

A. HUPP.

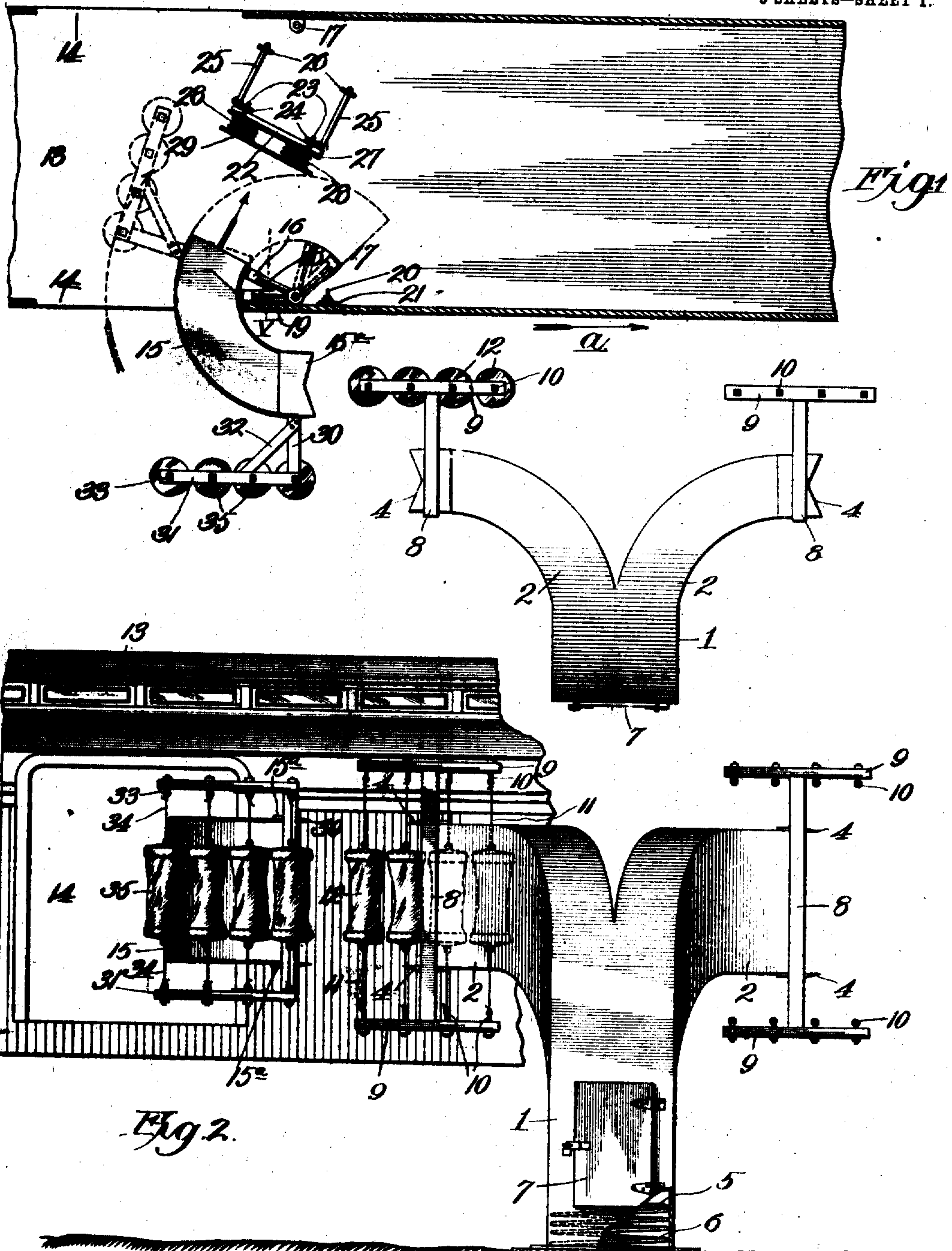
MAIL POUCH DELIVERING AND RECEIVING APPARATUS.

APPLICATION FILED SEPT. 15, 1908.

Patented Nov. 10, 1908.

3 SHEETS—SHEET 1.

903,473.



Witnesses
Frank R. Glori
H. C. Rodgers.

Inventor
Albert Hupp.
By George E. Hooper Atty.

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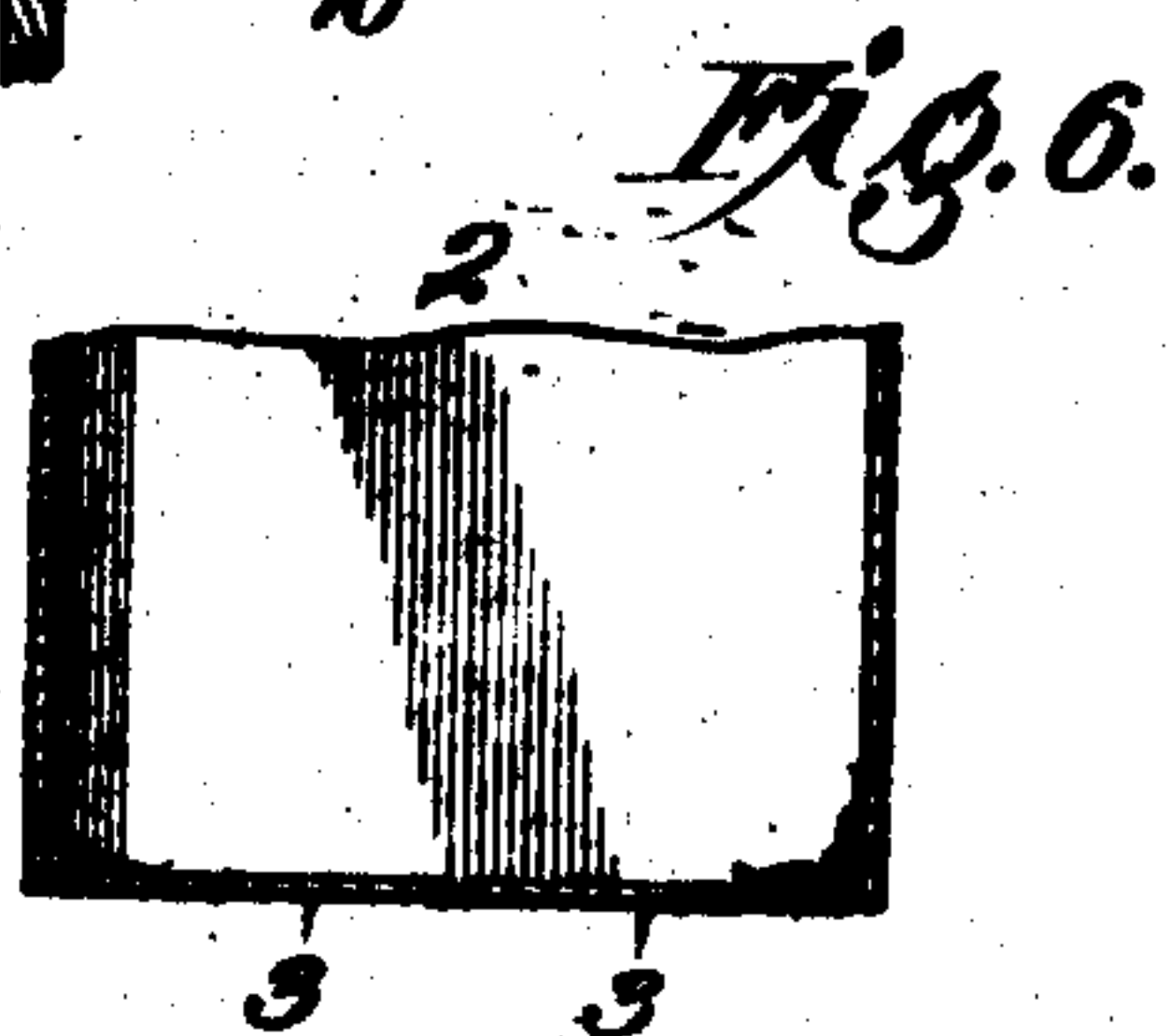
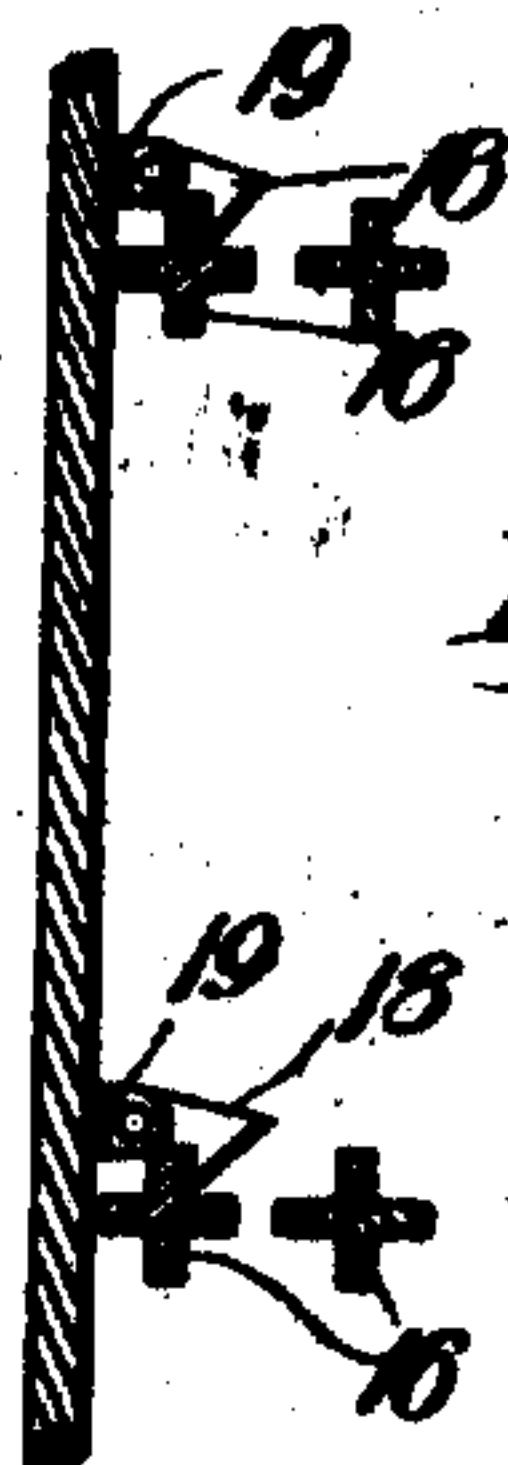
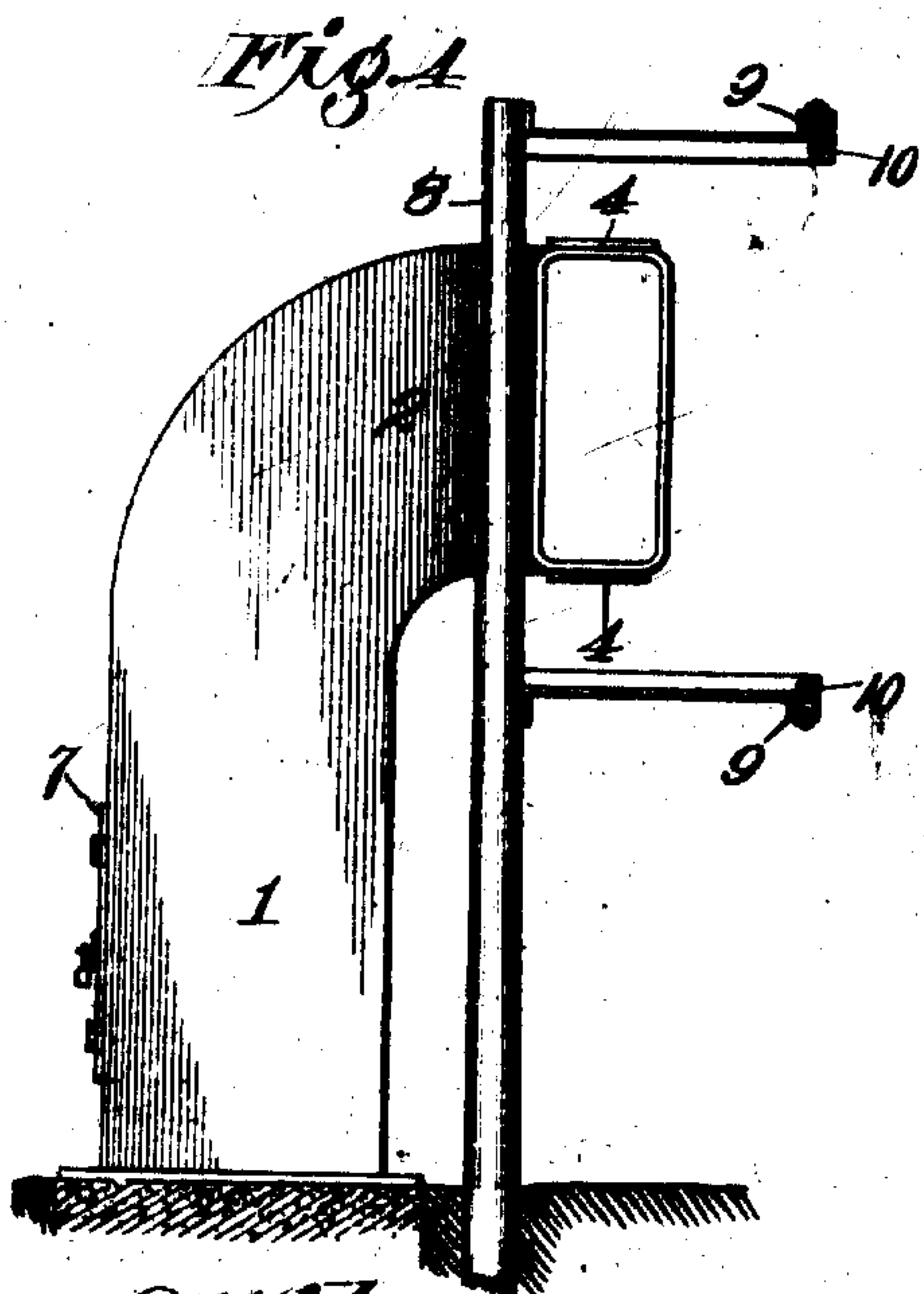
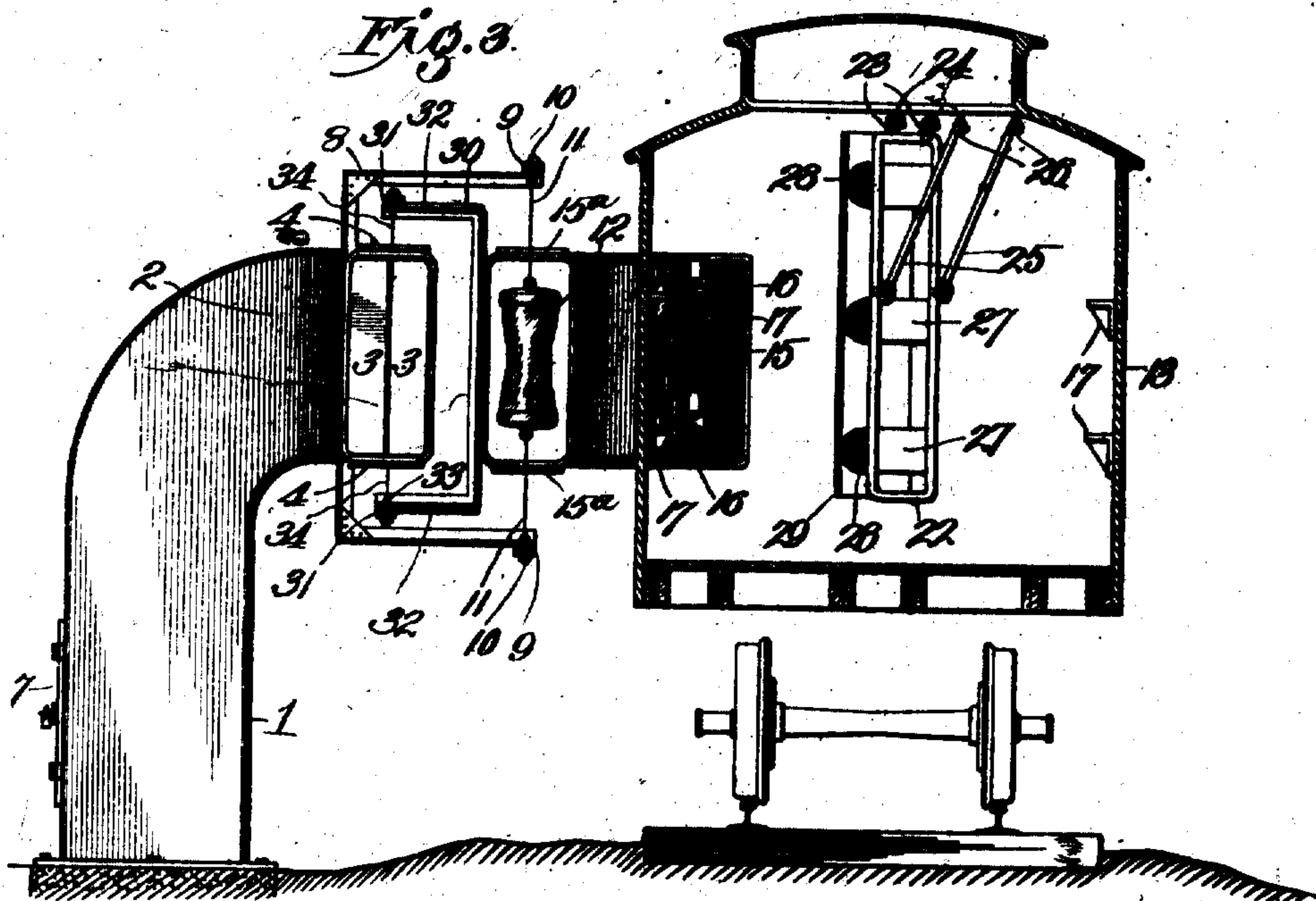
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3 SHEETS—SHEET 2.



Witnesses
Frank R. Elton
H. C. Rodgers

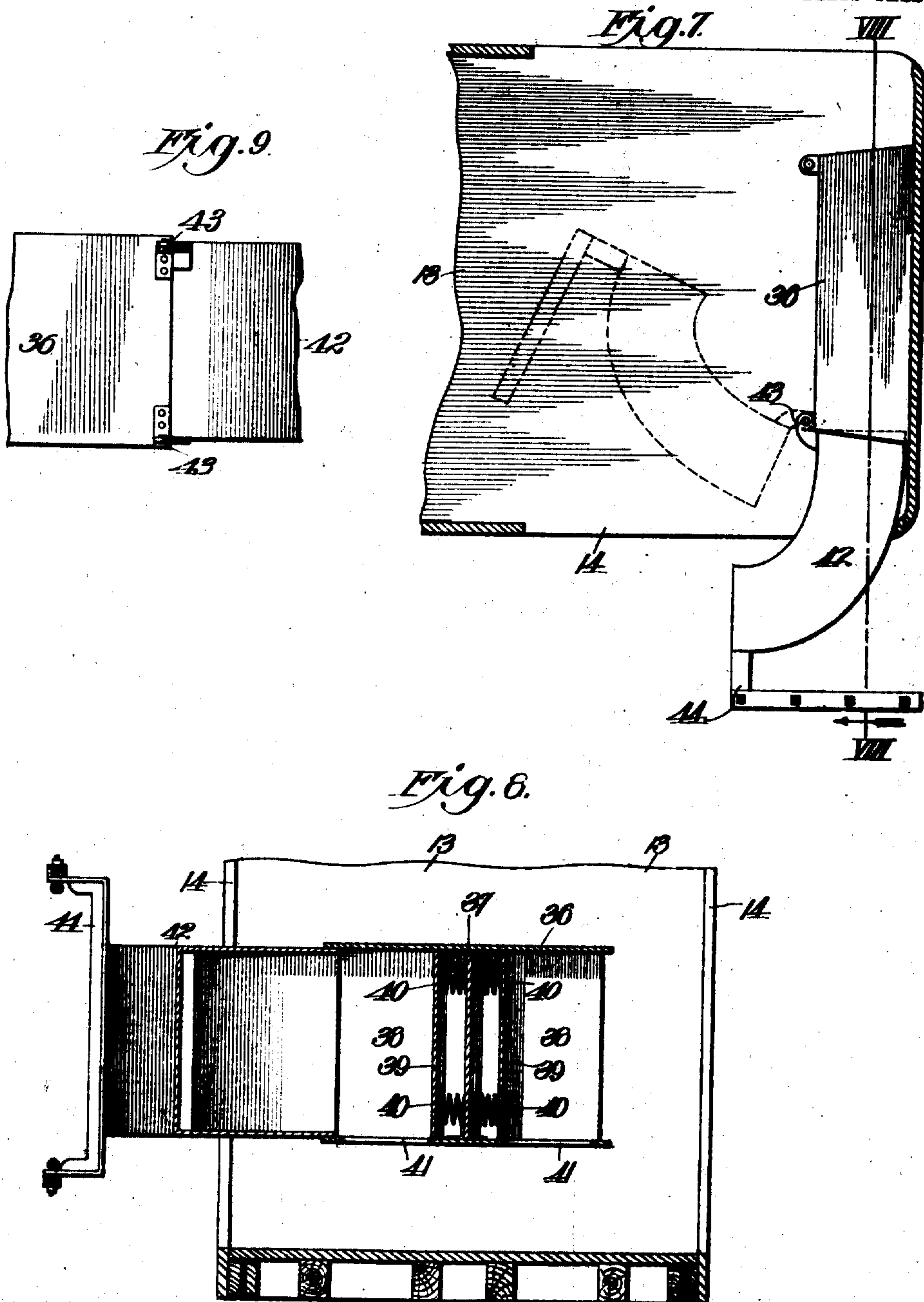
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MAIL POUCH DELIVERING AND RECEIVING APPARATUS.
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3 SHEETS—SHEET 2.



Witnesses
Frank R. Gore
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UNITED STATES PATENT OFFICE.

ALBERT HUPP, OF KANSAS CITY, MISSOURI.

MAIL-POUCH DELIVERING AND RECEIVING APPARATUS.

No. 903,473.

Specification of Letters Patent.

Patented Nov. 10, 1908.

Application filed September 15, 1908. Serial No. 453,146.

To all whom it may concern:

Be it known that I, ALBERT HUPP, 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 Mail-Pouch Delivering and Receiving Apparatus, of which the following is a specification.

This invention relates to mail pouch catching and delivering apparatus of that character whereby mail pouches are automatically transferred from a moving train to a station and vice versa, and my object is to produce apparatus of this character which will operate efficiently and reliably without injury to the pouches or their contents and irrespective of the speed of the train delivering or receiving or both delivering and receiving the pouches.

A further object is to produce apparatus of the character outlined, which is of simple, strong, durable and inexpensive construction and can be economically adapted for use in connection with mail cars having door-openings at any location in the sides of the car.

With these general objects in view and others as hereinafter appear, 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—

Figure 1, is a top plan view of apparatus embodying my invention with a mail car of standard type in horizontal section. Fig. 2, is a side view of the same. Fig. 3, is an end view with the car in cross section. Fig. 4, is an end view showing a slightly modified form of the station mail crane. Fig. 5, is an enlarged vertical section on the dotted line V of Fig. 1, but showing more clearly the construction whereby the mail receiving tube is locked in opened or closed position. Fig. 6, is a horizontal section of the receiving end of one of the tubes to disclose the type of spring-closed doors with which the receiving ends of all of the tubes may be equipped. Fig. 7, is a horizontal section of a mail car equipped with door openings

at its ends and with mail-pouch-receiving tubes of slightly modified construction. Fig. 8, is a vertical section on the line VIII—VIII of Fig. 7. Fig. 9, is an inner face view of the tube construction shown in Figs. 7 and 8.

In the said drawings, 1 indicates an upright tube of suitable proportions to receive and hold a number of mail pouches at a time, there being one of these tubes at each station where mail is delivered from a moving train. The tube 1 is formed at its upper end with a bent extension or arm 2, said bend being inward and upward toward the path of the mail cars and then laterally so that its open end shall be disposed in position to receive mail pouches carried by the train for delivery to said tube, as hereinafter more particularly referred to. By preference tube 1 will be equipped with a pair of arms 2, having their laterally projecting bends disposed in opposite directions so that the tube may receive pouches from a train traveling in either direction. If desired the receiving ends of the tube arms may be equipped with spring-closed doors 3 desirable chiefly as a means for excluding wind, rain and snow from the tubes.

4 indicates cutting blades secured to the upper and lower sides of the tube arms 2, each blade having two cutting edges which converge inwardly as shown clearly in Fig. 1, so as to tend to deflect the mail pouches toward the vertical centers of the mouths of said arms, as hereinafter more particularly referred to, it being understood by reference to Fig. 2, that the cutting blades project beyond the mouths of said arms to insure the severance of the supports for the mail pouches in the plane of the top and bottom sides of said arms.

Owing to the peculiar configuration of arms 2, the mail pouches in passing there-through are offered considerable frictional resistance so as to gradually arrest their movement. They will enter the tube 1, however, at considerable speed and in order to avoid injuring them or their contents as they are arrested at the bottom of tube 1, the latter is equipped near its lower end with a buffer 5 mounted upon a spring 6, and to

give access to the pouches in said tube, the latter is equipped with a door 7 in its outer side, any suitable locking appliance being employed to prevent an unauthorized person obtaining access to the pouches.

8 indicates a U-shaped mail crane arranged horizontally with its bridge portion secured rigidly in any suitable manner to arm 2, or the bridge portion of said frame may extend downward as shown in Fig. 4, and be secured to the ground. In either event the crane bears a fixed relation to tube 1, and at the free ends of its horizontal arms, is equipped with bars 9 extending approximately parallel with the trackway. The bars 9 are equipped with vertically-alined bolts 10 to which are tied strings 11 attached to opposite ends of the mail pouches 12. Each arm 2, will by preference, be equipped with a crane of the character shown and described.

13 indicates a mail car, provided as shown in Figs. 1 and 2 with the usual door opening 14, about midway its length, and equipped with an arc-shaped tube 15 in the same horizontal plane as the mouth of the receiving end of arm 2. Secured to said tube at its inner end and concave side is a pair of V-shaped brackets 16 with their apices forming the center around which tube 15 turns and mounted pivotally at such points on brackets 17 secured to and within the car.

18 indicates a yieldingly depressed catch, preferably a gravity catch, pivotally secured to the bracket 19 fastened to the adjacent side wall of the car near the door opening of such side, said catch being adapted to automatically move upward out of the path of the outermost arm of the V-shaped bracket when the tube 15 is swung outward through the adjacent opening 14, and then drop down behind said arm to lock the tube in such operative position. A similar catch 20 carried by a similar bracket 21 fastened to the same side wall of the car is adapted to yield to the other arm of the bracket when the tube is swung wholly within the car as shown by dotted lines in Fig. 1, and then drop down behind said arm of the bracket to lock the tube in its inoperative position, it being obvious that when it is desired to adjust the tube inward or outward the operative catch 18 or 20 is pushed upward out of the path of the bracket.

The buffer arranged within the car to receive the impact of the mail pouches caught by tube 15 and directed by the latter into the car, is constructed as follows: 22 is a vertically elongated rectangular frame provided with hooks 23 at its upper end, detachably engaging hangers 24 secured to the car, and to brace said frame, inclined braces 25 are secured to it at their lower ends and at their upper ends detachably engage hangers 26 carried by the car. At suitable points

the frame is provided with cross bars 27 equipped with buffer springs 28, carrying a buffer plate 29. By reference to Fig. 1, it will be seen that when the mail pouches shoot through tube 15, they strike the buffer plate 29 which offers a yielding resistance so that neither the pouches nor their contents shall be injured, the pouches of course dropping upon the floor after impact with the buffer plate.

When the car is traveling in the direction indicated by the arrow *a*, Fig. 1, the tube 15 and buffer will be disposed relatively as shown in said figure. In the event that the station tube is at the opposite side of the trackway the positions of the tube 15 and buffer are reversed. In practice the car will be equipped with pivoted brackets near each door as shown and also with duplicate sets of hangers 23 and 24 and latches 18 and 20 so that the tube and buffer can be quickly and easily disposed for operation with a crane at either side of the trackway. The tube 15 is so arranged that it will pass between the arms of crane 8 in the vertical plane of the mail pouches carried by said crane and at such end is equipped with cutting blades 15^a corresponding in form, location and function to cutting blades 4 so that in passing, said cutting blades 15^a shall cut the strings 11 above and below the pouches 12, the latter of course shooting successively through the tube and against the buffer plate 29, the arc-shape of the tube resulting in reducing the speed of the pouches to an appreciable extent.

30 indicates a horizontally arranged U-shaped crane secured to and projecting outward from the outer end of tube 15 and of such proportions that the outer ends of its arms shall pass between the receiving end of arms 2, and the upper and lower arms of crane 8, as will be readily seen by reference to Figs. 1, 2 and 3. 31 indicates bars projecting rearward from the outer ends of the arms of crane 30 and braced from said arms by braces 32 and provided with eyebolts 33 to which cords 34 are attached, vertically alined cords supporting between them mail pouches 35, in such position that said pouches shall enter the mouth of the opposing tube arm 2 as the car passes the latter, the cords 34 being severed by engagement with the cutting blades 4 of said tube arm.

In practice the parts are preferably so arranged that the pouches 12 and pouches 35 shall simultaneously enter tubes 15 and arms 2 as by so doing the supporting cords of both cranes will be cut at the same time, and the exchange of pouches be simultaneously effected, it being obvious of course that the car may receive pouches from the station crane without delivering other

pouches to the said crane or that the said crane may receive pouches from the car without delivering other pouches to the car.

Referring now to the modified construction shown by Sheet 3, it will be noticed that the door openings of the mail car are at one end thereof. 36 indicates a tube arranged horizontally and transversely of and adapted to be secured in any suitable manner, not shown, to the end wall of the car. 37 is a stationary partition secured centrally in said tube so as to divide the same into two oppositely-opening chambers 38, and fitting slidingly in each chamber 38 is a buffer plate 39, held pressed away from partition 37 by interposed springs 40, and each of said chambers is provided with a discharge opening 41 in the lower side of the tube to permit mail pouches after striking the buffers, to fall down through the adjacent opening 41 upon the floor of the car. 42 indicates a curved tube hinged as at 43 to tube 36 at either end of the latter desired and of such proportion as to project slightly into said tube 36 when disposed in operative position as shown in full lines Fig. 7, in which position tube 42 is adapted to receive mail from a station crane, the said tube 42 being also equipped with a pouch-carrying crane 44 of precisely the same construction by preference as the crane described in connection with tube 15. When tube 42 is not in use it can be swung inwardly into the car until its normally outer end strikes tube 36, any suitable fastening devices not shown being employed to secure tube 42 in its operative or inoperative position.

When a pouch is caught by the tube 42 it passes through the latter and strikes against the opposing buffer 39 as explained and then drops down upon the floor of the car, the curvature of the tube tending to check the speed of the pouch so that the impact of the buffer shall be reduced as much as possible, the buffer yielding of course to guard against injury to the pouch or its contents.

This apparatus is capable of accommodating any number of mail pouches desired, as they are delivered and received individually or one at a time, without regard to number.

From the above description it will be apparent that the tubes are so formed that they receive only a small fraction of the impact with which the pouches eventually strike the buffers, it being noted in this connection that the buffer 5 is preferably perforated so as to facilitate the escape from the tube of water which might enter it and thus avoid any possibility of the mail pouches or their contents being injured by water. It will be further noted that by the use of the cutting blades the cords or their equivalents used for securing the pouches to the cranes are cut so as to permit the pouches to pass

into the tubes with but little jar on the latter. It will be further noted that the car tubes are so arranged that when disposed inside the car, the door, not shown, of the latter, can be readily shut, and that the crane is conveniently fastened to enable the mail clerk to string the pouches thereon. The tubes of course are so arranged and of such proportion that lateral oscillation of the car will be accommodated, that is to say, the parts will be so proportioned that the pouches will always enter their respective tubes irrespective of the swaying of the car. It will be apparent of course, that the car crane may be adapted for movement and adjustment independent of the tube instead of being carried directly by the latter.

From the above description it will be apparent that I have produced a mail pouch catching and delivering apparatus possessing the features of advantage enumerated as desirable and I wish it to be understood that I reserve the right to make all changes in the form, proportion, detail construction and organization of the parts falling within the spirit and scope of the appended claims. Having thus described the invention what I claim as new and desire to secure by Letters-Patent, is:

1. A mail pouch delivering and receiving apparatus, comprising a station tube and a mail-car tube, the latter facing in the direction of travel of the car and the former in the opposite direction, and a pair of horizontally-arranged U-shaped frames, one movable with the car and related to its tube and the other located at the station and related to its tube; one tube and the related frame being capable of passage between the arms of the other frame and the arms of the frame related to said last-named tube being capable of passage between the arms of said other frame and the tube related thereto.

2. A mail pouch delivering and receiving apparatus, comprising a station tube and a mail-car tube, the latter facing in the direction of travel of the car and the former in the opposite direction, a pair of horizontally-arranged U-shaped frames, one movable with the car and related to its tube and the other located at the station and related to its tube; one tube and the related frame being capable of passage between the arms of the other frame and the arms of the frame related to said last-named tube being capable of passage between the arms of said other frame and the tube related thereto, and flexible means supported from the upper and lower arms of each of said frames for carrying mail pouches in line with the tube related to the other frame.

3. A mail pouch delivering and receiving apparatus, comprising a station tube and a mail-car tube, the latter facing in the direc-

tion of travel of the car and the former in the opposite direction, a pair of horizontally-arranged U-shaped frames, one movable with the car and related to its tube and the other located at the station and related to its tube; one tube and the related frame being capable of passage between the arms of the other frame and the arms of the frame related to said last-named tube being capable of passage between the arms of said other frame and the tube related thereto, flexible means supported from the upper and lower arms of each of said frames for carrying mail pouches in line with the tube related to the other frame, and means at the upper and lower sides of the receiving end of each tube, for severing the flexible mail-pouch-carrying means in its path.

4. A mail pouch delivering and receiving apparatus, comprising a station tube and a mail-car tube, the latter facing in the direction of travel of the car and the former in the opposite direction, a pair of horizontally-arranged U-shaped frames, one movable with the car and related to its tube and the other located at the station and related to its tube; one tube and the related frame being capable of passage between the arms of the other frame and the arms of the frame related to said last-named tube being capable of passage between the arms of said other frame and the tube related thereto, longitudinally-extending bars secured to the free ends of each of said frames, and a series of cords attached to the upper and lower bars of each of said frames for carrying mail pouches in line with the tube related to the other frame.

5. A mail pouch delivering and receiving apparatus, comprising a station tube and a mail-car tube, the latter facing in the direction of travel of the car and the former in the opposite direction, a pair of horizontally-arranged U-shaped frames, one movable with the car and related to its tube and the other located at the station and related to its tube; one tube and the related frame being capable of passage between the arms of the other frame and the arms of the frame related to the said last-named tube being capable of passage between the arms of the said other frame and the tube related thereto, and yielding closed doors for the receiving ends of said tubes adapted to open inwardly under the impact of a mail pouch as it enters said tube.

6. A mail-pouch delivering and receiving apparatus, comprising a station tube and a mail-car tube, the latter facing in the direction of travel of the car and the former in the opposite direction, a pair of horizontally-arranged U-shaped frames, one movable with the car and related to its tube, and the other located at the station and related to

its tube, one tube and the related frame being capable of passage between the arms of the other frame and the arms of the frame related to the last-named tube being capable of passage between the arms of the other frame and the tube related thereto, and a buffer in the car to receive the impact of each mail pouch discharged into the car by the tube thereof.

7. A mail-pouch delivering and receiving apparatus, comprising a station tube and a mail-car tube, the latter facing in the direction of travel of the car and the former in the opposite direction, a pair of horizontally-arranged U-shaped frames, one movable with the car and related to its tube, and the other located at the station and related to its tube; one tube and the related frame being capable of passage between the arms of the other frame and the arms of the frame related to the last-named tube being capable of passage between the arms of the other frame and the tube related thereto, and a buffer in the station tube for receiving the impact of each mail pouch received by said tube.

8. A mail-pouch delivering and receiving apparatus, comprising a station tube and a mail-car tube, the latter facing in the direction of travel of the car and the former in the opposite direction; said mail-car tube being of segmental form and horizontally-arranged and pivotally carried by the car so as to be capable of swinging entirely within the same, and means for securing the tube projected from the car in operative position.

9. A mail-pouch delivering and receiving apparatus, comprising a station tube and a mail-car tube, the latter facing in the direction of travel of the car and the former in the opposite direction, said mail-car tube being of segmental form and horizontally-arranged and pivotally carried by the car so as to be capable of swinging entirely within the same, means for securing the tube projected from the car in operative position, and means for securing the said tube wholly within the car in inoperative position.

10. A mail-pouch delivering and receiving apparatus, comprising a station tube and a mail-car tube, the latter facing in the direction of travel of the car and the former in the opposite direction; said station-tube comprising a vertical portion terminating at its upper end in a double-elbow arm, the first bend of the elbow being upwardly and toward the path of the car tube and the second bend laterally and toward the path of the car tube.

11. A mail pouch delivering and receiving apparatus, comprising a station tube and a mail-car tube, the latter facing in the direction of travel of the car and the former in

the opposite direction; said station-tube comprising a vertical portion terminating at its upper end in a double-elbow arm, the first bend of the elbow being upwardly and
5 toward the path of the car-tube and the second bend laterally and toward the path of the car-tube, a buffer within and at the lower end of the station tube, and a door

controlling access to the interior of said tube above said buffer.

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

10

ALBERT HUPP.

Witnesses:

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G. Y. THORPE.