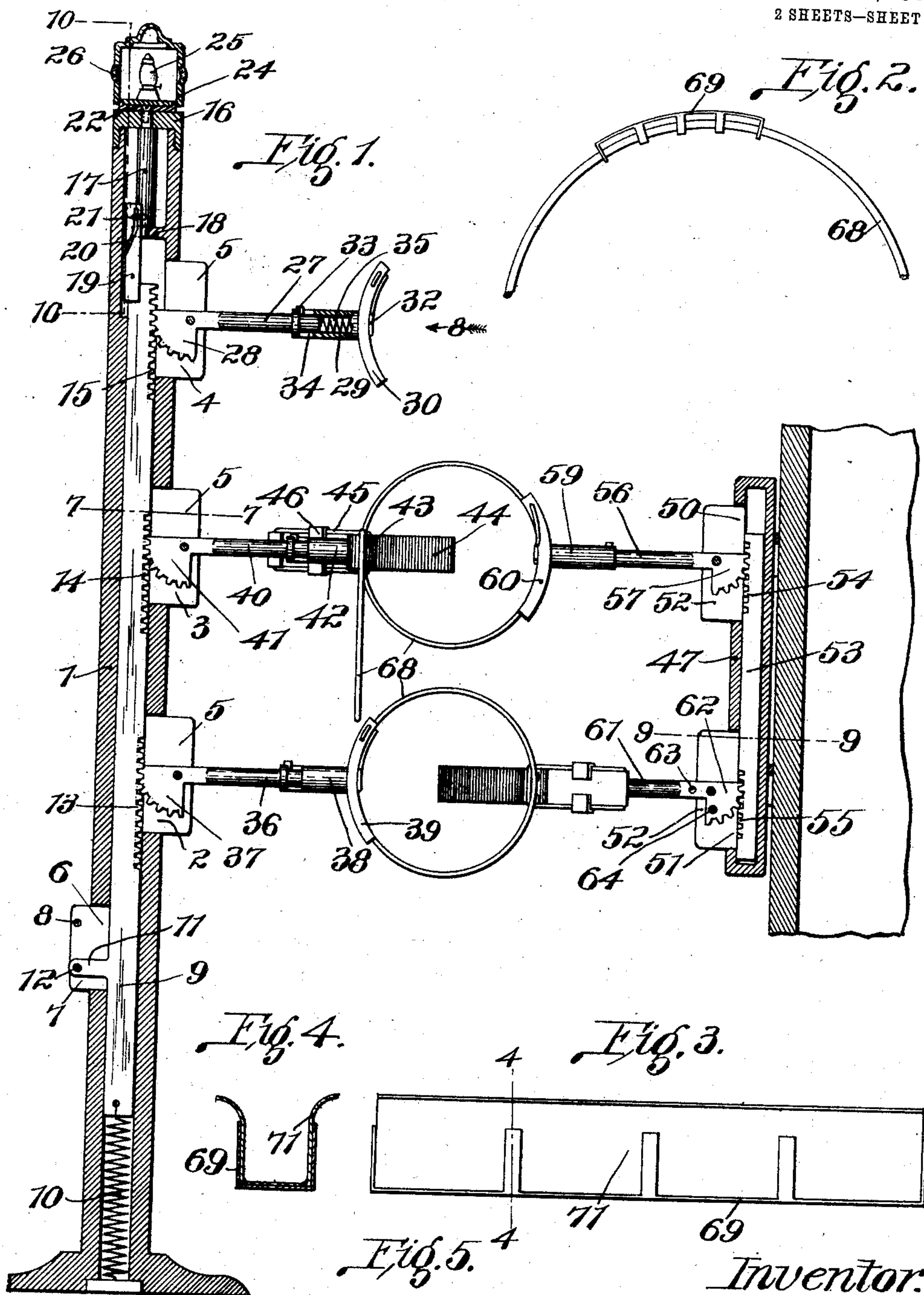


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 APPLICATION FILED MAR. 9, 1908.

908,839.

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 2 SHEETS—SHEET 1.



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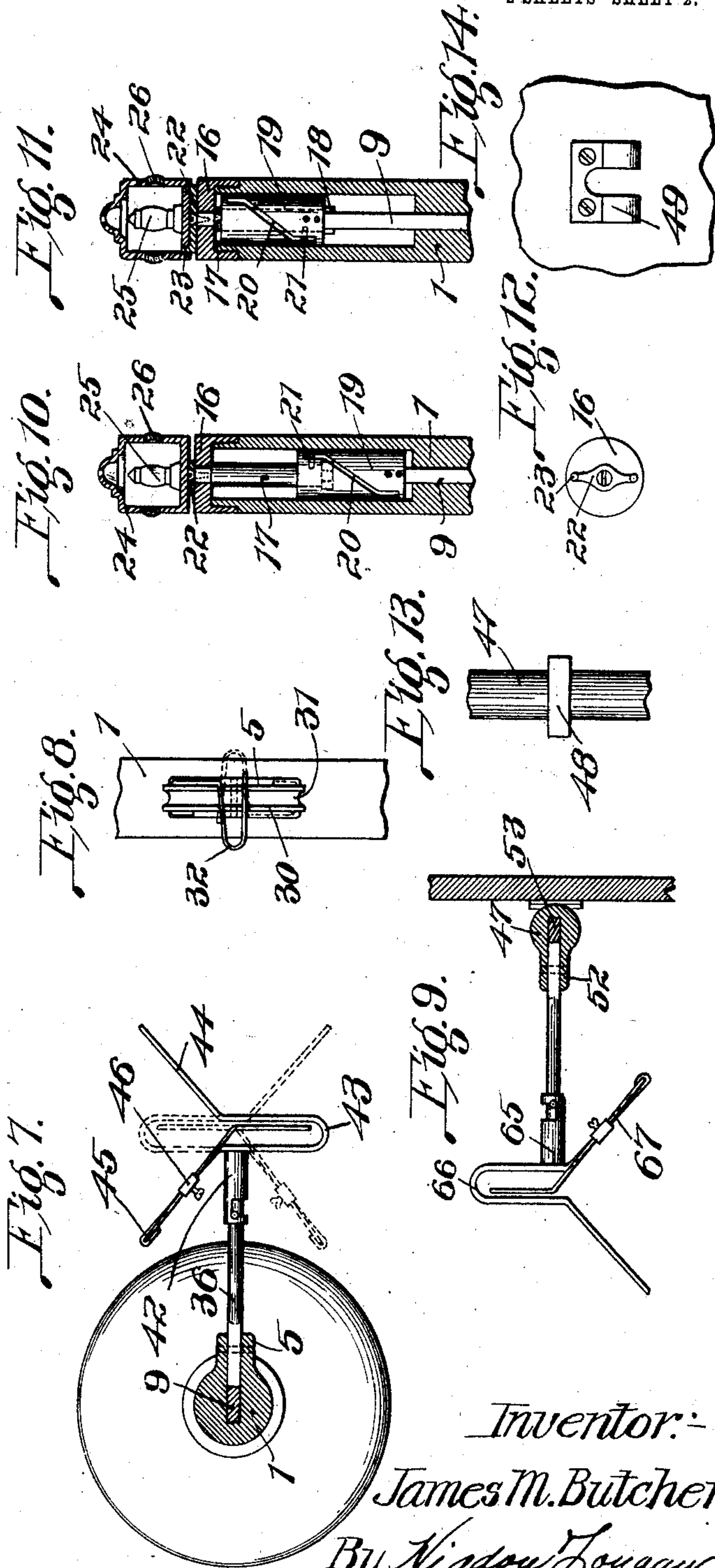
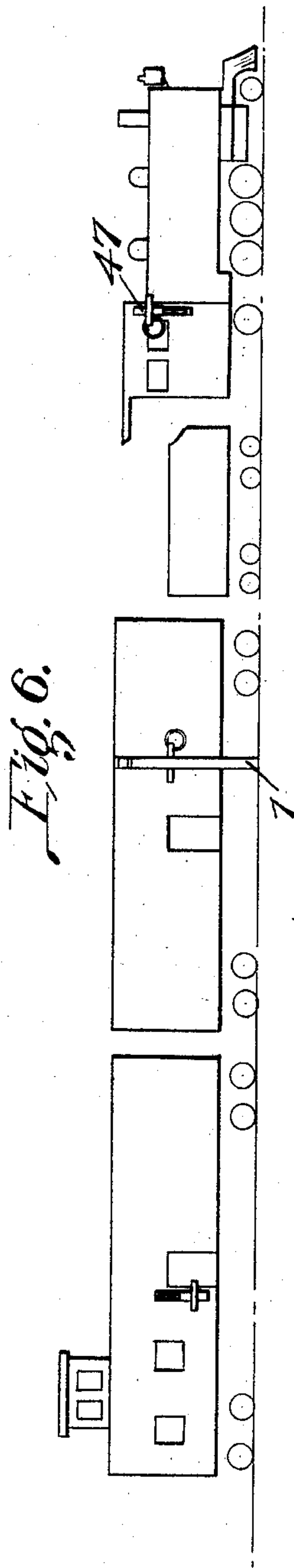


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# UNITED STATES PATENT OFFICE.

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## TRAIN-ORDER-DELIVERING APPARATUS.

No. 908,839.

Specification of Letters Patent.

Patented Jan. 5, 1909.

Application filed March 9, 1908. Serial No. 419,986.

*To all whom it may concern:*

Be it known that I, JAMES M. BUTCHER, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Train-Order-Delivering Apparatus, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to a train order delivering apparatus, my object being to provide a simple and efficient means whereby train orders are delivered to the engineer and conductor of a passing train, which latter may be running at high speed, thereby doing away with the necessity of stopping the train at a way station for orders, and which apparatus is practically automatic in operation, in that it requires no attention after being set for use.

A further object of my invention is to provide means in an apparatus of the class described whereby empty message holding members are delivered to the station agent to replace the message holding members which are delivered to the engineer and conductor of a passing train.

To the above purposes, my invention consists in certain novel features of construction and arrangement of parts which will be hereinafter more fully set forth, pointed out in the claims, and illustrated in the accompanying drawings, in which:

Figure 1 is a vertical section of a post or standard which is positioned adjacent the railway track, which post is provided with a series of movable arms to receive and hold the message carrying members, and this view also shows the arms which are positioned on the side of the locomotive and car; Fig. 2 is an elevation of a portion of one of the message carrying members; Fig. 3 is a side elevation of the clip or keeper which holds the message; Fig. 4 is a transverse section taken on the line 4—4 of Fig. 3; Fig. 5 is an end elevation of the message keeper; Fig. 6 is an elevation of a train showing the arms applied to the locomotive and to one of the cars of the train, and also showing the post adjacent the track; Fig. 7 is a horizontal section taken on the line 7—7 of Fig. 1; Fig. 8 is an elevation of the parts as seen looking in the direction of the arrow 8 of Fig. 1; Fig. 9 is a

horizontal section taken on the line 9—9 of Fig. 1; Fig. 10 is a vertical section taken on the line 10—10 of Fig. 1; Fig. 11 is a vertical section similar to Fig. 10, showing the lantern on top of the post reversed from the position in which it appears in Fig. 10; Fig. 12 is a view of the top of the post with the signal lamp removed; Fig. 13 is a detail elevation of a portion of the bracket which is applied to the side of the locomotive or car; Fig. 14 is an elevation of the hook which is applied to the locomotive or car, and which receives the part shown in Fig. 13.

Referring by numerals to the accompanying drawings: 1 designates a hollow post which is positioned adjacent the railway track, and formed in the side of the post adjacent the track are three vertically disposed slots, 2, 3 and 4, which slots are in vertical alinement, and formed integral with the wall of the post at the sides of these slots are pairs of oppositely projecting ears 5. Formed through the lower portion of the post on the opposite side from the slots just mentioned is a vertically disposed slot 6, and formed integral with the wall of the post with the sides of this slot are ears 7, through which are formed pairs of horizontally disposed apertures, such as 8.

Arranged for vertical movement in the hollow post 1 is a bar 9, the lower end of which is connected with the base of the post by a retractile coil spring 10, and formed integral with said bar 9 and extending outward through the slot 6 is a lug 11, which is perforated and adapted to receive a pin 12, which passes through either pair of the apertures 8, thus providing means for locking the bar 9 in either an elevated or lowered position. Formed in the front side of the bar 9, approximately opposite the openings 2, 3 and 4, are three series of rack teeth, 13, 14 and 15.

16 designates a cap on the upper end of the post 1, and arranged for rotation therein is the upper end of a vertically disposed shaft 17, the lower end of which is arranged for rotation in a lug 18, formed integral with the interior of the upper portion of the post 1.

Fixed to the upper end of the bar 9 is a vertically disposed plate 19, which is approximately semi-circular in cross section, and formed therein is a diagonally disposed slot 20, through which projects a pin 21,



which is seated in the lower portion of the shaft 17.

Fixed to the upper end of the shaft 17, on top of the cap 16, is a transversely disposed plate 22, provided on its ends with lugs 23, which are seated in the bottom of a housing 24, which is occupied by a lamp 25, there being oppositely arranged openings formed in said housing, which openings are provided with differently colored sections of glass 26.

Pivotally arranged between the pair of ears 5 is an arm 27, with the rear end of which is formed integral a toothed segment 28, which meshes with the series of rack teeth 15; and positioned on the outer end of this arm 27 is a short sleeve 29, on the outer end of which is fixed a vertically disposed segmental plate 30, the outer face of which is curved, as designated by 31; and fixed to one side of this plate and extending across the center of the face thereof is a spring keeper 32. This plate 30 normally occupies a vertical position, and is adapted to be reversed or turned upside down, and to accomplish this end a pin 33 is seated in the outer portion of the arm 27, and a semi-circular slot 34 is formed in the sleeve 29, there being recesses at each end of said slot to receive the pin when the plate 30 is moved from one position to another. An expansive coil spring 35 is interposed between the plate 30 and the end of the arm 27 to maintain said plate in either one of its set positions.

Pivotally arranged between the pair of ears 5 adjacent the sides of the slot 2 is an arm 36, which is identical with the arm 27, and formed integral with the rear end of said arm 36 and engaging with the rack teeth 13 is a toothed segment 37.

Fitted on the outer end of the arm 36 is a sleeve 38, which is identical in construction with the sleeve 29, and on the outer end of said sleeve 38 is a plate 39, identical in construction with the plate 30.

Pivotally mounted between the ears 5, adjacent the slot 3, is an arm 40, and formed integral with the rear end thereof, and meshing with the rack teeth 14, is a toothed segment 41. Fitted onto the outer end of this arm 40 is a sleeve 42, which is identical in construction with the sleeves 29 and 38, previously described, and formed on or fixed to the outer end of the sleeve 42 is a horizontally disposed V-shaped loop 43, provided with diverging ends 44. Fixed to one of these ends 44 is a spring 45, the inner end of which extends horizontally through the loop 43, and adjustably arranged on said spring and on the corresponding end 44 of the loop 43 is an adjustable tension clamp 46.

47 designates a vertically disposed tube, which is detachably applied to the side of a locomotive or car by means of ears 48 on the rear side of said tube, which ears enter clips 49 applied to the outer wall of the locomotive

cab or a car, and formed through the wall of this tube are the vertically alined openings 50 and 51, immediately adjacent which are arranged the pairs of vertically disposed ears 52. Arranged for vertical movement in the tube 47 is a bar 53, in the outer face of which is formed a series of rack teeth 54, which are directly opposite the opening 50, and a second set of rack teeth 55 are formed in the bar opposite the opening 51.

56 designates an arm pivotally arranged between the pair of ears 52 adjacent the opening 50, and formed integral with the rear end of this arm 56 is a toothed segment 57, which engages both the rack teeth 54. Arranged on the outer end of the arm 56 is a sleeve 59, which is identical in construction with the sleeve 34, and fixed on the outer end of the sleeve 59 is a curved plate 60, identical in construction with the plate 30.

Pivotally arranged between the ears 52, adjacent the opening 51, is an arm 61, with the rear end of which is formed integral a toothed segment 62, which meshes with the rack teeth 55. Apertures, such as 63, are formed in the rear portion of the arm 61 and through the segment 62, which apertures are adapted to receive a pin 64, detachably seated in the ears 52, for the purpose of locking the arm 61 in either one of its positions. Arranged on the outer end of the arm 61 is a sleeve 65, identical with the sleeve 42, and fixed on the outer end of said sleeve 65 is a loop 66, having diverging ends and provided with a spring 67, which parts are identical with the loop 43 and spring 45, previously described.

The message carrying members used in connection with my improved apparatus are in the form of large rings 68, and the message holders or clips comprise resilient strips 69, on the ends of which are formed hooks 70, which engage the ring 68, and positioned inside each resilient strip is a flexible section 71, of waterproof material, which incloses the message when the same is positioned between the message carrying clip and the ring.

The operation of my improved apparatus is as follows: When out of service the bar 9 is elevated and locked in such position by the pin 12 passing through the upper pair of apertures 8 and engaging through the aperture in the lug 11, and when so positioned the arms 27, 40 and 36 are swung into approximate vertical planes against the side of the post 1, and the pin 21 occupies the lower end of the slot 20, and thus maintains the signal lamp in such a position as that the safety lights are displayed so as to be seen by the engineer of a train approaching the station from either direction.

When the station agent or operator desires to deliver orders to the engineer and conductor of an approaching train, the pin 12 is removed from the upper pair of apertures 8



and the aperture in the lug 11, and as a result the bar 9 is drawn downward to its limit of movement, which action causes the sets of rack teeth 13, 14 and 15 to engage with the corresponding teeth of the segments 37, 41 and 28, and as a result the arms 36, 40 and 27 are all moved into horizontal planes, and as the plate 19 is drawn downward, the pin 21 will travel through the slot 20 and the lamp and the lamp housing will be shifted a quarter of a turn so as to display a signal to the engineer of an approaching train and indicate that messages are to be delivered to the engineer and conductor, which signals are necessary at night. The station agent or operator now turns the curved plates 30 and 39 so as to bring the open sides of the springs on said plates into proper positions to permit the release of the message carrying rings which are to be caught by the passing train, and at the same time shifts the loop 43 into position so that its open end is toward the approaching train. The written orders or messages to be delivered to the engineer and conductor of the passing train are now placed against the inside of a pair of the strips 69, and said strips are applied to a pair of the rings 68, by engaging the hooks 70 on said rings, after which one of the rings is positioned beneath the spring 32 in the groove 31 of the plate 30, and the second ring, with the orders or messages in duplicate, is positioned beneath the spring of the plate 39. The horizontal positions of the arms indicate to the engineer and conductor of an approaching train that orders or messages are to be delivered, and before the train reaches the signal post 1 the engineer and conductor elevate or move into horizontal planes the arms 56 and 61 adjacent their stations, and lock said arms in horizontal positions by means of the pins 64, and the loop 66 on the arm 61 which is carried by the locomotive cab is so shifted as that its open end is toward the signal post, and the tube 47, which is located on the cab, is at such an elevation as that the arm 61 occupies the same horizontal plane as the arm 27, and therefore when the loop 66 moves past the plate 30, the ring 68 held in said plate will be engaged by said loop 66.

When the engineer sets the arms 56 and 61, an empty ring 68 is positioned beneath the spring on the plate 60, which empty ring is caught by the loop 43, thus delivering a ring to the operator or station agent to replace the ring delivered to the engineer. The conductor of the approaching train shifts the arms 56 and 61 of the apparatus adjacent his station into horizontal planes, and locks said arms in such positions by means of the pin 64, shifts the loop 66 on the lowermost arm so that its open end is toward the signaling post, and locates an empty ring in the plate 60. The arm 61 of that portion of the apparatus adjacent the con-

ductor's station is in approximate horizontal alinement with the arm 36 of the signal post, and the corresponding arm 56 is in approximate horizontal alinement with the arm 40, and as the car on which the conductor is located passes the signal post, the message carrying ring 68 held in the plate 39 will be caught in the loop 66 and at the same time the empty ring carried by the plate 60 will be caught by the loop 43, and thus duplicate orders or messages are delivered to both the engineer and conductor of a passing train, and a pair of empty message carrying rings are delivered to the operator or station agent. After passing the signal post the message bearing rings caught by the loops 66 carried by the train are removed from the loops, and by removing the pins 64 the arms 61 and 56 may be swung downward into approximate vertical planes until it is again desired to use the apparatus. If desired, the tubes 62 can be readily removed from the sides of the locomotive cab and car by elevating said tubes to disengage the lugs 48 from the hooks 49. After the train has passed the signal post, the operator or station agent removes the pin 12 from the lowermost pair of apertures 8, and the aperture in the lug 11, and elevates the bar 9, and by so doing swings the arms 27, 40 and 36 into approximate vertical positions against the side of the signal post, and the bar 9 is held in its elevated position by engaging the pin 12 in the uppermost pair of apertures 8, and the perforation in the lug 11.

The springs 32, extending across the front faces of the curved plates 30, 39 and 60, maintain the message carrying rings 68 in proper positions on the various plates, and readily permit their disengagement therefrom when caught by the loops 43 and 66. The springs 45 and 67 on the loops 43 and 66 create a certain amount of friction on the message carrying rings caught by said loops, and prevent said rings from dropping out of the loops after having once been caught therein.

Sleeves 29, 38, 42 and 59 are all arranged to be rotated half a turn on the ends of the corresponding arms, in order that the various ring holding plates and loops can be shifted into position to accommodate the exchange of messages between the signal post and trains traveling in either direction.

An apparatus of my improved construction requires no attention after being set for use, comprises a minimum number of parts, and is adapted to deliver duplicate orders or messages to the engineer and conductor of a train traveling at a high rate of speed.

If desired, my improved apparatus may be utilized for delivering telegrams and the like to passengers on passing trains.

I claim:

1. In an apparatus of the class described,



a post, a rack bar operating vertically thereon, a series of movable arms pivotally mounted on the post, segments on the rear ends of the arms, which segments mesh with the teeth of the rack bar, means arranged on certain of said arms for temporarily holding message carrying members, and means arranged on one of said arms for receiving message carrying members.

2. In an apparatus of the class described, a signal post, a rack bar arranged to move vertically thereon, a series of arms pivotally connected to the post, toothed segments on the rear ends of the arms, and which segments engage with the teeth of the rack bar, reversible means arranged on certain of the arms for receiving message carrying members, and means arranged on one of the arms for receiving message carrying members delivered by a passing train.

3. In an apparatus of the class described, a post, a rack bar arranged for vertical movement thereon, a plurality of arms pivotally connected to said post, toothed segments on the rear ends of the arms, which segments engage with the teeth of the rack bar, and reversible means arranged on the arms for holding message carrying members.

4. In an apparatus of the class described, a hollow post, an arm pivotally connected thereto, a bar arranged to move vertically in the hollow post, and which bar engages with the rear ends of the arms to raise and lower the same, and a reversible open ended loop arranged on the arm, which loop is adapted to receive message carrying members delivered by a passing train.

5. In an apparatus of the class described, a post, a plurality of arms pivotally connected thereto, means whereby said arms are raised and lowered, reversible means arranged on the arms for holding message carrying members, a signal lamp on the post, and means whereby said signal lamp is shifted when the arms are raised and lowered.

6. In an apparatus of the class described, a post, an arm pivotally connected thereto,

means whereby the arm is raised and lowered, a reversible open ended loop arranged on the arm, which loop is adapted to receive message carrying members delivered by a passing train, a signal lamp on the post, and means whereby said signal lamp is shifted when the arms are raised and lowered.

7. In an apparatus of the class described, a message carrying member comprising a ring a resilient message holding clip, and hooks formed on the ends of said clip for engaging the ring.

8. In an apparatus of the class described, a post, a series of arms pivotally connected to the post and arranged to swing vertically, means whereby all of said arms are simultaneously actuated, means arranged on certain of said arms for temporarily holding message carrying members, and means arranged on one of said arms for receiving message carrying members, in combination with vertically moving arms pivotally arranged on the side of a car, and means arranged on said last mentioned arms for holding and receiving message carrying members.

9. In an apparatus of the class described, a post, a series of movable arms arranged thereon, means arranged on certain of said arms for temporarily holding message carrying members, and means arranged on one of said arms for receiving message carrying members, in combination with a member applied to the side of a car, a pair of arms pivotally arranged on said member, means whereby said arms are simultaneously raised or lowered, reversible means on one of the arms for temporarily holding a message carrying member, and reversible means on the remaining arm for receiving a message carrying member held by one of the arms on the post.

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses.

JAMES M. BUTCHER.

Witnesses:

M. P. SMITH,  
E. L. WALLACE.