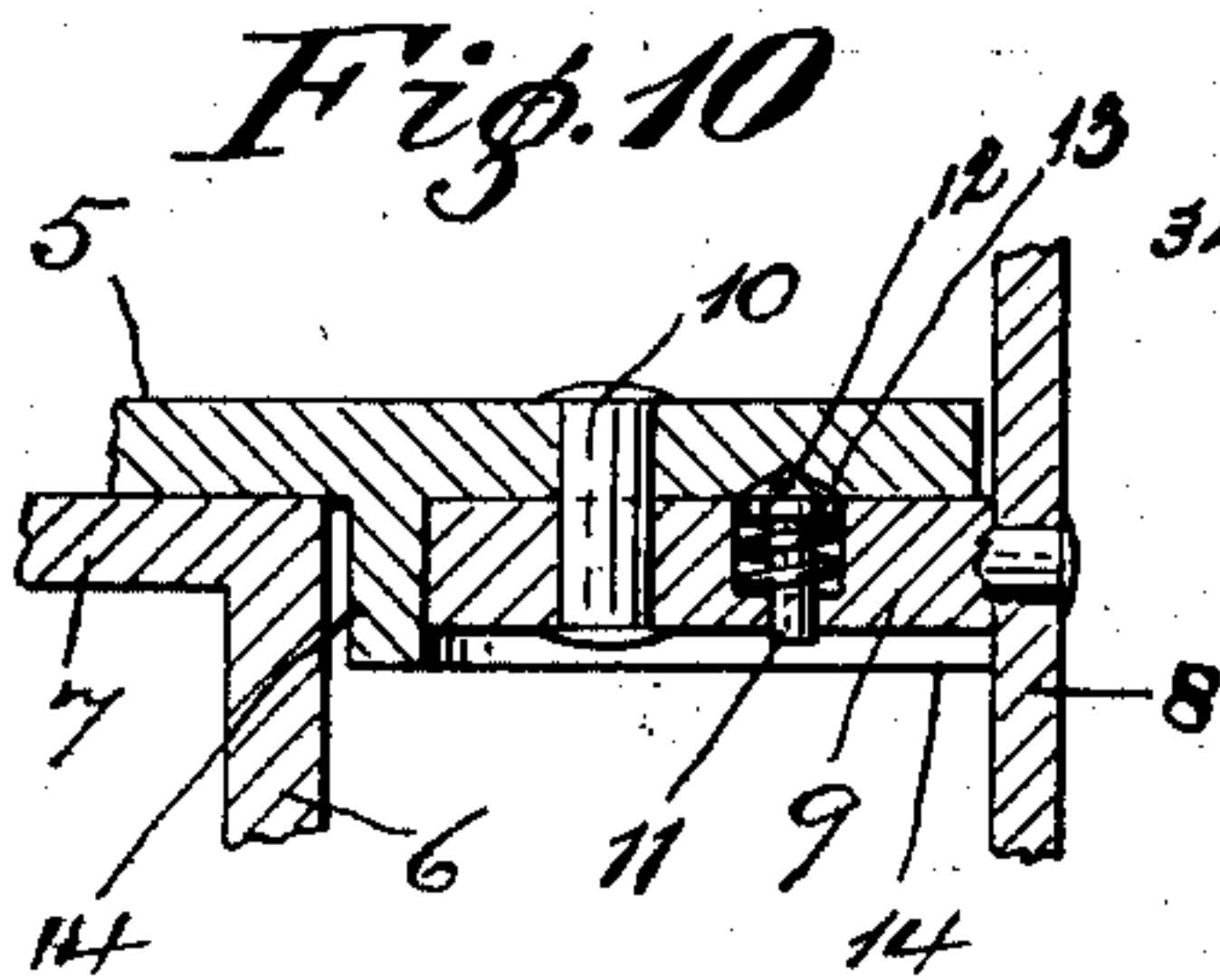
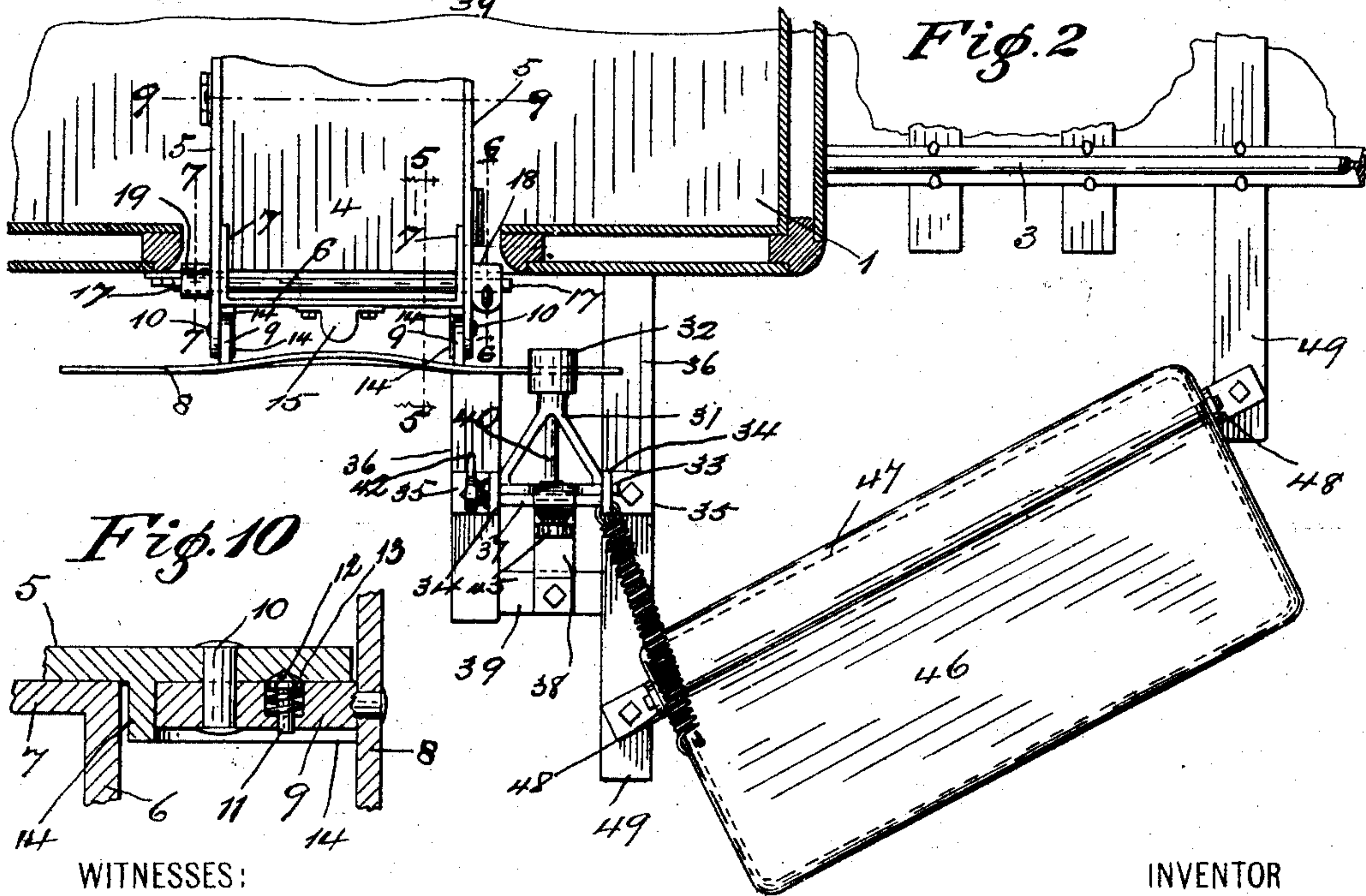
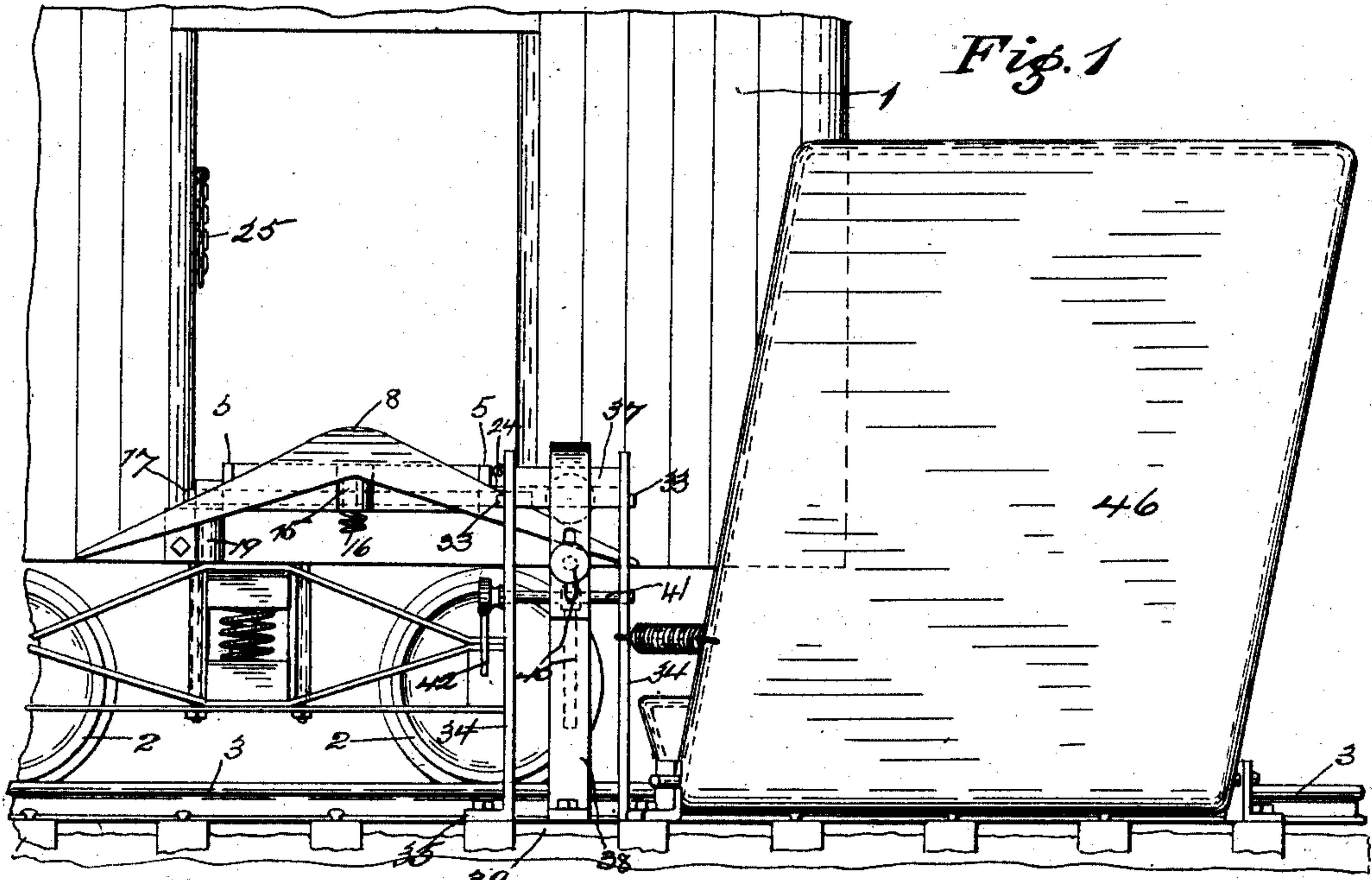


C. J. RINDERKNECHT.
MAIL SACK DELIVERING APPARATUS.
APPLICATION FILED OCT. 12, 1908.

907,286.

Patented Dec. 22, 1908.

2 SHEETS—SHEET 1.



WITNESSES:

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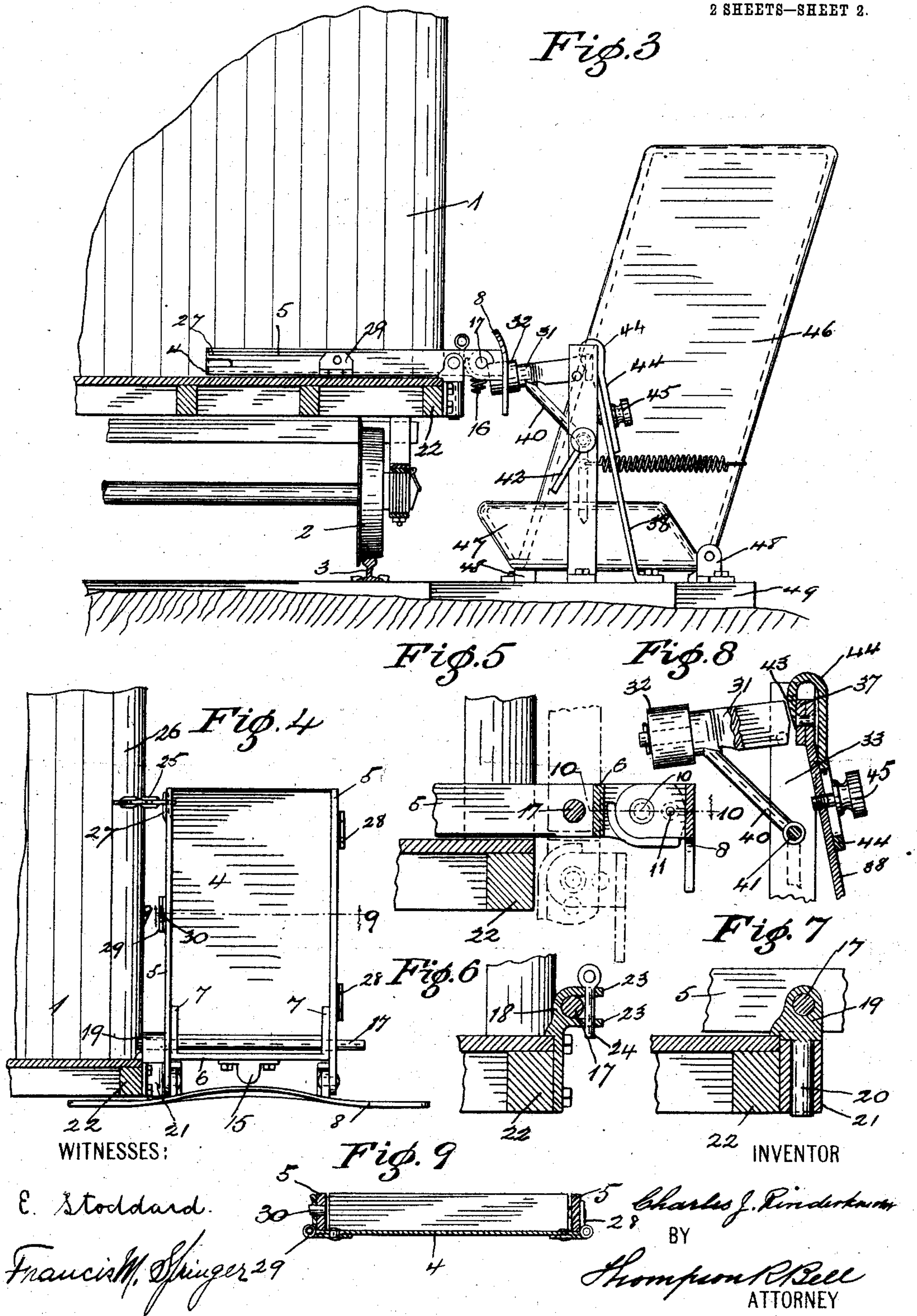
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2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

CHARLES J. RINDERKNECHT, OF INDIANAPOLIS, INDIANA.

MAIL-SACK-DELIVERING APPARATUS.

No. 907,286.

Specification of Letters Patent.

Patented Dec. 22, 1908.

Application filed October 12, 1908. Serial No. 457,297.

To all whom it may concern:

Be it known that I, CHARLES J. RINDERKNECHT, citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Mail-Sack-Delivering Apparatus, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to improvements in a mail delivering apparatus as hereinafter described in the specification and particularly pointed out in the claims.

15 The object of this invention is to provide a means whereby sacks containing mail may be delivered from the mail-car of a railroad train while in motion. I attain this object by means of the apparatus illustrated in the accompanying drawings in which like numerals of reference designate like parts throughout the several views.

20 Figure 1 is a broken view of the end portion of a car and showing the mail sack delivering platform applied thereto, the tripping means for operating the same, and the yielding resilient target by which the mail sack is received; Fig. 2 is a top view of Fig. 1 showing the horizontal section of a portion of the mail-car; Fig. 3 is a transverse broken sectional view of the track and the car mounted thereupon, and showing the mail delivering platform applied to said car and the stationary means for operating said platform; Fig. 4 is a detail broken sectional view of a portion of a car showing the mail delivering platform thereof swung sidewise on its hinge so as to present a clear unobstructed space or passage way; Fig. 5 is an enlarged detail broken-off view of the car showing the outer broken-off end portion of the mail delivering platform and the cam hingedly connected to the outer projecting ends of the side bars of the latter, and taken along the line 5—5 in Fig. 2; Fig. 6 is a detail sectional view of a broken-off portion of the side of the car showing the gap bearing in which one end of the hinge shaft is journaled, and taken along the line 6—6 in Fig. 2; Fig. 7 is a similar detail sectional view showing the pivoted hinge bearing in which the other end of the hinge shaft is journaled, and taken along the line 7—7 in Fig. 2; Fig. 8 is an enlarged broken detail view of the tripping-arm; Fig. 9 is a detail transverse sectional view of the sack delivering platform taken along the line 9—9 in Figs. 2 and 4; and, Fig. 10 is a detail

sectional view of one of the hinges of the sack delivering platform, and taken along the line 10—10 in Fig. 5.

The car 1 to which this apparatus is applied may be of the usual or any suitable type of mail car, and said car is mounted on the usual truck wheels 2, which are adapted to run on the track 3. The sack-delivering platform 4 is provided with the side-bars 5 which extend along the longitudinal edges of said platform and project beyond the cross-bar 6. The cross-bar 6 is of a length sufficient to fit in between the side-bars 5 and the said cross-bar 6 is provided with the feet portions 7 which are riveted or otherwise secured to said side-bars.

A cam 8 is mounted on the outer ends of the platform 4 and said cam is provided with the lugs 9 which are hingedly connected to the projecting portions of the side-bars 5 by the hinge pins 10. A retaining spring-pin 11, see Fig. 10, is provided with a conical ended head-portion 12 and said conical head-portion is adapted to engage a conical bore 13 formed in the side of one of the side-bars 5, and said spring-pin is provided for the purpose of yieldingly maintaining the lug 9 in horizontal position and to prevent them and the cam 8 connected thereto being moved by the vibration of the moving car. On the inner sides of each of the projecting portions of the side-bars 5 are formed the reinforcing flanges 14 which form bearings for said lugs and said flanges are provided for the purpose of forming auxiliary supports for the lugs 9 of the cam, so that the force applied to said cam 8 will not be taken up wholly by the hinge pins 10 but will also be transmitted to said flanges. On the said cross-bar 6 is a spring pocket 15 the bottom of which is open and from which a coil spring 16 projects, and the said spring 16 is provided for the purpose of forming a yielding cushion for absorbing the force of the blow of the delivering platform 4 when the latter is being tilted upwardly its full extent to contact said spring with the side sill of the car.

A hinge shaft 17 is situated at the outer projecting portions of the side-bars 5 of the platform 4 to extend through said end portions of said side-bars 5 to project at its ends. One of the projecting ends of said shaft is hinged in the gap bearing 18 and the other projecting end of said shaft in the hinge-bearing 19. The hinge-bearing 19 is provided with the pivotal stem 20 which is

adapted to turn in the bearing 21 secured to the side sill 22 of the car. The hinge shaft bearing 18 is an open sided or gap bearing having the lips 23 which are drilled to receive the removable securing pin 24 by which the end portion of the hinge shaft 19 is held in position in said bearing. This form of construction is provided so that the pin 24 may be removed to swing this end of the hinge shaft 19 out of its gap bearings and the delivering platform 4 carried by it may be swung around into the position shown in Fig. 4, so as to free the door-way of the car of the mail sack delivering platform when loading the car, and the top end portion of said platform is held in its vertical position by the chain 25, secured to the door-post 26 of the car. One of the links of said chain is passed over the end of the catch 27 formed on the top end portion of one of the side-bars 5, and this securing chain therefore operates as a hinge for the top portion of said platform as well as a fastening means therefor. The floor portion of the platform 4 is hingedly connected at one of its longitudinal sides to one of the side-bars 5 by the hinges 28 and at its other side by a clasp 29 which is adapted to engage the catch-pin 30 which is secured to the other side-bar 5 to slightly project from the other side of said bar to receive said clasp. By means of this construction of the platform the floor of the latter may be swung inwardly when the said platform is secured in a vertical position in the door-way of the car. This construction of the platform is provided for the purpose of swinging the said platform floor inwardly into the car, when it is not convenient to swing the entire platform and the parts connected thereto outwardly, as in the case of an obstruction situated exteriorly of the car.

The next feature of this invention is the tripping arrangement whereby the mail platform is tilted to disengage the mail placed therein. The tripping-arm 31 is provided with the cylindrical end portion or roller 32 which latter portion contacts with the cam 8 when said arm is moved into the position shown in Figs. 1, 2 and 3. The arm 31 is bifurcated and on the ends of the bifurcations are the hinge pins 33 which fit in bearings formed in the standards 34. The standards 34 are provided with the feet 35 which are secured to the prolonged ends of the cross ties 36 of the permanent way, by suitable securing bolts. A distance or cross-bar 37 extends horizontally to fit between the top end portions of the standards 34 and said cross-bar is secured to the top end portions of said standards to maintain them at the proper distance apart. A brace-bar 38 extends downwardly and forwardly from said cross bar 37 to the tie-bar 39 to which it is securely bolted and said brace-bar is provided to rigidly maintain the top ends of said

standards firmly in their vertical positions and to prevent an undue vibration of said standards. The tripping-arm 31 is supported in position to engage the cam 8 by the propping-arm 40. The propping-arm 40 is formed integral with the shaft 41, which latter has its ends journaled in bearings formed in the standards 34 in which bearings said shaft is adapted to turn and on one end of said shaft 41 is suitably mounted and secured thereto a lever 42 whereby said shaft may be revolved to swing the propping-arm 40 upwardly in position to support the tripping-arm 31.

In such cases as when the railroad train having a mail car equipped with this apparatus is moving or traveling with a velocity of sixty miles per hour the momentum of the train would be much greater than when moving at a velocity of thirty miles per hour; the position therefore of the tripping-roller 32 must be capable of being varied, so that when the train is moving at a high velocity the tripping-roller 32 may be varied to contact only a portion of the upper portion of the cam 8 to tilt the platform 4 with the required suddenness to discharge the mail from said platform. When the train is moving at a slower speed, say thirty miles per hour, then the position of the tripping-roller 32 shall necessarily be required to be lowered in order to contact with a greater length of cam surface in order to impart the same degree of swing or discharging force to the sack delivering platform 4. To accomplish these requirements I provide the following described means whereby the position of the tripping-arm may be readily adjusted.

A wedge 43, see Fig. 8, is adapted to be moved downwardly into a position between the cross-bar 37 and the ends of the bifurcations of the tripping-arm 31, which, when in this position, prevents said tripping-arm and the roller 32 carried by it from being moved further upwardly, as shown in the detail Fig. 8. When the wedge is raised upwardly from the position between the ends of the bifurcations of said arm and the cross-bar 37, then said tripping-arm 31 and its roller 32 may be moved upwardly till said roller occupies a higher position in which position the ends of the bifurcations of said tripping-arm contact the cross-bar 37. On the top or thicker portion of the wedge 43 is formed the arms 44 which latter is bent to extend over the cross-bar 37 and lap over the top flat portion of the brace-bar 38. The arm 44 is slotted at its lower portion to receive the thumb screw 45 by which latter said arm is adjustably secured to the brace-bar 38, so that the wedge 43 may be secured in adjusted position. The receiving target 46 is provided with a lower angle portion 47 so that when a mail sack delivered from the moving car strikes said target and slides downwardly on

its surfaces the angle portion 47 will prevent the sack moving off said target. The target 46 is hinged at its bottom portion to the standards 48 which are secured to the prolonged ends 49 of the ties. A coil-spring 50 is secured at one of its ends to said target and at its other end to one of said standards 33 and said spring is provided for the purpose of yieldingly maintaining said target in its upright position.

The operation of this device is as follows: The operator at the receiving station raises the tripping-arm 31 with its roller 32 and moves the prop 40 in position under said arm 31 to support the latter in the position shown in Figs. 1, 2 and 3. The tripping apparatus is now set to operate the mail sack delivering apparatus of the mail car of a coming train. The operator in the mail car of the moving train places the mail sack that he desires to be delivered at the approaching station, on the platform 4, the said platform being set or arranged to rest upon the floor of the car 1 as shown in Fig. 3, the cam 8 of said platform being placed in the position shown in Fig. 3. The mail delivering apparatus is now set to operate to deliver the mail at the station first reached. The cam 8 contacts on its upper face the roller 32 and tilts the platform 4 to throw the mail sack out of the car against the surface of the yielding target 46 upon which said sack is delivered. The roller immediately it contacts with the cam 8 and the tripping-arm 31, moves slightly upwardly, which releases the prop 40 from the arm 31 and permits said prop to drop into the position shown in dotted lines in Fig. 3, and the roller 32 and the tripping-arm 31, when the car passes said station and the cam 40 passes from under the roller 32 being released, drop downwardly to depend and therefore said tripping mechanism is moved out of the way of the next passing train.

I claim:

1. In a mail delivering apparatus, the combination with a car having a side door opening, a mail car delivering platform hingedly connected to said car to swing vertically outwardly, said platform so situated that one end thereof will project into the interior of the car and the opposite end will project through said door opening and beyond the side of the car, a cam connected to the outer projecting end of said platform and situated to extend outside and longitudinally of the car, of a swinging arm, means suitable for supporting said swinging arm situated adjacent the car track, a roller on the free end of said swinging arm adapted to engage said cam to tip said platform, a yieldingly supported target for receiving the mail and means for yieldingly supporting said target in a vertical position.

2. In a mail delivering apparatus, the combination with a car having a side door-open-

ing, a mail-sack delivering platform, side-bars between which said platform is situated and to which said platform is hingedly connected, said side-bars hingedly connected to said car to swing vertically outwardly, a cam connected to said side-bars to extend outside of said car and parallel to the side thereof, of a tripping means, standards for supporting said tripping means situated adjacent the car track, a mail-sack receiving target situated adjacent and at an angle to said track, and means for yieldingly supporting said target in a vertical position.

3. In a mail delivering apparatus, the combination with a car having a side door opening, a mail-sack delivering platform hingedly connected to said car to swing vertically outwardly, a cam hingedly connected to said platform to extend outside of and parallel to said car, of a tripping arm, a roller situated in position on one end of said tripping arm to contact with said cam, suitable standards for supporting said tripping arm situated contiguous to the car track, a mail sack receiving target pivotally supported at its bottom end portion, and a spring for yieldingly maintaining said target in vertical position.

4. In a mail delivering apparatus, the combination with a car having a side door-opening, a mail sack delivering platform, a hinge shaft carried by said platform, a fixed gap bearing and a closed bearing wherein the ends of said hinge shaft are supported, a depending stem, a stem bearing, a cam hingedly connected to said platform to extend outside and parallel to said car, of a tripping arm, a roller situated on one end of said tripping arm in position to contact with said cam, suitable standards for supporting said tripping arm situated contiguous to the car track, a mail sack target pivotally supported at its bottom end portion, and a spring for yieldingly maintaining said target in vertical position.

5. In a mail delivering apparatus, the combination with a car having a side door-opening, a mail sack delivering platform in said door-opening and extending into said car, a hinge shaft situated at the outer end of said platform, shaft bearings situated on the outer side of said car, a cam connected to the outer end of said platform to extend outside of and parallel to the side of said car, of a tripping arm, a roller situated at one end of said arm in position to engage said cam, supporting standards to which said tripping arm is pivoted to swing downwardly, a propping arm and means for raising said propping arm to support said tripping arm in position.

6. In a mail delivering apparatus, the combination with a car having a side door-opening, a mail sack delivering platform hingedly connected to said car-door-opening to swing vertically outwardly, a cam connected to said platform to extend outside of and par-

allel to said car, of a tripping arm, a roller
situated in position on one end of said trip-
ping arm to contact with said cam, suitable
standards to which said tripping arm is piv-
5 oted to swing vertically, a cross-bar situated
between the top ends of said standards, and
a wedge adapted to be moved between the
end of said tripping arm and said cross-bar, a
mail sack receiving target pivotally sup-

ported at its bottom end, and a spring for 10
yieldingly maintaining said target in vertical
position.

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

CHARLES J. RINDERKNECHT.

Witnesses:

THOMPSON R. BELL,
FRANCIS M. SPRINGER.