

No. 692,443.

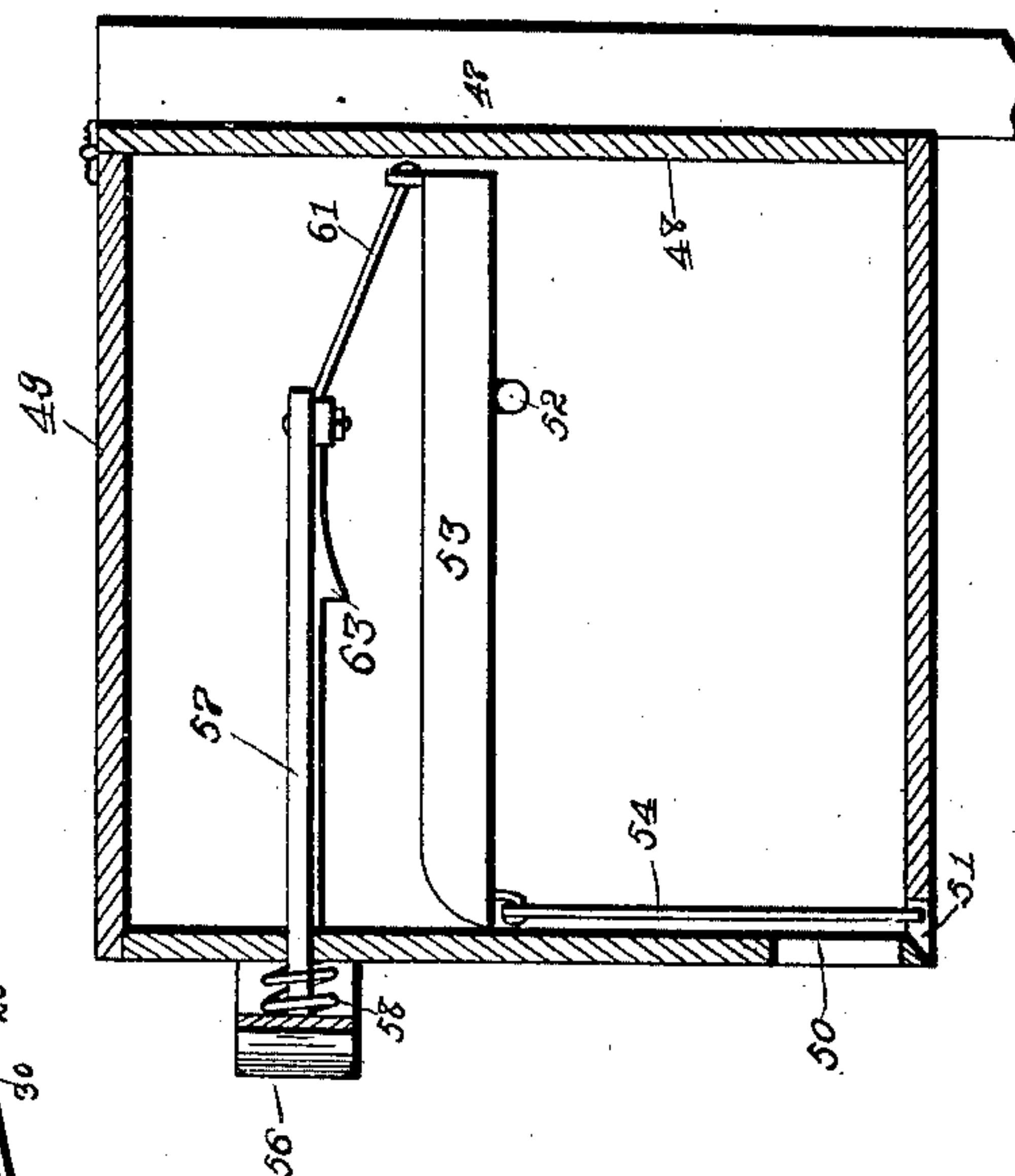
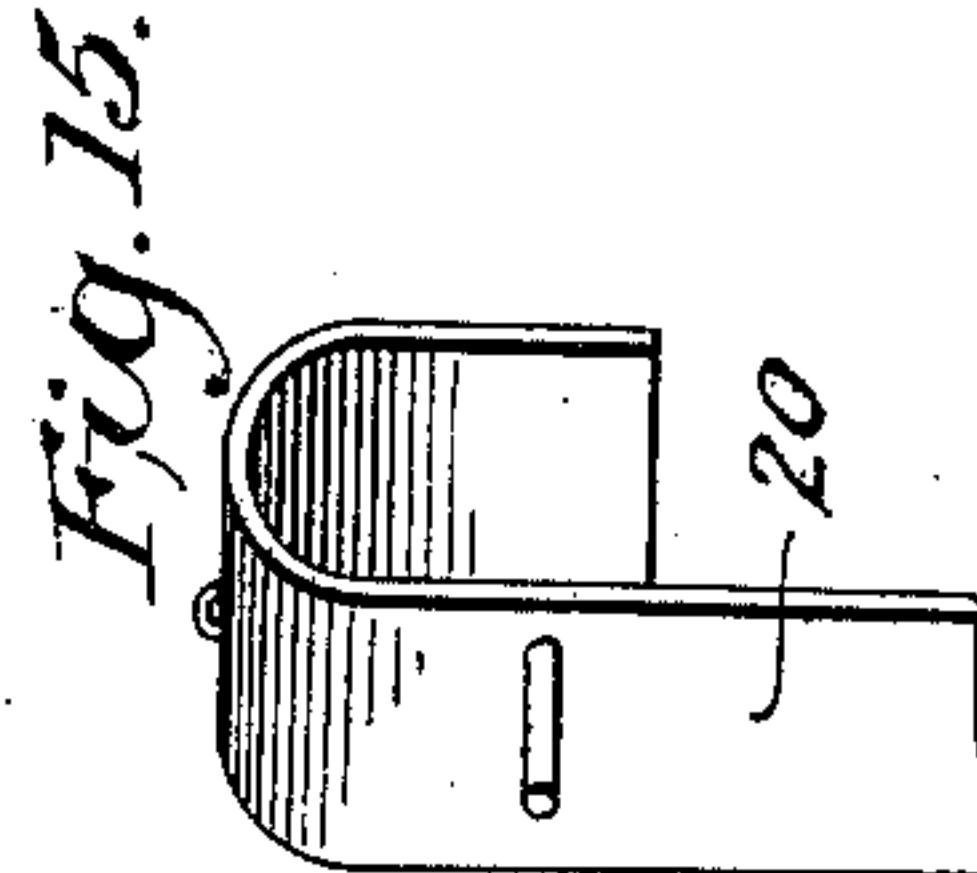
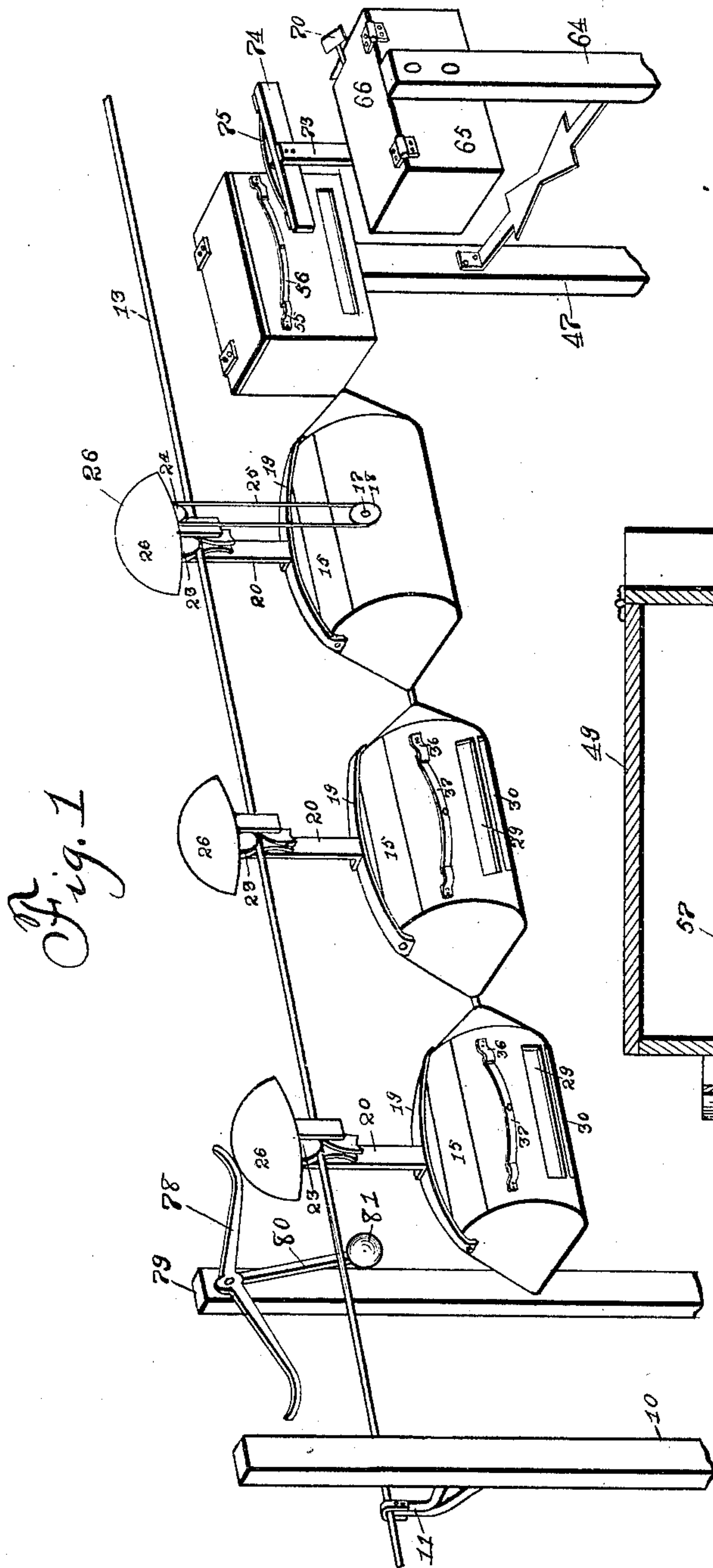
Patented Feb. 4, 1902.

H. O. HARDEN.
MAIL AND PARCEL CARRIER.

(Application filed May 18, 1901.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses: }
J. H. Roe }
W. S. Grwig }

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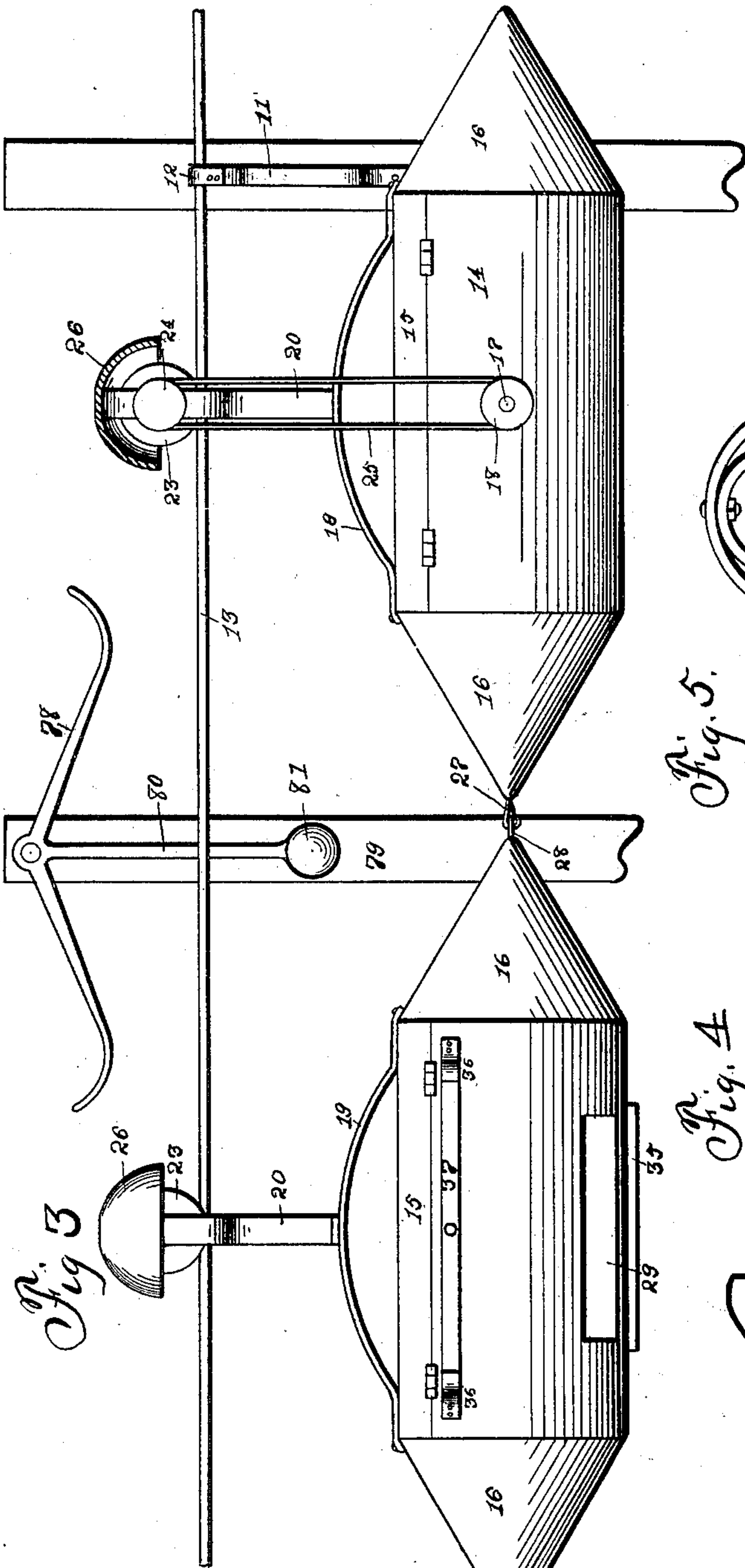


Fig. 3

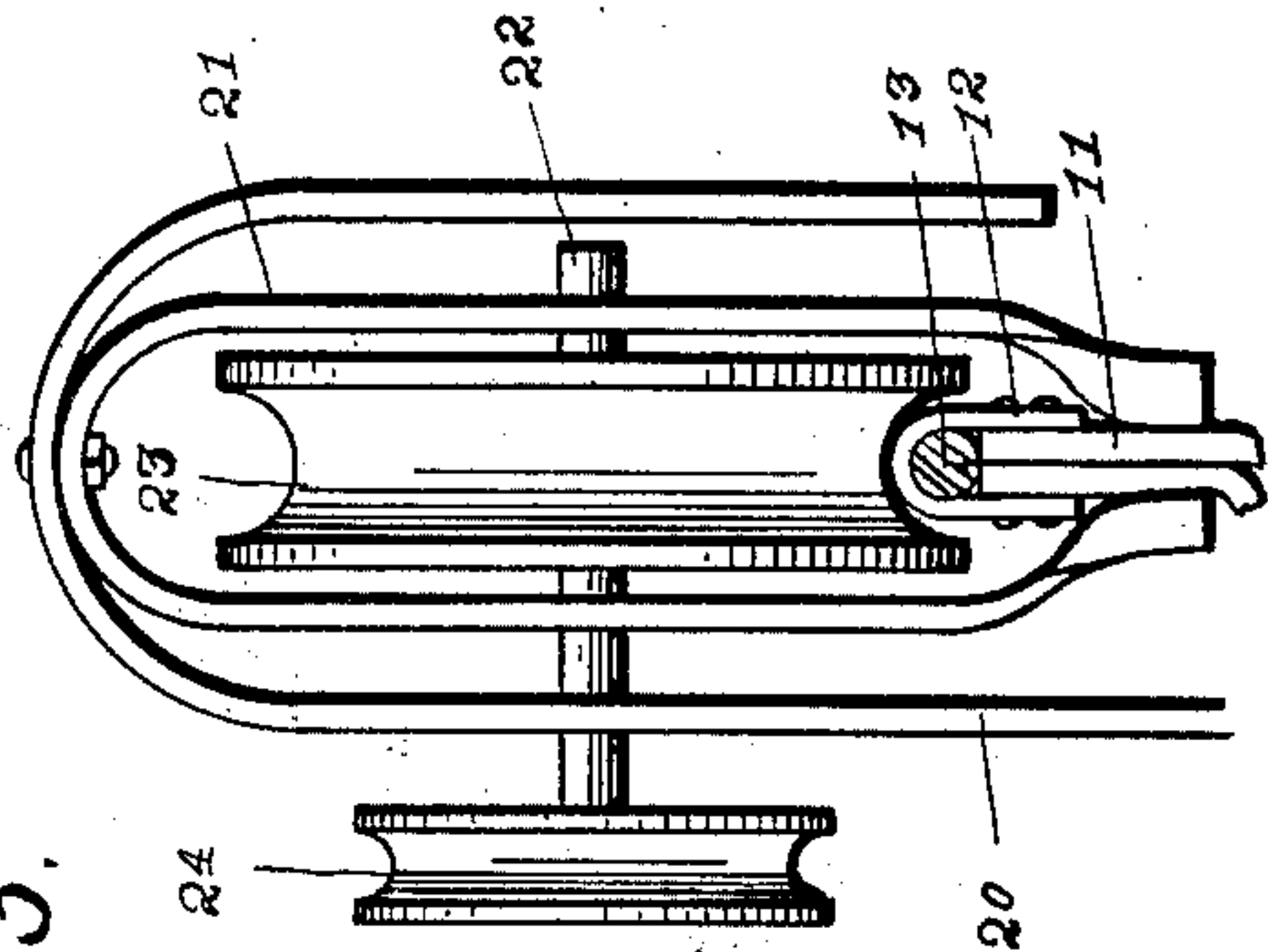


Fig. 5

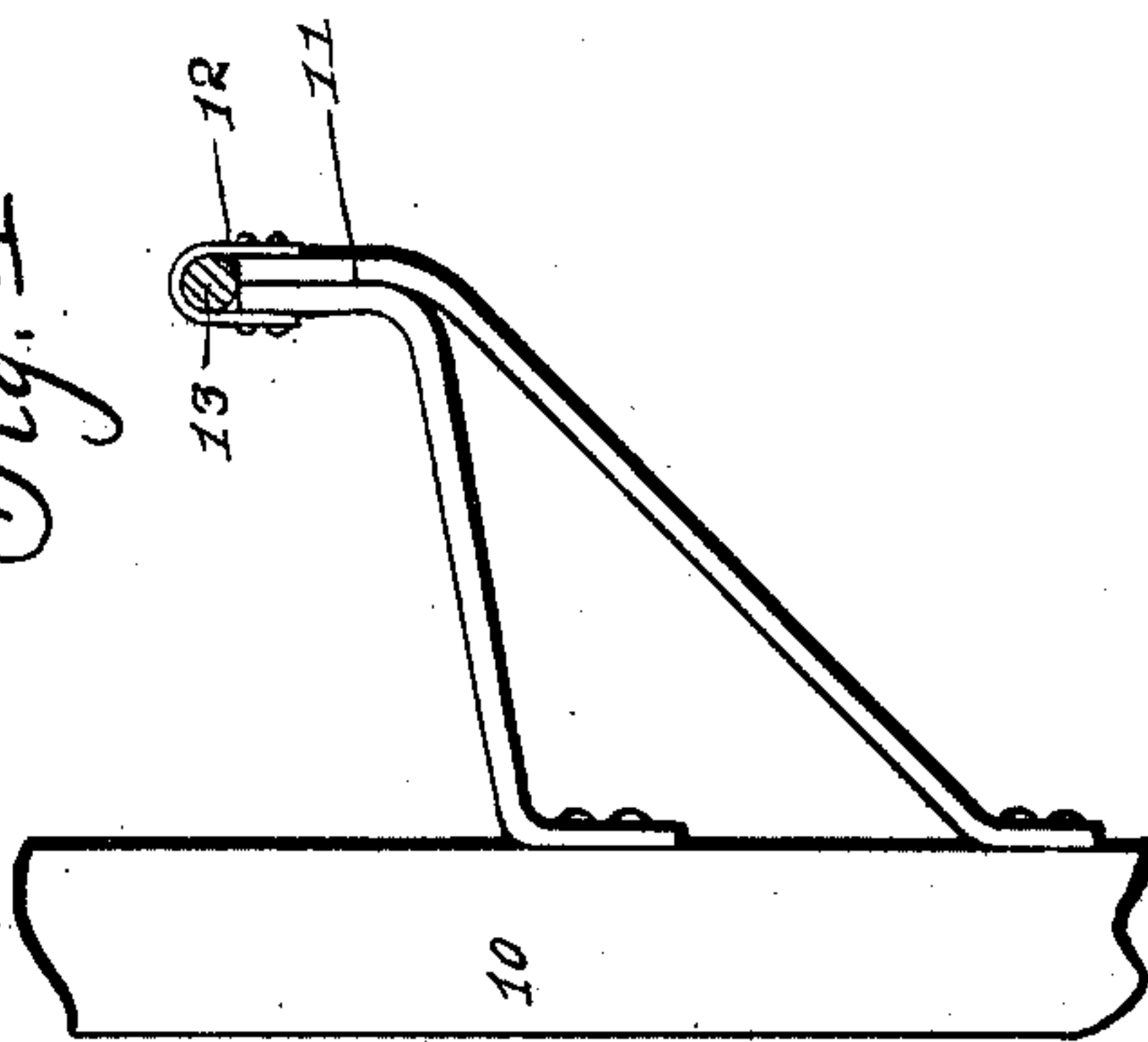


Fig. 4

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Fig. 6

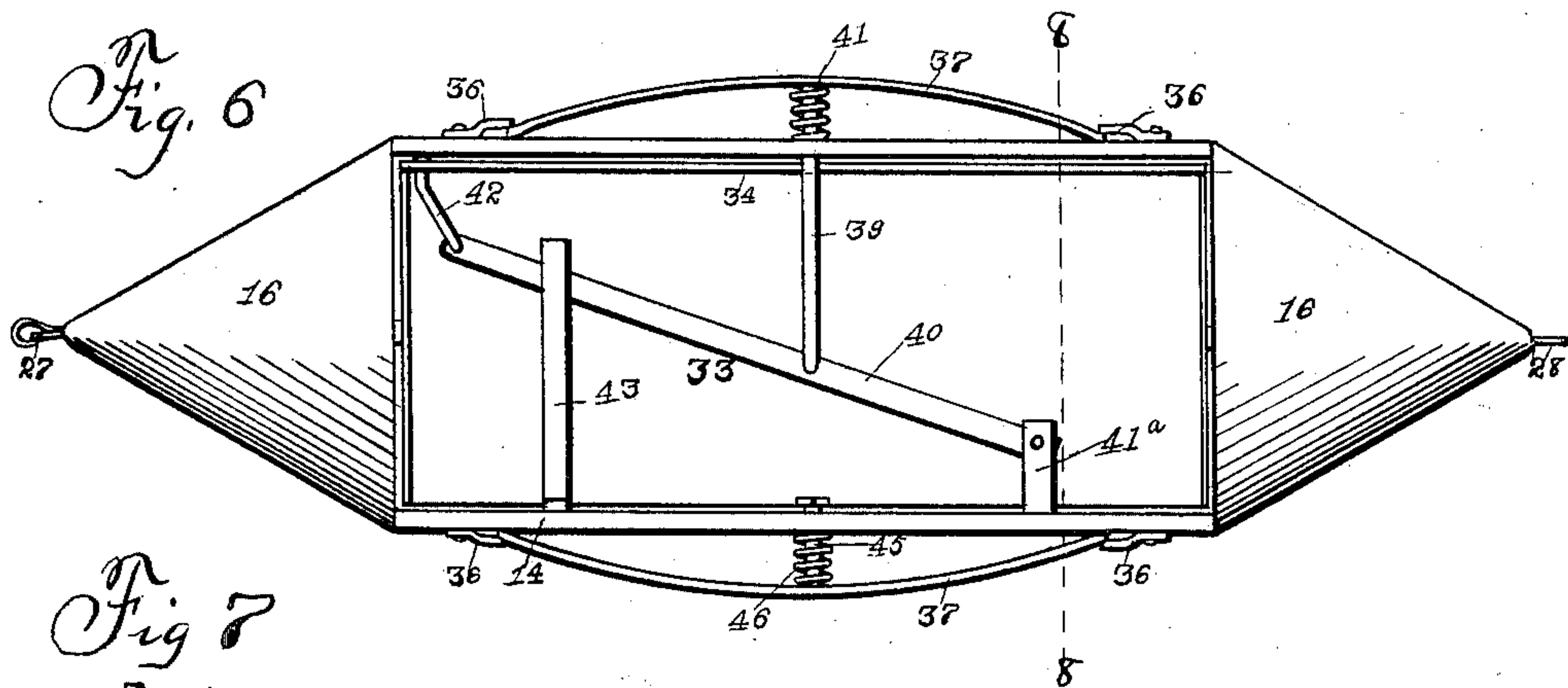


Fig. 7

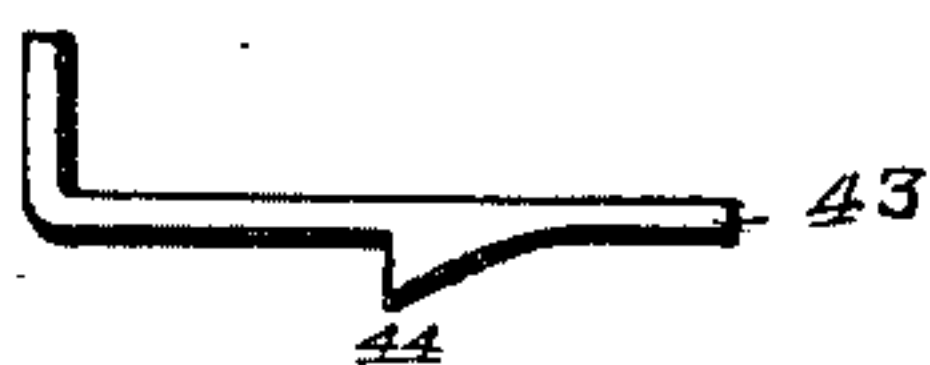


Fig. 8

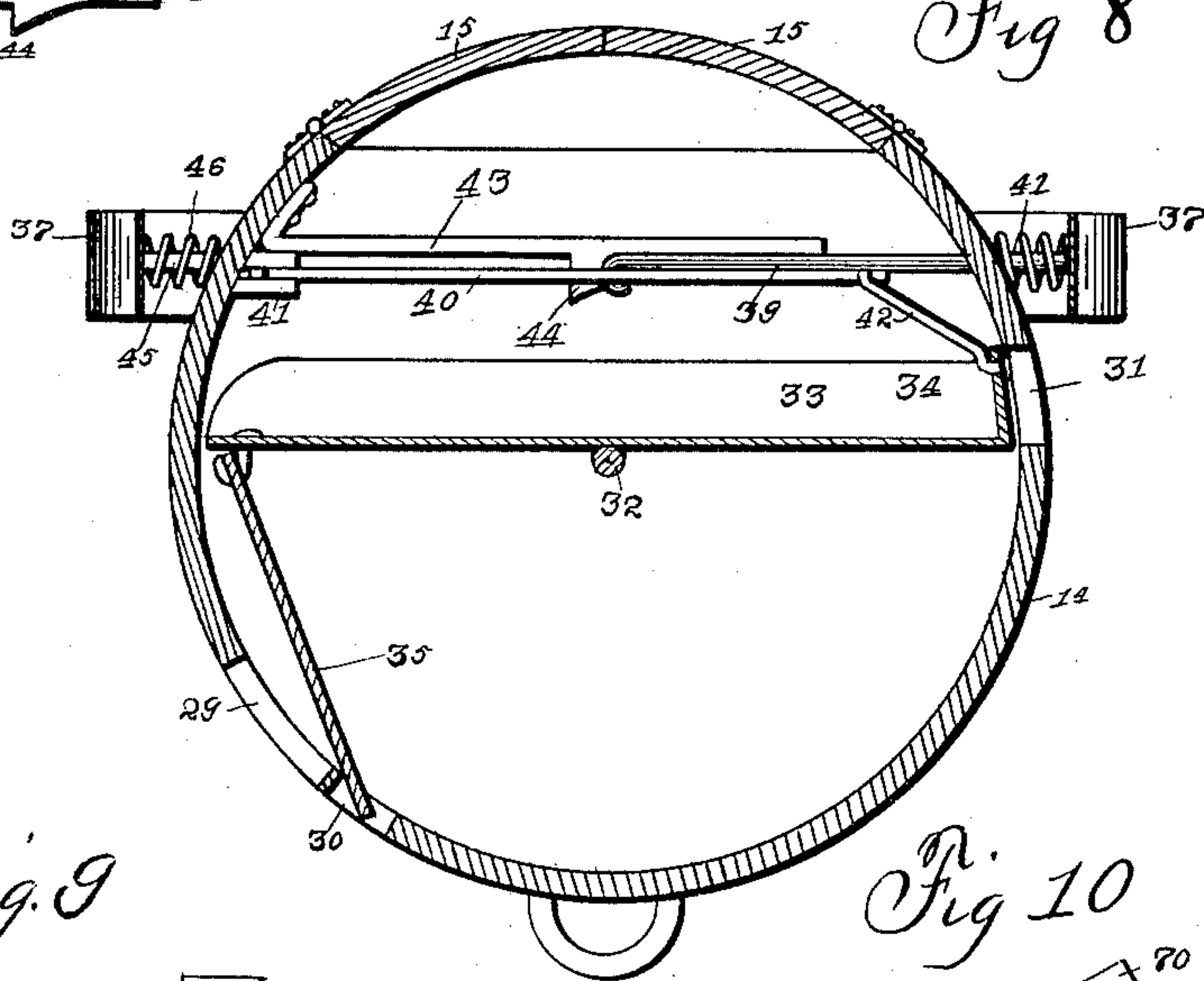


Fig. 9

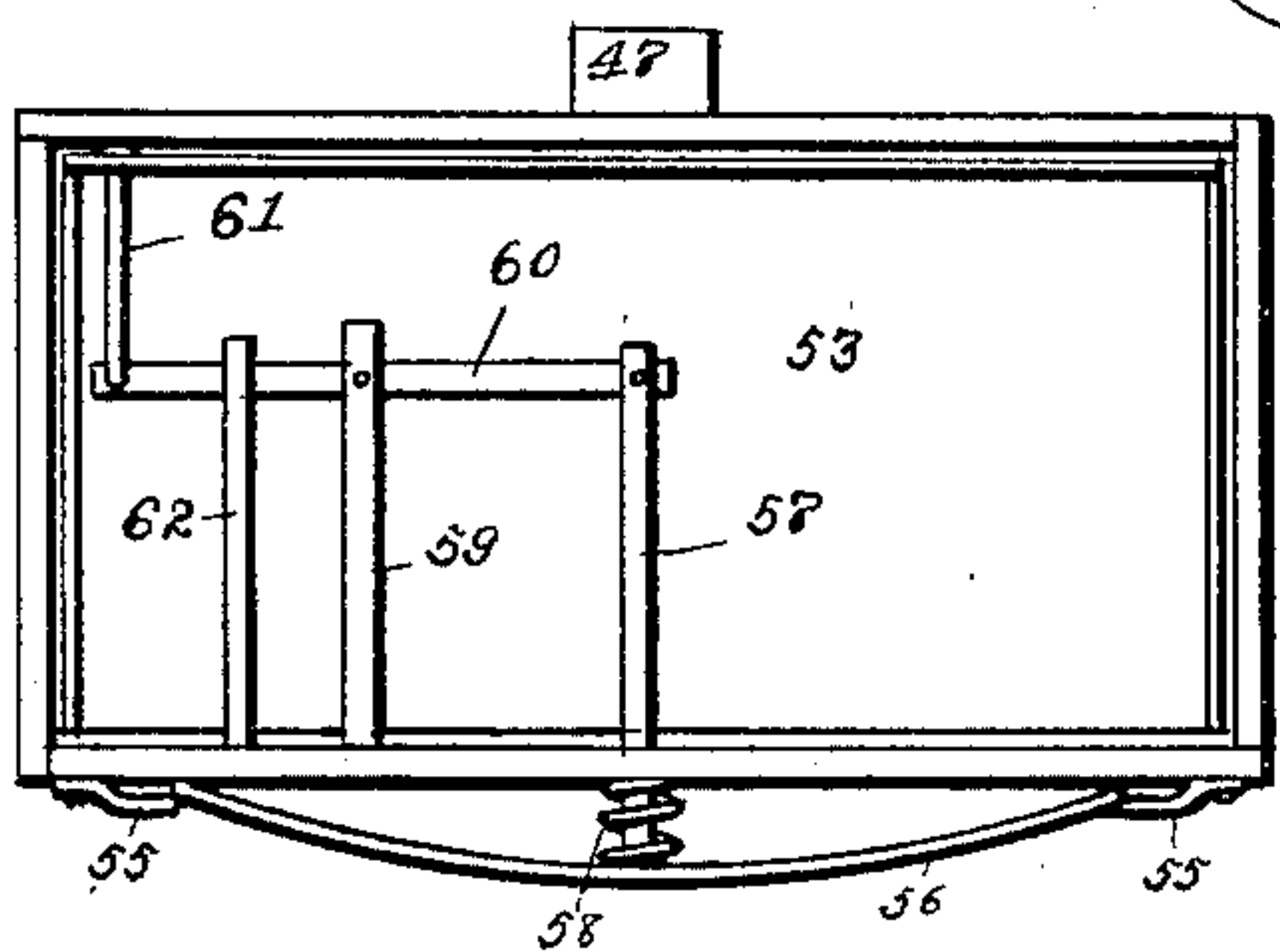
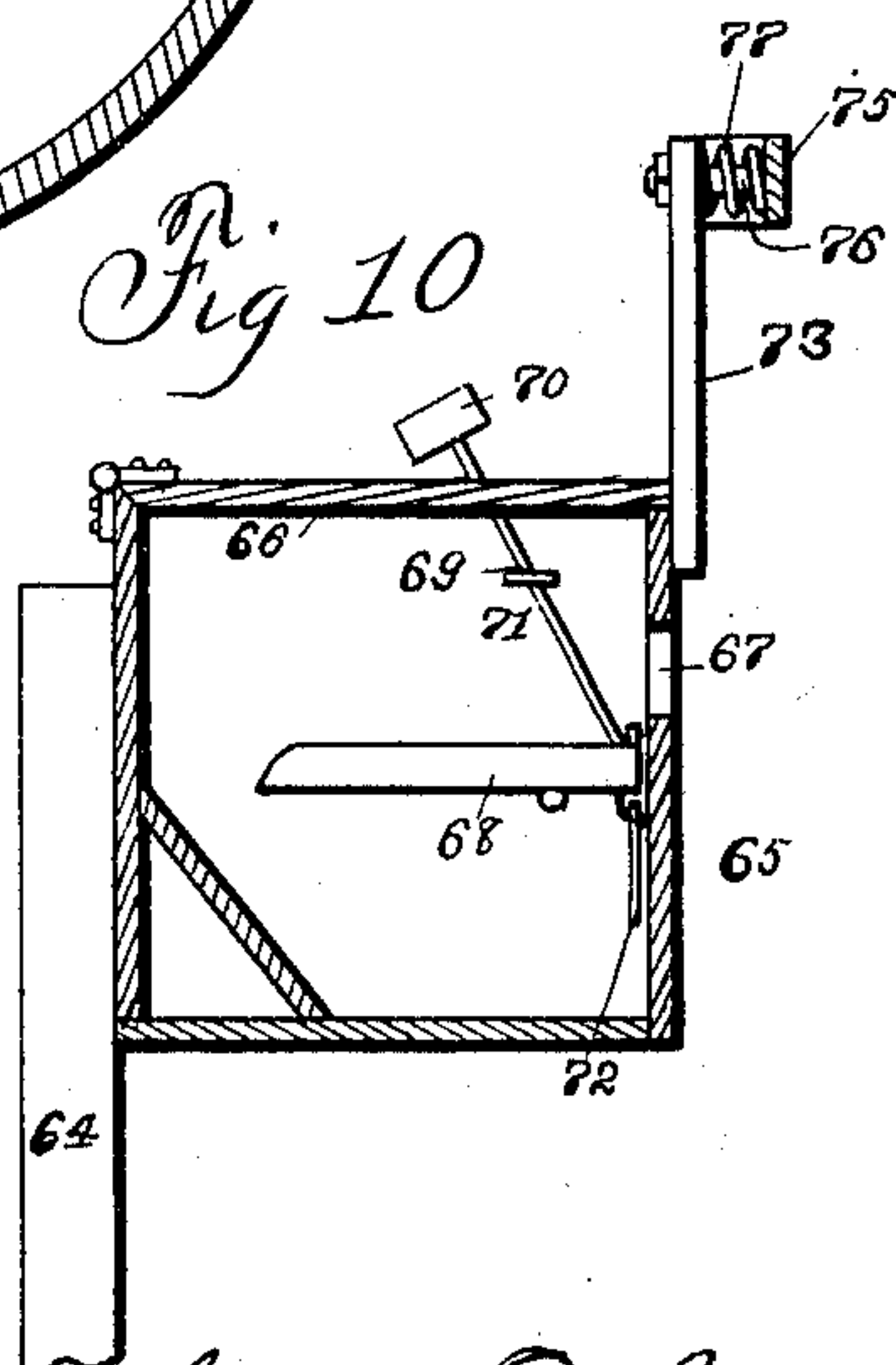


Fig. 10



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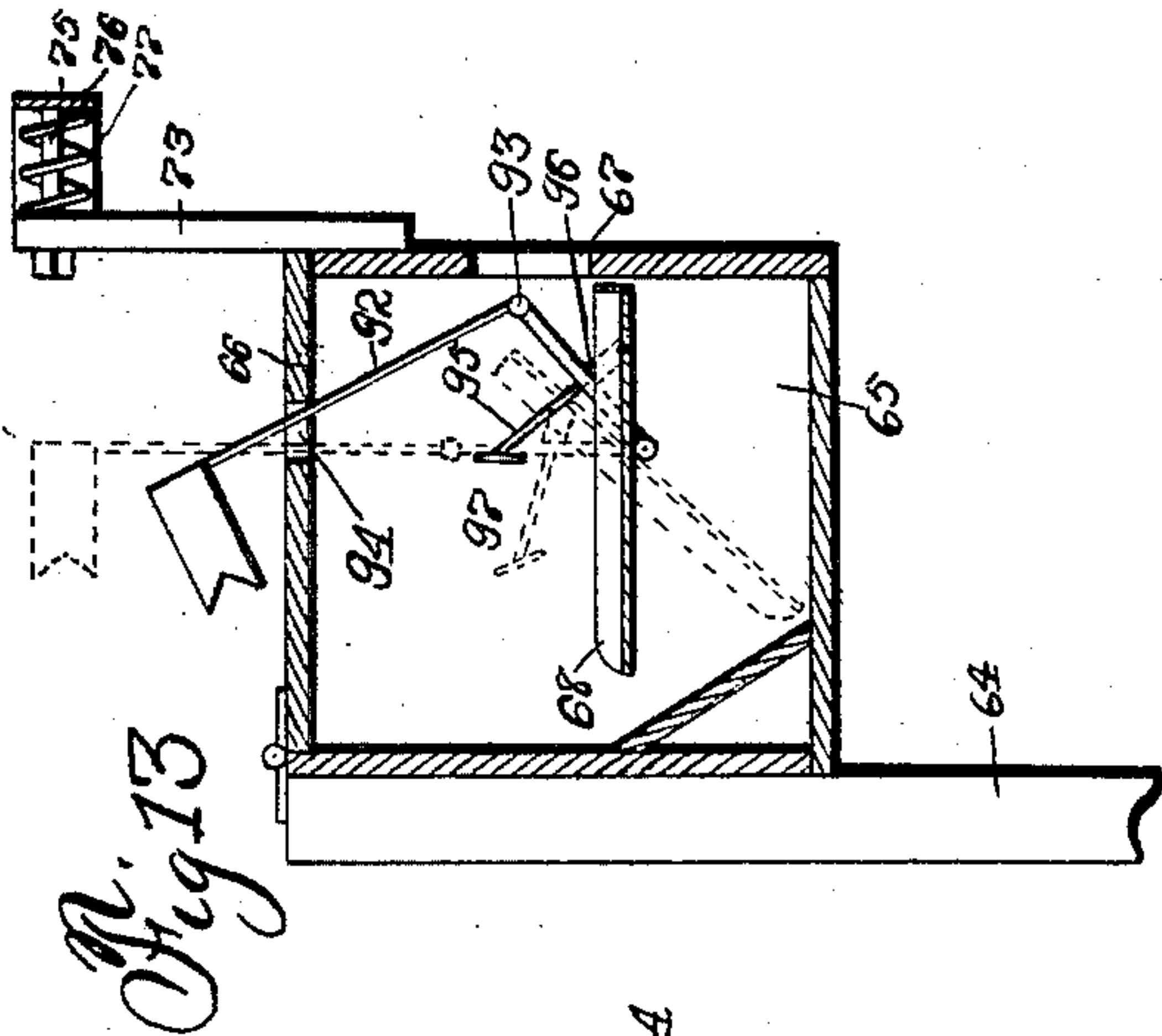


Fig. 13.

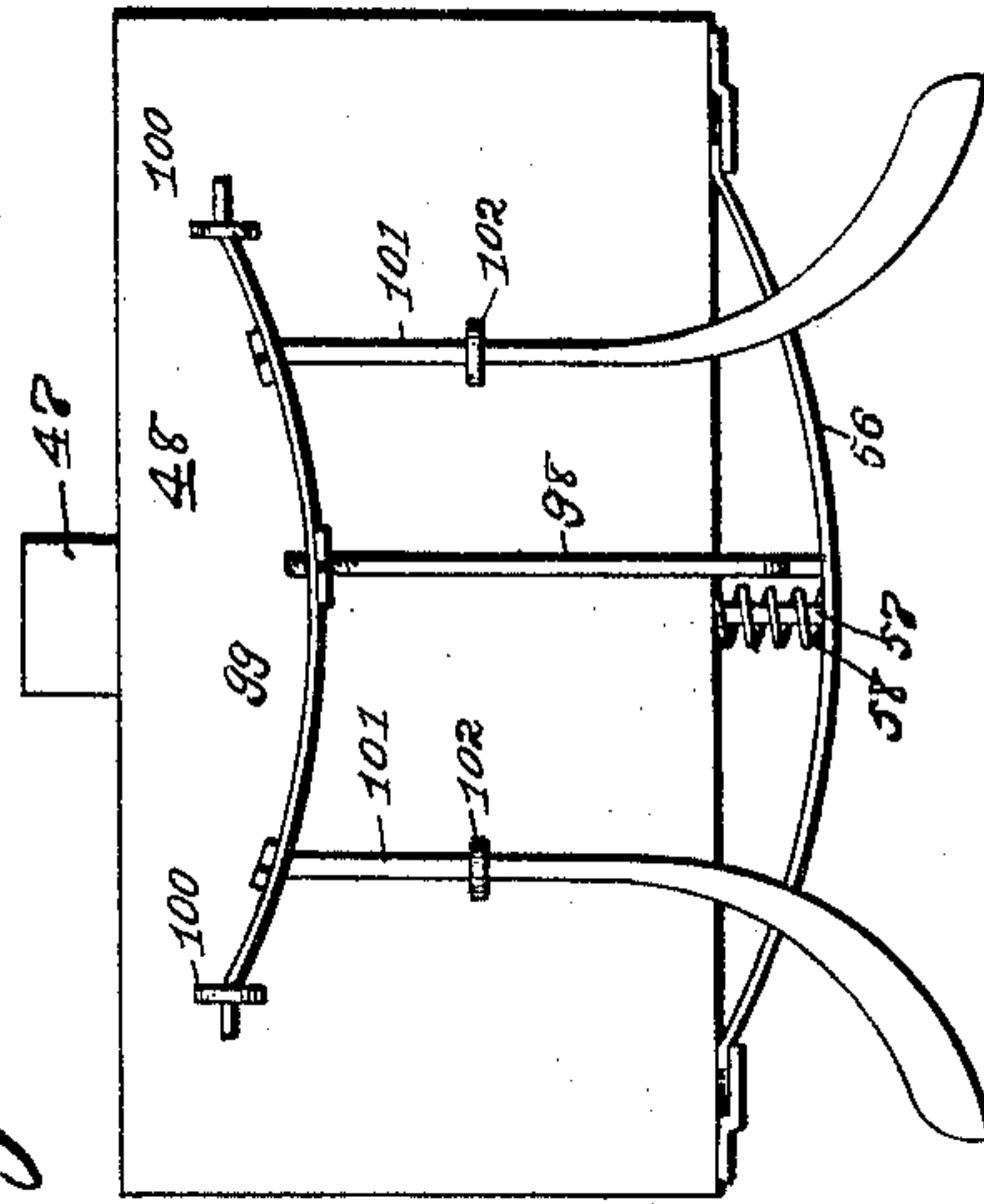
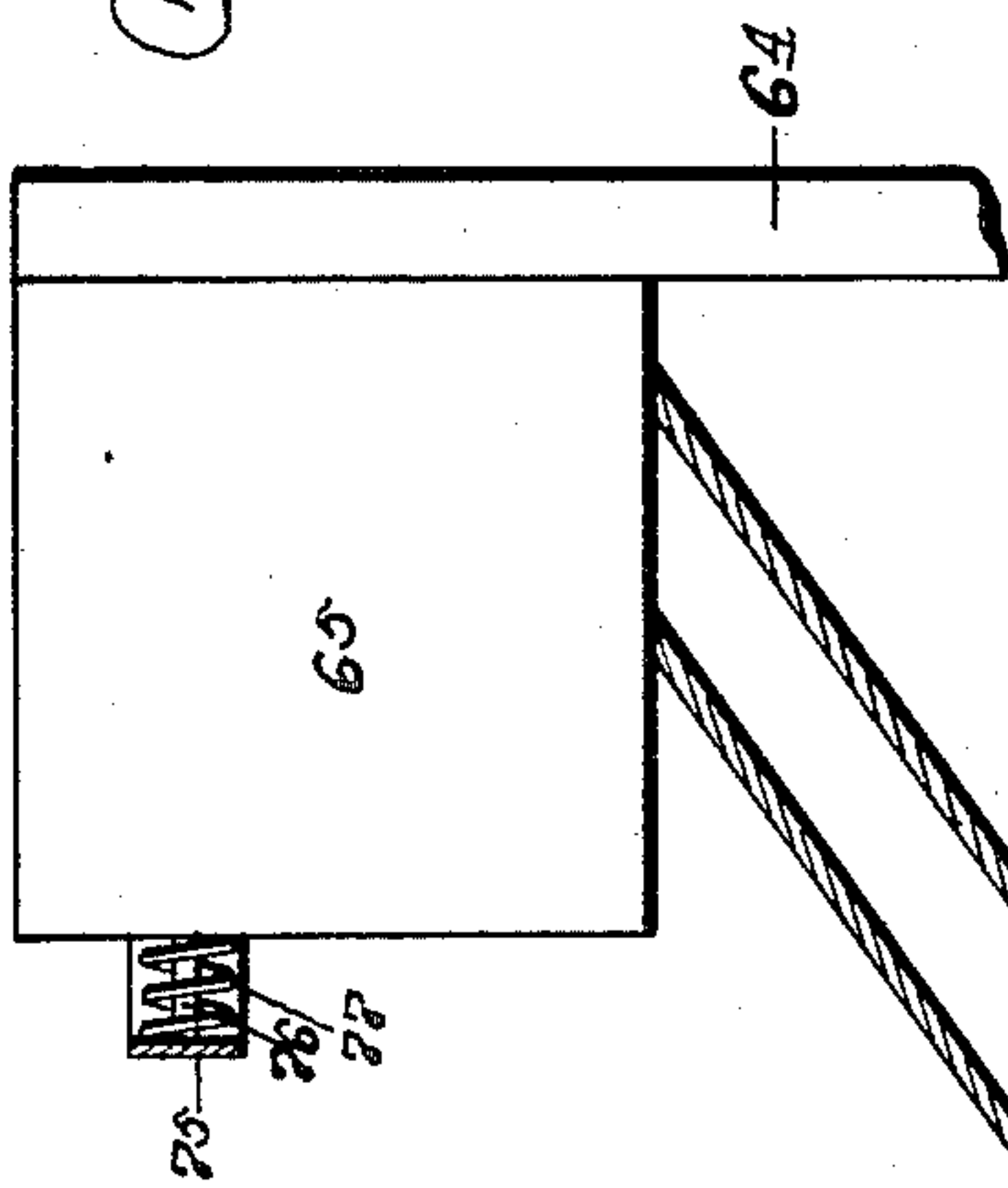


Fig. 14.



UNITED STATES PATENT OFFICE.

HIRAM OSCAR HARDEN, OF IOKA, IOWA.

MAIL AND PARCEL CARRIER.

SPECIFICATION forming part of Letters Patent No. 692,443, dated February 4, 1902.

Application filed May 18, 1901. Serial No. 60,825. (No model.)

To all whom it may concern:

Be it known that I, HIRAM OSCAR HARDEN, a citizen of the United States, residing at Ioka, in the county of Keokuk and State of Iowa, have invented a new and useful Automatic Mail and Parcel Receiver, Deliverer, and Carrier, of which the following is a specification.

The objects of my invention are, first, to provide an improved automatic mail receiving and delivering apparatus of simple and durable construction and which may be extended a comparatively great distance at slight cost and may be operated many times a day at a slight cost of operation. In other words, my object is, broadly, to provide an apparatus of this class that may be constructed and maintained at such slight cost as to make it commercially practicable to place the apparatus on the ordinary rural free-delivery routes to save the time and expense of delivering mail and the like by hand in places where the delivery-boxes are separated by comparatively great distances—as, for instance, in rural or country districts—and, further, to provide a system of this class in which frequent deliveries and collections of mail or the like can be made without great additional expense.

My object is, further, to provide an improved motor-car designed to carry a motor whereby the car may propel itself along a wire or cable suspended from ordinary telegraph-poles or the like.

A further object is to provide means whereby the said self-propelling car may be automatically slowed up at certain intervals along the route without possibility of permanently stopping and holding the car. In other words, to provide a retarding device that will automatically retard the movement of the self-propelling car and then automatically release the car.

A further object is to provide a car of the class that operates upon a suspended wire or cable with means whereby the car may readily turn sharp corners and the car is securely held to the wire so that it cannot accidentally disengage from the wire.

A further object is to provide an improved mail-carrying car to be suspended from the same wire and to be coupled to the self-propelling car and having a hinged shelf designed

to hold the mail or other matter to be delivered in such manner that the mail-matter is securely held and thoroughly protected from rain.

A further object is to provide means whereby the hinged shelf in the mail-carrying car may be automatically operated to discharge its contents through the side and to uncover an opening in the opposite side through which mail-matter may be dropped into a receptacle below the hinged shelf.

A further object is to provide a mail-delivering box to be fixed to a stationary support to contain mail-matter and to be actuated by one of the mail-carrying cars to discharge its contents into an opening in the side of the mail-carrying car.

A further object is to provide a mail-receiving box to be fixed to a stationary support and designed to catch the mail-matter discharged from the mail-carrying car.

A further object is to provide means whereby when the mail has been discharged from one of the mail-carrying cars the projecting mechanism by which the device is actuated to discharge the mail is withdrawn and automatically held inwardly after the mail has been discharged, so that when one of the mail-delivering devices, whether on the stationary delivering-box or on the traveling car, has once been actuated to drop the mail contained therein said delivering mechanism will thereafter be held inoperative.

My object is, further, to provide a simple, durable, and inexpensive means whereby the operator may readily and quickly elevate mail-matter or the like from a point near the ground-surface to the elevated delivering-box, and also to provide means whereby the mail-matter deposited into the elevating-box will be discharged into a box located near the ground-surface.

A further object is to provide a pair of knives on the under surface of the stationary delivering-box, said knives to normally project beneath the line of travel of the mail-carrying box, so that when heavy packages are suspended by string from the mail-carrying box the said string will be severed by said knives, and, further, in this connection to provide means whereby the knives are automatically withdrawn when the traveling car has passed

the stationary delivering-box and the spring thereof has been forced to its limit and there held.

A further object is to provide an improved automatic signal-flag, which flag is automatically elevated when mail-matter is deposited in the box, and then the flag is held in its elevated position until manually withdrawn without regard to the subsequent movement of the tilted shelf.

My invention consists in the construction, arrangement, and combination of the various parts of the device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows in perspective a wire or cable suspended from an elevated support and having a self-propelling car and two mail-carrying cars connected to the self-propelling car and mounted upon the suspended wire, and also showing in position a stationary mail-delivering box and a stationary receiving-box, and also the device for retarding the movement of the cars. Fig. 2 shows a vertical transverse sectional view of the mail-delivering box attached to a stationary support. Fig. 3 shows in side elevation a suspended wire or cable having a self-propelling car and a mail-carrying car mounted upon the suspended wire and a car-retarding device mounted adjacent thereto. Fig. 4 shows an enlarged detail view illustrating a stationary post having a bracket thereon for supporting a suspended wire. Fig. 5 shows an enlarged detail view illustrating the means for supporting the self-propelling car upon the suspended car and also showing the means for driving the grooved supporting-wheel. Fig. 6 shows a top or plan view of one of the mail-carrying cars with its hinged cover removed. Fig. 7 shows in detail the device for locking the shelf-operating lever. Fig. 8 shows a vertical central sectional view of the traveling mail-carrying car through the indicated line 8 8 of Fig. 6. Fig. 9 shows a top or plan view of the stationary mail-delivering box with its hinged cover removed, and Fig. 10 shows a vertical central sectional view of the stationary receiving-box. Fig. 11 shows an enlarged detailed view of one of the stationary delivering-boxes and a receiving-box adjacent thereto, an auxiliary receiving-box located below them, and also illustrating means for elevating mail-matter from the box at the ground-surface to the elevated delivering-box parts, this view being in section to show the interior construction. Fig. 12 shows a detail sectional view of a portion of the stationary delivering-box and the top portion of a tube through which mail-matter is placed in the delivering-box and also shows the tray for elevating the mail in position to dump mail into the delivering-box. Fig. 13 shows an enlarged detail sectional view of the stationary receiving-box to illustrate my im-

proved flag-operating mechanism, also showing by dotted lines the position of the working parts when the flag is elevated. Fig. 14 shows an inverted plan view of the stationary delivering-box to show the movable knives. Fig. 15 shows in perspective the upper portion of the frame or bracket in which the supporting-wheel frame is pivoted. Fig. 16 shows an enlarged detail view illustrating the link connecting the tilting shelves with the means for operating them.

Referring to the accompanying drawings, I have used the reference-numeral 10 to indicate the stationary posts upon which the wire or cable is suspended. Fixed to each post is a bracket 11, which projects laterally some distance from the post, and then straight upwardly, and on top of the bracket is a strap 12, designed to encircle the wire or cable 13, thereby securely holding the wire or cable on top of the bracket.

The self-propelling car preferably comprises a cylindrical sheet metal body portion 14, provided with a hinged top 15 and cone-shaped ends 16. Within this car an electric motor and storage battery may be placed or any other motive power, which motive power is connected with the shaft 17, which projects through the side of the cylinder 14 and is provided with the grooved pulley 18. The mechanism for driving this shaft does not comprise any part of my present invention, and hence is not illustrated or described. Mounted on top of the car is an arch 19. Projecting upwardly from the arch is a flat bar 20, having its top arched over the wire or cable. Pivotaly mounted within the part 20 is a frame 21, capable of movement in a horizontal plane within the part 20. The lower ends of the frame 21 are curved inwardly to engage each other. Beneath the wire or cable the sides of the frame 21 are made of spring metal, so that said ends may be forced apart when they strike one of the brackets 11. Mounted in the central portion of the frame 21 is a shaft 22, having the grooved wheel 23 thereon, said wheel being designed to rest upon the wire or cable. One end of the shaft 22 projects through a slot in the frame 20, and a grooved pulley 24 is mounted on the outer end thereof, and a belt 25 connects it with the grooved pulley 18. By this means it is obvious that the weight of the car is supported upon the grooved wheel 23, which rests upon the wire or cable. This grooved wheel may turn in a horizontal plane to a limited extent within the part 20, so that it may readily travel around short curves in the wire or cable. Furthermore, it is obvious that when the motor in the car is operated the grooved wheel 23 will be forced to travel along on top of the wire or cable. Fixed to the top of the part 20 is an inverted-cup-shaped guard 26, for purposes hereinafter made clear. Fixed to the rear end of the said car is a snap-hook 27, of ordinary construction, designed to connect a mating snap-hook 28 on one of the mail-carry-

ing cars, hereinafter described. It is to be understood in this connection that one mail-carrying car is provided for each mail receiving and delivering box arranged along the line of the route. In exterior contour the mail-carrying cars correspond exactly with the self-propelling car, before described, except that on one side of the central cylinder, near the bottom, is a longitudinal slot 29 and below it a smaller longitudinal slot 30, and on the opposite side, near the top, is a longitudinal slot 31, for purposes hereinafter made clear. At about the longitudinal center of the car is a pivoted rod 32, and fixed to this rod is a shelf 33, comprising a bottom, an end piece 34, projected upwardly from the bottom, and two sides. This end piece is designed to stand in line with the slot 31 when the shelf is in a horizontal position, thereby covering the slot and protecting the contents of the car from rain. Pivoted to the opposite end of the shelf is a plate 35, extended downwardly through the slot 30 and so arranged that when the shelf 33 is tilted the said plate will serve to direct the contents of the shelf to pass through the slot 29. However, when the shelf is in a horizontal position this plate will cover the slot 29.

I have provided means for automatically tilting the shelf when it is desired to discharge its contents, as follows: Mounted upon one side of the car are the brackets 36, and a flexible flat metal bar 37 has its ends slidably mounted in said brackets and its central portion bowed outwardly from the car. Fixed to the said central portion is a rod 39, passed through the side of the car and pivoted to a lever 40. An extensile coil-spring 41 is placed on the rod with one end in engagement with the side of the car and the other bearing against the inner surface of the flat bar 37. The said lever 40 is fulcrumed at one end to the support 41^a, and at its other end is a link 42, which is attached to the end piece 34 of the shelf. This link is preferably made of wire and has loops at its ends whereby universal joints are provided, as shown in the drawings. Obviously when the flat bar 37 is pushed inwardly the shelf 33 will be tilted. In this connection I have provided means whereby when the said shelf has once been tilted it will be held in its tilted position, and the flat bar 37 will be held close to the side of the car, as follows: Fixed on the interior of the car is a flat bar 43, having a shoulder 44 thereon, one edge of the shoulder being beveled, and said shoulder being placed in position so that the lever 40 will pass beyond it when the shelf is tilted, and the lever will then engage the shoulder and prevent the shelf from returning to its normal position.

On the opposite side of each mail-carrying car I have provided the brackets 36, the curved flat bar 37 corresponding to the ones before described. Connected with said flat bar 37 is a rod 45, which projects through the side of the car, and a coil-spring 46 is mount-

ed upon it to engage with the car and with the bar 37 to normally hold the bar to its outer limit. The function of this device will be made clear hereinafter.

As before explained, I have placed at intervals along the line of travel of the cars the mail receiving and delivering boxes, and I shall now describe the mail-delivering box. The reference-numeral 47 indicates a stationary post having a rectangular box 48, supported at its top and provided with a hinged cover 49. At one side of the box, near its bottom, is a horizontal slot 50, and in the bottom, directly below the horizontal slot, is a smaller longitudinal slot 51. Rotatably mounted within the box is a rod 52. Fixed to the rod 52 is a tilting or dumping shelf 53. Pivoted to the said dumping-shelf is a plate 54, the lower end of which projects through the slot 51. When the shelf is tilted, the said plate 54 serves to direct the contents of the shelf to pass through the slot 50. Mounted on the side of the said box, above the slot 50, are the brackets 55 to receive the ends of the flat curved plate 56, said brackets 55 and plate 56 corresponding in shape to the brackets 36 and plate 37, before described. Fixed to the central portion of the plate 56 is the rod 57, and the coil-spring 58 is mounted upon the rod, between the box and the plate, to normally hold the plate to its outer limit of movement. Within the box, above the tilting shelf, is the support 59, to which a lever 60 is pivoted. The rod 57 is pivoted to one end of the lever 60, and a link 61 pivotally connects the other end of the lever with the back of the tilting shelf. This link is preferably made of wire and has loops at its ends whereby universal joints are provided. This link 61 has loops at its ends similar to the link 42. (Illustrated in Fig. 16.) Obviously when said lever is pushed inwardly the shelf will be tilted. I have provided means for locking the shelf in its tilted position, as follows: Secured to the interior of the box, above the shelf, is an arm 62, having a shoulder 63 thereon to engage the lever 60. Hence when the rod 57 is pushed inwardly the link 61 will cause the shelf to tilt, and when the lever 60 passes the shoulder 63 it will be engaged and held by said shoulder, and the shelf 53 will be retained in its tilted position. The said plate 56 is so positioned relative to the suspended wire or cable that the plate 37 of the mail-carrying cars will engage it, and both plates will be forced inwardly against the pressure of their springs. Furthermore, the slot 50 of the stationary box is so arranged relative to the slot 30 of the traveling car that the mail contained on the shelf 53 will be discharged into a car when the said plates are operated by coming in contact with each other, and at the same time the mail-matter on the shelf of the traveling car will be discharged through the slot 29.

I have provided means for receiving the

mail-matter discharged from the car as follows: Adjacent to each of the posts 47 is another stationary post 64, having at its top the box 65, provided with the hinged cover 66.

5 In the front of said box 65 is a horizontal slot 67, and beneath the horizontal slot 67 is a tilting shelf 68, so balanced that the weight of mail-matter resting upon its end will cause it to incline downwardly. Connected with the

10 said tilting shelf 68 is a flagstaff 69, having a flag 70 in its top, said staff being passed through a slot in the top of the cover 66. This flagstaff is passed through a guide 71 in the side of the box, and the parts are so arranged

15 and proportioned that when the shelf is tilted by the weight of mail-matter resting upon it the said flag will be forced upwardly through the slot, so that a person may ascertain without opening the box whether or not it contains mail-matter. I have also pivoted to the

20 said tilting shelf 68 a plate 72, arranged in position to cover the opening 67 when the shelf is tilted to protect the contents of the box from rain. Fixed to each box 65 is an upright 73, and on each upright is a cross-piece

25 74. On each of these cross-pieces 74 is a curved plate 75, supported upon a rod 76, which passes through the upright 73, and a coil-spring 77 is placed on said rod to normally hold the plate 75 to its outer limit of

30 movement and permit it to yield slightly. This plate 75 is so positioned relative to the suspended wire that the plate 37 on each car will engage it when traveling along the suspended wire. This plate 75 serves the double

35 function of slightly retarding the car as it passes between the plates 75 and 56 and at the same time providing means by which the plates 56 and 37 are both forced inwardly, as

40 required to operate the tilting shelves. If the plate 75 were not used, obviously the cars would simply swing laterally when the plates 37 and 56 engage each other.

The means for retarding the traveling cars

45 and then releasing them when they are stopped, comprises the curved bar 78, mounted on a post 79 directly above the suspended wire. The arms of the bar 27 extend downwardly far enough to engage the cup-shaped guards

50 26, and the ends of said bar are far enough apart so that one of the guards 26 cannot engage both ends at one time. Fixed to the central portion of the bar 78 is an arm 80, having a weight 81 at its lower end. In use this portion of the device operates as follows: The

55 first guard 26 will strike one of the curved ends of the bar 78 and the momentum of the guard and car to which the guard is attached will elevate the weight 81. Then when said

60 arm is elevated sufficiently to disengage from the guard 26 the other arm will strike the guard and must be elevated, together with the weight 81, before the guard can pass. This motion takes place as each guard passes the

65 curved bar 37. However, when the guard 26 strikes the curved bar 78 the weight 81 will commence to swing, and the guard may pass

outwardly beyond the curved bar whenever the end of the curved bar is elevated, so that the cars are simply detained, but not stopped. 70

Referring to Fig. 11 of the drawings, I have illustrated the mechanism for placing mail-matter in the stationary receiving-box at a point near the ground-surface, as follows: The reference-numeral 82 indicates the box, 75 located near the ground-surface. From the top of this box a tube 83 extends upwardly to a point adjacent to one end of the stationary delivering-box. A portion of the side of the delivering-box is removed at 84, so that communication may be had from the tube into

80 said delivering-box. At the top of said tube is a pulley 85, and a stationary lug 86 is fixed in the tube for the purposes hereinafter made clear. A wire or cord 87 is passed over said

85 pulley, one end extending downwardly to a point near the box 82 on the exterior of the tube and the other end extending downwardly in the center of the tube. At the

90 lower end of the cord or wire 87 is a tray 88 and having a pivoted bail 89, to which the cord or wire 87 is attached. A contractile coil-spring 90 is fixed to both and to the end portion of the tray to normally hold the tray

95 in a horizontal position. This tray is so arranged that when elevated over the tube its end will strike the lug 86 and the tray will be tilted in such a manner as to discharge the contents into the shelf of the stationary

100 delivery-box, this position when ready to dispose being illustrated in Fig. 12. Connected with the stationary receiving-box is a tube 91. This tube is designed to convey the mail-matter in the stationary receiving-box

105 to the box 82. Obviously by this arrangement an operator may place the mail-matter in the delivering-box and receive mail from the receiving-box at a point near the ground-surface.

Referring to Fig. 13 of the drawings, I have 110 illustrated a modified form of a signal-flag-operating mechanism. The reference-numeral 92 is used to indicate a flagstaff having a joint at 93 and fixed to the side of the

115 tilting shelf in the receiving-box, the upper end of the flagstaff being passed through the opening 94 into the top of the box. Pivoted to the shelf at a point some distance from the point of the pivoted shelf is a rod 95, said rod being provided with a shoulder 96 and a head

120 97. When the shelf is in a horizontal position, the shoulder 96 is in an engagement with the lower end of the flagstaff, and obviously with the shelf tilted the flagstaff will be

125 straightened to the position indicated by the dotted lines. Then if the shelf should be again lowered the flagstaff may remain in a stationary position until this joint is broken and it is returned to its starting position by the

130 operator. Hence the flag will remain elevated until manually withdrawn, no matter how many times mail-matter has been deposited on the depositing-shelf.

In Fig. 14 I have illustrated means for au-

tomatically withdrawing knives that are designed to sever string on packages suspended there beneath the traveling cars. The numeral 98 indicates a rod fixed to the spring 56 and extending near the stationary delivery-box. Fixed to the rear end of the rod 98 is a curved spring 99, the ends of which are mounted in the bearings 100, and fixed to the central portion of the spring 99 are the knives 101, passed through the staples 102. Obviously when the spring 56 is placed inwardly the knives will move inwardly with them and be withdrawn from the line of travel of the mail-carrying boxes.

In practical use and assuming that a wire or cable is extended over a circular route beginning at a post-office and returning to the starting-point and that each house along said route is provided with a stationary delivering and a stationary receiving box the operator at the post-office places all of the mail-matter to be delivered at the first stationary receiving-box in the first mail-carrying car, all of the mail-matter to be delivered at the second stationary receiving-box is placed in the second mail-carrying car, and so on. Then the motor in the self-propelling car, together with all of the mail-carrying cars, proceeds along the suspended wire or cable, upon which it may run at comparatively great speed. At some distance in front of the first stationary receiving-box one of the retarding devices is placed, and obviously the speed of the cars will be greatly lessened before the mail-carrying car reaches the mail-carrying box. When it does so, the spring-actuated plates 75 and 56 on the stationary boxes will engage with the plates 37 on the opposite side of the mail-carrying car and the car will be further retarded in its movement. When this is done, all of the mail-matter in the stationary delivering-box will be deposited in the car and all of the mail-matter on the shelf of the mail-carrying car will be discharged into the stationary receiving-box, and the plate 37 on one side of the car and the plate 56 on the stationary delivering-box will be held inwardly, as before explained, so that the next car passing between the stationary receiving and delivering boxes will not have its plate 37 brought into engagement with the plate 56, and hence its contents will not be dropped. Whenever any mail-matter is deposited in one of the stationary receiving-boxes, the flag 70 is elevated. Obviously when the circuit is completed and the mail-carrying cars have returned to their starting-point all of the mail-matter they originally contained will have been delivered and each box will contain the mail-matter to be sent to the post-office.

I do not desire to be understood as limiting myself to the particular arrangement and construction of the receiving and delivering mechanism, as it is obvious that the apparatus may be readily adapted for carrying packages of various kinds, and, furthermore, it is

obvious that any desirable motive power may be used in driving the self-propelling car.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States therefor, is—

1. An improved, automatic receiving and delivering apparatus, comprising in combination, a suspended wire or cable, one or more cars mounted for movement on said wire or cable, means for propelling said car or cars on said wire or cable, a stationary delivering-box, and a stationary receiving-box adjacent thereto, said boxes being arranged on opposite sides of the line of travel of the car or cars, a tilting shelf in each traveling car, a tilting shelf in the stationary delivering-box, and means for actuating said tilting shelves at the same time when the traveling car passes between the stationary receiving and delivering boxes, for the purposes stated.

2. In a receiving and delivering apparatus, the combination of a suspended wire or cable, a car mounted upon said wire or cable, capable of traveling thereon, means for propelling said car on the wire or cable, a stationary receiving-box arranged adjacent to the line of travel of the car, a tilting shelf carried by the car, a projecting trip device carried by the car to tilt the shelf, a device adjacent to the stationary receiving-box, to engage the projected trip device of the car, and means for automatically holding said trip device inwardly after the shelf has been tilted.

3. In an automatic receiving and delivering apparatus, the combination of a suspended wire or cable, a car mounted for movement on said wire or cable, means for propelling the car on the wire or cable, a tilting shelf borne by the car, a projecting trip device on the car connected with the shelf, whereby, when the trip device is engaged, the shelf will be tilted to discharge its contents, a stationary delivering-box arranged adjacent to the path of travel of said car, a stationary receiving-box on the opposite side of the line of travel of said car, a tilting shelf in the stationary delivering-box, a projecting trip device connected therewith, to tilt the shelf when engaged, said projecting trip devices being arranged to engage with each other when the car passes the stationary delivering-box, whereby, the contents of the stationary delivering-box is discharged into the car and the contents of the shelf borne by the car is discharged into the stationary receiving-box, for the purposes stated.

4. In an automatic receiving and delivering apparatus, the combination of a suspended wire or cable, a car mounted for movement on said wire or cable, means for propelling the car on the wire or cable, a tilting shelf borne by the car, a projecting trip device on the car connected with the shelf, whereby, when the trip device is engaged the shelf will be tilted to discharge its contents, means for automatically holding the said projecting trip device inwardly after the shelf has been tilted,

a stationary delivering-box arranged adjacent to the path of travel of said car, a stationary receiving-box on the opposite side of the line of travel of said car, a tilting shelf in the stationary delivering-box, a projecting trip device connected therewith, to tilt the shelf when engaged, means for automatically holding the said projecting trip device inwardly after the shelf has been tilted, said projecting trip devices being arranged to engage with each other when the car passes the stationary delivering-box, whereby the contents of the stationary delivering-box is discharged into the car and the contents of the shelf borne by the car is discharged into the stationary receiving-box, for the purposes stated.

5. In an automatic receiving and delivering apparatus, the combination of a suspended wire or cable, a car-body, an upright connected with the car-body and extended over the wire or cable, a frame pivoted in the top of said upright to swing in a horizontal plane, a grooved wheel borne by the said pivoted frame, and spring-actuated arms connected with the said pivoted frame to engage each other beneath the wire or cable, for the purposes stated.

6. In an automatic receiving and delivering apparatus, the combination of a car-body, having a slot in each side, a tilting shelf in the car-body, having the end designed to cover one of the slots when the shelf is in a horizontal position, and a plate pivoted to the opposite end of the shelf and passed through a slot in the bottom of the car and designed to direct the contents of the shelf through one of said slots when the shelf is tilted, for the purposes stated.

7. In a mail receiving and delivering apparatus, the combination of a car-body, a tilting shelf in the car-body, a lever fulcrumed at one end to a stationary support, a link connecting the other end of the lever with the tilting shelf, a rod attached to the central portion of the lever and passed through the side of the car-body, a spring-actuated curved plate having its central portion fixed to said rod and projected outwardly beyond the car-body, whereby, when the said plate strikes an obstruction it will be forced inwardly and the said shelf will be tilted.

8. In a mail receiving and delivering apparatus, the combination of a car-body, a tilting

shelf in the car-body, a lever fulcrumed at one end to a stationary support, a link connecting the other end of the lever with the tilting shelf, a rod attached to the central portion of the lever and passed through the side of the car-body, a spring-actuated curved plate having its central portion fixed to said rod and projected outwardly beyond the car-body, whereby, when the said plate strikes an obstruction it will be forced inwardly and the said shelf will be tilted, and means for automatically locking said lever in its tilted position.

9. In an automatic receiving and delivering apparatus, the combination of a car-body, a tilting shelf in the car-body, a lever pivoted at one end to a stationary support above the tilting shelf, a link connecting the opposite end of said lever with the tilting shelf, a rod pivoted to the central portion of the lever and projected outwardly through the side of the car-body, a coil-spring on its outer end, with one end in engagement with the car-body, a curved flexible plate having its central portion fixed to said rod, and brackets to slidably support the ends of said plate, for the purposes stated.

10. In a mail delivering and receiving apparatus, the combination with a stationary delivering-box having a movable portion to be engaged and pushed inwardly by the traveling car, and means for holding the same inwardly, one or more knives connected therewith in such a manner as to move inwardly and outwardly in unison with said part, for the purposes stated.

11. In an automatic receiving and delivering apparatus the combination of a suspended wire or cable, a car-body, an upright connected with the car-body and extended over the wire or cable, a frame pivoted in the top of said upright to swing in a horizontal plane, a grooved wheel borne by the said pivoted frame, a second grooved wheel fixed to the first grooved wheel, a grooved wheel mounted on the car-body, and a belt connected with the two latter-mentioned grooved wheels whereby the car may be propelled along the wire or cable and rounded curves.

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Witnesses:

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