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 APPLICATION FILED NOV. 18, 1907.

901,219.

Patented Oct. 13, 1908.

2 SHEETS—SHEET 1

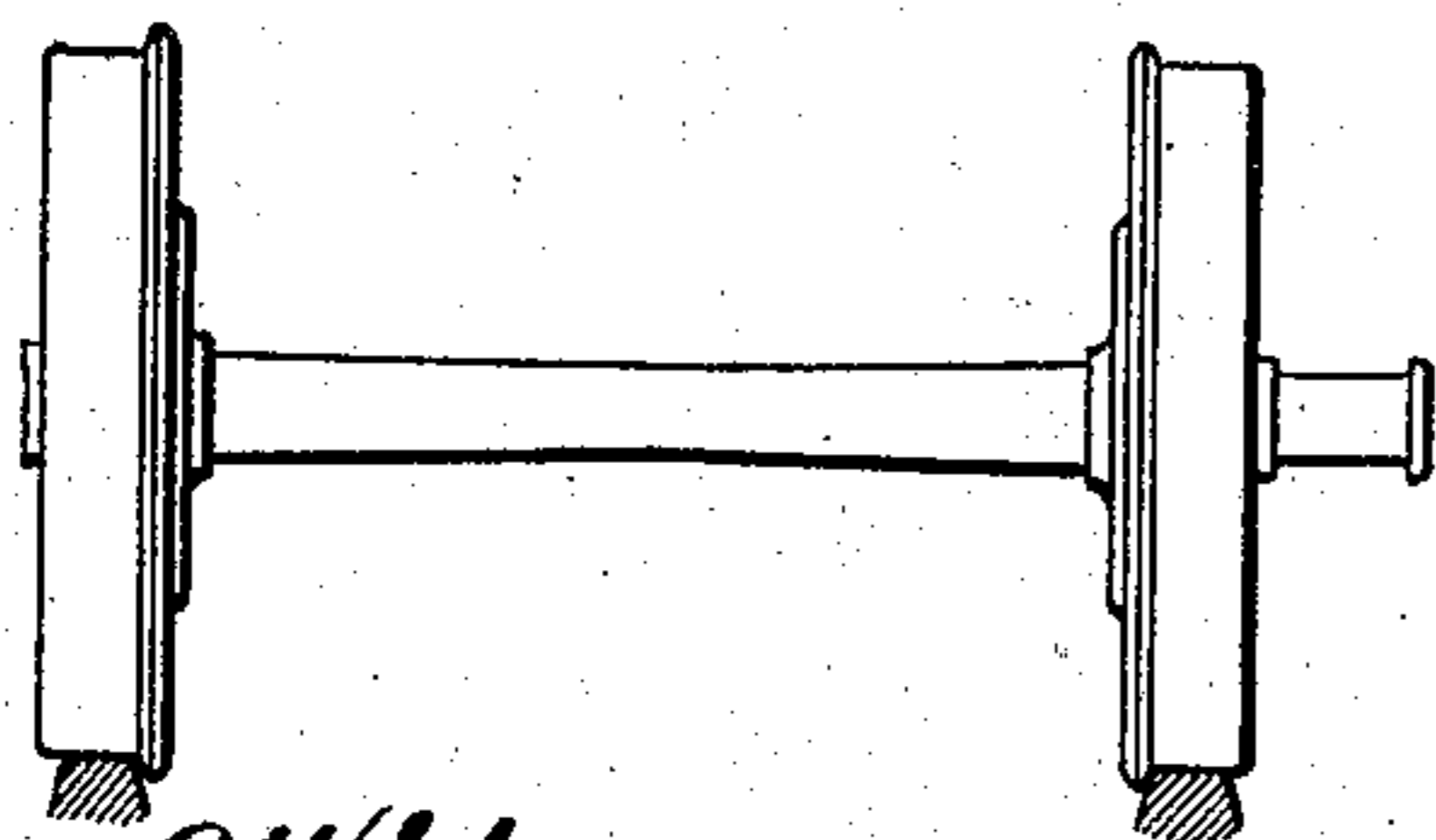
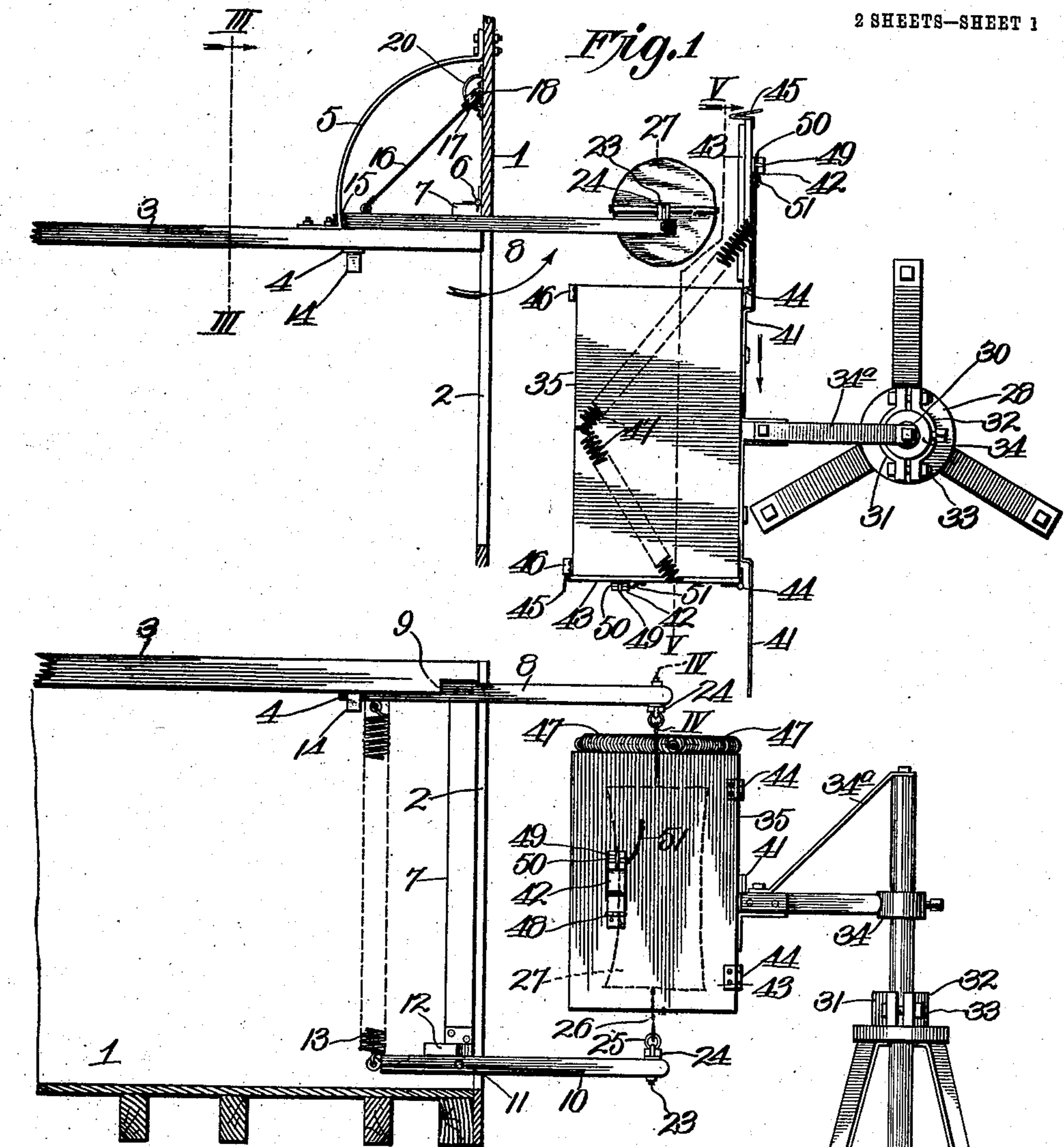
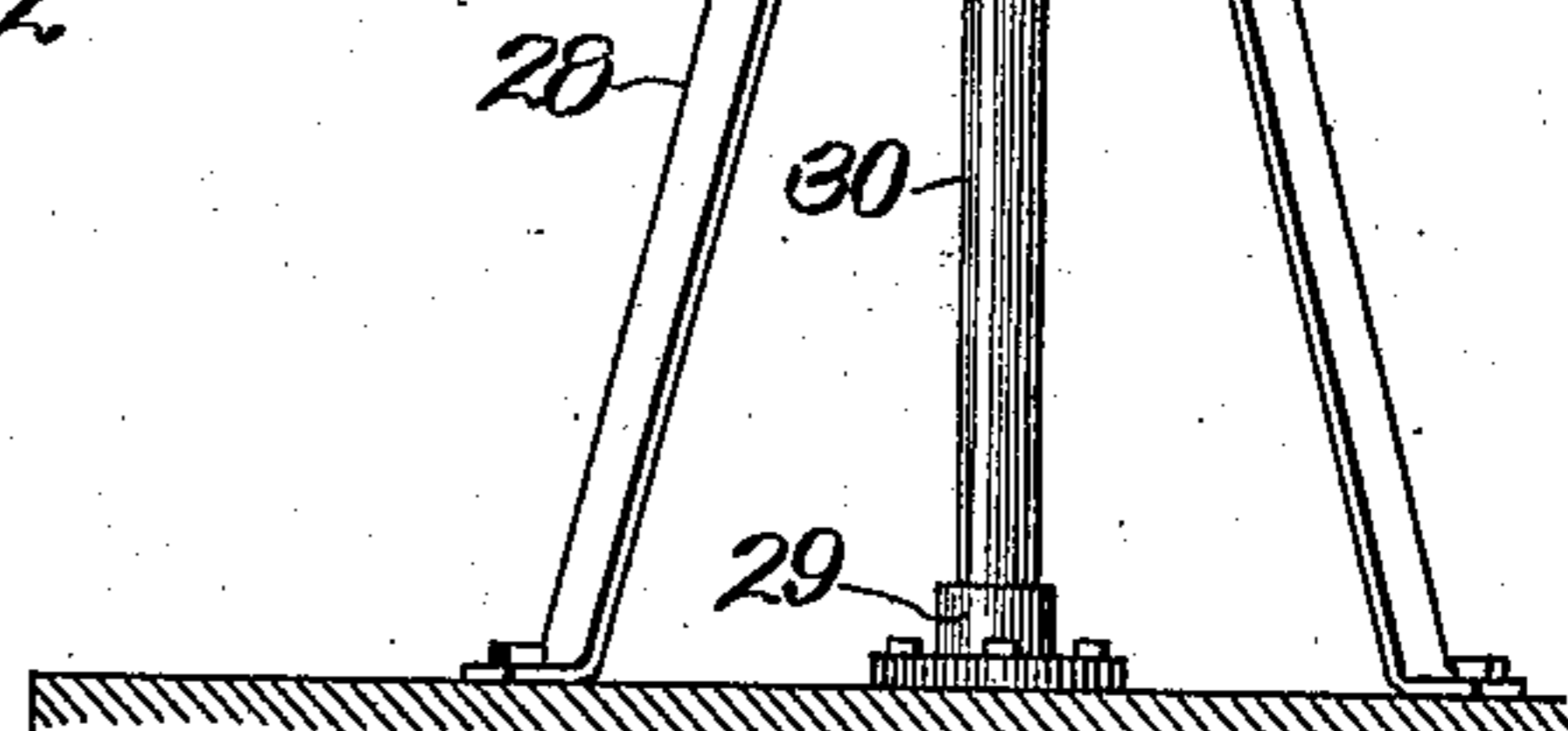


Fig. 2



Witnesses  
 Frank R. Gore  
 H. C. Rodgers.

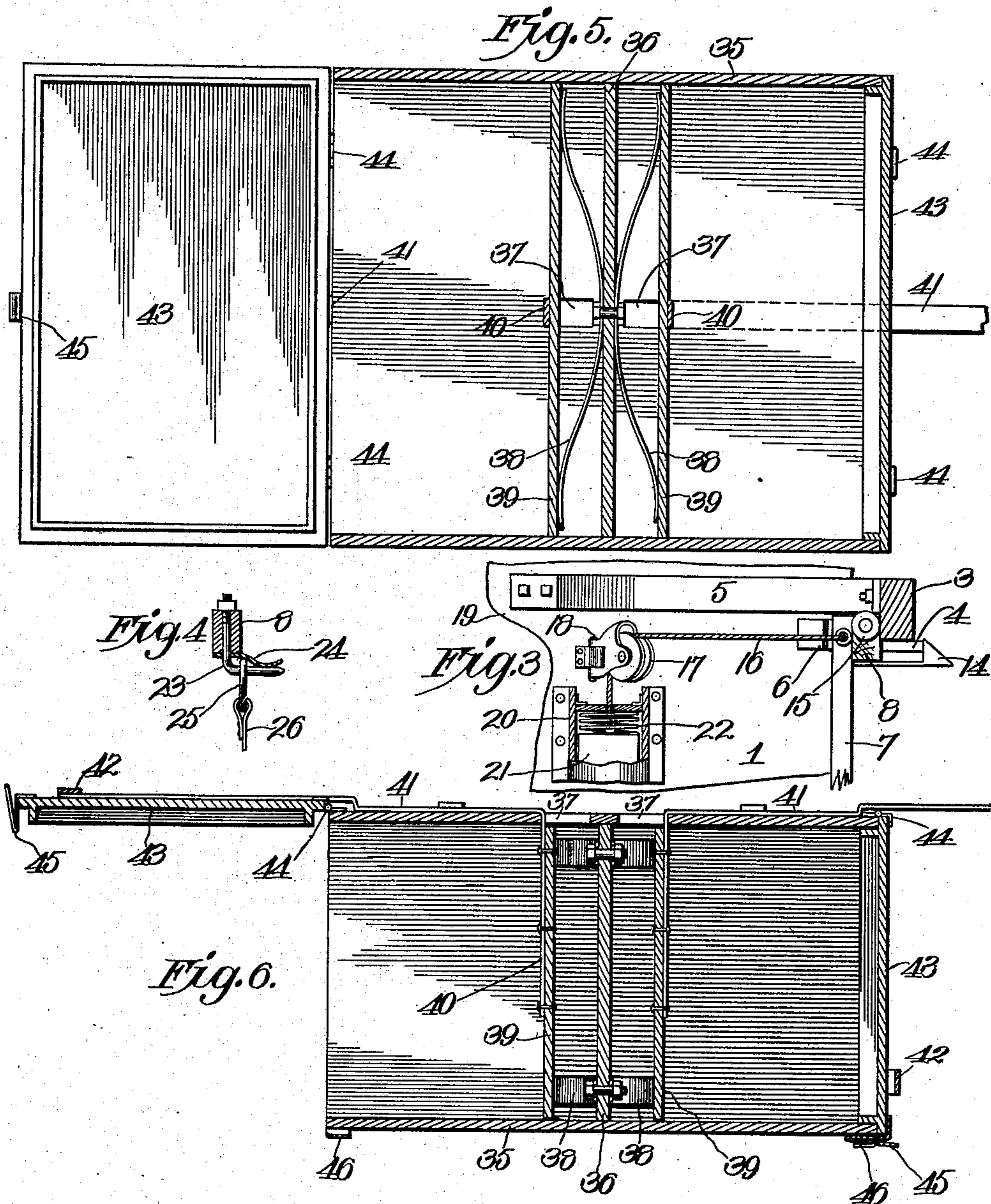
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# UNITED STATES PATENT OFFICE.

NEWEL F. VALENTINE, OF KANSAS CITY, MISSOURI.

## APPARATUS FOR TRANSFERRING MAIL-BAGS FROM A MOVING TRAIN TO A STATION.

No. 901,219.

Specification of Letters Patent.

Patented Oct. 13, 1908.

Application filed November 18, 1907. Serial No. 402,622.

*To all whom it may concern:*

Be it known that I, NEWEL F. VALENTINE, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Apparatus for Transferring Mail-Bags from a Moving Train to a Station, of which the following is a specification.

10 This invention relates to apparatus for transferring mail bags from a moving train to a station and my object is to produce apparatus of this character which performs its function efficiently and reliably and with a minimum of wear and tear on the bags.

15 With this general object in view the invention consists in certain novel and peculiar features of construction and organization as hereinafter described and claimed; and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

25 Figure 1, is a top plan view of an apparatus embodying my invention and a portion of a mail car in horizontal section. Fig. 2, is an end view of the apparatus with the car in section in the plane of the doorway and with the roof portion of the car omitted. Fig. 3, is an enlarged section on the line III—III of Fig. 1, with a certain part broken away. Fig. 4, is an enlarged section on the dotted line IV—IV of Fig. 2. Fig. 5, is an enlarged section on the line V—V of Fig. 1 with the springs for closing the doors omitted. Fig. 6, is a central horizontal section of the construction shown by Fig. 5.

35 In the said drawings, 1 indicates a mail car and 2 a side door opening thereof, the door for said opening being omitted.

40 3 is a cross bar suitably supported at one of the upper corners of the door opening.

4 is a wear plate secured to the lower edge of bar 3.

45 5 is a curved track connecting the bar 3 with one side wall of the car and extending concentrically of the hinge 6 connecting the mail bag-supporting frame with the car, said frame being constructed as follows:—7 is an upright bar connected by hinges 6 (one only appearing) to the car at the edge of the door opening near bar 3. 8 is a horizontal bar secured rigidly to bar 7 and adapted to project out of the door opening or to lie within the car substantially paral-

50 lel with its side walls, the bar 3 being cut away at 9 to accommodate the movement of bar 8. 10 is a bar secured to the lower end of bar 7 by pivot 11 so as to be capable of rocking in a vertical plane, a lug 12 projecting from bar 7 to limit the distance which the outer end of bar 10 can be moved from the corresponding end of bar 8. A retractile spring 13 connects the inner ends of said bars for the purpose of spreading their outer ends as far apart as permitted by the lug 12.

60 14 indicates a bevel-end spring catch projecting from bar 8 and adapted when the latter is thrown to the position shown to lock it in such position by engagement with wear plate 4 (see Fig. 3) it being noticed that bar 8 is provided at its inner end with a grooved roller 15 in engagement with the lower edge of track 5, which thus serves to steady the pivotal movement of the said frame.

70 16 indicates a cable connected at one end to the rear end of bar 8 and extending therefrom over a hooded sheave 17 pivoted at 18 to the side of the car so as to automatically swivel and thus stand in alinement with the cable irrespective of the direction in which the latter may extend, it being understood that its direction changes as the frame is pivotally operated. From the shaft the cable extends down through the top of the vertical casing 21 secured to the side wall of the car and is attached to a weight 21 within said casing, said weight being raised by the cable when the bag-carrying frame is swung out to operative position and descending to return or assist in returning said frame to its original or inoperative position, within the car, it being understood that when the frame is swung to operative position the cushion or spring 22 between the top of casing 20 and the weight offers a yielding resistance to the upward movement of the latter so as to prevent bar 8 from striking bar 3 with any great degree of force.

100 To secure the bag vertically between the bars 8 and 10 of the frame, the bars are provided with L-shaped bolts 23 projecting rearwardly with respect to the car movement, and with spring catches 24 secured to bars 8 and 10, and pressing against the horizontal arms of the L-shaped bolts and flaring therefrom so that the rings 25 attached by straps 26 to the opposite ends of the mail bag 27, can be slipped easily into position as shown 110

in Fig. 4, the spring catches 24 retaining the bag in operative position until an overpowering force is applied to remove it.

Arranged at a suitable point along the trackway is a small tower 28 and a bearing 29, the latter receiving a vertical shaft 30 which also extends up through the top of the tower and is journaled in a bearing consisting of member 31 cast integral with the top of the tower by preference, and a cap member 32 bolted as at 33 to member 31 and adapted to be clamped with more or less pressure on the shaft to prevent the wind pressure on a part hereinafter referred to, from turning said shaft.

34 is an arm secured to the shaft above the tower and to brace and stiffen the same an inclined brace 34<sup>a</sup> is secured to arm 34 and to the top of the shaft.

35 is a rectangular box secured rigidly to the outer end of arm 34 and of such length and arrangement that bars 8 and 10 will pass above and below it when the parts are in operative position. The box is provided centrally with a stationary partition 36, and at opposite sides of said partition is provided, in its rear wall with short longitudinal slots 37. Secured to the opposite sides of the partition are springs 38 exerting pressure on slide plates 39 which tend to force said plates toward the opposite ends of the box.

Oppositely disposed angle bars secured to the angle plates 39 consist of the parallel arms 40 projecting into the box through slots 37 and the aligned arms 41 projecting beyond the opposite ends of the box and adapted for engagement at times with the clips 42 of doors 43 hinged at 44 to the ends of the rear wall of the box and adapted to close the open ends of the box at times, each door having a spring catch 45 for engagement with a clip 46 to lock the door in its closed position or any other automatic latch mechanism in lieu of the parts 45 and 46 may be employed.

47 are retractile springs secured at their inner ends to the box and at their outer ends to the doors and tending to close and hold the latter closed in order that when one of the arms 41 is withdrawn from engagement with the clip 42 of the corresponding door, the latter will be instantly and automatically shut.

It would be a difficult performance for one man to undertake to secure either of the doors 43 in its opened position if it was necessary to force its associated plate 39 inward to withdraw the connected arm 41 from the path of the clip 42, and to avoid this difficulty I construct the clip 42 as a hasp, that is to say, it is hinged at 48 to the door so that it can be swung down out of the way of the angle bar when the door is opened, and then swung back to its original position embracing the staple 49 projecting

from the door, a pin 50 attached to the door by a chain 51 being fitted through the staple to secure the hasp in position so that it shall prevent the shutting of the door until bar 41 is forced out of engagement with the clip or hasp.

In practice the mail bag to be delivered at a certain station is first attached to bar 8 and then bar 10 is sprung upward and attached as explained to the opposite end of the mail bag, the retractile action of spring 13 stretching the mail bag vertically between said bars. The frame is then swung outward in the direction indicated by the arrow, Fig. 1, to dispose the bag in the position shown in Figs. 1 and 2 with relation to the box for receiving the bag, it being noted that the door at the end of the box approached by the bag is open, and that it is immaterial whether the other door is open or not. Now as the train passes, bars 8 and 10 pass above and below the box respectively and the bag passes into the open end of the box, the engagement of the top and bottom walls of the box with connections 26 withdrawing rings 25 from engagement with the catches of said bars 8 and 10, the momentum of the bag being sufficient to carry it forcibly within the box until it strikes and represses the opposing slide plate 39. As soon as said slide plate is thus repressed it slides the angle bar in the same direction, as indicated by the contiguous arrow, Fig. 1, and thus effects the withdrawal of said bar from the clip or hasp 42. This tripping of the locking arm 41 is followed by the contraction of the spring 47 connected to said door so that the latter shall be shut before there is any chance of the bag recoiling after striking the slide plate 39, it being noticed in this connection by reference to Fig. 6, that arm 41 is withdrawn from the clip or hasp 42 before plate 39 has made its full movement, consequently the door is closing, as stated, before the bag movement ends in the box, the closing of the door retaining the bag within the box as will be readily understood. To lessen the force of the impact in a still greater measure the box is permitted when the bag strikes and represses plate 39 to swing around with the shaft 30 as the axis of movement, it being understood of course, that there will be sufficient friction or equivalent resistance to the rotation of said shaft to prevent it moving appreciably, at least until the resistance of springs 38 have been overcome and the door has been released to permit it to close, it being further noted that the parts are so proportioned and arranged that the box is free to swing around without coming in contact with the side of the mail car or any other car of the train. After the train has passed, the agent or other person in charge opens the door of the compartment of the box containing the bag and

removes the latter, it being understood that the box is substantially water-tight so as to protect the bag in inclement weather.

When the train is moving in the direction indicated by the position of the parts in Fig. 1, it will be apparent that as the bag is swung out of the doorway, the wind pressure will tend to continue such swinging movement and force it instantly to the position shown in Fig. 1, the wind thus assisting the operator in disposing the bag in operative position. For this reason it is desirable to employ the weight 21 as it tends to counteract and steady the pivotal movement of the bag-carrying frame, it being further noticed that the spring 22 as hereinafter explained cushions the impact of bar 8 on bar 3. When the train is moving in the opposite direction, that is when the wind pressure tends to press the bag back into the car, it is desirable to disconnect the weight so that the operator shall have only the resistance of the wind to overcome in securing the bag in operative position. If the car should be always disposed so that the wind pressure would reverse the setting of the bag in operative position, the employment of the weight would be unnecessary.

From the above description it will be apparent that I have produced apparatus for transferring mail bags from moving trains to stations, and I wish it to be understood that I do not desire to be restricted to the exact details of construction shown and described as obvious modifications will suggest themselves to one skilled in the art.

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

1. In an apparatus of the character described, a car having a door-opening and provided with a hinged frame adapted to swing through said door-opening, a rigid bar, a curved track connecting the bar with the car-wall pierced by the door-opening, a roller carried by the swing frame and engaging said track, and a catch-mechanism securing the hinged frame with its outer end protruding through the door-opening.

2. In an apparatus of the character described, a car having a door-opening and provided with a hinged frame adapted to swing through said door-opening, a rigid bar, a curved track connecting the bar with the car-wall pierced by the door-opening, a roller carried by the swing frame and engaging said track, a catch-mechanism securing the hinged frame with its outer end protruding through the door-opening, a weight guided to move vertically, a swiveled sheave above the weight, and a cable connecting the swing-frame and weight and engaging said sheave.

3. In an apparatus of the character described, a car having a door-opening and

provided with a hinged frame adapted to swing through said door-opening, a rigid bar, a curved track connecting the bar with the car-wall pierced by the door-opening, a roller carried by the swing frame and engaging said track, a catch-mechanism securing the hinged frame with its outer end protruding through the door-opening, a vertical casing secured within the car, a slidable weight therein, a swiveled sheave above the casing, a cable connecting the frame and weight and engaging said sheave, and a resilient cushion interposed between the weight and the top of the casing.

4. In an apparatus of the character described, a box arranged substantially horizontally, a movable plate therein, yielding means for pressing the plate toward the open end of the box, a door to close the said open end, and means controlled by the movable plate, for locking the door open and for freeing it.

5. In an apparatus of the character described, a box arranged substantially horizontally, a movable plate therein, yielding means for pressing the plate toward the open end of the box, a door to close the said open end, means controlled by the movable plate for locking the door open and for freeing it, and yielding means to close the door as it is freed.

6. In an apparatus of the character described, a box open at one end and provided with a stationary partition, a movable plate in the box between its open end and partition, yielding means for holding the plate pressed toward the open end and away from the partition of the box, a door to close the open end of the box, means movable with the movable plate for holding the door open, and means for closing the door when the holding means is inoperative.

7. In an apparatus of the character described, a box open at one end and provided with a stationary partition, a movable plate in the box between its open end and partition, yielding means for holding the plate pressed toward the open end and away from the partition of the box, a door to close the open end of the box, means movable with the movable plate for holding the door open, and a spring for closing the door when the latter is released by the holding means.

8. In an apparatus of the character described, a box supported to swing horizontally and open at one end, a movable plate in the box pressed yieldingly toward said end, a bar movable with said plate, a door hinged to the box and provided with a clip engaged by said bar to hold the door open, and means for closing the door when the plate is moved away from the open end of the box.

9. In an apparatus of the character described, a vertical shaft suitably journaled,

an arm projecting outwardly therefrom, a  
box carried by said arm and open at each  
end and provided centrally with a station-  
ary partition, a pair of movable plates with-  
5 in the box at opposite sides of the partition,  
springs between the partition and said  
plates, slide bars secured to said partition  
and projecting beyond the ends of the box  
at its rear side, doors hinged to the rear wall  
10 of the box and provided with clips adapted  
to be engaged by said bars for the purpose  
of holding the doors open, springs tending  
to close the doors, bars projecting from the

side of a mail car in planes above and below  
the said box, and means secured to the outer 15  
ends of said bars for detachably securing  
thereto a mail bag in such position that it  
will enter said box and thereby be with-  
drawn from engagement with said bars.

In testimony whereof I affix my signature, 20  
in the presence of two witnesses.

NEWEL F. VALENTINE.

Witnesses:

H. C. RODGERS,  
G. Y. THORPE.