F. H. HOUGLAND.

MAIL BAG DELIVERING APPARATUS.

APPLICATION FILED SEPT. 28, 1908.

915,439.

Patented Mar. 16, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

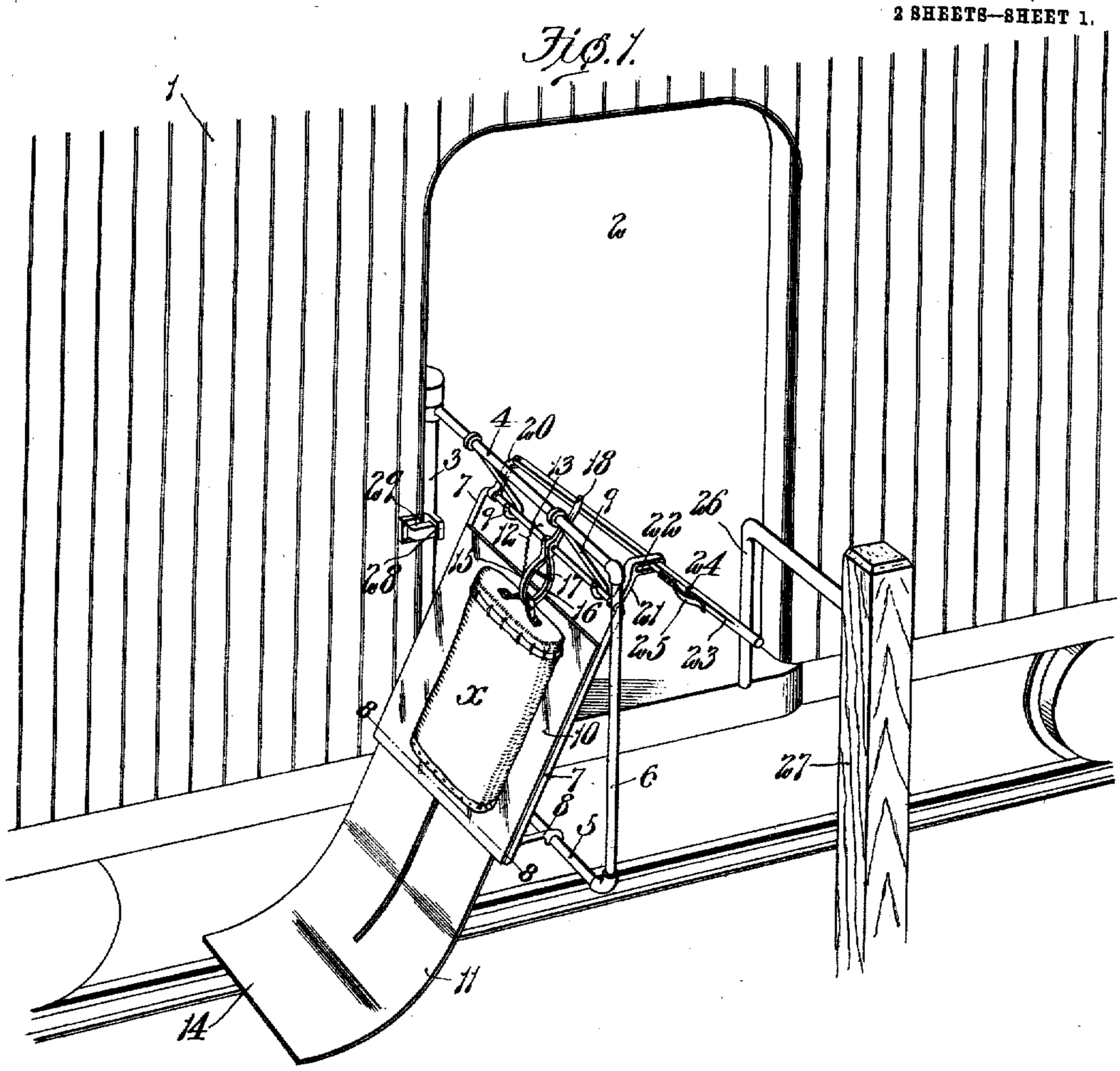


Fig. 3.

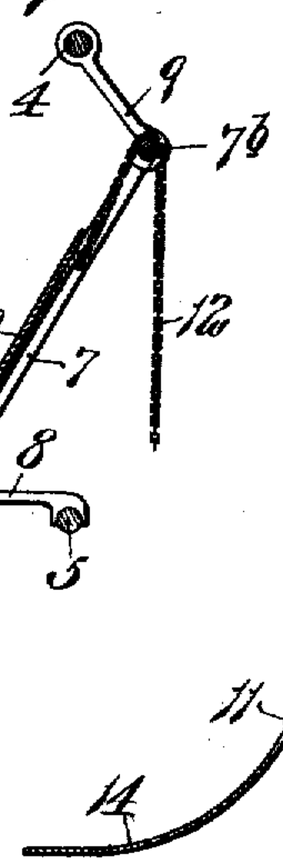


Fig. 4.

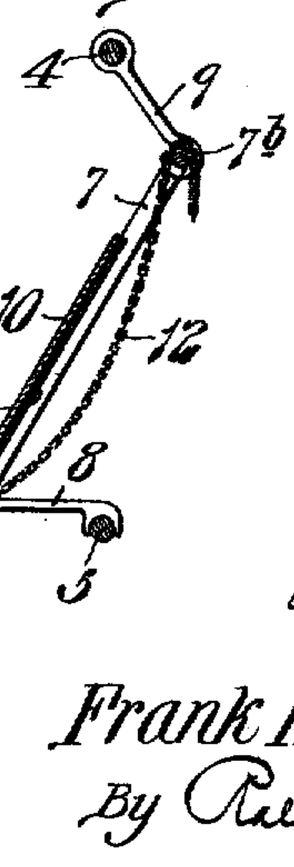


Fig. 2.

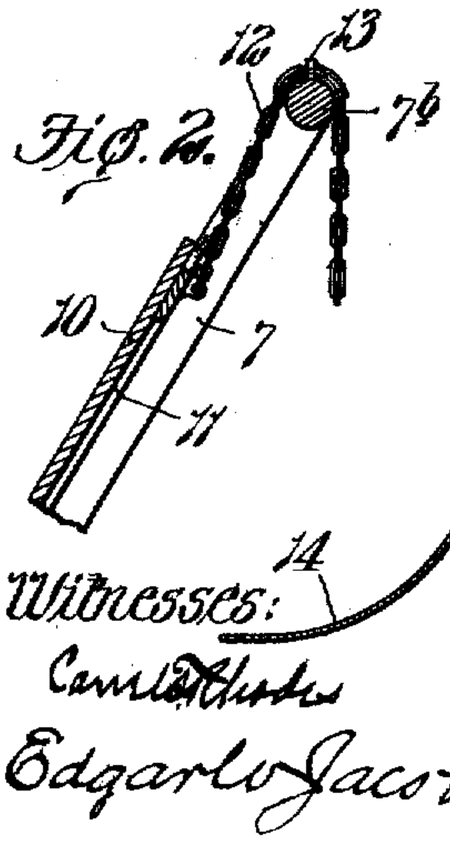


Fig. 5.

Witnesses:

Carrie A. Hudson

Edgar L. Jacobs.

Inventor,

Frank H. Hougland.

By Ralph Rulich Atty.

F. H. HOUGLAND.

MAIL BAG DELIVERING APPARATUS.

APPLICATION FILED SEPT. 28, 1908.

915,439. **Patented Mar. 16, 1909.**

2 SHEETS—SHEET 2.

Fig. 6.

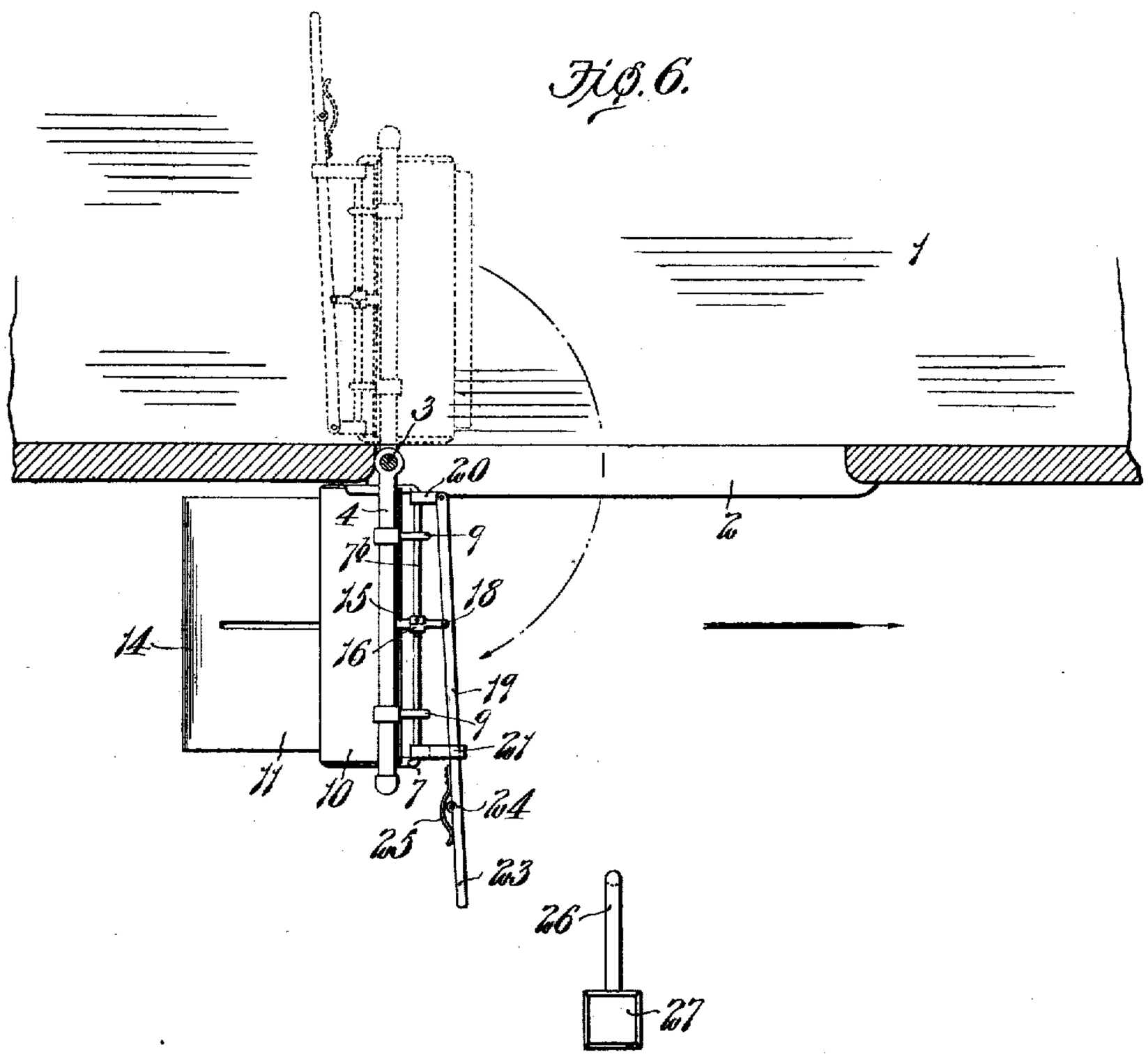


Fig. 7.

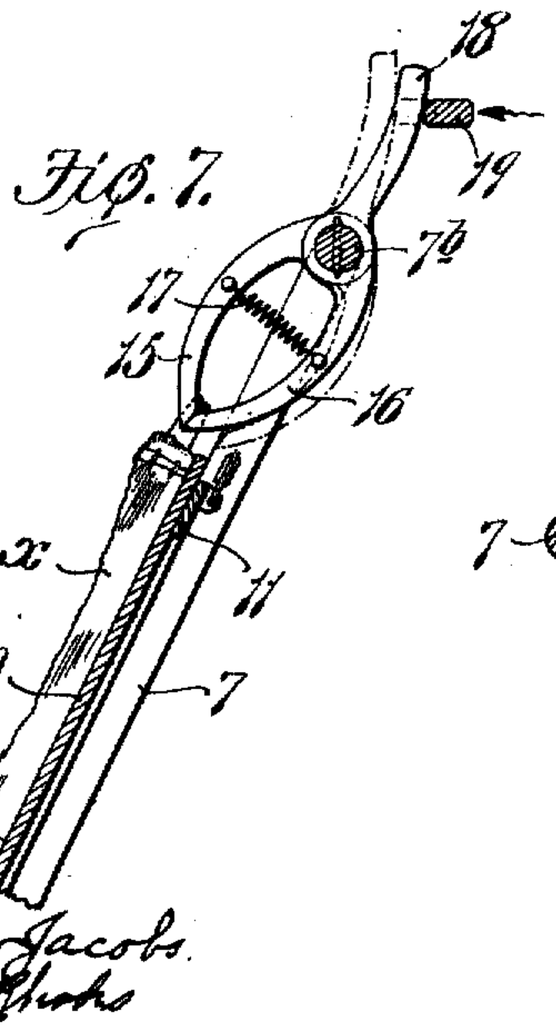
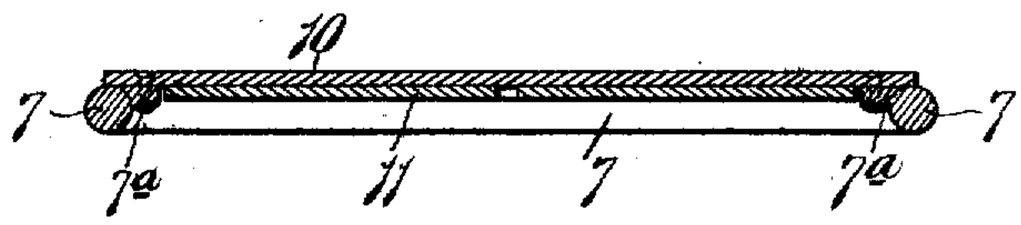


Fig. 8.



Witnesses:
Edgar W. Jacobs.
Carl E. Thorbs

Inventor,
Frank H. Hougland.
By Ralph Kalish Atty.

UNITED STATES PATENT OFFICE.

FRANK H. HOUGLAND, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-FOURTH TO ISADORE SELIGSTEIN, OF ST. LOUIS, MISSOURI.

MAIL-BAG-DELIVERING APPARATUS.

No. 915,439. Specification of Letters Patent. Patented March 16, 1909.

Application filed September 28, 1908. Serial No. 455,187.

To all whom it may concern:

Be it known that I, FRANK H. HOUGLAND, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Mail-Bag-Delivering Apparatus, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof, in which—

Figure 1 is a fragmentary perspective view of a portion of a mail-car equipped with my mail-bag delivering apparatus, showing the mail-bag delivering apparatus in position just prior to delivering a mail-bag therefrom; Fig. 2 is an enlarged sectional view, showing in detail a portion of the sliding fender or chute and the releasable holding-device therefor; Fig. 3 is a sectional view of the bag-supporting frame, showing the sliding fender or chute in raised or inoperative position; Fig. 4 is a similar view, showing the sliding fender or chute in lowered or operative position; Fig. 5 is an enlarged fragmentary detail sectional view of the lower portion of the bag-supporting frame and fender; Fig. 6 is a fragmentary view in horizontal section of the car body, showing in top plan the mail-bag delivering apparatus in full lines in operative or effective position to deliver a bag and in dotted lines its position when within the car; Fig. 7 is an enlarged detail view of the releasable grapple for holding the mail-bag; and Fig. 8 is an enlarged cross-sectional view on the line 8—8, Fig. 1.

This invention relates to a new and useful improvement in mail-bag delivering apparatus, the object being to provide an apparatus of the kind described which will deliver mail-bags from a moving train without damage or injury to the mail-bags or to persons or objects along the right-of-way.

With this object in view, my invention resides in the novel means whereby the mail-bags are delivered from the car toward the rear thereof or in a direction opposite to that in which the car is moving and comparatively gently delivered or laid upon the ground or station-platform, and in the novel construction, arrangement, and combination of the several parts, all as will hereinafter be described and pointed out in the claims.

In the drawings, 1 indicates the body of an ordinary mail-car, which is provided with the usual side-door opening 2. My mail-bag delivering apparatus is preferably mounted on a main frame consisting of a post 3 pivotally mounted in said door-opening 2 adjacent to one side thereof, upper and lower cross-members 4 and 5, respectively, extending from said post 3, and upright member 6 connected to said cross-members 4 and 5 at their outer ends. Supported by or upon said cross-members 4 and 5 is a second rectangular or mail-bag supporting frame 7. The lower portion of frame 7 is provided with brackets 8, which fit on said lower cross-member 5 of said main frame, and the upper portion of frame 7 is suspended from the upper cross-member 4 of said main frame by links or hooks 9. By this arrangement, the frame 7 is held in an inclined or slanting position toward the rear of the car when the car is moving forwardly and the bag-delivering apparatus is in position to deliver a bag therefrom, as shown clearly in Fig. 1. Secured or mounted on said frame 7 is a bag-supporting plate or board 10, this board or plate 10 being secured on said frame 7 in any convenient manner, but preferably by riveting the same to lugs or projections 7^a provided therefor on said frame 7. Slidably mounted on the under side of said plate 10 is a fender or chute 11. Preferably this fender 11 has a slot-and-pin connection with said plate 10 and is adapted to be held in raised or inoperative position by a chain or other flexible holding means 12. A pin 13 or other suitable catch is provided on the upper cross member 7^b of frame 7, over or by which said chain or other holding means may be secured or attached for holding said fender or chute in raised position. The lower portion of this fender 11 is curved outwardly, as at 14, and when the fender is in lowered or operative position, this curved portion 14 is adapted to extend some little distance on a plane substantially horizontal or parallel with the bottom of the car or with the roadway or station-platform, for purposes hereinafter stated.

Mounted on the upper cross member 7^b of frame 7 is a bag-grapple comprising a stationary or fixed member 15 and a pivoted member 16, which latter member is yieldingly held in closed position, relative to said member 15, by a spring 17. The pivoted member 16 has an extension or tail-piece 18, which is adapted to be actuated by a tappet-lever 19

pivotally mounted on a bracket 20 fixed on the cross-member 7^b of frame 7. The outer end of said lever 19 is supported by and has movement on a slotted bracket 21, which is fixedly mounted on the opposite side of said cross-member 7^b of frame 7, see particularly Fig. 1, and, as will be obvious, the slotted portion 22 of said bracket 21 limits the sliding movement of said lever 19.

23 indicates an extension which is hingedly mounted by a rule-joint 24 on the outer end of lever 19. By this arrangement, the extension 23 is permitted to swing rearwardly or in one direction only and is resiliently held in extended or open position by a leaf spring 25, this spring 25 being stronger than the spring 17, for purposes hereinafter appearing. When the apparatus is swung out from the car into operative or effective position to deliver a bag therefrom, the extension member 23 is adapted to contact with a projection or arm 26 on a post 27 erected at the side of the right-of-way.

The operation of my apparatus is as follows. Normally the apparatus is carried within the car, as shown by dotted lines in Fig. 6, until such time as it is desired to deliver a bag therefrom. Now when it is desired to deliver a bag from the car, a bag X is placed on the supporting-plate 10 and held in position thereon by the grapple members 15 and 16. The main frame is now swung outwardly until it extends at substantially right angles to the car, as shown in full lines in Fig. 6, in which position the frame is prevented from swinging rearwardly by the stop 28 on post 3 contacting with a wear-plate 29 on the side of the car and in which position the bag-supporting frame 7 is presented in an inclined or slanting position toward the rear of the car. Just prior to the point or place at which it is desired to deliver a bag X, the operator releases chain 12 from pin 13, and the fender or chute 11, being thus released, will drop by gravity to its lowermost or operative position, as shown in Figs. 1 and 4, in which position the lower end 14 of said fender or chute 11 is adapted to be slightly above and extend for a short distance on a plane substantially horizontal or parallel with the road-bed or the usual regulation station-platform. As soon as the extension 23 contacts with arm 26 on post 27, the tappet or tripping-lever 19 is swung rearwardly until arrested by the rear end of slot 22 of the bracket 21, when the extension 23 will yield, through spring 25, to permit the same to pass said arm 26 without damaging or injuring the apparatus, and in this rearward movement of lever 19, lever 19 actuates the pivoted grapple-arm 16, through its extension 18, whereby the mail-bag X will be released and at once fall by gravity down the inclined supporting-plate 10 and fender 11. Now, due to the peculiar form of fender or chute 11, the momentum of said bag in falling will be retarded by the curved off-set portion 14 thereof, and thus, as the train is moving in the usual forward direction and as the end 14 of the fender or chute 11, when said fender is in operative position, is presented toward or faces the rear of the car and extends slightly above but on a plane substantially horizontal or parallel with the road-bed or station-platform, it is obvious that the bag will be delivered from the car toward the rear thereof or in a direction opposite to that in which the car is moving and comparatively gently delivered or laid upon the ground, the fender or chute 11 being, as it might be said, pulled from under the bag X when the same is on the end portion 14. And as the rear or bottom of said bag X will naturally, in falling, strike the ground or platform first, and as the bag has also but a comparatively short distance to fall from said fender to the ground or station-platform, there will be but very little, if any, roll or other movement of the bag when the same is on the ground or station-platform, the bag being thus delivered upon the ground or station-platform without damage or injury thereto or to any person or other object on the ground or station-platform. After said bag X has been thus delivered, the operator merely raises the fender or chute 11 by means of said chain 12, secures the same in raised or inoperative position by fastening said chain 12 to pin 13, and swings the apparatus inside the car, ready to deliver a second bag, and so on.

While I have herein shown and described the lever 19 as contacting with a post or arm at the side of the right-of-way and automatically operating to release a bag X, it is obvious that such post or arm might be done away with and the bag-grapple tripped by the hand of the operator within the car; and it is also obvious that other changes in the arrangement, construction, and combination of the several parts of my apparatus may be made and substituted for those herein shown and described without departing from the nature and principle of my invention. And it is further plain that while I have herein shown and described my apparatus in connection with delivering mail-bags, the same can be used equally as well for delivering other articles or packages.

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

1. A mail-bag delivering apparatus comprising an extensible chute, said apparatus being adapted to be movably mounted upon a car and to deliver a bag from said car toward the rear thereof; substantially as described.

2. A mail-bag delivering apparatus adapted to be movably mounted on a vehicle and

comprising a chute whose lower end extends substantially horizontal with the plane upon which the bag is to be delivered; substantially as described.

3. A mail-bag delivering apparatus adapted to be movably mounted on a vehicle and comprising a chute whose lower end is curved outwardly and adapted to extend substantially horizontal with the plane upon which the bag is to be delivered; substantially as described.

4. In a mail-bag delivering apparatus, the combination with a supporting frame adapted to be movably mounted on a vehicle, of a chute, and means for releasably holding a mail-bag thereon; substantially as described.

5. In a mail-bag delivering apparatus, the combination with a supporting-frame adapted to be movably mounted on a car, of a chute adapted to be mounted on said frame, means for releasably holding a mail-bag on said chute, and means for automatically actuating said holding means to release said bag; substantially as described.

6. A mail-bag delivering apparatus comprising a frame for supporting the mail-bag and adapted to be movably mounted on a vehicle and an extensible chute mounted in operative relation to said frame; substantially as described.

7. A mail-bag delivering apparatus comprising a supporting-frame and an extensible chute mounted in operative relation to said frame, the lower end of said chute being curved outwardly and adapted to extend substantially horizontal with the plane upon which the bag is to be delivered; substantially as described.

8. In a mail-bag delivering apparatus, the combination with a frame for supporting a mail-bag, of means for releasably holding a bag thereon, and a chute slidably mounted in operative relation to said frame; substantially as described.

9. In a mail-bag delivering apparatus, the combination with a frame for supporting a mail-bag, of means for releasably holding a bag thereon, and a chute slidably mounted in operative relation to said frame, the lower end of said chute being curved outwardly; substantially as described.

10. In a mail-bag delivering apparatus, the combination with a frame for supporting a mail-bag, of means for releasably holding a bag thereon, a chute slidably mounted in operative relation to said frame, the lower end of said chute being curved outwardly and, when said chute is in operative position to deliver a bag, being adjacent to and substantially horizontal with the plane upon which the bag is to be delivered; substantially as described.

11. In a mail-bag delivering apparatus, the combination with a frame for supporting a mail-bag, of means for releasably holding a bag thereon, and a chute slidably mounted in operative relation to said frame, the lower end of said chute being curved outwardly and, when said chute is in operative position to deliver a bag, being adjacent to and substantially horizontal with the plane upon which the bag is to be delivered; substantially as described.

12. In a mail-bag delivering apparatus, the combination with an inclined frame for supporting a mail-bag, of means for releasably holding a bag thereon, a chute slidably mounted on said frame, means for releasably holding said chute in raised position on said frame, and means for guiding said chute into operative position when said holding means therefor is released; substantially as described.

13. In a mail-bag delivering apparatus, the combination with an inclined frame for supporting a mail-bag, of means for releasably holding a bag thereon, a chute slidably mounted on said frame, the lower end of said chute being curved outwardly, means for releasably holding said chute in raised inoperative position, and means for guiding said chute into operative position when said holding means therefor is released, said lower end of said chute, when said chute is in operative position, being adjacent to and substantially horizontal with the plane upon which the bag is to be delivered; substantially as described.

14. In a mail-bag delivering apparatus, the combination with a pivotally mounted main-frame, of a bag-supporting frame mounted on said main-frame, means for releasably holding a bag on said bag-supporting frame, and a chute slidably mounted on said bag-supporting frame; substantially as described.

15. In a mail-bag delivering apparatus, the combination with a pivotally mounted main-frame, of a bag-supporting frame obliquely mounted on said main-frame, means for releasably holding a bag on said bag-supporting-frame, and a chute slidably mounted on said bag-supporting frame, the lower end of said chute being curved outwardly and extending substantially horizontal with the plane upon which the bag is to be delivered; substantially as described.

16. In a mail-bag delivering apparatus, the combination with a pivotally mounted main-frame, of a bag-supporting frame obliquely mounted on said main-frame, means for releasably holding a bag on said bag-supporting frame, and an extensible chute mounted on said bag-supporting frame, the end of said chute being curved outwardly and, when said chute is in extended position, being adjacent to and substantially horizontal with the plane upon which the bag is to be delivered; substantially as described.

17. In a mail-bag delivering apparatus, the combination with a pivotally mounted main-frame, of a bag-supporting frame obliquely mounted on said main-frame, means

for releasably holding a bag on said bag-supporting frame, an extensible chute mounted on said bag-supporting frame, the lower end of said chute being curved outwardly and, when said chute is in extended position, being adjacent to and substantially horizontal with the plane upon which the bag is to be delivered, and means for automatically actuating said bag-holding means to release said bag; substantially as described.

18. In a mail-bag delivering apparatus, the combination with a bag-supporting frame, of a grapple for releasably supporting a bag thereon, a lever pivotally mounted on said frame for actuating said grapple to release said bag, and an extensible chute mounted in operative relation to said frame; substantially as described.

19. In a mail-bag delivering apparatus, the combination with a bag-supporting frame, of a grapple for releasably holding a bag thereon, a lever pivotally mounted on said frame and adapted to open said grapple to release said bag, means for automatically actuating said lever, and a chute mounted in operative relation to said frame; substantially as described.

20. In a mail-bag delivering apparatus, the combination with a main-frame adapted to be pivotally mounted on a car, of a second frame mounted on said main frame and adapted to support a mail-bag, a grapple for releasably holding a bag on said second frame, a pivotally mounted lever adapted to coöperate with said grapple to release said bag, and a chute slidably mounted in operative relation to said second frame; substantially as described.

21. In a mail-bag delivering apparatus, the combination with a frame for supporting a mail-bag, of means for releasably holding a bag thereon, a chute slidably mounted on said frame, and means for normally holding said chute in raised inoperative position; substantially as described.

22. In a mail-bag delivering apparatus, the combination with a frame for supporting a mail-bag, of means for releasably holding a bag thereon, a chute slidably mounted on said frame and having its lower end curved outwardly, means for releasably holding said chute in raised inoperative position, and means for regulating the downward movement of said chute into lowered operative position, the lower end of said chute when in such operative position being adjacent to and substantially horizontal with the plane upon which the bag is to be delivered; substantially as described.

23. In a mail-bag delivering apparatus, the combination with a bag-supporting frame movably mounted upon a car, of means for releasably holding a bag on said frame, and an extensible chute mounted in operative relation to said frame, said frame and said chute being adapted to face the rear of said car when delivering a bag therefrom; substantially as described.

24. In a mail-bag delivering apparatus, the combination with a bag-supporting frame pivotally mounted upon a car, of means for releasably holding a bag on said frame, and an extensible chute mounted in operative relation to said frame and having its lower end curved outwardly, said frame and said chute being adapted to face the rear of said car when delivering a bag therefrom; substantially as described.

25. In a mail-bag delivering apparatus, the combination with a bag-supporting frame pivotally mounted upon a car, of means for releasably holding a bag on said frame, means for automatically actuating said means to release said bag, and a chute slidably mounted on said frame and having its lower end curved outwardly, said frame and said chute being adapted to face the rear of said car when delivering a bag therefrom; substantially as described.

26. In a mail-bag delivering apparatus, the combination with a main frame pivotally mounted upon a car, of a bag-supporting frame obliquely mounted upon said main frame, means for releasably holding a bag on said bag-supporting frame, a chute slidably mounted on said bag-supporting frame and having its lower end curved outwardly, means for releasably holding said chute in raised inoperative position, said chute being adapted to move downwardly on the release of said holding means therefor into operative position, and means for regulating the downward movement of said chute into operative position, the lower end of said chute when in such operative position being adapted to be adjacent to and substantially horizontal with the plane upon which said bag is to be delivered and said bag-supporting frame and said chute being adapted to face the rear of said car when delivering a bag therefrom; substantially as described.

27. In a mail-bag delivering apparatus, the combination with a supporting-frame, of a bag-supporting plate adapted to be mounted thereon, means for releasably holding a mail-bag on said supporting-plate, and a chute mounted in operative relation to said supporting-plate and on which said bag is adapted to slide when released from said holding means; substantially as described.

28. In a mail-bag delivering apparatus, the combination with a supporting-frame, of a bag-supporting plate adapted to be mounted thereon, means for releasably holding a mail-bag on said supporting-plate, means for automatically actuating said holding-means to release said bag, and a chute mounted in operative relation to said sup-

porting-plate and on which said bag is adapted to slide when released from said holding-means; substantially as described.

29. In a mail-bag delivering apparatus, the combination with a supporting-frame, of a bag-supporting plate adapted to be mounted thereon, means for releasably holding a mail-bag on said supporting-plate, and a chute mounted in operative relation to said supporting-plate and having its lower end curved outwardly, said bag being adapted to slide on and be delivered from said chute when released from said holding-means; substantially as described.

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

FRANK H. HOUGLAND.

Witnesses:
EDGAR W. JACOBS,
CARREL F. RHODES.