

No. 724,673.

PATENTED APR. 7, 1903.

M. D. CUMMINGS.
MAIL BAG CATCHING AND DELIVERY DEVICE.

APPLICATION FILED JUNE 26, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

FIG. 1.

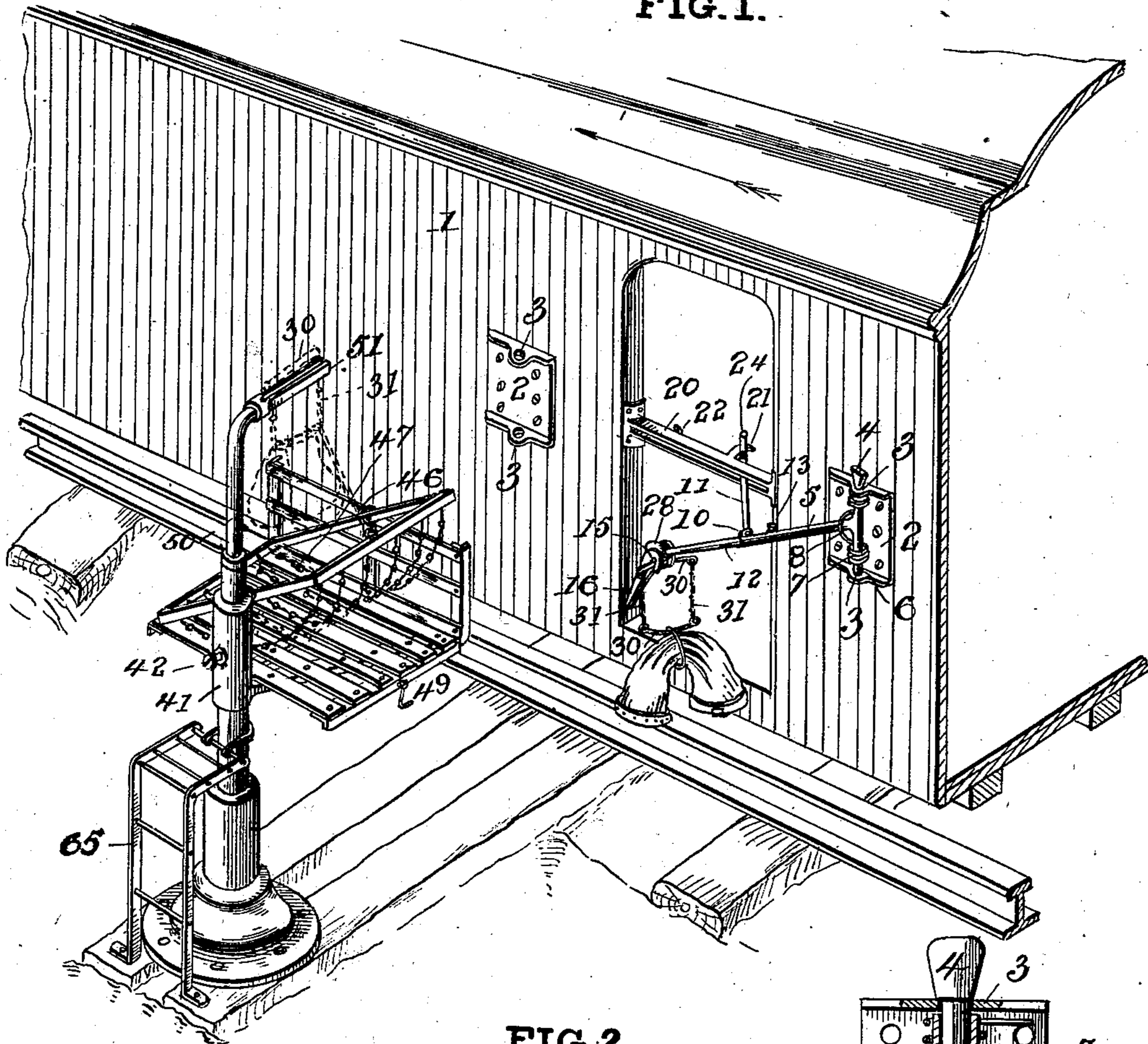


FIG. 2.

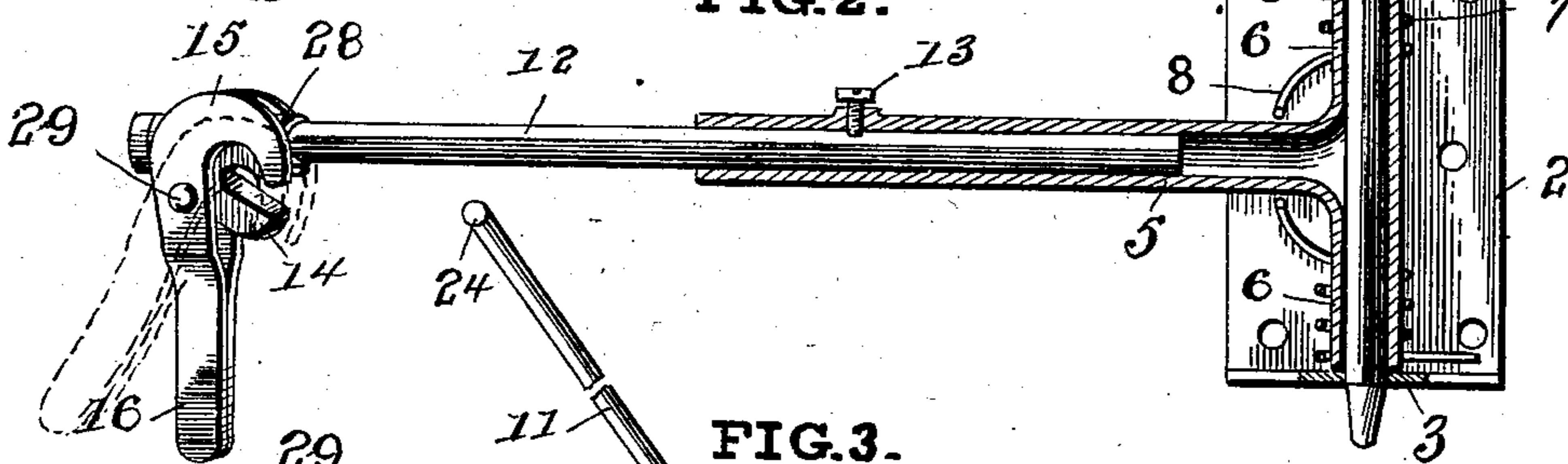
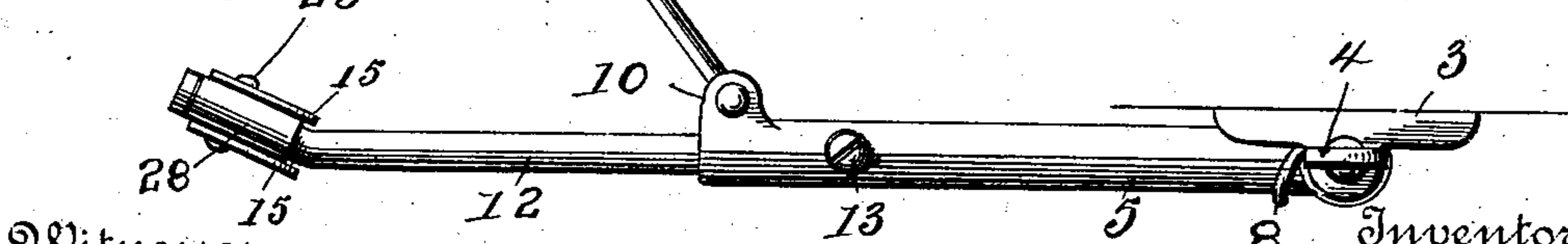


FIG. 3.



Witnesses
Chas. K. Davis
W. E. Brown

Inventor
M. D. Cummings
By W. A. Bartlett
Attorney

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3 SHEETS—SHEET 2

FIG. 4.

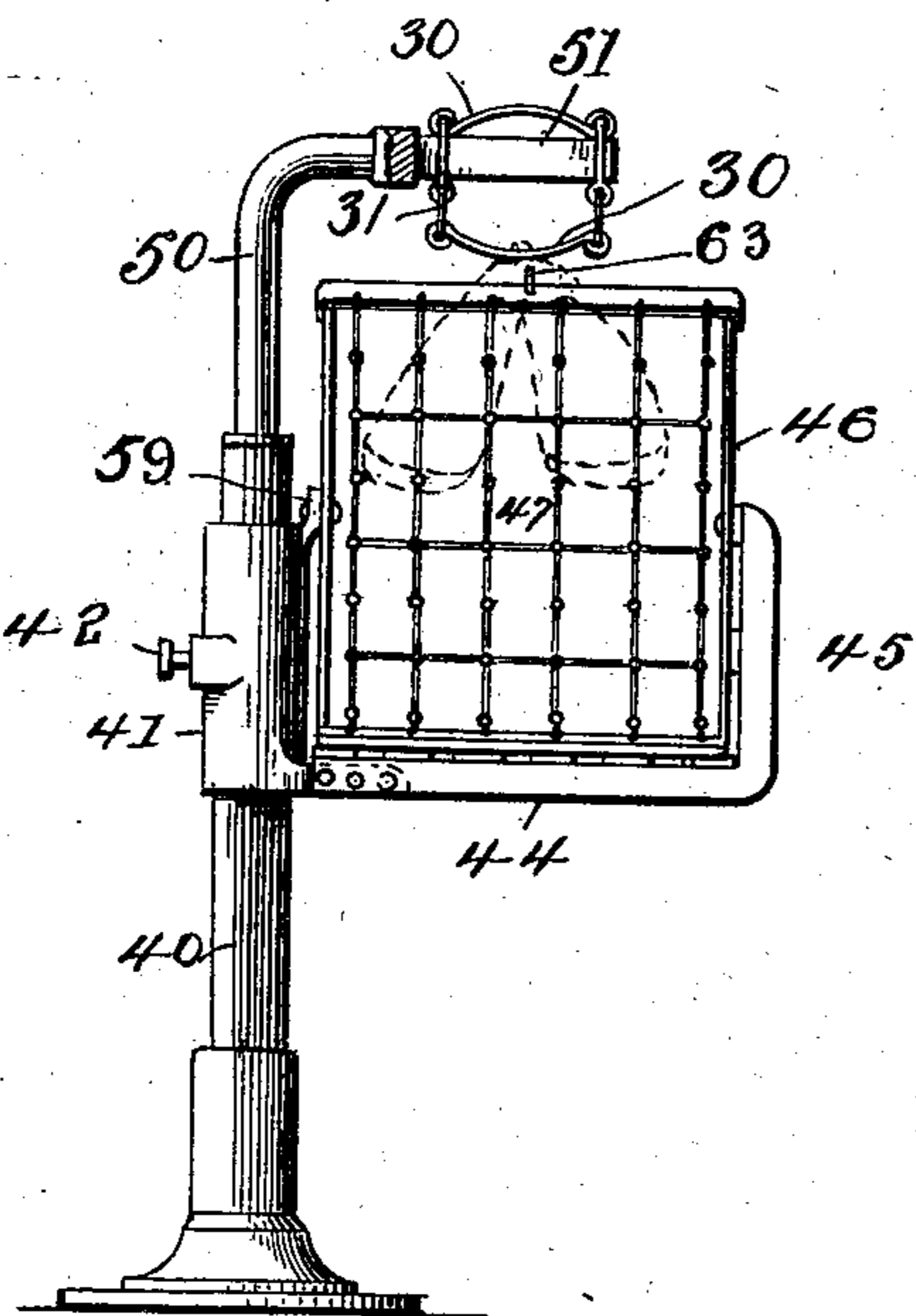


FIG. 5.

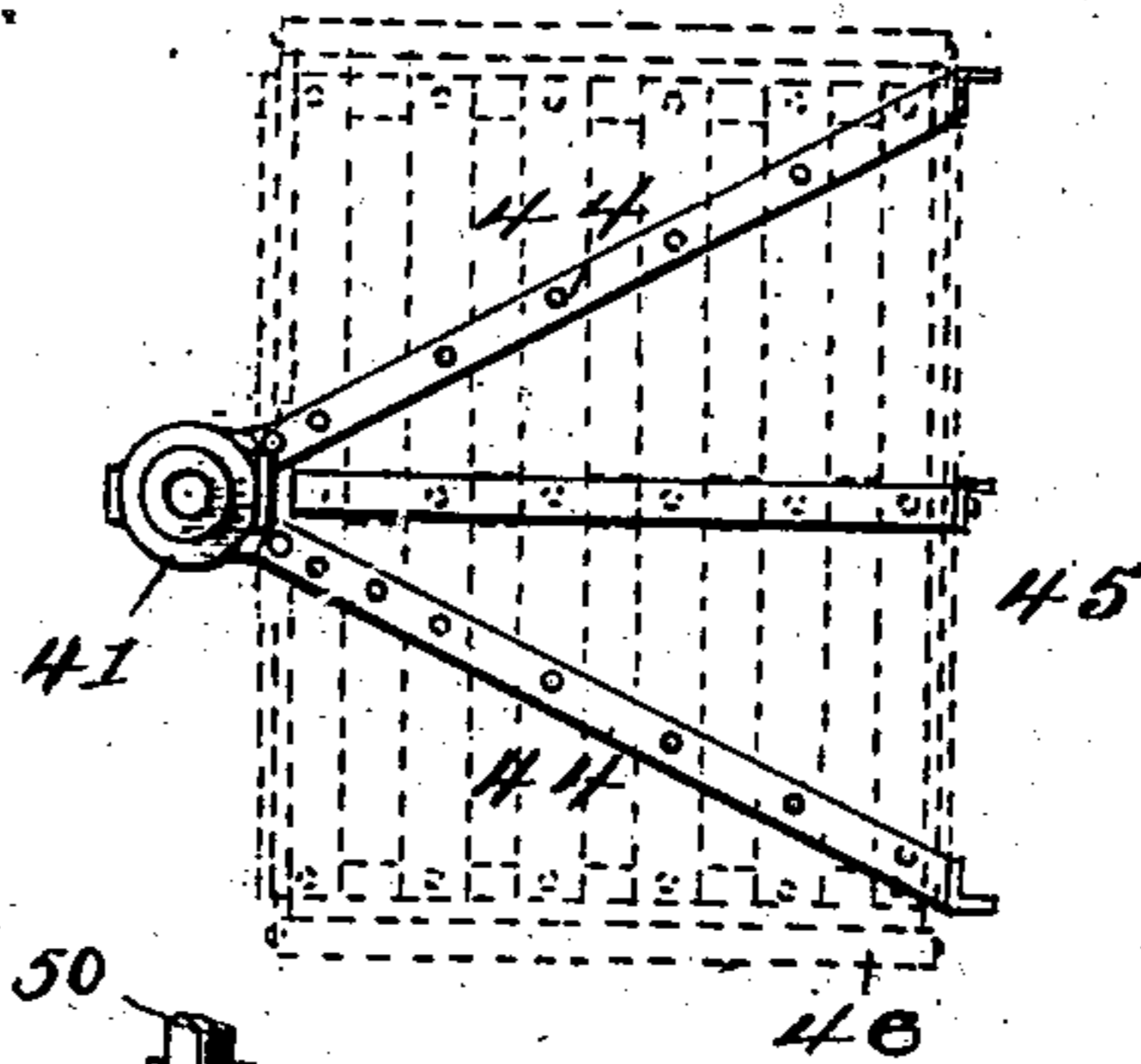


FIG. 6.

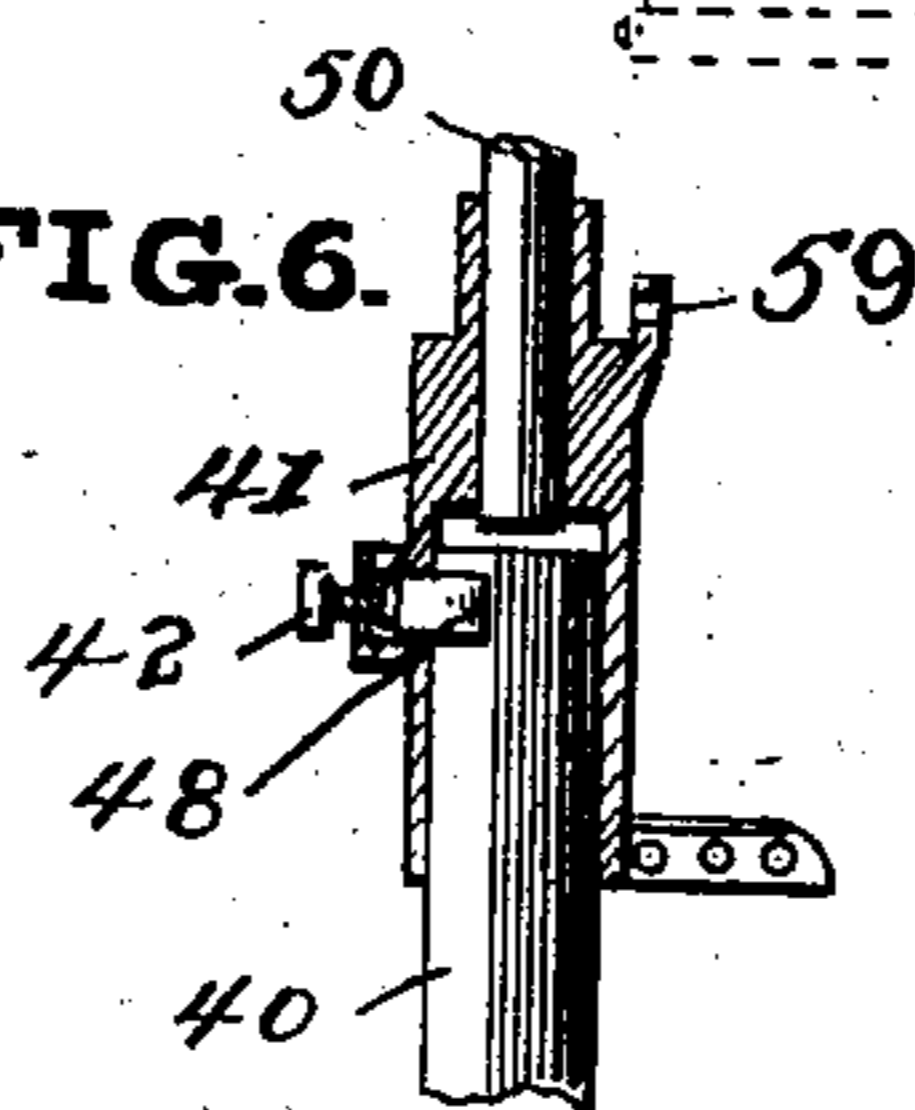


FIG. 8.

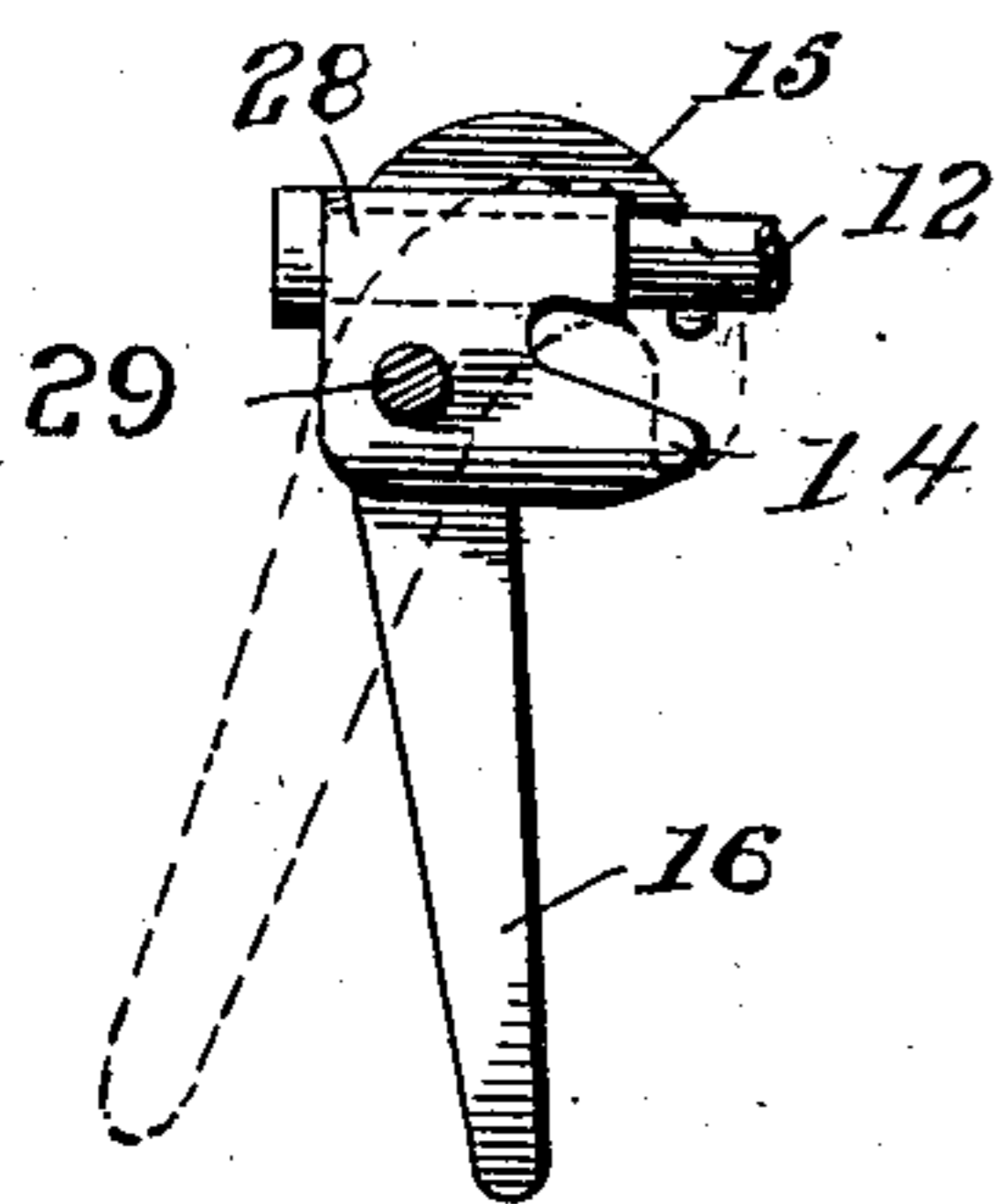


FIG. 9.

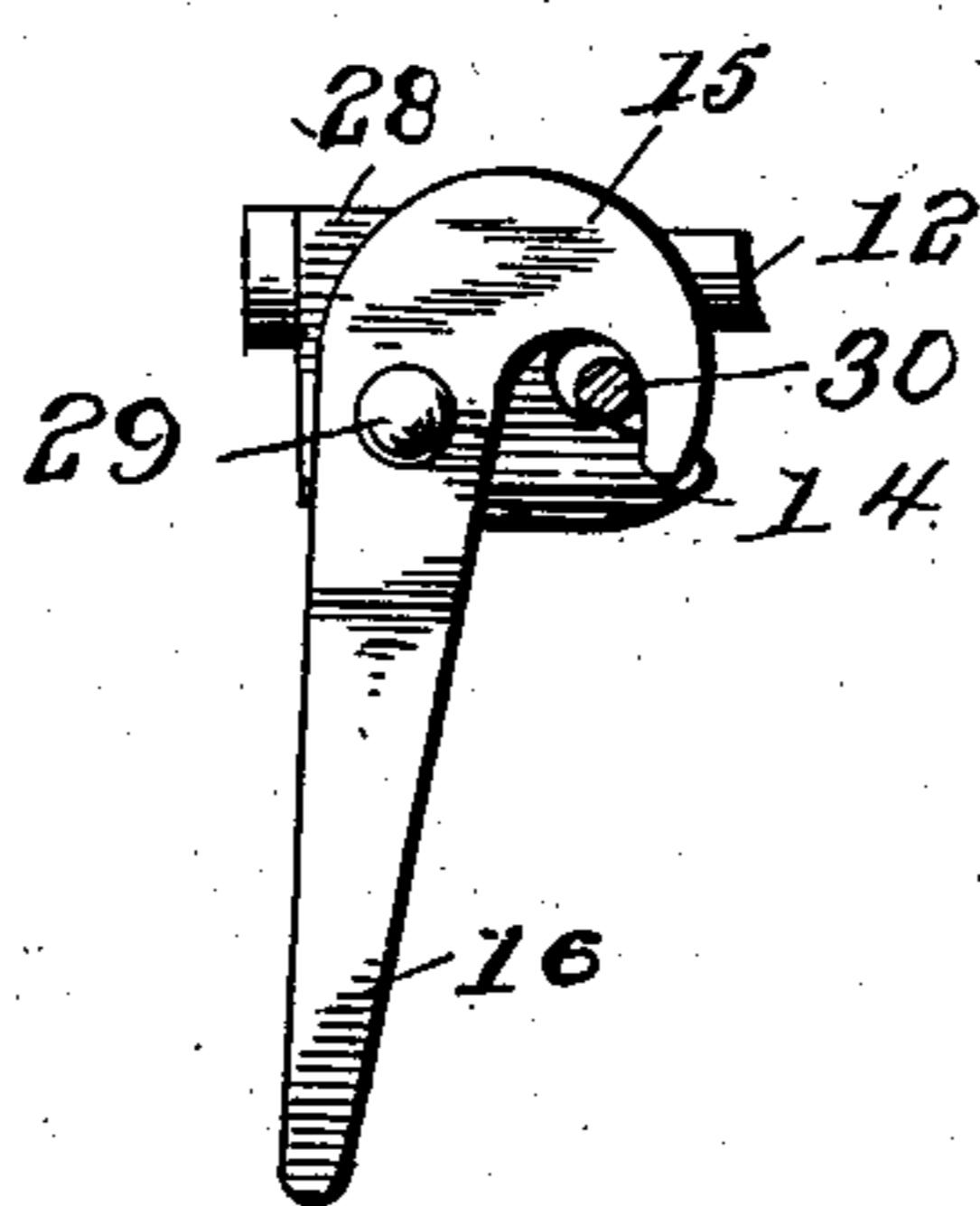


FIG. 7.

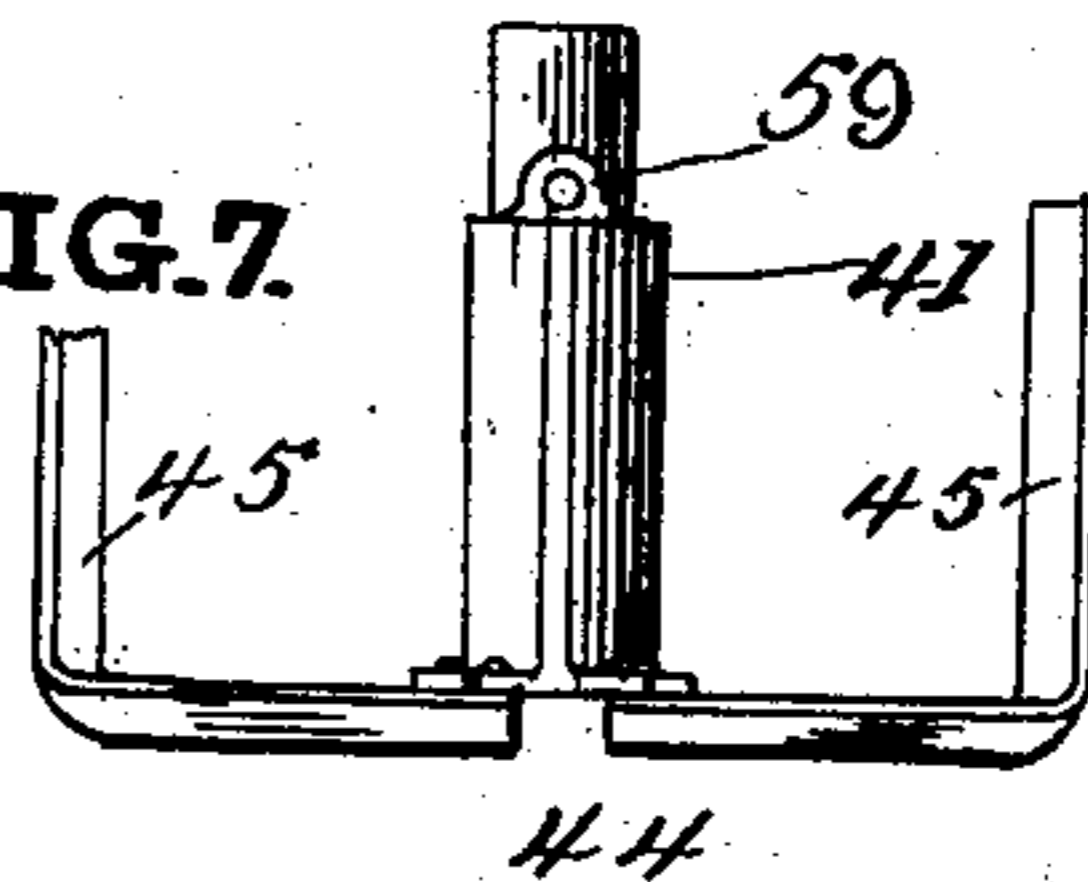


FIG. 12.

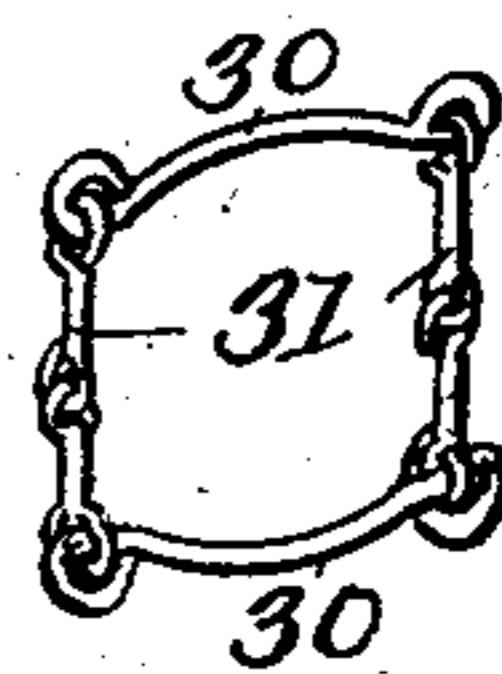
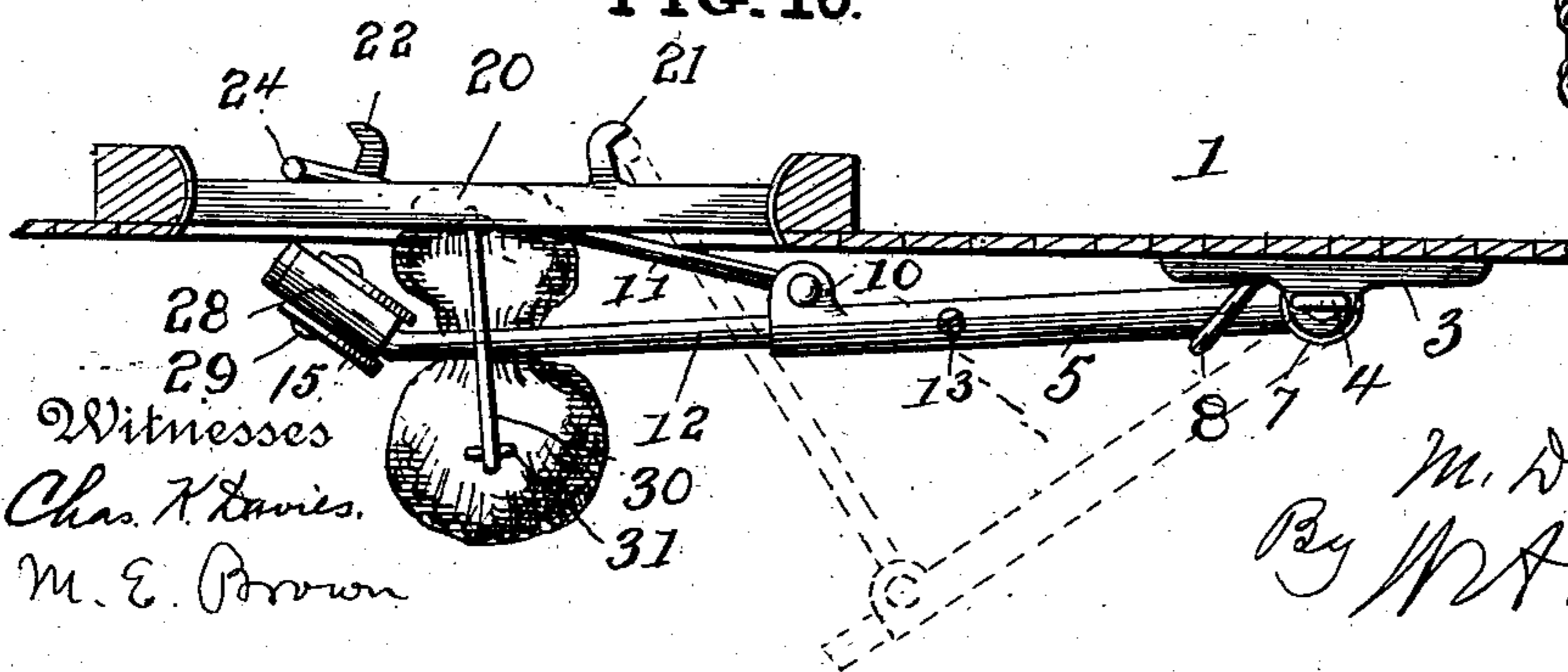


FIG. 10.



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Chas. H. Davies.
M. E. Brown

Inventor
M. D. Cummings
By W. A. Bartlett
Attorney

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3 SHEETS—SHEET 3.

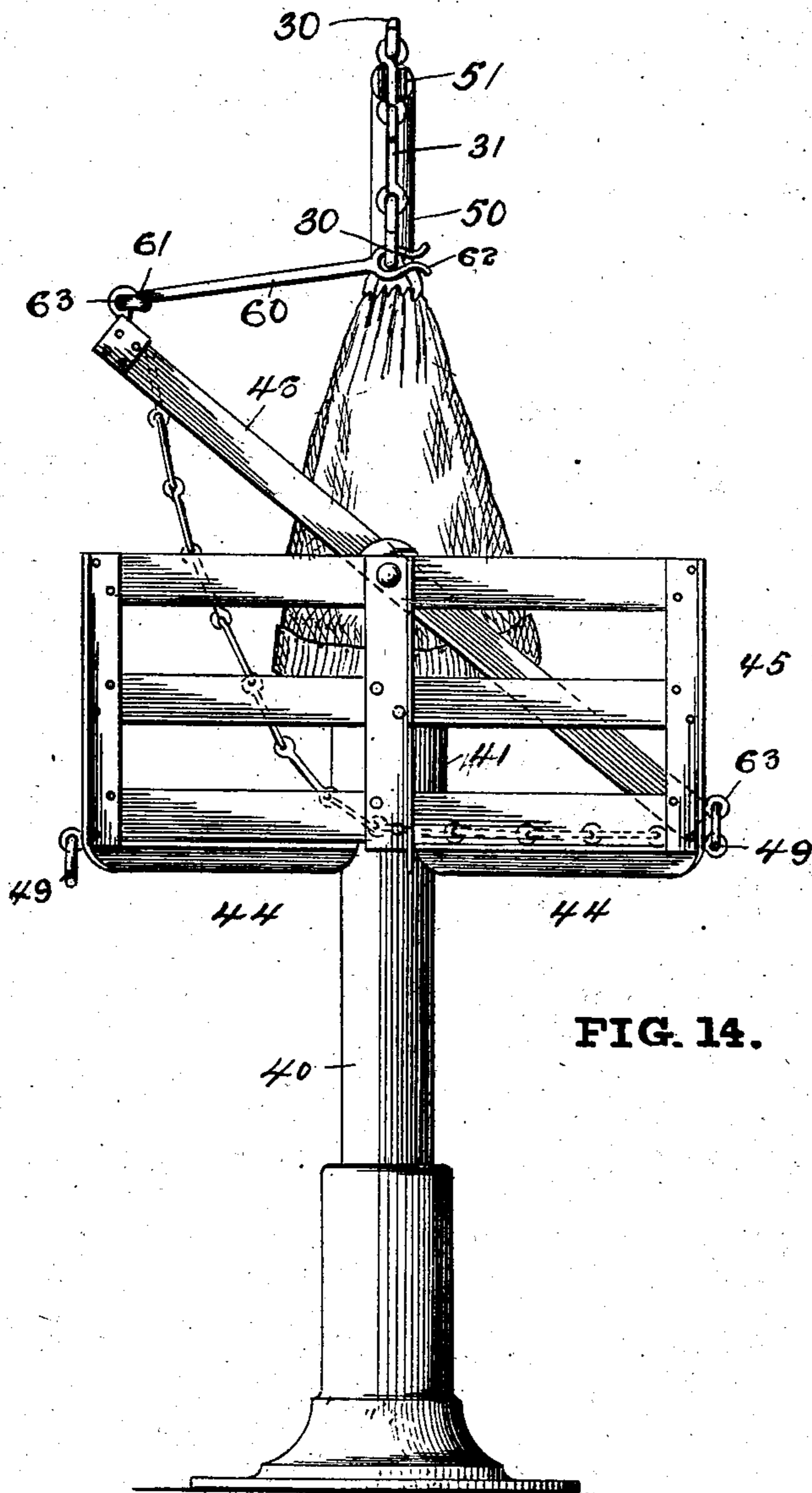


FIG. 14.

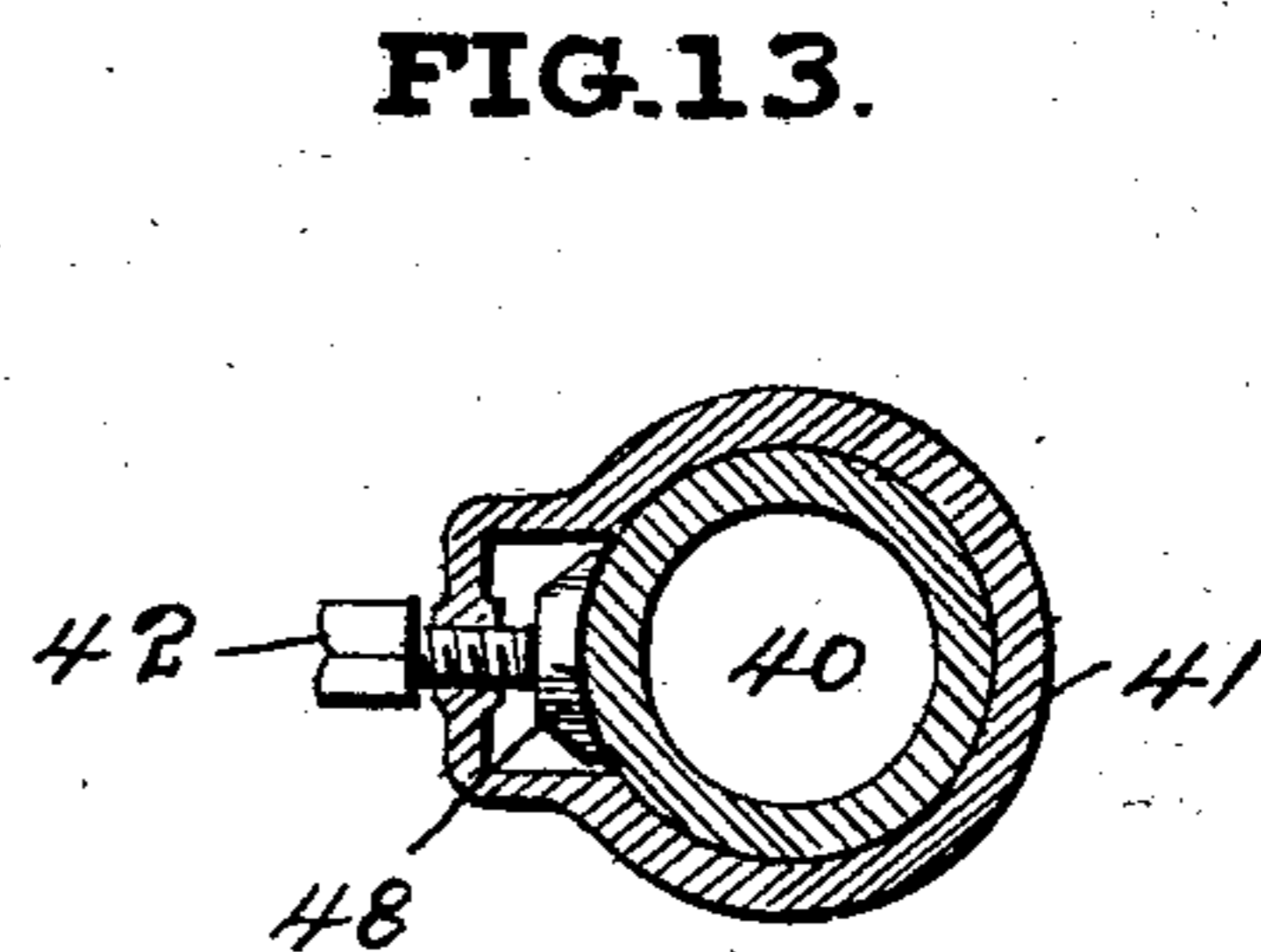


FIG. 13.

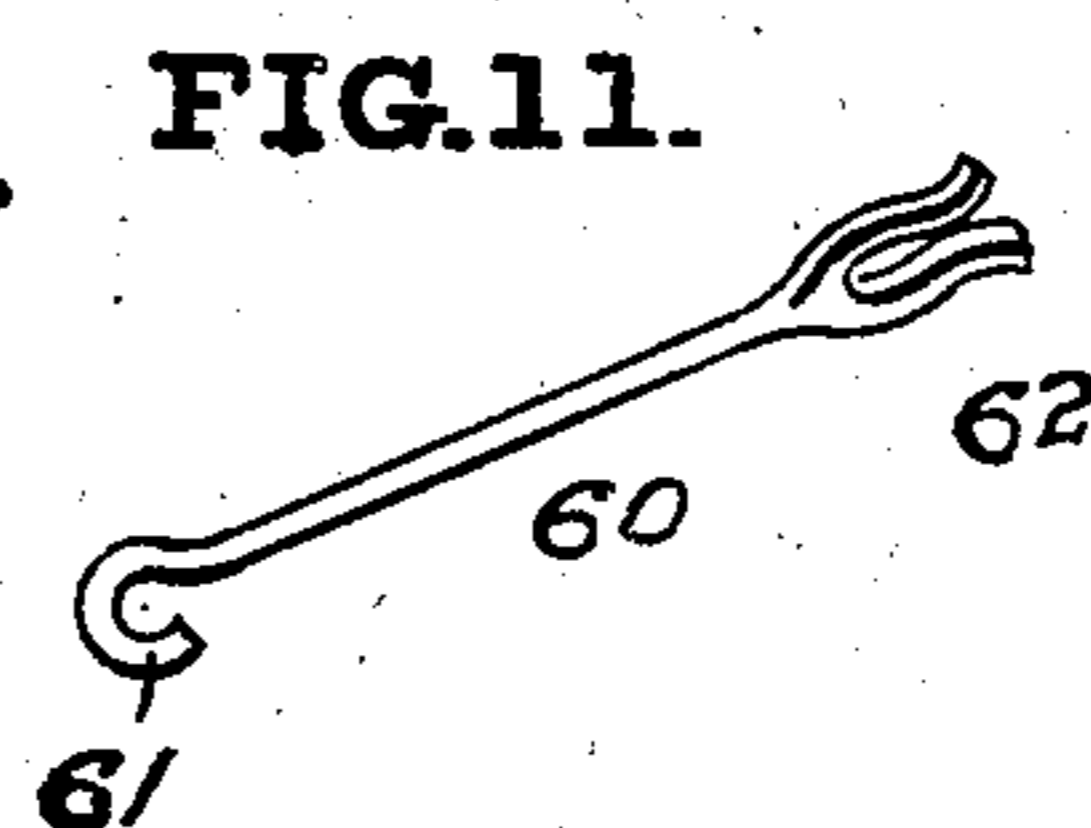


FIG. 11.

Witnesses.

Chas. K. Davies.

W. E. Brown.

Inventor.

M. D. Cummings

By W. A. Bartlett

Attorney.

UNITED STATES PATENT OFFICE.

MONTRAVILL D. CUMMINGS, OF COLUMBUS, OHIO.

MAIL-BAG CATCHING AND DELIVERY DEVICE.

SPECIFICATION forming part of Letters Patent No. 724,673, dated April 7, 1903.

Application filed June 26, 1902. Serial No. 113,361. (No model.)

To all whom it may concern:

Be it known that I, MONTRAVILL D. CUMMINGS, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Mail-Bag Catching and Delivery Devices, of which the following is a specification.

This invention relates to mail-bag catching and delivery devices for railway use.

The object of the invention is to produce a safe, effective, and reliable mechanism by which the mail-clerk on a postal car may suspend a pouch of mail from a crane carried by the car and a postal employee may suspend a pouch from a crane alongside the track and the pouches will be delivered to and from the moving car as the car passes.

The invention consists in the construction and combination of elements which constitute the mail-pouch crane and the operating mechanism therefor; also, in the construction of the mail-pouch support at the side of the track, so that these parts coöperate, as will be stated; also, in various improvements in the mechanical elements and combinations which go to make up the working apparatus.

Figure 1 is a broken perspective of the side of a railway-car, showing mail-bag supported by car-crane and showing also the track-crane or mail-bag receiver and supporter at the side of the track. Fig. 2 is a partial elevation and partial section of the car-crane and its brace and handle. Fig. 3 is a broken top plan of the car-crane. Fig. 4 is an end or "along-the-track" view of the track-crane or mail-pouch catcher and supporter at the side of the track. Fig. 5 is a bottom plan view of basket or crib and support. Fig. 6 is a broken side elevation of the track-crane post with section of basket-supporting sleeve, showing also the brake. Fig. 7 is a rear view of the basket or crib supporting sleeve and brackets. Figs. 8 and 9 are elevations of the bag-support clamp or double hooks at the end of the car-crane, the figures being partly in section. Fig. 10 is a plan, partly in section, of the car-crane arm and connections. Fig. 11 is a perspective view of a brace to be described. Fig. 12 is a perspective of a flexible frame or bag-support. Fig. 13 is a cross-section showing track-crane brake. Fig. 14 is

a view of the track-crane and attachments from the side toward the rail.

Referring first to the crane structure connected to the car, let 1 indicate the car, which moves along a track, as usual. At each side of the car-door there is a bracket 2, secured to the outside of the car and having perforated lugs 3 3, through which lugs the pivot-pin 4 of the crane may pass. The crane-arm has a T-shaped sleeve 5, the cross-arm 6 of which rests between the perforated lugs 3 3 when the arm is in place, the pivot-pin 4 passing through this cross-arm to hold the crane in place. A spring 7 surrounds cross-arm 6 and has a loop 8, which extends outside the crane-bar 5. The ends of the spring 7 bear against bracket 2, and the spring thus has a tendency to swing the crane-arm toward the side of the car by reason of this loop of the spring bearing inwardly on the outer side of the crane-arm.

The outer end of the crane-arm 5 has a knuckle 10, to which brace 11 is pivoted, for a purpose to be stated. The crane-arm has an extension 12, which telescopes inside the sleeve 5 and is held in any adjusted position by set-screw 13. The outer end of this extension or bar 12 has a hook 14, attached to a sleeve 28, which is swiveled on the extension or bar 12, so as to be free to rotate on said bar. The front end of bar 12, on which sleeve 28 swivels, is preferably bent, so that when the crane is braced outward the sleeve 28 is about parallel with the side of the car. A hook 15 is pivoted to the sleeve 28. This hook 15 is divided and has a member at each side of the body of hook 14. The two hook members 15 unite and have a lever extension 16. The top bar of a bag-support extends through hook 14 when the device is in use, and by turning lever 16 to the position shown in Fig. 9 and in dotted lines, Fig. 2, the bag-support is clamped between the jaws of the two hooks. The weight of the bag holds hook 14 below the crane and tends to slide the bag-support down the inclined face of hook 14 and cause it to bear against the two members of hook 15, so as to hold that hook in position. At the same time the two members of the hook 15, acting with hook 14, will hold the bag-support from twisting should the wind blow against the bag.

Across the door of the car are parallel bars 20. One of these bars has a hook or horn 21, projecting inwardly and inclined in one direction, while the other bar has a hook or horn 22, inclined in the other direction. The brace 11 extends between these parallel bars and is guided thereby. The brace 11 has a head or bent arm 24. This head serves as a handle by which the mail-clerk can operate the crane from inside the car and hold the crane projected, or the head, arm, and handle can be swung into the recess formed by horn 22, and the pressure of spring 7 will then hold the crane-arm in such position, as shown in Fig. 1, the brace 11 then retaining the crane in its projected position against the pressure of the spring. Then a pressure against brace 11, which throws the head of said brace out of the grasp of the horn, will permit the spring 7 to swing the crane-arm inward against the side of the car and against the parallel bars 20. Thus the brace 11 may be used to make the car-crane automatic, or it may be manipulated by hand.

The preferred form of mail-bag support is a flexible frame consisting of two bars 30, connected at their ends by short chains 31. One bar 30, as shown in Fig. 1, may pass through and be grasped by hooks 14 15, while the mail-pouch is fastened to the other bar in any suitable way, as by straps or by tying thereto. When applied as in Fig. 1, the mail-pouch will then be supported from the crane, but the open flexible frame will intervene, and this frame will have its upper member held against twisting or swinging by the engagement of hooks 14 15. The bag being suspended as shown in Fig. 1, let us suppose that the lever 16 encounters an obstruction. The lever will thereby be swung down, the hooks disengaged, and the bag-support and bag will be dropped. When the car is to move in the other direction from that indicated in Fig. 1, the pin 4 can be withdrawn, the crane-arm moved to the other bracket without removing the brace 11 from between bars 20, and the crane-arm can then be attached by the pivot to the other bracket, the arm of head 24 then turning downward. The brace 11 will now engage horn 22 to hold the crane outward, and in other respects the operation will be the converse of that heretofore described. The sleeve 28 being free to rotate on the crane-arm will have its hook 14 below said crane-arm in all normal positions.

I will now refer to the crib or basket alongside the track and the crane which supports the mail-pouch in position to be taken up by the advancing car.

Let 40 indicate an upright post, preferably of metal, which stands alongside the track. To this post a sleeve 41 is swiveled, so that it may turn on the post with more or less resistance as controlled by a friction device.

42 indicates a set-screw, which passes through sleeve 41 and bears on a brake-shoe

48, which shoe in turn bears on post 40. The set-screw can be so adjusted as to give any desirable amount of friction, and thus the basket is held against turning by wind-pressure or train suction, but may turn under the impulse of a bag from the car-crane. Sleeve 41 has bracket-arms 44 rigid therewith, which support the bracket or crib into which the mail-pouch is delivered. Crib 45 is an open-ended trough which may have only one upright side and is composed of slats supported on sleeve 41 and the brackets 44, so that the crib can be swung around with the sleeve. The length of the crib and the distance from the track is such that the corner of the crib will not strike the car. When a mail-pouch is dropped into a crib from a car-crane, the momentum of the bag may swing the crib and sleeve around on the supporting-post, thus transforming the forward movement of the pouch into a swinging movement of the crib. The bag will naturally seek that side of the crib toward the track as the crane swings.

A rectangular frame 46 is pivoted at one side in the top bars of crib 45 and at the other side to lug 59 on sleeve 41. This frame supports a chain net 47, the net being slack in the frame. The frame is set for use in inclined position, as shown in Fig. 1, the end of the frame toward which the car approaches being elevated and held to the crib by a hook 49 or in other suitable manner. The net 47 when set in this inclined position is in front of the mail-pouch carried by the car-crane and receives the pouch as it advances. The frame 46 will furnish obstruction to the lever 16, and thus trip this lever and turn hook 15, thus permitting the pouch and its attached support to fall from the hook 14 into the crib under the net. The lever 16 is turned back by engagement with the top bar of the frame 46 and will then ride over the top of this frame or will swing said frame and crib, the same swiveling on post 40. The turning of the track-crane is assisted by the momentum of the mail-pouch, and the bag attached to the track-crane may be started by the impulse of the bag from the car-crane, which bag moves with great momentum and is caught under the chain net and prevented from leaving the crib. When the car advances from the other direction from that shown in Fig. 1, the crane 46 and its net will have the reverse end elevated and the relation of parts is maintained. The car-crane projects from the car at such elevation as to pass above the crib and in such position as to enter the mail-bag frame or support 30, which support is suspended, as will be described. The track-crane has a bent arm or gooseneck 50, swiveled in the upper part of sleeve 41 and forked at its upper horizontal end 51. The mail-pouch to be taken up by the passing car is suspended from the track-crane by the flexible frame 30 31. The top bar of this frame is connected to the link sides by loops, and these loops of the upper part of the mail-bag support rest

on top of bars 51 of the track-crane, the vertical parts or links 31 of said support passing down between said bars. The mail-bag support or flexible frame 30 31 has its top and bottom bars 30 substantially rigid and the connecting sides 31 composed of links. This support can only be suspended in one way from the parallel bars 51 of the gooseneck 50, and that is by passing the vertical side links 31 between said parallel bars, leaving one bar 30 above the gooseneck and the other bar 30 below the gooseneck.

To prevent the gooseneck or mail-bag from swinging by the force of wind or from other cause, a rod 60, having a hook 61 at one end, is hooked into the eye 63 at the upper end of the chain-frame, and the other end of this rod has a spring-clasp 62, which embraces the linked side 31 of the mail-bag support. The bag and support are thus braced against turning or twisting. The holding of the bag in such manner also prevents the gooseneck 50 from turning until the mail-bag support on said gooseneck is picked up by the car-crane, when said gooseneck will swing in sleeve 41 in the direction of the movement of the train and the bag-support will slip out of the open-ended slot between the parallel bars 51 of the gooseneck 50.

The brake-shoe 48 may be held with more or less pressure against post 40, as regulated by screw 42.

When the car reaches the track-crane, the front end of the car-crane enters the flexible frame 30 31. The forward movement of the car carries the front end of the car-crane through the open frame forming the bag-support, and the side of this ring or frame striking brace 11 throws the inner end of the brace backward out of the grasp of the horn 21, if the car-crane is set for the automatic action. The spring 7 instantly swings the car-crane inward, carrying the bag-support with it, the bag-support sliding out at the open end of the bars 51. The track-crane 50 at the same time swings, so that the open end of the bars is nearly in the direction toward which the car is moving. The bag and support having been swung inward toward the door of the car by the swinging of the crane-arm will be held suspended in front of the car-door until removed by the mail-clerk in the car. The bag dropped from the car-crane will stay in the net or crib of the track-crane until removed therefrom.

It should be understood from the foregoing that the postal agent at the station or beside the track suspends a mail-pouch from the track-crane and adjusts the net under said pouch with its face in the direction to receive the incoming mail-pouch and with the opening in the bag-support also facing in the same direction. The mail-clerk on an approaching car suspends a bag and its ring or frame from the car-crane, which is held or adjusted as to length and outward projection so as to enter the ring or frame bag-support on the

track-crane. The mail-sack from the car-crane entering with considerable velocity under the chain net raises the slack of such net against the bag suspended over it, and the momentum of the moving bag thus serves in part to overcome the inertia of the bag suspended from the track-crane. The entry of the car-crane into the flexible bag-support 30 31 distorts the latter, but the flexible sides 31 permit the temporary change of form without injury. The further momentum of the bag from the car-crane is overcome in swinging the crib or basket around about the central post 40. The brake may be adjusted to regulate the resistance of the crib in turning.

A ladder 65 may be connected to the track-crane for convenience in suspending the mail-bag.

I do not as a rule confine myself to the specific and precise construction of the parts, as the same may be varied by skilled mechanics without further invention or experiment, so long as the general principles involved in the claims are embodied in the structure or device.

What I claim is—

1. The combination with a car-bracket, of a T-shaped sleeve and a pivot connecting said sleeve to the bracket, a telescopic extension entering said sleeve, a set-screw by which said extension is held in a more or less extended position, and a swiveled hook at the outer extremity of such extension.

2. The combination with the car-crane, of parallel bars extending across the car-door, horns or hooks on said bars facing in opposite direction, a brace pivoted to the crane-arm in position to be held by the hooks, and means for swinging the crane inward when not held by the brace and hook.

3. The combination with the crane-arm, of the clamping-hooks, and a bag-support consisting of two substantially horizontal bars and end chains connecting said bars.

4. The combination with the car-crane, means for holding the same extended or swung out from the car, and a spring bearing said arm toward the car, of a pivoted track-crane having parallel bars at its upper end, and a bag-supporting frame extending between said parallel bars of the track-crane, in position to receive the front of the car-crane.

5. The combination with the track-post, of a sleeve swiveled thereon, a bracket on the sleeve and an open-ended crib connected to said bracket, and a pivotally-supported frame having a net above said crib.

6. The combination with the track-post and open-ended crib, of a frame centrally pivoted near the top of said crib, a netting connected to said frame, and means for holding either end of the net-frame depressed.

7. The combination with a revolving net suspended at the side of the track, of a car-crane having a hook for suspending the bag-support, and a second hook pivotally sup-

ported on said crane-arm and forming in connection with the first a clamp, said second hook having a projecting lever-arm to engage said net.

- 5 8. The track-crane having parallel horizontal bars, combined with a frame-like bag-support having a projection which will lie above and not pass between the said horizontal bars.
- 10 9. The combination with the track-crane and its suspended bag-support, and the crib on said crane, of a brace extending from the crib to the bag-support, to hold the same from twisting.
- 15 10. The combination with the track-crane and bag-support, of a chain net under the bag-support, and the car-crane arranged to project an advancing bag under the chain net, and thereby lift or start the bag on the
- 20 track-crane.
11. The combination with a supporting-crane, of a bag-support consisting of upper and lower bars, and flexible sides connecting the same.

12. The combination, in a mail-bag catcher, 25 of a car-crane having a bracket thereon with perforated lugs projecting from the bracket, a crane-arm with a T-shaped sleeve with its cross-arm resting between said lugs, a pivot-pin passing through said lugs and cross-arm 30 as described, a coiled spring surrounding the cross-arm with its ends bearing on the bracket, and its central portion bearing on the crane-arm to swing the same inward.

13. The combination with a car-door, of bars 35 extending across the doorway, brackets on the car near each end of said bars, a crane-arm and means for pivoting the same to either bracket, and a brace extending from the crane-arm between the bars across the door- 40 way.

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

MONTRAVILL D. CUMMINGS.

Witnesses:

JOHN F. FERGUS,
BESSE U. CARDER.