

No. 822,816.

PATENTED JUNE 5, 1906.

R. M. BARTHOLOMEW.  
RURAL MAIL DELIVERY APPARATUS.

APPLICATION FILED NOV. 27, 1905.

4 SHEETS—SHEET 1.

FIG. 1

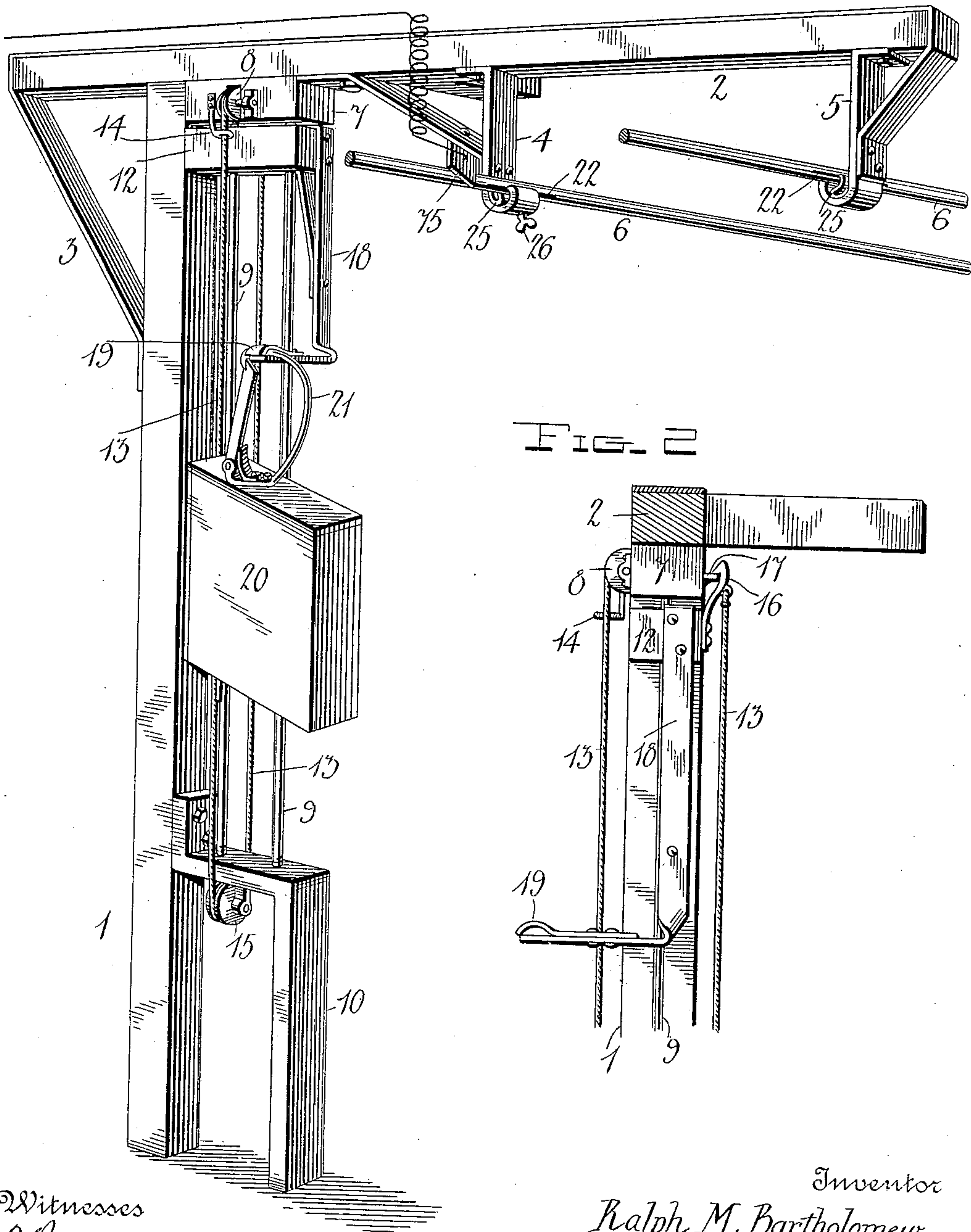
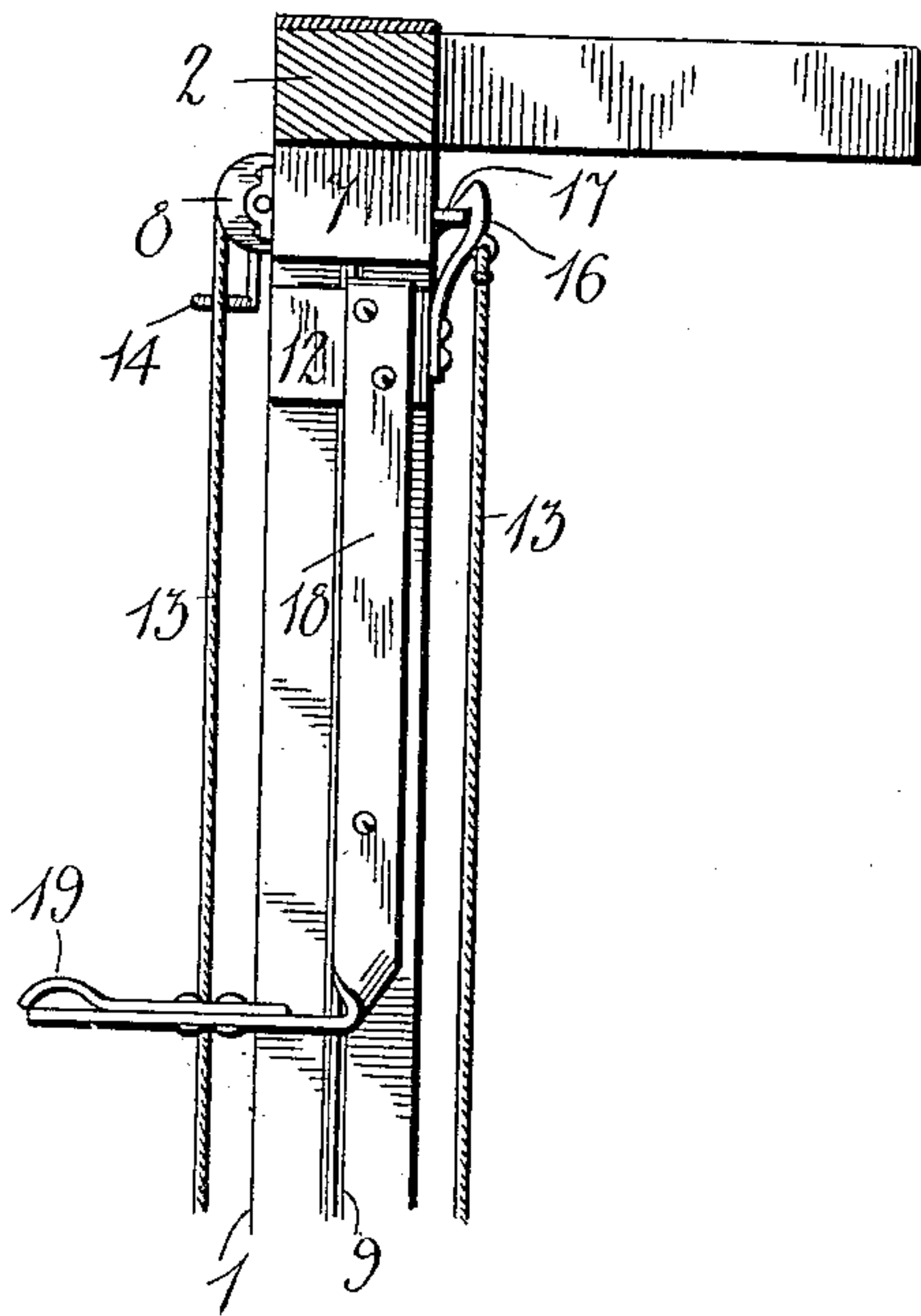


FIG. 2



Witnesses  
*[Signature]*  
C. H. Griesbauer.

Inventor  
Ralph M. Bartholomew  
by *[Signature]*  
Attorney

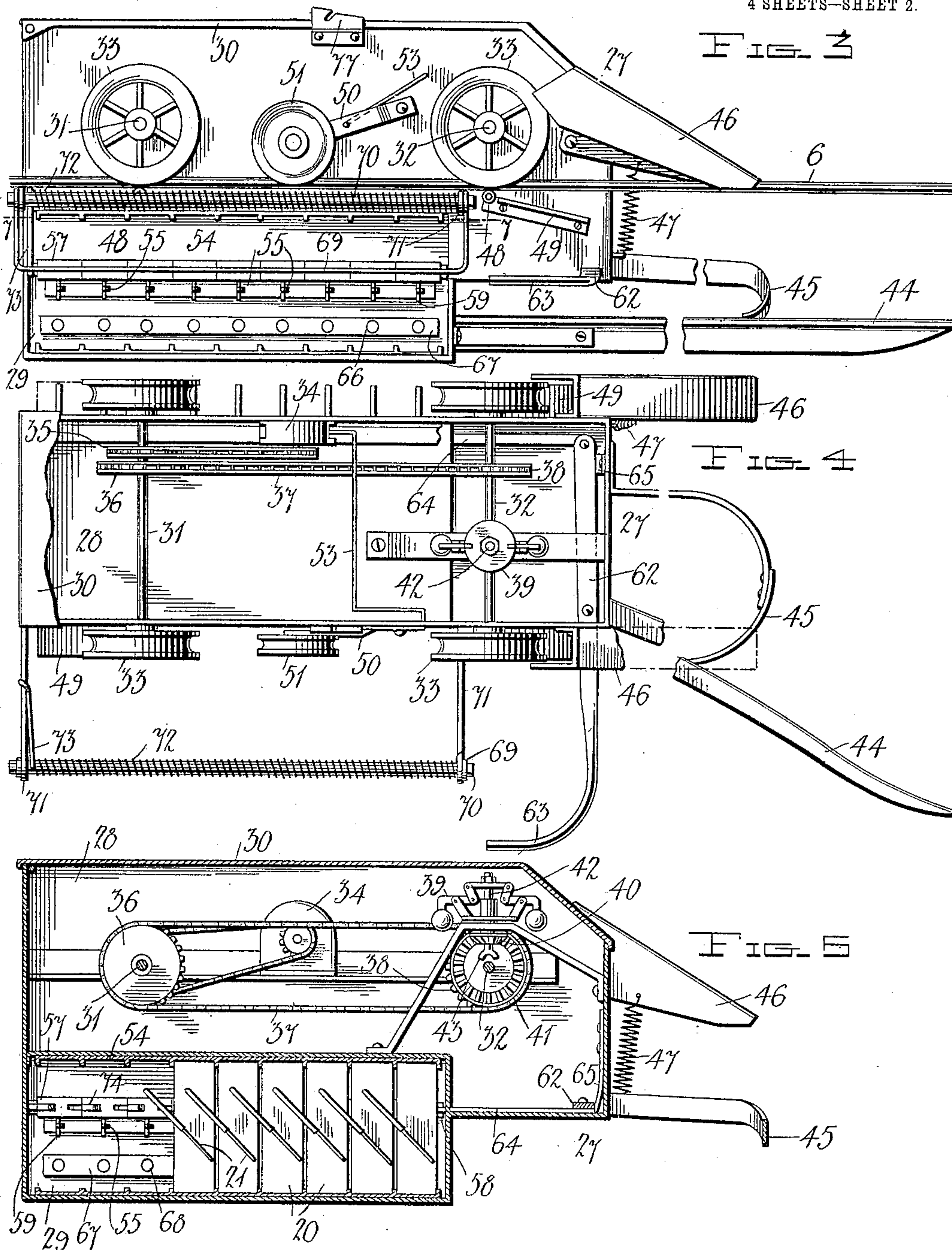
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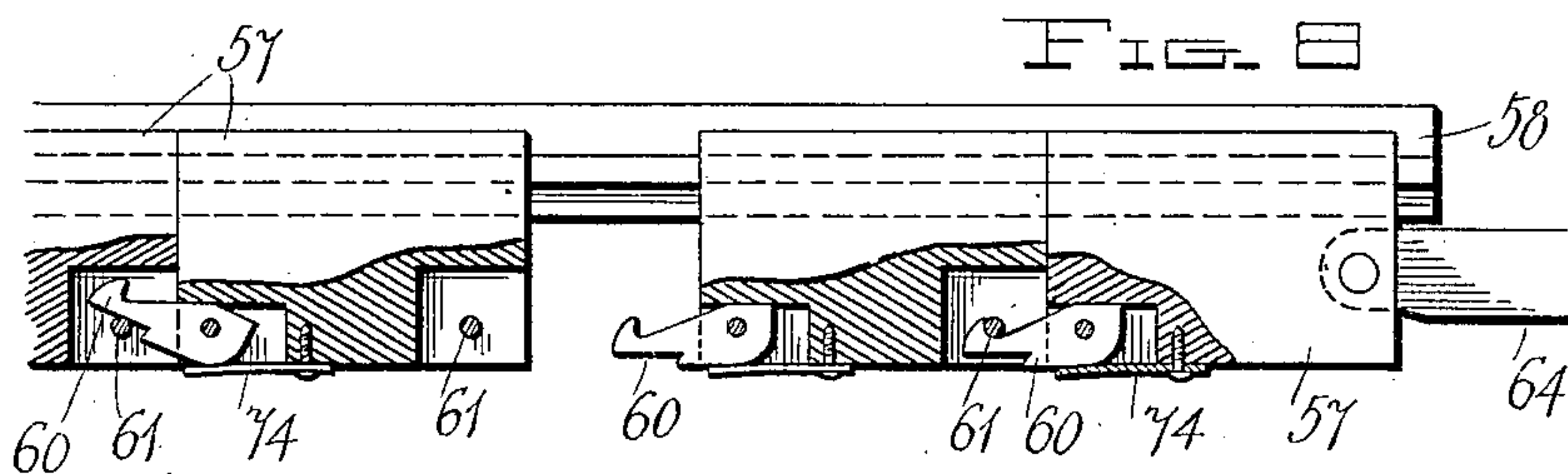
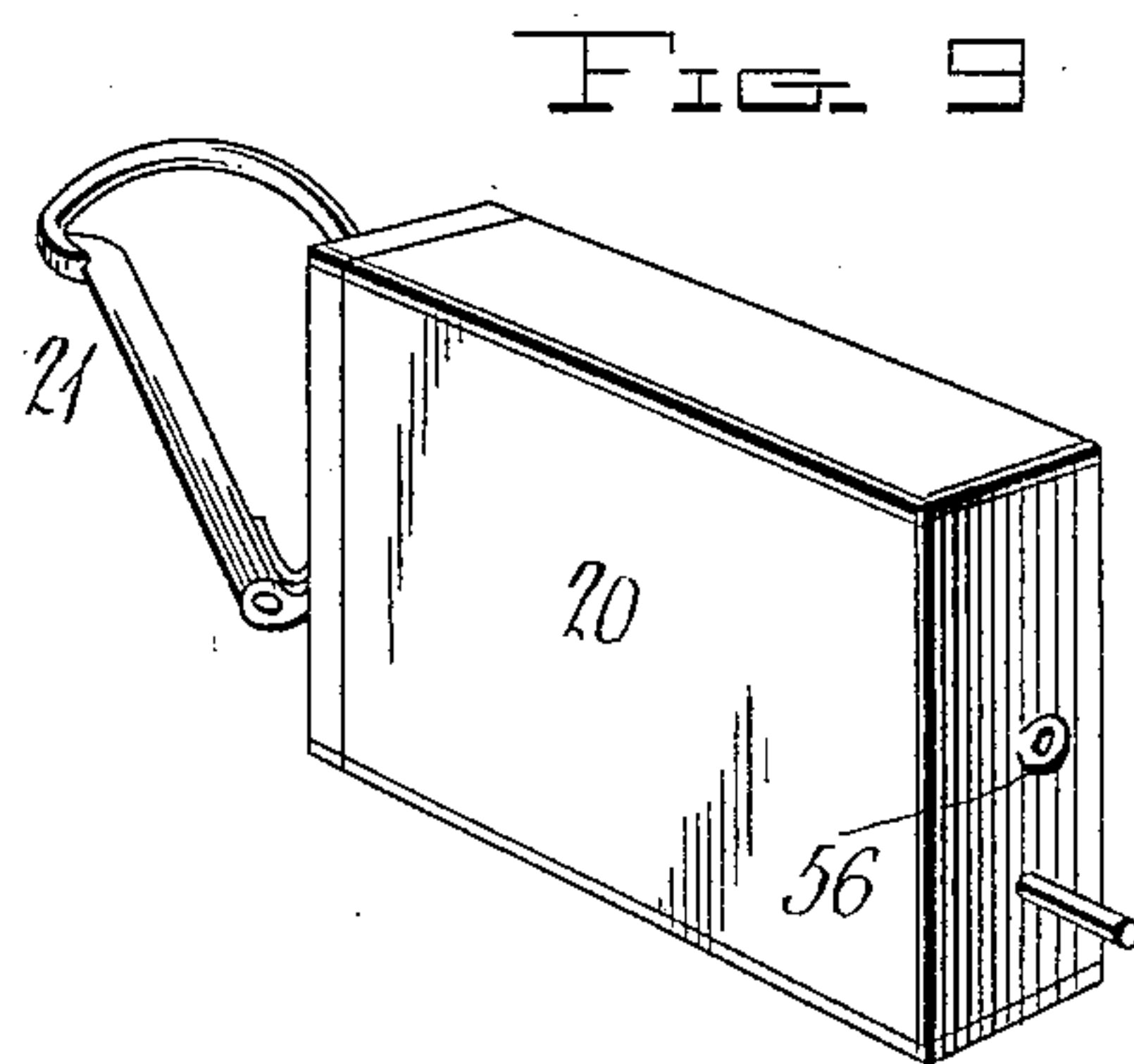
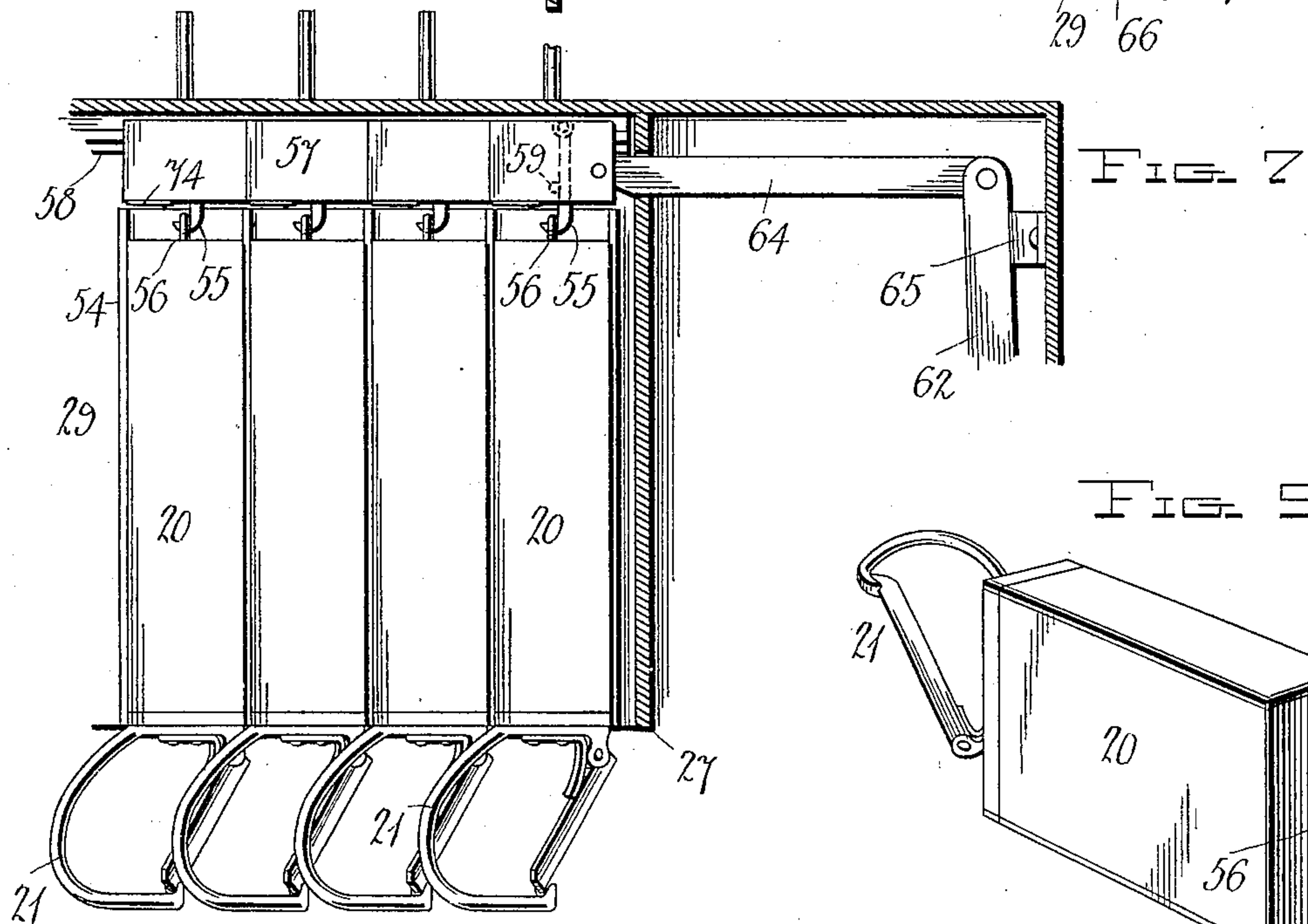
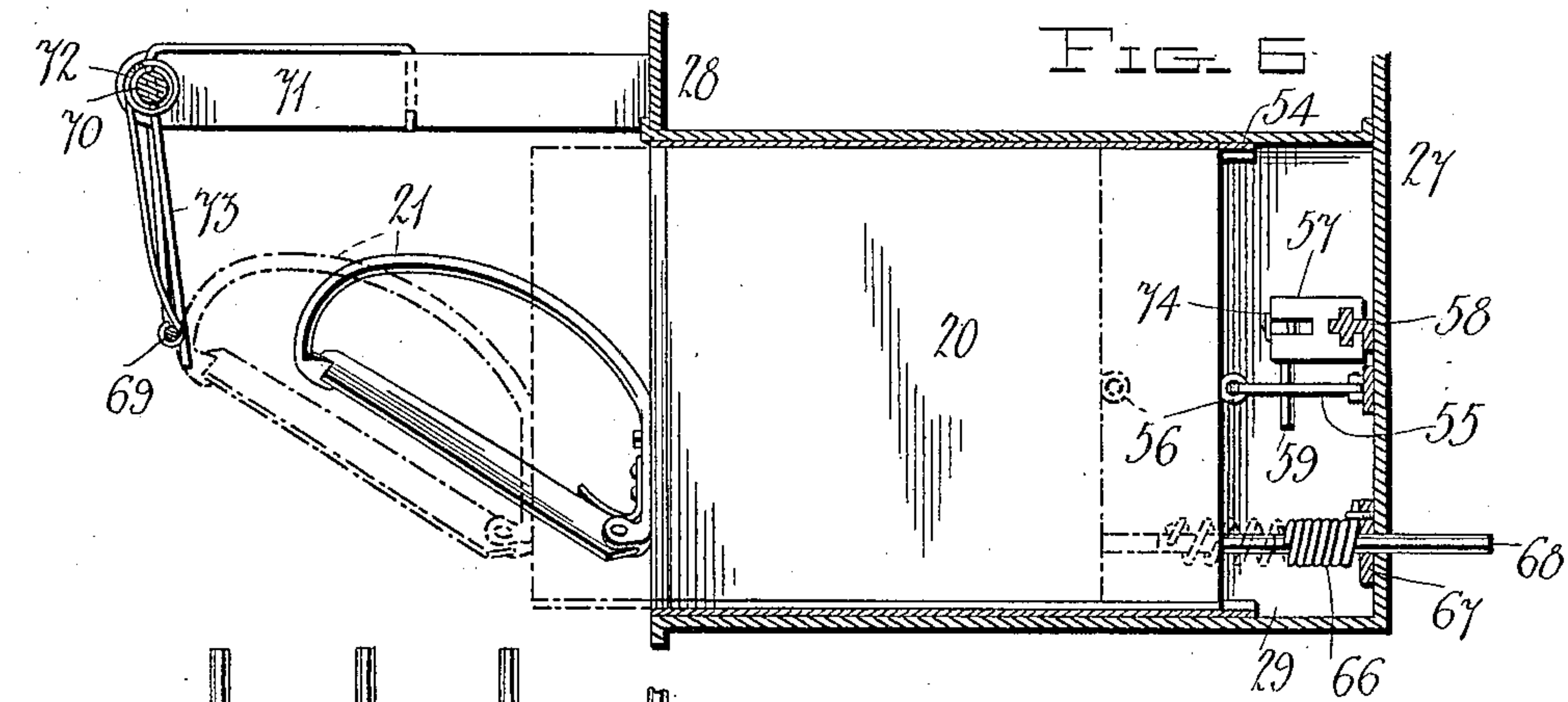
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

FIG. 10

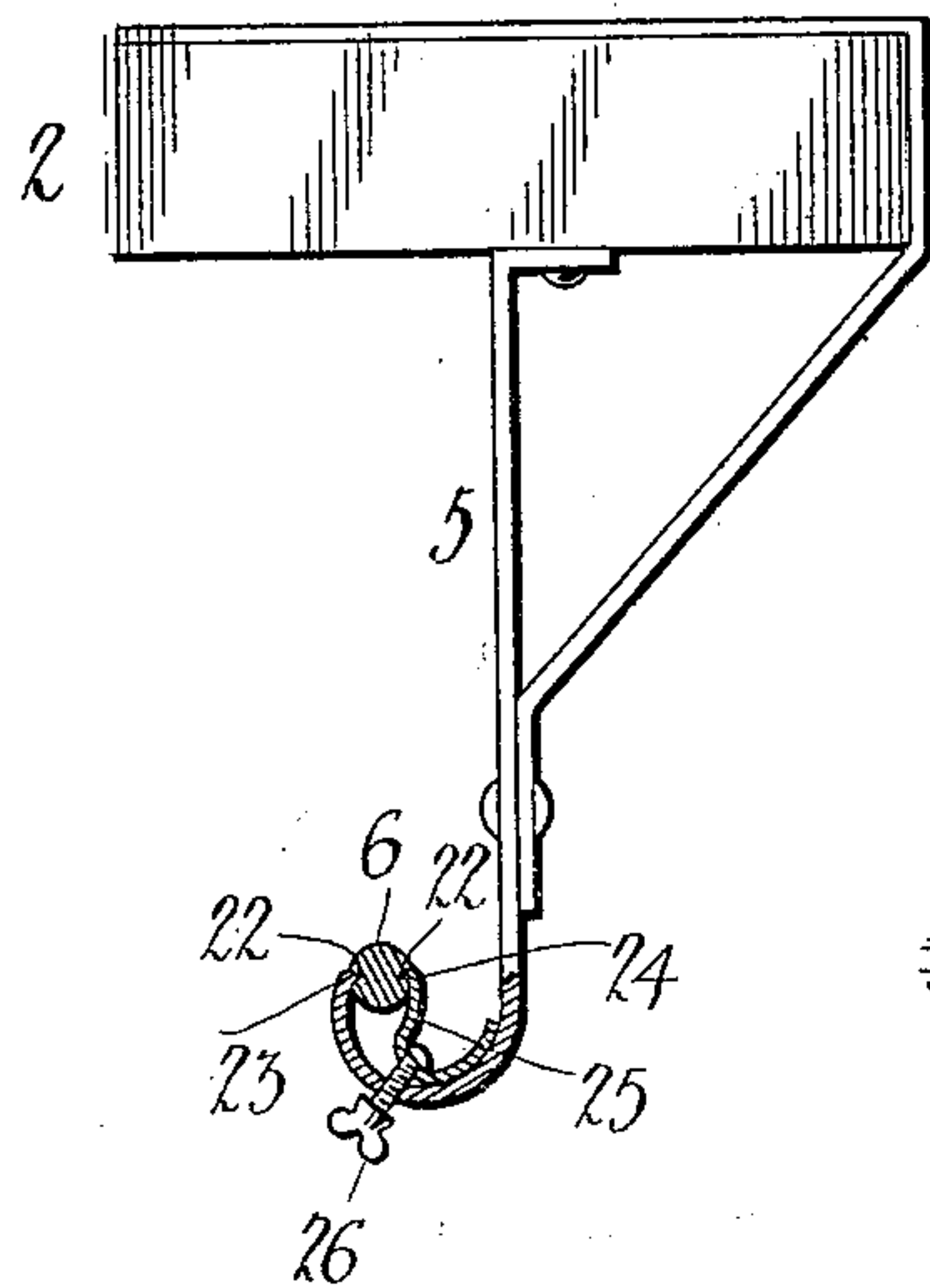


FIG. 11

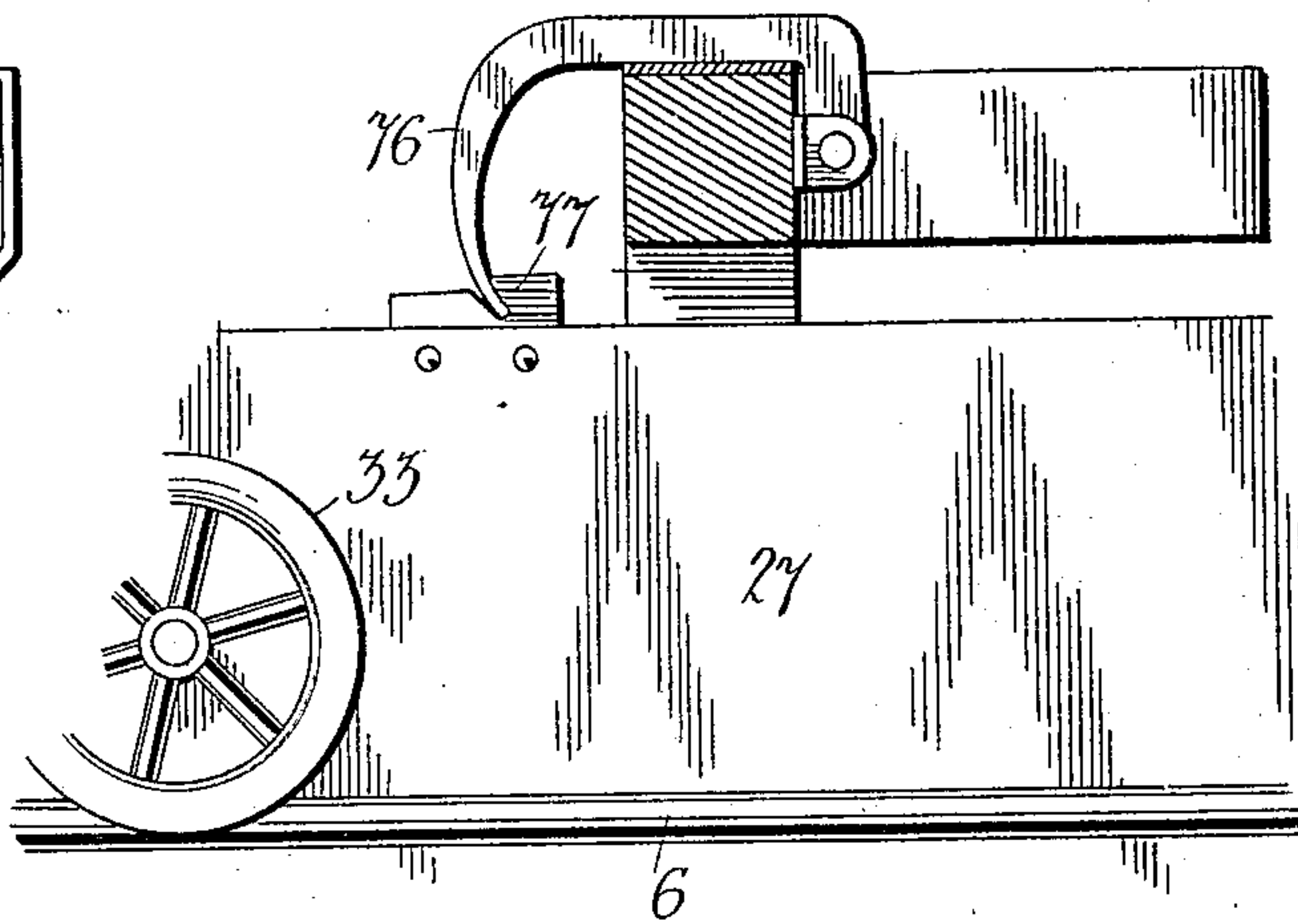


FIG. 12

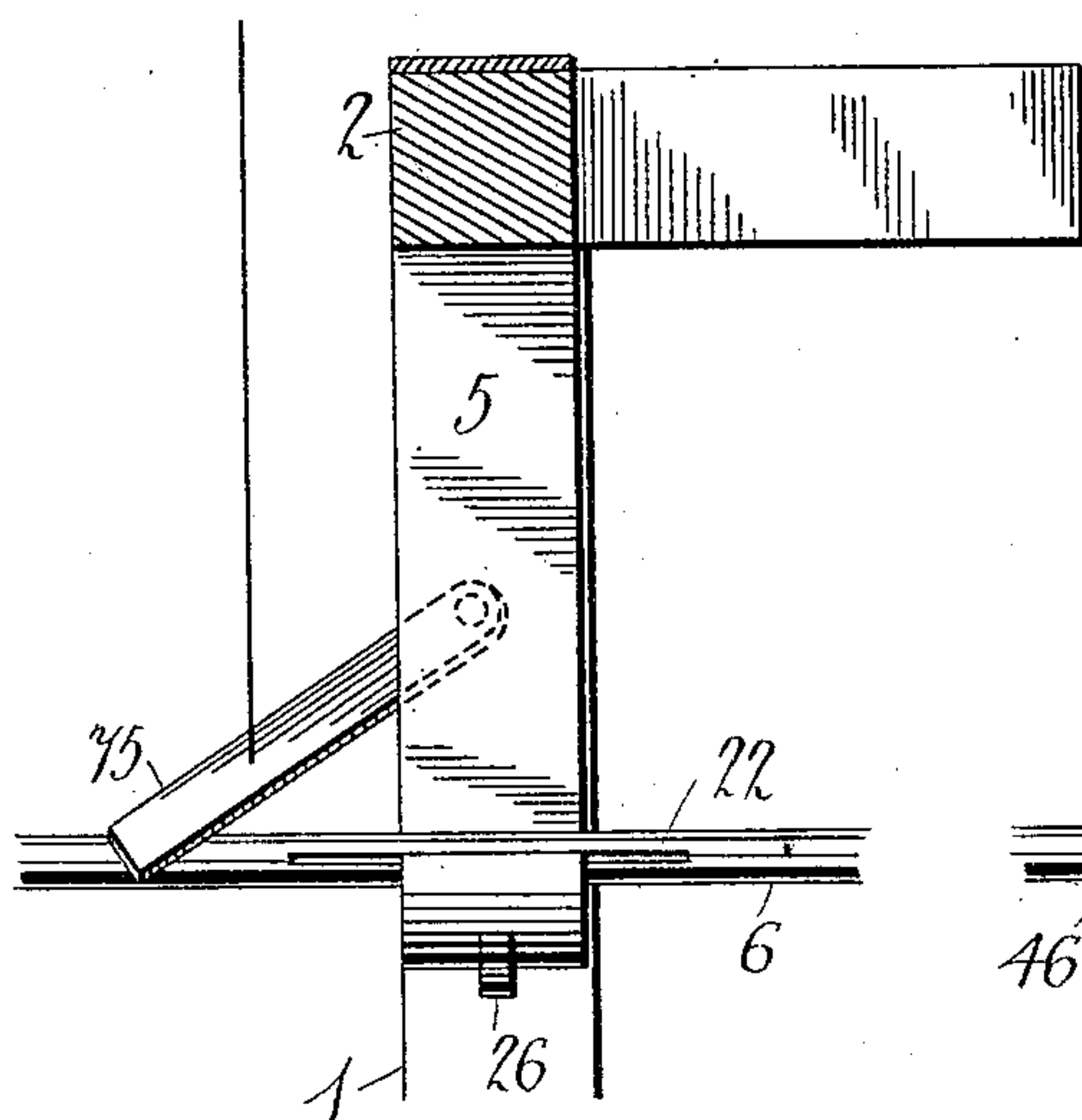
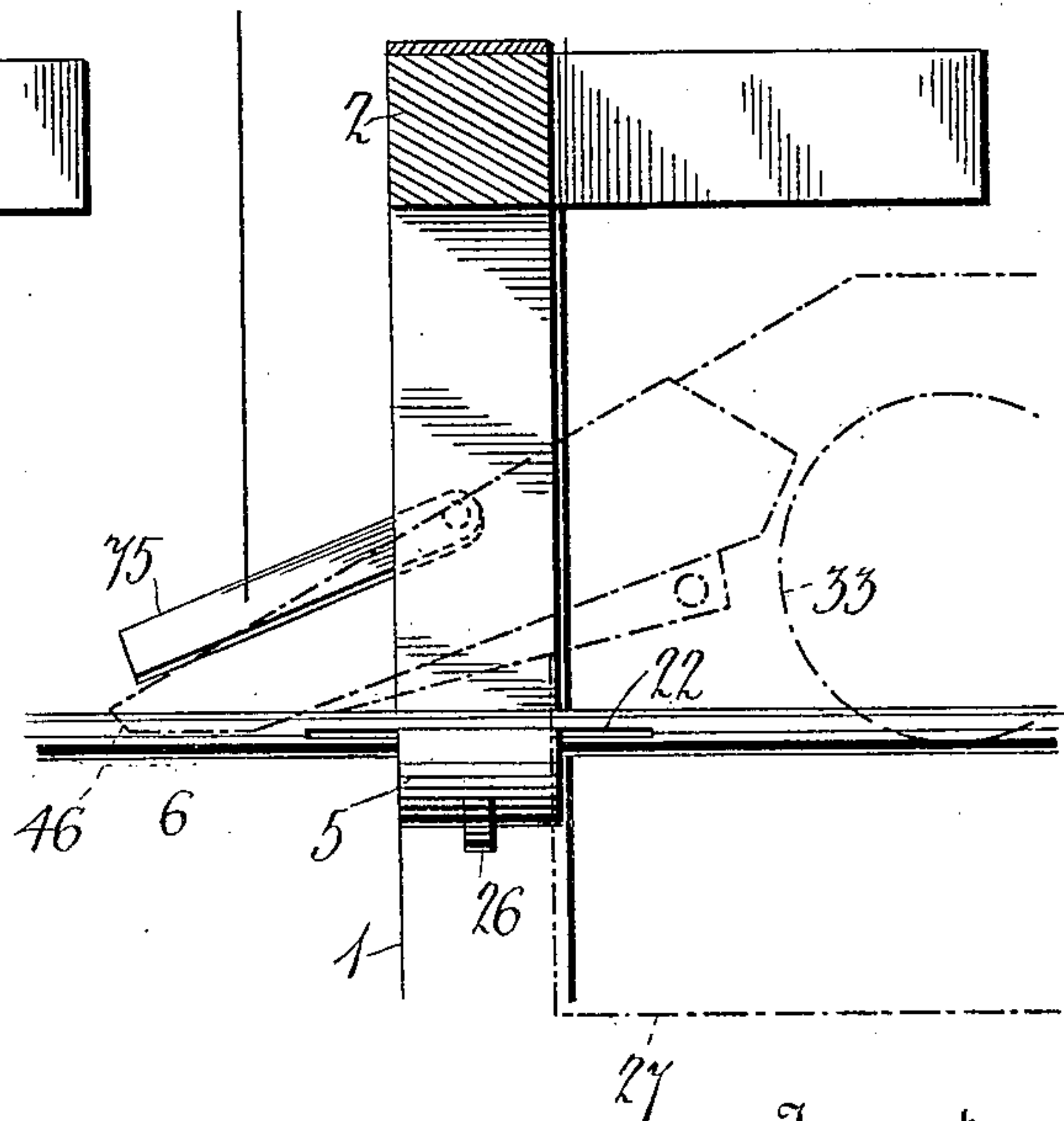


FIG. 13



Inventor

Witnesses  
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# UNITED STATES PATENT OFFICE.

RALPH M. BARTHOLOMEW, OF READING CENTER, NEW YORK.

## RURAL-MAIL-DELIVERY APPARATUS.

No. 822,816.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed November 27, 1905. Serial No. 289,321.

*To all whom it may concern:*

Be it known that I, RALPH M. BARTHOLOMEW, a citizen of the United States, residing at Reading Center, in the county of Schuyler and State of New York, have invented certain new and useful Improvements in Rural-Mail-Delivery Apparatuses; and I do 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 appertains to make and use the same.

This invention relates to improvements in rural-mail-delivery apparatus.

The object of the invention is to provide an apparatus of this character which will automatically deliver and collect mail along the route over which the same runs.

A further object is to provide an apparatus of this character which will be strong and durable in construction, efficient and reliable in operation, and well adapted to the purpose for which it is designed.

With these and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of one of the track-wire-supporting poles, which are located at each house or place of delivery. Fig. 2 is a sectional view through the cross-arm of said post, showing an inner side view of the post and the supporting mechanism for the mail-box. Fig. 3 is a side view of the car. Fig. 4 is a top plan view thereof. Fig. 5 is a longitudinal vertical sectional view showing a part of the mail-boxes in place. Fig. 6 is a transverse vertical sectional view of the same, showing in full lines one of the mail-boxes hooked back in place and in dotted lines the released position of said boxes. Fig. 7 is a horizontal sectional view through the lower portion of the car, taken on the line 7-7 in Fig. 3, parts being broken away to illustrate the mail-box-holding mechanism. Fig. 8 is an enlarged detail horizontal sectional view through several of the slidably-mounted mail-box-releasing blocks, showing the manner in which said blocks are automatically engaged and connected together. Fig. 9 is a detail perspective view of one of the mail-boxes. Fig. 10 is a detail vertical sectional view through one of the track-wire hangers,

showing the manner of securing said wire thereto. Fig. 11 is a detail sectional view through the securing-arm of the post at the post-office end of the line, showing a portion of the car and the manner in which the same is caught and held at this point; and Figs. 12 and 13 are detail views of a post adjacent to or a short distance from the post-office, showing the switch by which the electric current is applied to the track-wire and the manner in which said switch is disengaged from said wire by a passing car to cut off the current, thus causing the car to slow down before reaching the post-office, where it will be stopped by the catch mechanism shown in Fig. 11.

Referring more particularly to the drawings, 1 denotes one of the track-wire-supporting posts which are arranged at each house or place of delivery. On the upper end of the post 1 is arranged a laterally-projecting cross-arm 2, the rear projecting end of which is connected to the rear side of the post 1 by means of an inclined brace-bar 3. On the opposite end of the arm is suitably secured and braced downwardly-projecting inner and outer hangers 4 and 5, to which are connected track-wires 6, on which the mail-car is adapted to run. On the under side of the arm 2 adjacent to the post 1 is secured a bearing-block 7, on which is pivotally mounted a guide-pulley 8. To the block 7 is secured the upper ends of a pair of parallel vertically-disposed guide rods or bars 9, the lower ends of which are secured in a suitable bracket or standard 10, arranged at the lower end of the post 1. On the guide-rods 9 is slidably mounted the mail-box-supporting block 12, to which is connected one end of a cord or cable 13, said cable passing over the pulley 8, thence downwardly through a guide-eye 14, and around a pulley 15, journaled in the bracket or standard 10, and from thence passing upwardly on the opposite side of the guide-rods 9, where it is connected to a spring-projected catch 16. This catch 16 is adapted to engage a keeper 17, secured to the block 7, whereby when said catch is in engagement with the keeper the supporting-block 12 will be held in place at the upper ends of the guide-rods 9 and immediately below the bearing-block 7. To the supporting-block 12 is secured a downwardly-projecting arm or bracket 18, having a right-angularly-disposed lower end on which is ar-



10 ranged a spring-catch 19. On the right-angularly-disposed lower end of the arm or bracket 18 is adapted to be suspended the boxes 20, said boxes being provided with large bail-shaped snap-hooks 21, which are engaged with the spring-catch 19 on said arm or bracket 18, whereby the boxes will be held in place and prevented from being blown off or otherwise casually removed from said arms.

15 The track-wires 6 may be secured to the hangers 4 and 5 in any suitable manner, but are here shown and are preferably connected thereto by forming in said wires adjacent to said hangers longitudinally-disposed grooves 22. With one of said grooves 22 is adapted to be engaged an inwardly-projecting tongue 23, formed on the upwardly-turned end of the hangers. With the other of said grooves on 20 the opposite side of the wire is adapted to be engaged an inwardly-projecting tongue 24, formed on the clamping-plate 25, which is arranged in the upwardly-turned lower end of the hangers and is adapted to be clamped 25 into tight engagement with the wire by means of a set-screw 26, which is screwed through the lower end of the hangers and into said clamping-plates. Adapted to run upon the track-wires 6 is a car 27. Said car may be of 30 any suitable form, but is here shown as being rectangular in shape and provided with upper and lower compartments 28 and 29. The car is provided with a hinged cover 30, which closes the upper compartment of the car.

35 Within the upper compartment of the car, near each end of the same, is arranged transversely-disposed shafts 31 and 32, on the outer ends of which, adjacent to the outer sides of the car, are secured grooved supporting-wheels 33, adapted to engage and rest 40 upon the track-wires 6, whereby said car is supported. Within the compartment 28 is also arranged an electric motor 24, which is connected, by means of suitably-arranged 45 gears 35, with the shaft 31, by which means said shaft and the wheels 33 secured thereto are driven. On the shaft 31 is also mounted a sprocket-wheel 36, connected by a sprocket-chain 37 to a similar wheel 38 on the shaft 32, 50 whereby motion from the shaft 31 is imparted to the shaft 32 and the wheels secured thereto. Over the shaft 32 is arranged a suitably-mounted centrifugal governor 39, on which is mounted a beveled gear-pinion 40, said 55 pinion being adapted to mesh with a similar pinion 41 on the shaft 32, whereby motion from said shaft is imparted to the governor. The governor 39 is provided with a centrally-disposed slidably-mounted shaft 42, adapted 60 to be moved up and down by the centrifugal motion of the governor-balls, the lower end of said shaft having arranged thereon a brake-shoe 43, which is adapted to engage and bear upon the shaft 32 when the shaft 42 is forced 65 downwardly by the rapid revolution or cen-

trifugal motion of the governor-balls, thereby checking or retarding the revolutions of the shaft 2, and consequently checking the speed of the car when the track-wires are on an incline or downgrade. 70

On the forward end of the car, near the bottom of the same, is secured a forwardly-projecting arm or spear 44, which is adapted to be projected into the snap-hooks 21 of the mail-boxes 20 when the same are hung upon 75 the arm or bracket 18 of the supporting-blocks 12, thus disengaging said blocks from the arms 18 and taking the same upon the arm or spear 44. A curved spring retaining-arm 45 is secured to the forward end of the car and is adapted to engage the arm or 80 spear 44 to hold the boxes thereon after being caught by the spear. On the forward end of the car, near the upper portion and at each side of the same, are pivotally mounted 85 forwardly-projecting inclined hoods or fenders 46, which are adapted to engage the track-wires 6 ahead of the car, thereby removing snow, ice, or other obstruction from said wire before the car reaches the same. The fenders 46 are held in yielding engagement with 90 said track-wires by means of coil-springs 47.

On the sides of the car immediately below each supporting-wheel 33 is pivotally mounted a roller 48, and adjacent to said roller is secured downwardly-inclined guide-plates 49, 95 said plates and rollers being adapted to guide and hold the track-wires and the grooved supporting-wheels in engagement. On one side of the car between the supporting-wheels 100 is pivotally mounted a spring-arm 50, on the lower end of which is journaled a grooved contact-wheel 51, adapted to rest upon the adjacent track-wire 6. By means of the wheel 51 the electrical current from the 105 track-wire will be taken up and conducted, by means of a wire 53, to the motor 34 in the upper compartment of the car, thereby imparting motion to the same.

The lower compartment 29 of the car is 110 adapted to contain the letter-boxes 30, said compartment being adapted to contain any desired number of said boxes, the latter being preferably arranged on edge in suitable guideways 54, formed on the upper and 115 lower walls of the compartment 29. In order that the boxes 20 may be held in said compartment and released and projected at the proper time, suitable holding, releasing, and projecting mechanisms are provided. 120 The holding mechanism for the boxes consists of a series of horizontally-projecting hooks 55, which are pivotally mounted on the inner side of the compartment 29 in the rear of each letter-box, said hooks being 125 adapted to be engaged with an eye or staple 56, arranged on the inner end of said boxes.

The releasing mechanism for the boxes consists of a series of hollow blocks 57, which are slidably mounted upon a track or guide 130



bar 58, secured to said inner wall of the compartment 29 immediately in line with hooks 55. On the lower side of each of said blocks 57 is secured a downwardly-projecting trip arm or pin 59, said trip-arms being adapted to be successively brought into engagement with said hooks 55 to release or disengage the same from the staples 56 on said letter-boxes. The hollow blocks 57 each have arranged in one end thereof a pivotally-mounted spring-catch or coupling-hook 60, said hooks 60 being adapted to engage a transversely-disposed pin 61, arranged in the opposite end of each of said blocks, whereby the same are adapted to be successively coupled together, thus permitting them to be successively actuated to release the mail-boxes one after another.

In order that the blocks 57 may be automatically actuated or shifted on the track 58, an operating mechanism is provided, said operating mechanism consisting of a transversely-disposed arm or bar 62, which is pivotally mounted in the forward end of the car and projects laterally from one side thereof in the form of a curved contact-arm 63, which is adapted to be brought into engagement with the arm or bracket 18 on the supporting-block 12 of the box-holding mechanism on the post 1. To the inner end of the bar 62 is pivotally connected the forward end of a connecting-rod 64, the opposite end of which is connected to the first or foremost block 57. On the inner end of the car is secured a spring 65, which is adapted to bear upon the inner end of the bar 62 to normally project the same and the blocks connected thereto inwardly, thus holding the trip arms or pins 59 out of engagement with the hooks 55, thereby permitting said hooks to hold the mail-boxes in place.

The projecting mechanism for the mail-boxes consists of coil-springs 66, the inner ends of which are secured to a longitudinally-disposed bar 67, secured to the inner wall of the compartment 29 below the hooks 55. One of the springs 66 is arranged in rear or at the inner end of each of the mail-boxes and is arranged upon a guide-bar 68, slidably mounted in the adjacent side of the car, whereby when the springs are pushed in by the insertion of the mail-boxes said springs will be prevented from doubling. The mail-boxes are pushed into the compartment 29 against the tension of the springs 65, and when so arranged in said compartment the hooks 55 are engaged with the staples 56, whereby said boxes are held in place. As soon as a trip pin or arm 59 is brought into engagement with one of said hooks the same will be disengaged from said eye or staple, thus releasing the hook from the box and permitting the spring 66 to forcibly project the box from the compartment 29 and into engagement with a yielding bail-shaped stop-

bar 69, which is pivotally mounted upon a shaft 70, journaled in brackets 71, to project laterally from the side of the car immediately above the compartment 29. On the shaft 70 is arranged a coil-spring 72, with which the bail-shaped stop 69 is connected, said spring being adapted to normally force the stop inwardly into engagement with a downwardly-projecting pin or arm 73, which will hold said bail-shaped stop in a vertical position opposite the compartment 29 to receive the mail-boxes as they are projected from said compartment by the coil-spring 66 therein, thus preventing said boxes from being swung entirely out of the compartment and holding them in a position whereby the snap-hooks on the ends of the same will be engaged with the arm or bracket 18 and when so engaged will be pulled entirely out of the compartment 29 and will drop upon the right-angularly bent lower end of said arm or bracket simultaneously with the removal from said end of the empty box hanging thereon by the arm or spear 44, the full box just delivered taking the place of the empty box removed by said spear.

In arranging the letter-boxes in the compartment 29 the hollow blocks 57, carrying the trip-pins 59, are arranged as shown in Figs. 7 and 8 of the drawings, with the end of the coupling-hooks 60 of one of said blocks disengaged with and projecting beneath the coupling-pin 61 of the next adjacent block toward the rear end of the car, said coupling-pin holding the hook in this position against the tension of a spring 74, which is arranged in said block and which will force said hooks to a position of engagement as soon as released from beneath said coupling-pin by the separation of the blocks, so that when the separated blocks are again forced into contact with the adjacent block the coupling-hook will engage and hook into said coupling-pin, thus connecting said block. In this manner the whole series of blocks, beginning at the front end of the car, will be successively coupled together, thus causing the same to successively release the mail-box-holding hooks as the arm 63 is brought into engagement with the arm or bracket 18 of each house or place of delivery. The mail-boxes are arranged in the compartment 29, beginning at the rear end of the car, each box being connected with its hook 55 as it is placed into the compartment, so that when all of said boxes are in place the hooks holding the same are in position to be successively engaged by the trip arms or pins on the releasing-blocks 57, as hereinbefore described.

The electrical current is applied to the track-wire 6 by means of an electric switch 75, which is pivotally mounted on the inner track-wire hanger of one of the supporting-posts just outside of the post-office or starting-station. The switch 75 is so arranged



that when a car comes into engagement with the same when near the office or station at the completion of its trip the fender on the car which runs over the track-wire with which  
 5 said switch is engaged will turn said switch off of and out of engagement with said track-wire, thus removing the electric current from the same and causing the motor within the car to stop and the car to gradually slow  
 10 down as is approaches the post-office station. On a supporting-post within said station is arranged a pivotally-mounted catch-hook 76, which is arranged in the path of movement of a catch 77, fixed in the car, whereby when  
 15 said car comes under said catch-hook the same will automatically engage the catch and stop the car. After the empty boxes have been removed from the spear 44 and filled and again placed in the compartment 29, as  
 20 hereinbefore described, the operator will again turn the switch 75 into engagement with the track-wire, thus applying the electric current thereto and starting the motor within the car. The catch or holding hook  
 25 76 now being released, the car will again start on another delivery-trip. The supporting-wheels of the car, the fenders, and all other parts where necessary will be suitably insulated where they come into engagement with  
 30 the track-wires.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of  
 40 this invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-holding mechanism arranged on certain of said posts, means whereby said holding apparatus is raised and lowered, an electrically-driven  
 45 mail-car adapted to run on said track-wires, mail-boxes carried by said car, means whereby said boxes are successively discharged from said car at their proper places of delivery, and means whereby empty boxes are  
 50 taken by said car, substantially as described.

2. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-supporting mechanism, arranged on certain of  
 60 said posts, said mechanism consisting of vertically-disposed guide-bars, a supporting-block slidably mounted on said bars, a depending box-holding arm or bracket secured to said block, means whereby said block is  
 65 raised and lowered, a catch adapted to hold

the block in its raised position, a mail-car adapted to be run on the tracks, means whereby an empty mail-box is taken from said arm or bracket, means whereby a full box is discharged from said car, and means  
 70 whereby the same is engaged with and supported by said arm or bracket, substantially as described.

3. In a mail-delivery apparatus, the combination with supporting-posts, having laterally-projecting cross-arms, of depending  
 75 hangers secured to said arms, track-wire-clamping devices arranged on said hangers, track-wires clamped to and supported by said hangers, means whereby an electric current is applied to said wires, a mail-car adapted to run on the latter, mail-boxes carried by  
 80 said car, means whereby the same are successively projected therefrom, and means whereby empty boxes are taken up by said car, substantially as described.

4. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-holding mechanism arranged on certain of said posts, a car adapted to run on said track-wires, an  
 90 electric motor carried by said car whereby the same is driven, mail-boxes arranged in said car, a holding mechanism to retain said boxes in place, a releasing mechanism to disengage said holding mechanism, a projecting mechanism to discharge said boxes, and means whereby the same are prevented from  
 95 being entirely ejected out of said car, substantially as described.

5. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-holding mechanism arranged on certain of said posts, a car adapted to run on said track-wires, a  
 100 mail-box compartment formed in said car, mail-boxes arranged in said compartment, hooks for separately holding said boxes in place, means whereby said hooks are separately and successively released from said  
 105 boxes, means whereby they are projected from said compartment, and means whereby the same are caught and held in position to be taken from the car, substantially as described.

6. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-holding mechanism arranged on certain of said posts, a car adapted to run on said track-wires, a  
 110 mail-box compartment formed in said car, mail-boxes arranged in said compartment, hooks for separately holding said boxes in place, a hook-releasing mechanism adapted to separately and successively disengage said  
 115 hooks from said boxes, means whereby said releasing mechanism is actuated, springs adapted to successively project said boxes from said compartment when released from said hooks and means whereby said projected  
 120  
 125  
 130



boxes are caught and held in position to be taken from the car, substantially as described.

7. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-holding mechanism arranged on certain of said posts, a car adapted to run on said track-wires, a mail-box compartment formed in said car, 10 mail-boxes arranged in said compartment, hooks for separately holding said boxes in place, slidably-mounted blocks arranged in said compartment, hook-releasing pins carried by said blocks, coupling hooks and pins 15 arranged thereon whereby said blocks are coupled together, means whereby said blocks are actuated to cause the same to be automatically and successively coupled and shifted to bring said releasing-pins into en- 20 gagement with said hooks, and springs adapted to project the boxes from said compartment when released from said hooks, substantially as described.

8. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-holding mechanism arranged on certain of said posts, a car adapted to run on said track-wires, a mail-box compartment formed in said car, 30 mail-boxes arranged in said compartment, hooks for separately holding said boxes in place, slidably-mounted blocks arranged in said compartment, hook-releasing pins carried by said blocks, coupling hooks and pins 35 arranged thereon whereby said blocks are coupled together, a spring-projected contact arm or bar pivotally mounted in said car, a connecting-rod connecting the inner end of said contact-arm with the forward end block, 40 whereby when said contact-arm is rocked, the blocks will be successively coupled and shifted to bring the pins thereon into engagement with the box-holding hooks to successively release said boxes, springs whereby 45 said boxes are projected, and a yieldingly-mounted stop to catch and hold said boxes in position to be taken from the car, substantially as described.

9. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported on said posts, a mail-car

adapted to travel on said track-wires, fenders carried by said car to clear the wires of obstructions, an electric motor arranged in said car, means whereby an electric current 55 is applied to the track-wires, a pivotally-mounted contact-wheel carried by said car to run on said tracks and conduct the electricity therefrom to said motor, mail-boxes carried by said car, means whereby said 60 boxes are automatically projected from the car at the proper places, means whereby the electric current is automatically cut off from said wire when the car nears the main station, and a pivotally-mounted hook at said station 65 to engage and stop said car, substantially as described.

10. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-holding mechanism arranged on certain of said posts, a mail-car adapted to run on said track-wires, mail-boxes carried by said car, snap-hook bails arranged on said boxes whereby the same are engaged with and taken from 75 said supporting mechanism, a spear secured to the forward end of said car to engage the bails on said boxes and remove the latter from said supporting mechanism, and means whereby the boxes are held on said spear, 80 substantially as described.

11. In a mail-delivery apparatus, the combination with supporting-posts, of track-wires supported thereby, a mail-box-holding mechanism arranged on certain of said posts, 85 a mail-car having supporting-wheels adapted to engage and run on said track-wires, an electric motor carried by said car, means whereby electricity is taken from one of said track-wires and conducted to said motor, 90 means whereby the latter is geared to the axles of said wheels, and a governor adapted to engage one of said axles to regulate the speed of said car, substantially as described.

In testimony whereof I have hereunto set 95 my hand in presence of two subscribing witnesses.

RALPH M. BARTHOLOMEW.

Witnesses:

W. H. BARTHOLOMEW,

Mrs. W. H. BARTHOLOMEW.