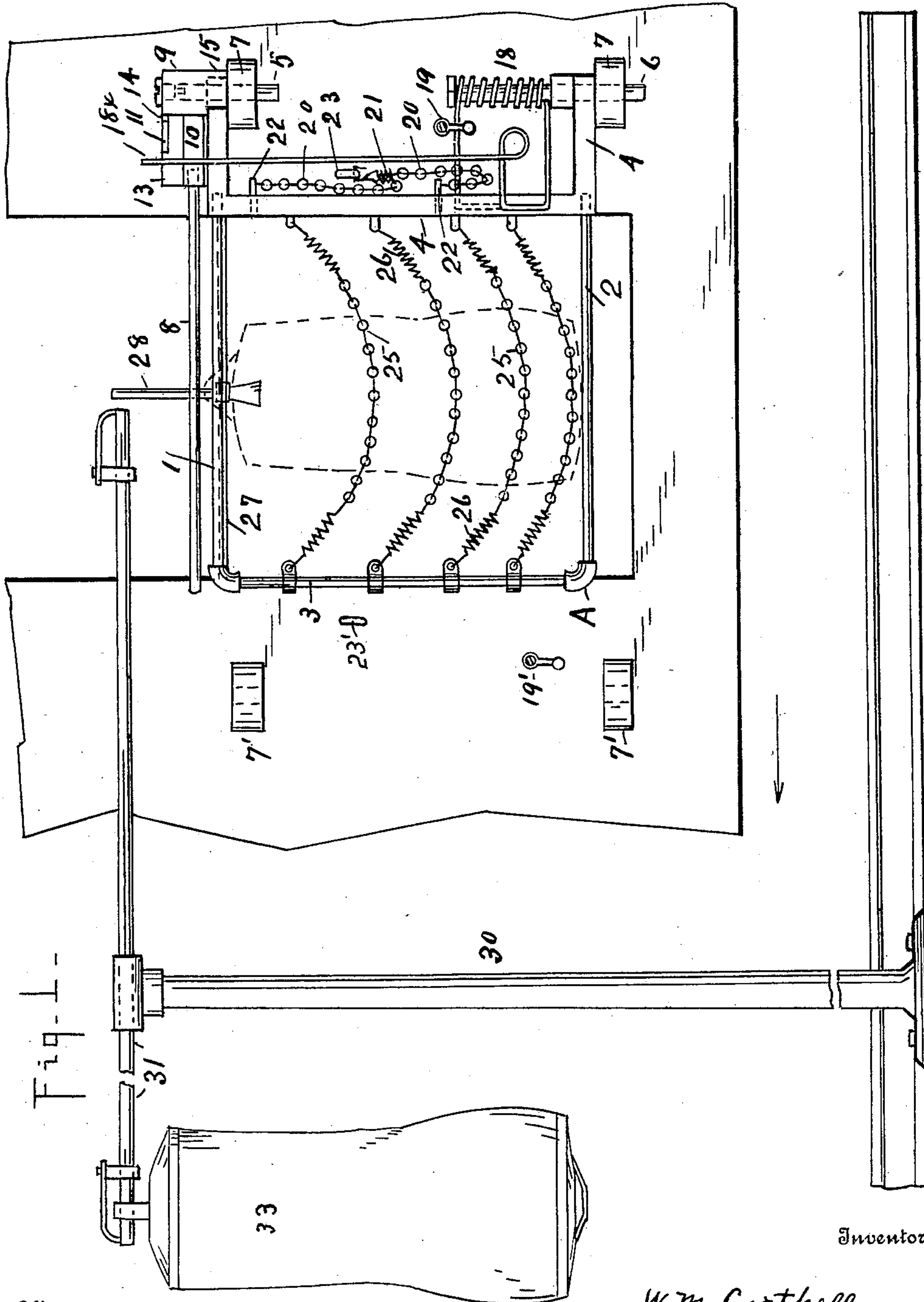


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MAIL DELIVERING AND COLLECTING APPARATUS.  
APPLICATION FILED AUG. 3, 1908.

923,336.

Patented June 1, 1909.

2 SHEETS—SHEET 1.



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**923,336.**

2 SHEETS--SHEET 2.

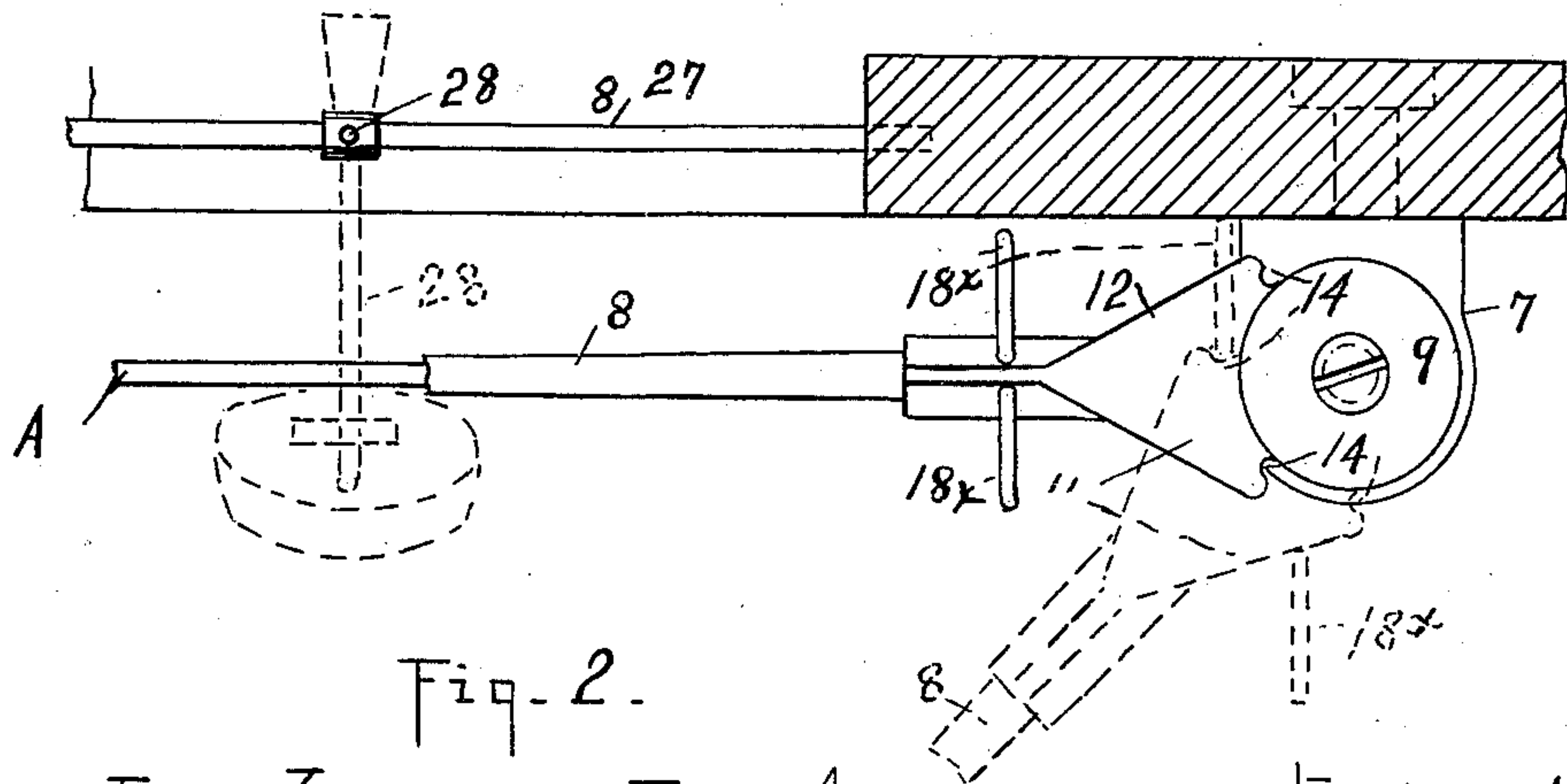


Fig-2.

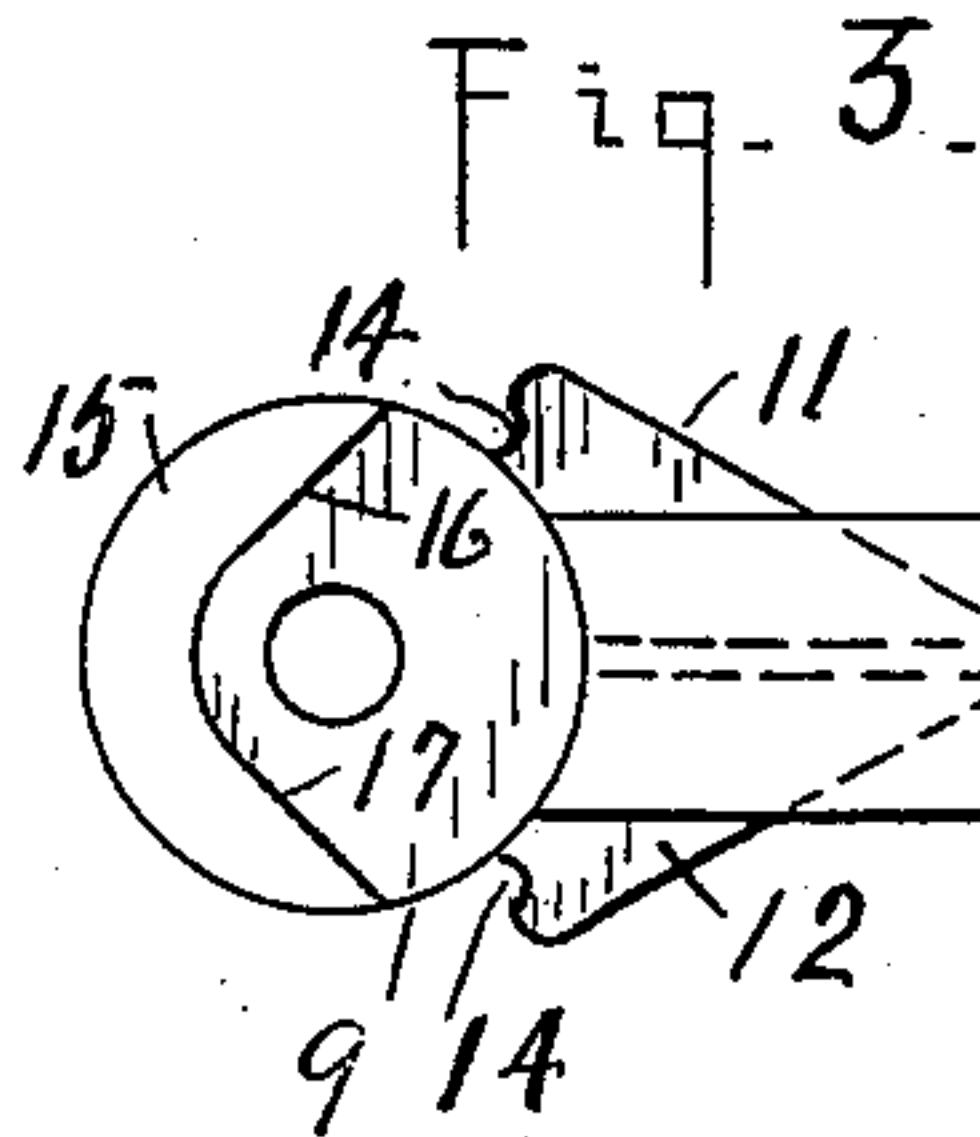


Fig. 3.

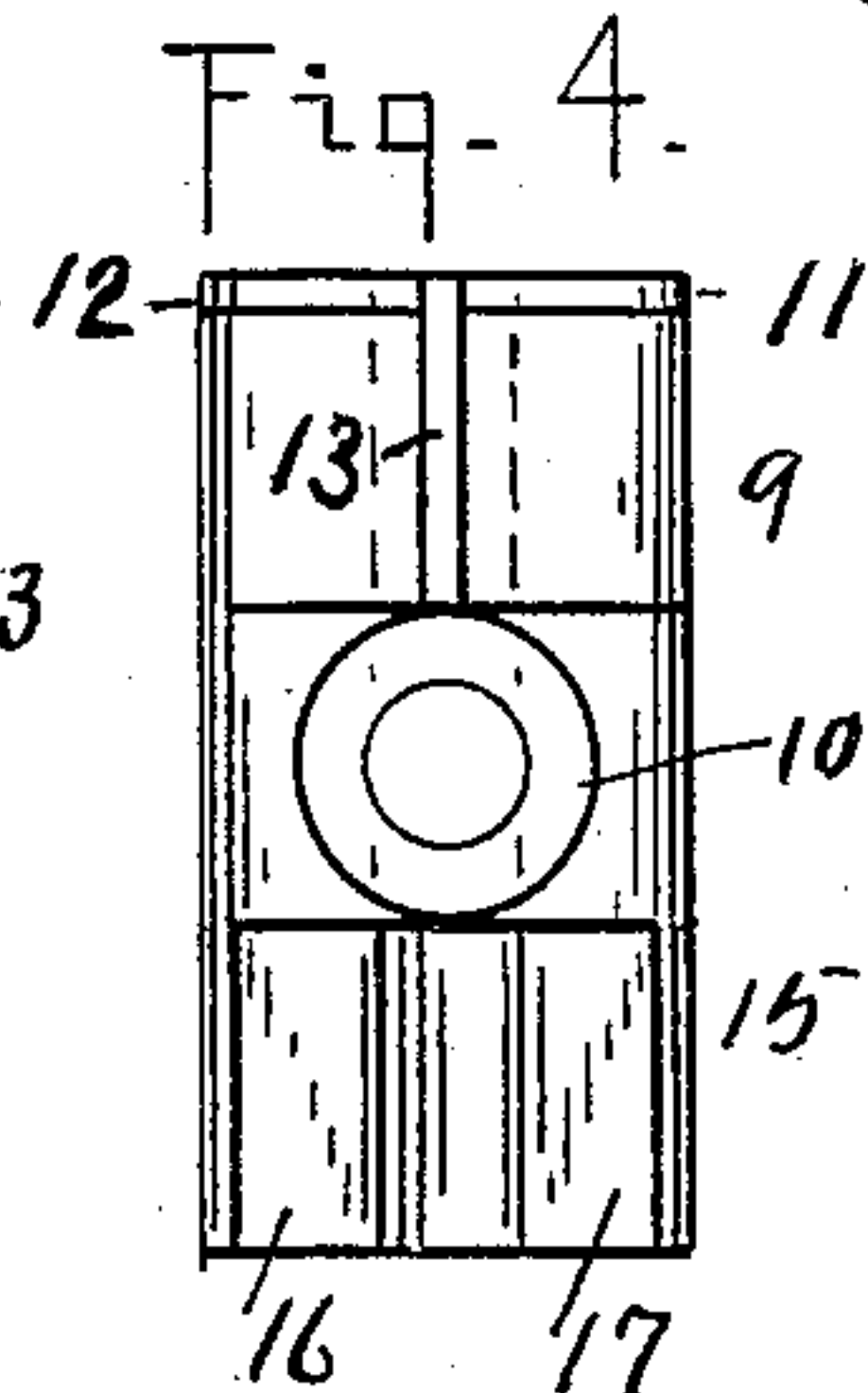


Fig. 4.

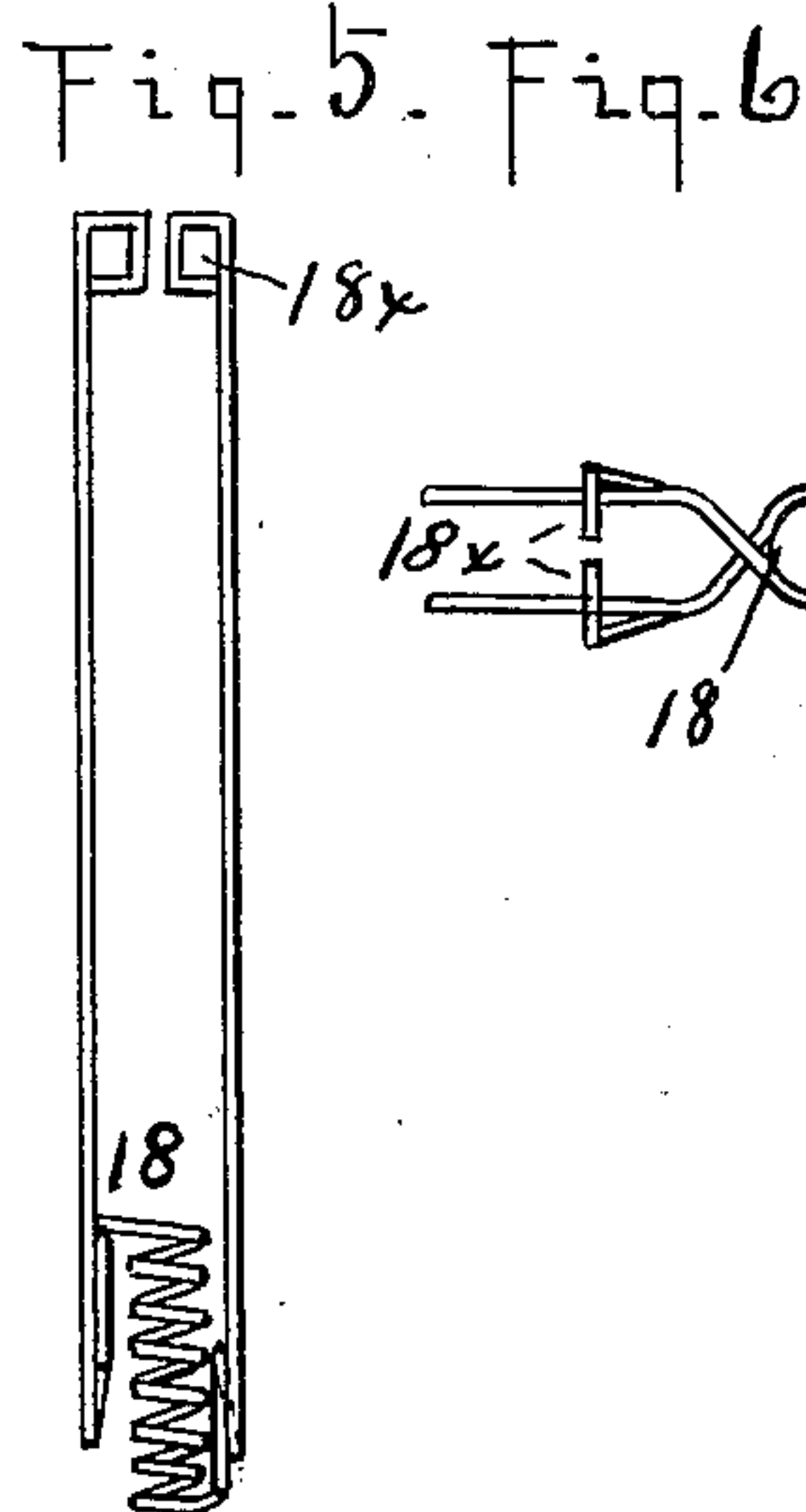


Fig-5. Fig-6

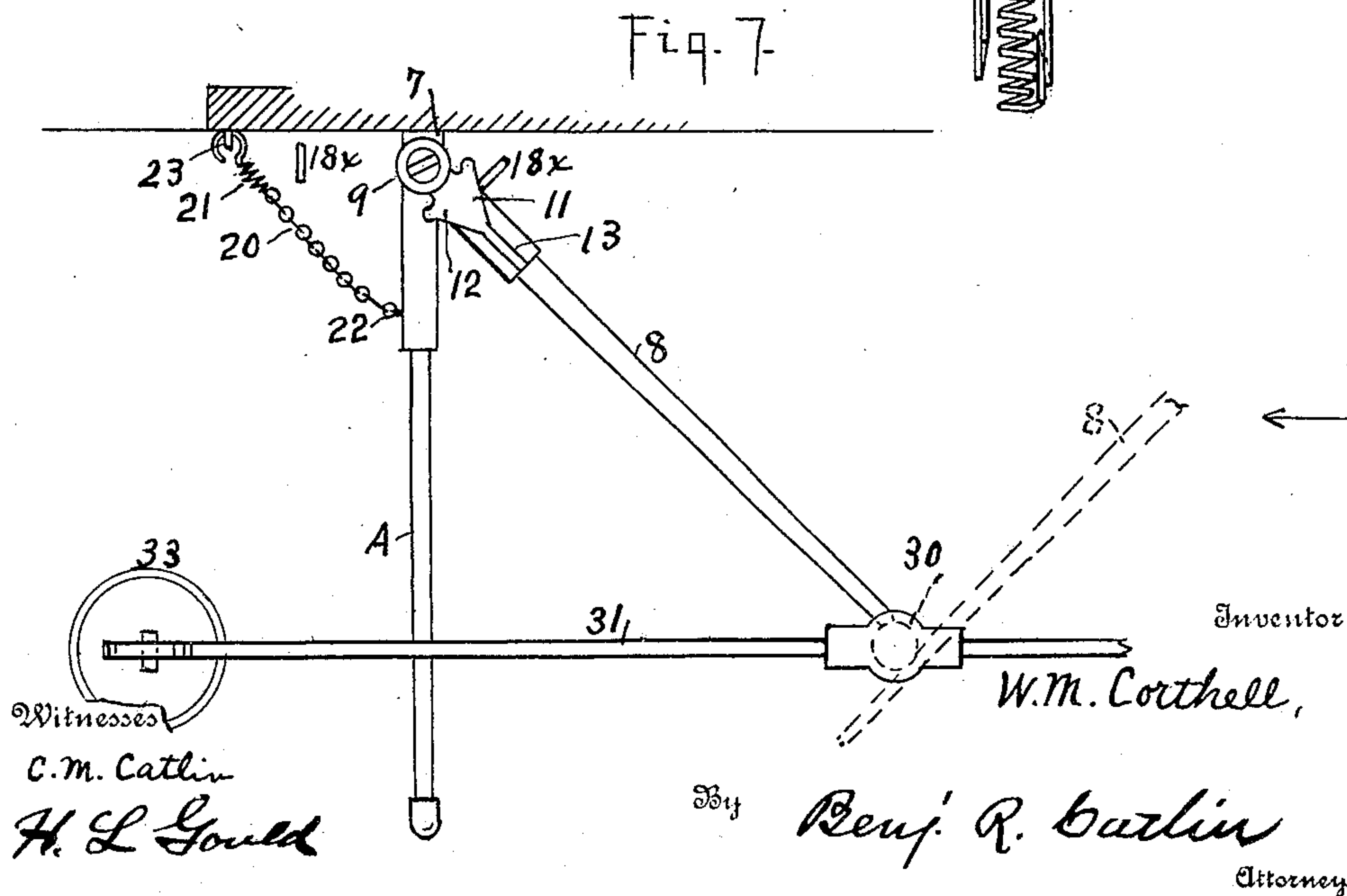


Fig. 7-

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# UNITED STATES PATENT OFFICE.

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## MAIL DELIVERING AND COLLECTING APPARATUS.

No. 923,336.

Specification of Letters Patent.

Patented June 1, 1909.

Application filed August 3, 1908. Serial No. 446,765.

*To all whom it may concern:*

Be it known that I, WILLIAM M. CORTHELL, a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mail Delivering and Collecting Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

This invention relates to apparatus for delivering mail or the like from a moving vehicle, and for taking mail or the like onto such vehicle, and the object of the invention is to provide simple and efficient devices for the purposes named, adapted to handle the mail without excessive wear of the mail bags, and without danger to the mail.

The invention consists in the construction hereinafter described and particularly pointed out.

In the accompanying drawings which illustrate the invention and form part of the specification, Figure 1 is a partial side elevation of a car with apparatus attached, showing also a mail support beside the car track; Fig. 2 is a partial plan view of the frame and actuating arm, operative position of said arm being indicated in broken lines; Fig. 3 is a bottom plan of the device between the actuating arm and the frame; Fig. 4 is an end view of the same; Fig. 5 is a view of the main spring at right angles to that in Fig. 1; Fig. 6 is a plan (end) view of said spring; Fig. 7 is a partial plan showing position of parts at the moment of mail delivery.

The part of the apparatus placed on the moving car comprises a mail handling frame A, the sides 1, 2, 3 of which are preferably of one piece of steel rod formed into shape. The side 2 is rigidly fixed to the forging 4 at its bottom, and the side 1 is likewise secured at the top. Said forging has at its ends hinge pintles 5, 6, which engage hinge sockets 7 fixed to the car near an edge of the doorway and which support the weight of the frame A.

Directly above side 1 of frame A when in its normal position in front of the doorway,

is an actuating arm 8 about as long as the frame, and rigidly fixed to a casting or body 9 between the actuating arm and the frame, having a hole for pintle 5, an integral extension 10 to which arm 8 is connected, and side wings 11, 12, supported above part 10 by a web 13. These wings extend on either side of part 10, have outwardly inclined sides, and spring-receiving notches 14 adjacent part 9. Said part 9 (which may be about 4 inches in diameter), at its lower end has a flange extension 15, the sides 16, 17 of which are formed at an angle preferably of 45 degrees from the median longitudinal plane of the casting. The upper end of forging 4, which is of less width than the diameter of part 9, say two inches, has a rounded end and fits into the angle inclosed by said sides.

The lower pintle 6 is upwardly extended to form a support for a strong spiral spring 18, the opposite ends of which are extended to overlap the vertical part of the forging 4 on opposite sides, as shown in Fig. 1, and thence back and up by opposite sides of parts 10 and 13, where they terminate in suitable handle loops 8<sup>x</sup>.

19 is a gravity catch, or any suitable device, adapted to engage the side or end of the spring on the side nearest the car to hold it when the opposite end of the spring is forced around thus putting the spring under increased tension.

Means are provided for suitably arresting the outward swing of frame A, which may comprise chains 20 having each an included spring 21, one end of each chain secured to part 4 at 22, and the other end to the car at 23, the chains being loose. The car end of the chains is made readily detachable. I do not limit myself to the use of two chains and springs in this situation.

Across the frame extend loose mail-bag-holding chains 25, or similar connections, which may include springs 26 if desired.

Supported across the doorway behind the upper side of frame A is a removable rod 27, on which is pivotally mounted a mail-bag-supporting arm 28 (one or more) which normally hangs vertically inside the doorway by gravity, and is adapted to be swung over



so as to rest on the top of frame A to form a temporary support for mail bags to be delivered. When a single arm 28 only is used it is placed preferably at the middle of  
5 rod 27.

When the apparatus is supported as shown in Fig. 1 the car is traveling toward the left. To use the apparatus on the same side of the car when moving in opposite direction, catch 19 is disengaged from the  
10 spring, the entire frame is lifted, and its pintles dropped into the hinge sockets 7' on the other side of the doorway, and catch 19' engaged with the lower end of spring 18  
15 (which will then be next to the car). Chain 20 would also be changed from connection 23 to the opposite one 23'. The far side of the car being likewise furnished with hinge sockets and catches, the same apparatus or  
20 a like one can be used on that side of the car.

Supported beside the track at points where mail is to be delivered and collected are posts 30, say about 30 inches from the near side of a passing car, and extending to  
25 a height a little above the top of frame or body A. The post carries a horizontal bar 31 parallel with the track. In the instance illustrated the arm on each side of the post is supposed to be about five feet long. At  
30 the outer end of each arm is or may be fixed a spring clip, or other yielding device which will allow the bag 33 hung on the arm to be pulled off but will prevent accidental removal, as by jarring or wind.

When nearing a post 30 an attendant on the car grasps the handle-loop 18<sup>x</sup> of spring 18 nearest the car, pushing it back until it engages the inner recess or notch 14, which swings arm 8 outward from the doorway  
40 about 45 degrees. This movement of arm 8, owing to the form of flange 15 and the top of forging 4, occurs without moving frame A from its position in front of the doorway. One or more bags are now hung on arm 28  
45 (see in broken lines in Fig. 2). As the car advances the outwardly and forwardly inclined arm 8 strikes a glancing blow against the post 30 (shown in broken lines in Fig. 7), and continued movement of the car releases the spring member in notch 14 which  
50 member returns to its normal position and out of the way of arm 8 in its return movement after leaving the post. Such forward movement of the car also causes a farther  
55 swing of arm 8 for about 90 degrees, carrying frame A with it, and at the end of this movement arm 8 will pass from the post (see full lines in Fig. 7). As arm 8 is about to leave the post chain 20 becomes taut by the swing  
60 of the frame toward the rear of the car and yieldingly checks such movement.

It will be noted that during the first part of the movement of frame A the bags hung on arm 28 were pulled therefrom, and were  
65 then carried by resting on the frame and

cross chains, and that at the end of the outward swing of the frame the movement of the mail bag toward the rear is at the same speed as the forward movement of the car, the inertia of the mail due to movement of  
70 the car being thus neutralized and the bags dropped. As arm 8 leaves the post, and while chain 20 is taut, frame A on its reverse side strikes bag 33, springs 21 receiving the force of the blow. When arm 8 leaves the  
75 post 30 the spring 18 at once reacts through the end thereof on the outer side of the frame and swings said frame, and arm 8, back to the doorway. During said reverse movement the rear side of frame A carries bag 33  
80 from the arm on which it is hung and throws it with suitable force (depending on the strength of spring 18) into the car doorway, the same frame or body thus both delivering and collecting. The arresting of the out-  
85 ward swing and the starting of the reverse swing of frame A leaves the bag being delivered unsupported at the moment its forward inertia is neutralized, and it falls easily to the ground or into a receptacle.  
90

The spring 18 performs three functions; it holds arm 8 and frame A in normal position in front of the doorway; it holds arm 8 out in position to strike post 30; and it returns (or assists in returning) the frame.  
95

The invention is not limited to details of construction; thus, the form and arrangement of the frame-returning spring, etc. can be largely varied without departing from the invention; so also can the particular means  
100 for connecting arm 8 and frame A, and likewise other parts.

When it is desired to use the doorway catch 19 is disengaged and the frame swung around against the car side out of the way,  
105 and rod 27 taken out.

Having thus described the invention what I claim is,—

1. The combination with a car having a suitable doorway, of a swinging mail handling frame pivoted adjacent one side of the doorway and when in position for use extending across the doorway, an operating arm for said frame, and a stop fixed beside the car track for operating said arm and  
110 frame.

2. The combination with a car having a doorway, of a swinging mail handling frame pivoted adjacent one side of the doorway and when in position for use extending across  
120 the doorway, means for removably supporting mail to be delivered in front of said frame, an operating arm, and a fixed stop.

3. The combination with a car, of a swinging mail handling frame, a swinging operating arm therefor separate from said frame but operatively connected thereto, and means for automatically returning said frame to normal position after operation.  
125

4. The combination with a car having a  
130



doorway, a swinging frame across the doorway, an operating arm therefor, means for automatically returning the frame to normal position, and means for supporting mail beside the car track in position to be carried by such return movement of the frame into the car doorway.

5. The combination with a car having a doorway, of a reversible swinging mail handling frame pivoted adjacent either side of the doorway at will and when in position for use extending across the doorway, an operating arm, and a fixed operating stop.

6. The combination with a car having a doorway, of a frame across the doorway, means for swinging the frame away from the doorway to deliver mail, and means for swinging the frame toward the doorway to collect mail.

7. The combination with a car, of a swinging frame, a swinging operating arm separate from said frame but operatively connected thereto, and automatic means for moving the arm out of operative position after use.

8. The combination with a car, of a swinging frame extending across a doorway thereof, a horizontal operating arm, automatic means for returning said arm after operation, and automatic means for returning said frame.

9. The combination with a car having a doorway, of a rod across the doorway, a mail supporting arm pivoted on said rod, a swinging frame across said doorway, and means for swinging the frame to deliver such mail.

10. The combination with a car having a doorway, of a rod across the doorway, a mail supporting arm on the rod and normally held from projection from the car, a swinging frame across the doorway, said arm bearing on said frame when supporting mail.

11. A swinging mail-handling body for use on a car, an actuating arm for said body adapted to be projected out from the car independently of said body into position to strike and to be operated by a stop supported beside the track, and such stop.

12. A swinging mail-handling body for use on a car, an actuating arm for said body adapted to be projected out from the car into position to strike and to be operated by a stop supported beside the track, and such stop, said body and arm being operatively connected during a part of their movement only.

13. A swinging mail-handling body for use on a car, an actuating arm for said body, said arm having a stop-striking portion pointing at an angle of less than a right angle from the line of movement of the car, and a stop supported beside the track.

14. In a mail-handling device for a moving car, a mail-handling body rotatably supported in bearings on a car, an actuating arm

connected to said body to turn it outward from the car side, and a stop for said arm supported beside the car track.

15. A car, a mail-handling body pivoted to the car, means operated by movement of the car for swinging said body toward the rear at substantially the same speed as the car advances, and means for arresting such rearward movement of the body whereby mail thereon is dropped.

16. The combination with a mail-handling body for cars, of pivots for the body on the car, a spring normally holding said body against the car, means for moving said body outward from the car, such movement increasing the spring tension for returning said body.

17. The combination with a reversible mail-handling body for a moving car, pivot bearings on opposite sides of a doorway of such car in either of which bearings the body may be pivotally supported, a spring one end or the other end of which normally holds the body against the car according to whether the body is on one side or the other of such doorway, and means for actuating said body whatever the direction of movement of the car.

18. In a mail-handling device for cars, a body movable outward from such car to deliver mail and automatically movable reversely to collect mail.

19. In a mail-handling device for cars, a body movable outward from such car to deliver mail and automatically movable reversely, and means operated by movement of such car to furnish power for moving said body and mail.

20. In a mail-handling device for cars, a body movable outward from such car to deliver mail and automatically movable reversely to collect mail, means operated directly by movement of such car to furnish power for moving said body and mail in one direction, and a spring energized by such movement for moving the body, and mail, in the reverse direction.

21. The combination with a car having a doorway, of a swinging mail-handling body standing across such doorway and pivoted at a side thereof, an actuating arm similarly situated and pivoted, means for moving said arm, the arm being movable out from the doorway a predetermined distance less than its whole range of movement without carrying said body with it, and means for operatively connecting said arm and body whereby the latter will be moved by the former during the rest of the outward swing.

22. The combination with a car, of a pivoted mail-handling body, an actuating arm therefor which in operative position stands out from the car at an angle less than a right angle, and a stop beside the track in the path of said arm.

23. The combination with a car, of a mail-  
handling body thereon, means for moving  
said body out from said car and back to the  
same, and means for supporting mail beside  
5 the track out of the path of such outward  
movement of the body but in the path of the  
reverse movement thereof.

In testimony whereof, I have signed this  
specification in the presence of two sub-  
scribing witnesses.

WILLIAM M. CORTHELL.

Witnesses:

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M. W. ZOERN SCH.