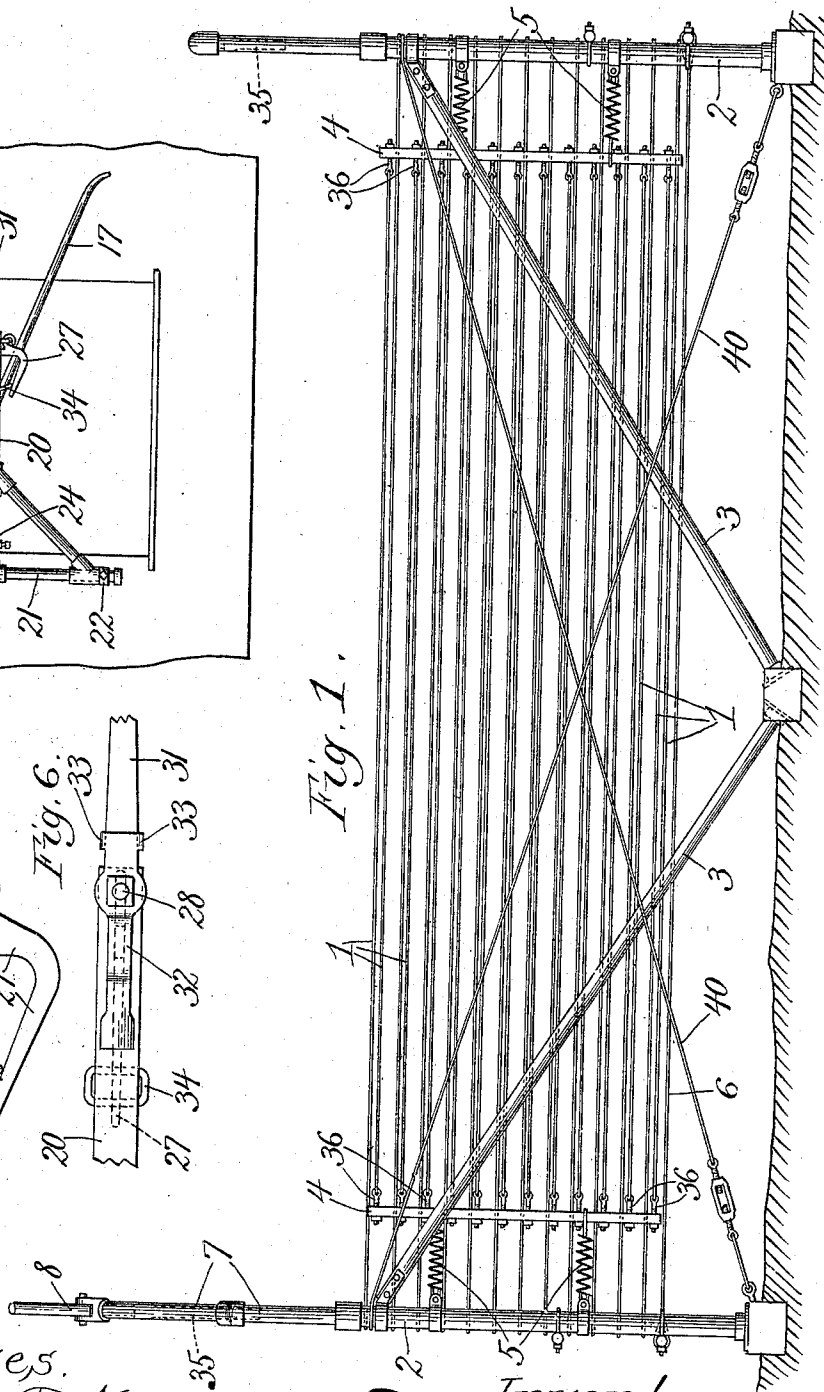
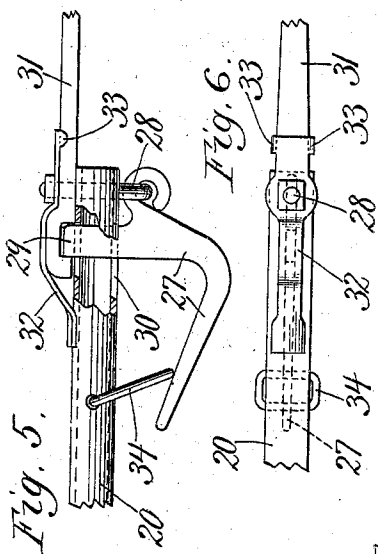
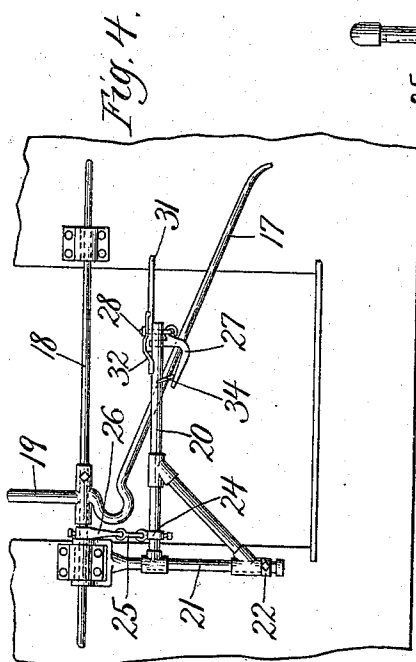


D. D. MILES, JR.
 DEVICE FOR DISCHARGING AND RECEIVING ARTICLES FROM MOVING VEHICLES.
 APPLICATION FILED JUNE 8, 1908.

984,015.

Patented Feb. 14, 1911.

4 SHEETS—SHEET 1.



Witnesses.
 Edward T. Wray.
 Edna K. Reynolds.

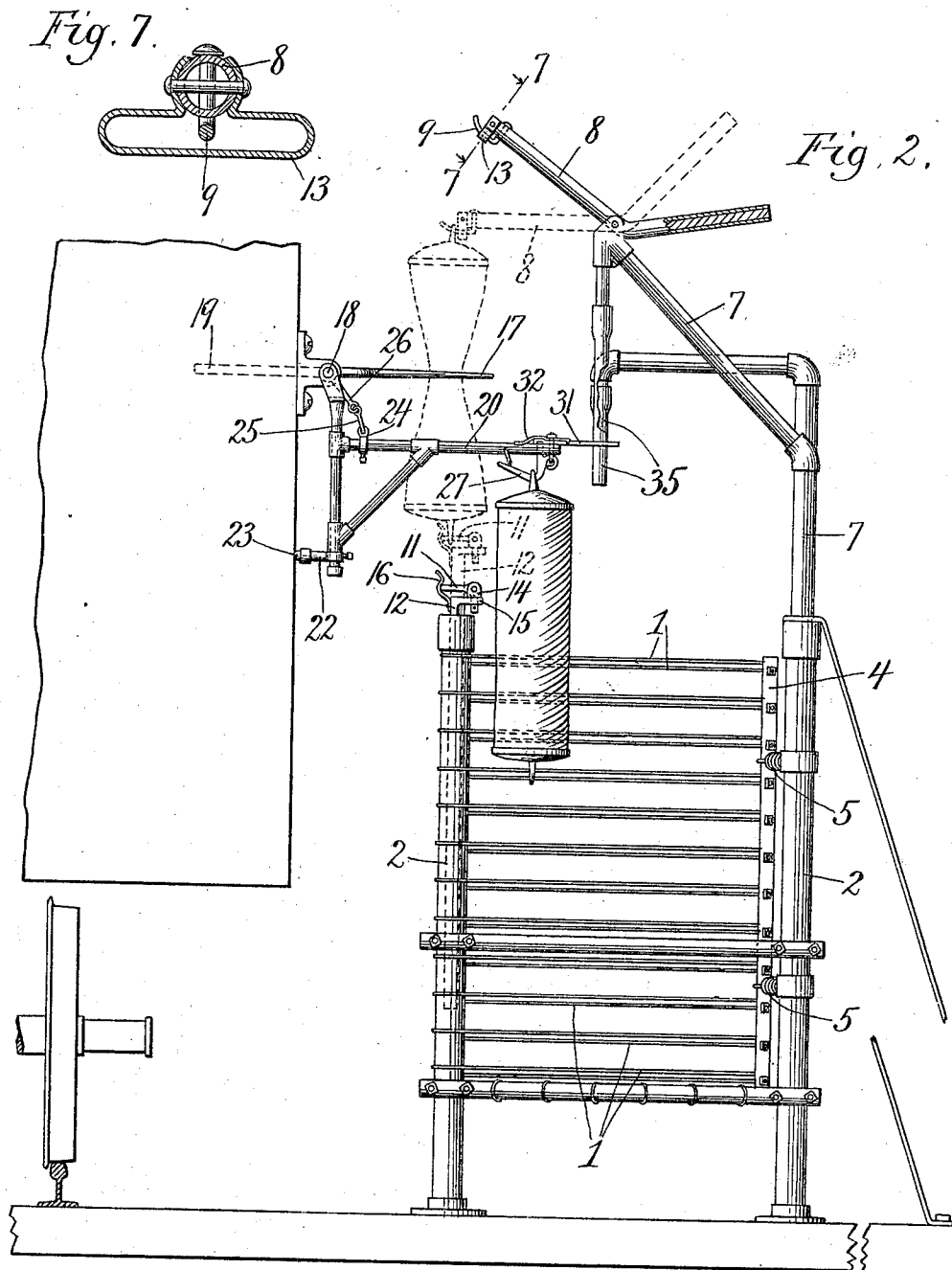
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4 SHEETS—SHEET 2.



Witnesses.
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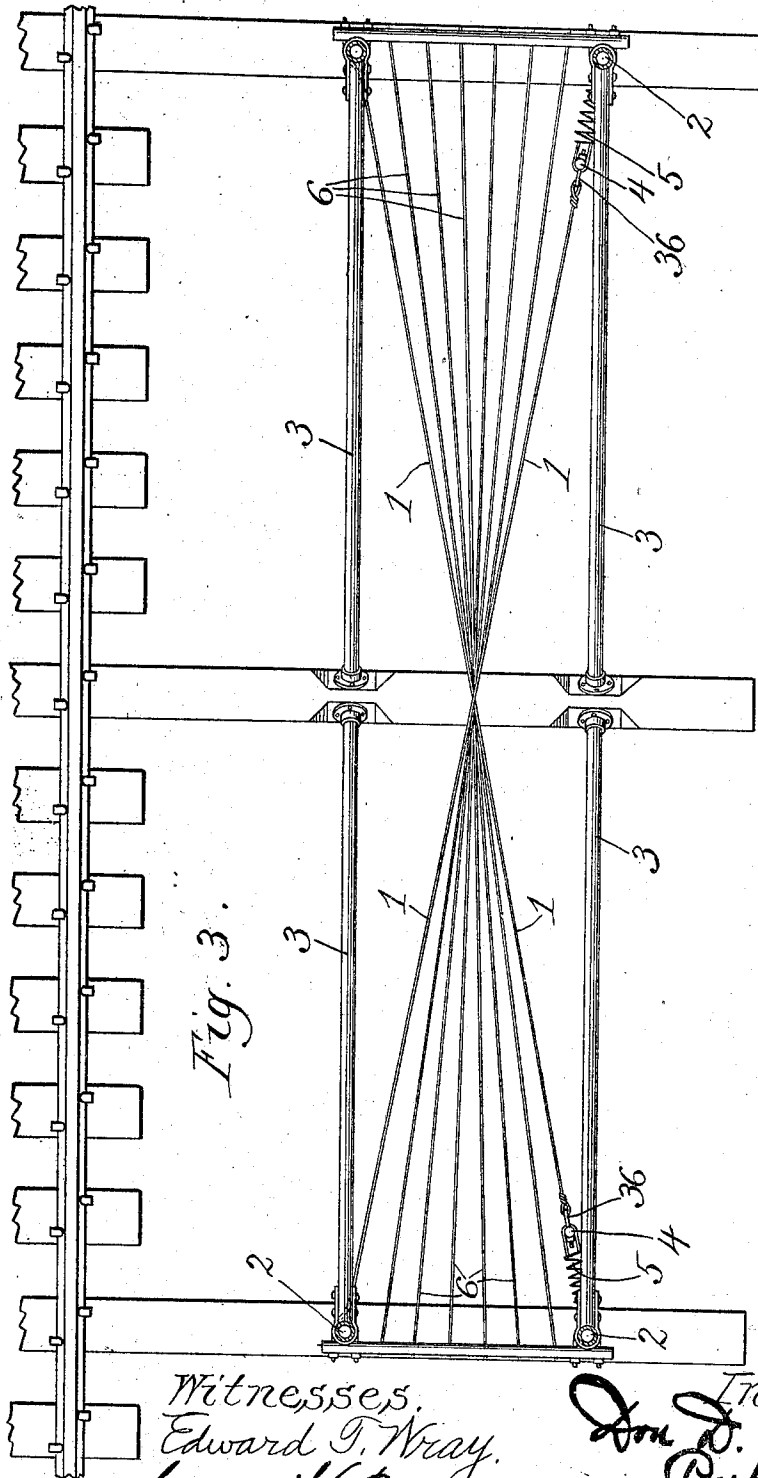


Fig. 3.

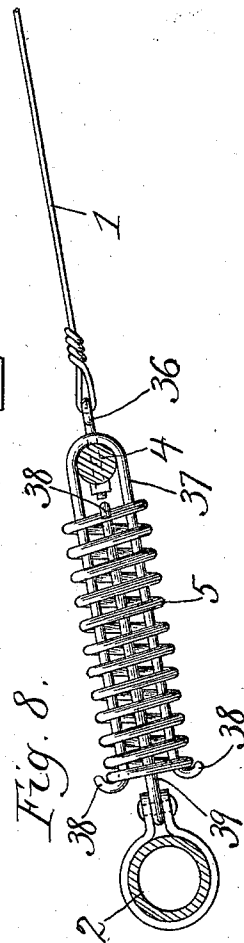


Fig. 8.

Witnesses,
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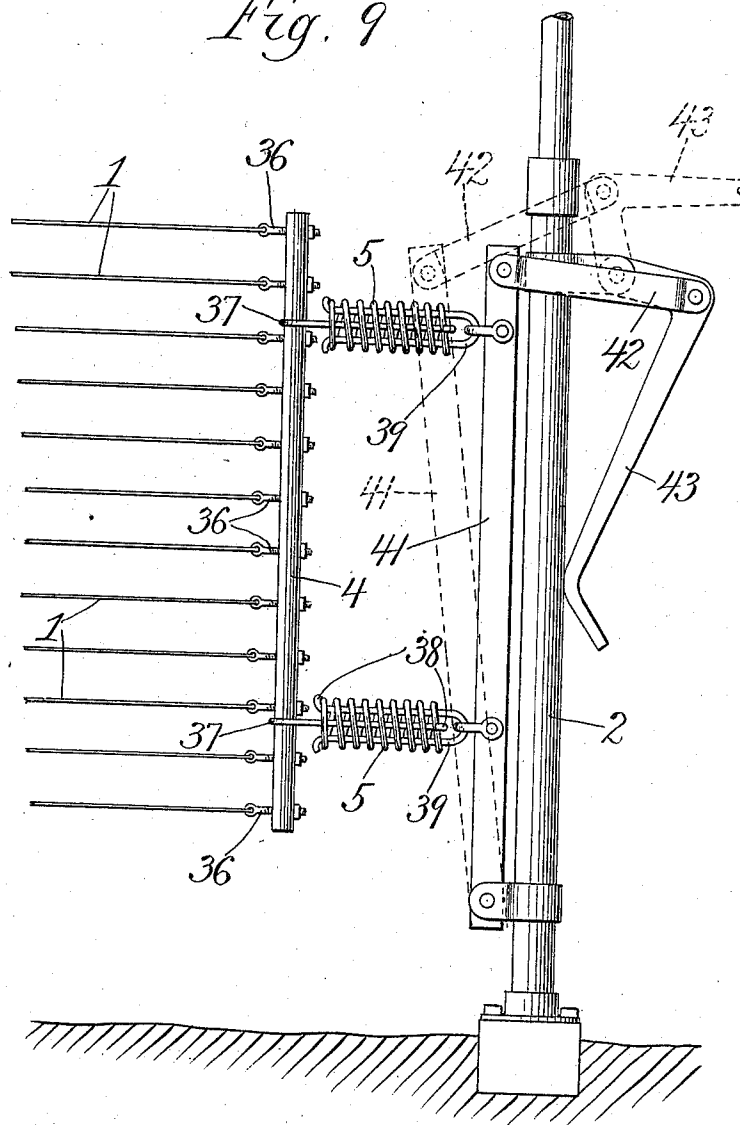
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4 SHEETS-SHEET 4.

Fig. 9



Witnesses.
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UNITED STATES PATENT OFFICE.

DON D. MILES, JR., OF AURORA, ILLINOIS.

DEVICE FOR DISCHARGING AND RECEIVING ARTICLES FROM MOVING VEHICLES.

984,015.

Specification of Letters Patent. Patented Feb. 14, 1911.

Application filed June 8, 1908. Serial No. 437,245.

To all whom it may concern:

Be it known that I, DON D. MILES, JR., a citizen of the United States, residing at Aurora, in the county of Kane and State of Illinois, have invented a certain new and useful Improvement in Devices for Discharging and Receiving Articles from Moving Vehicles, of which the following is a specification.

This invention relates to devices for catching articles discharged from moving vehicles such as trains, and has for its object to provide a new and improved device of this description.

The invention is illustrated in the accompanying drawing, wherein—

Figure 1 is a side elevation of one form of the device embodying the invention; Fig. 2 is an end view of the device shown in Fig. 1; Fig. 3 is a plan view of the device shown in Fig. 1; Fig. 4 is a view of the part on a moving vehicle to which the device to be discharged is connected; Figs. 5 and 6 are enlarged views of the end of the device of Fig. 4; Fig. 7 is an enlarged sectional view on line 7—7 of Fig. 2, and Fig. 8 is an enlarged view showing the elastic connection of the cables to the support; Fig. 9 is a view showing a releasing device for the receiver.

Like numbers refer to like parts throughout the several figures.

The receiving device for material discharged, that is the device on the ground, consists of what may be called a flexible wedge. It consists of a wedge-shaped receiver having its large end or mouth toward the moving vehicle, and having flexible sides or parts which engage the material discharged. As herein illustrated this receiving device is made up of a series of flexible pieces 1, which are preferably wire cables made up of a plurality of strands so as to be flexible and at the same time capable of resisting great stresses. These flexible pieces may be formed into a wedge in any desired manner as, for example, by being crossed, or by being brought together between their ends so as to form the wedge. I prefer to cross them as shown in Fig. 3, as this is the simplest method. These flexible pieces are connected to suitable supports 2 in any desired manner. These supports are preferably connected by braces 3 so as to make a strong well-braced construction. I prefer to connect one end of each flexible

piece directly with one of the supports, and connect the other elastically to such supports. Any suitable arrangement for this purpose may be used. As herein shown the flexible pieces are connected at one end to the part 4, said parts being elastically connected to the supports by means of springs or the like 5. These springs are preferably compression springs, and are arranged so that they will be compressed when stress is placed upon the flexible pieces. The supports will of course be properly guyed so as to be held firmly in position and be able to resist the shock of the moving device discharged from the vehicle.

When the device is arranged as shown in Fig. 3 it is adapted to receive material from trains going in either direction, as there are two wedge-shaped receiving parts opening in opposite directions. Some suitable device, such as a net or the like 6, is provided at the bottom of the receiving devices or wedges to prevent the devices caught from falling out of the receiving devices. I also prefer to provide an arrangement by means of which the moving car can take on devices or packages such as mail sacks while moving at a high speed. For this purpose I provide a support for the device to be taken onto the train, and it may be associated with the receiving device. As shown in Figs. 1 and 2 I provide a post 7 carrying an arm 8 having a hook 9 to engage the device, such as the mail sack, as shown in Fig. 2. There is a bottom post 10 which carries a similar hook 11. This hook is preferably on a part 12 which fits into the bottom post 10 thus allowing the hook to be moved up or down to adjust for different length devices. The hooks enter loops or similar engaging parts on the device or package to be taken up by the car. The hook 9 is pivoted to the arm 8 which in turn is pivoted to the post 7; the outer end of arm 8 being preferably weighted so that it moves up out of the way as shown in full lines in Fig. 2. The hook 9 preferably passes through a loop 13, which is shown in detail in Fig. 7. When the mail bag or other article is engaged by the engaging part on the car, and moved forward, the hook 9 which passes through a loop thereon, is moved about its pivot and passes into the loop 13, the bag or other article sliding off so as to be entirely released. The hook 11 at the lower end which also passes through a loop on the article or mail bag,

is pivoted to a piece 14 which in turn is rotatably mounted in a lug 15 on the part 12, so that when force is applied to the article or mail bag, the hook 11 will be moved up and the part 14 will be rotated so as to insure the release of the bag. The spring 16 tends to prevent accidental release of the bag. The article or bag is caught by the engaging device 17 on the car. This may be the usual engaging device connected with the rod 18 rotatably mounted in bearings at the side of the door, the engaging device being provided with a handle 19 by means of which it is moved out to a horizontal position ready to engage the mail bag.

Some suitable device is provided on the car for holding the article which is to be discharged from the car; any suitable construction for this purpose may be used as shown in Figs. 4, 5 and 6. A movable arm 20 is rotatably mounted upon a supporting piece 21, held in position in any desired manner as by being attached to the rod 18. This supporting piece has a rearwardly projecting arm 22 which engages the side of the car, this arm preferably having a cushion 23 which directly engages the car (see Fig. 2). Some means is provided for moving the arm 20 out at substantially right-angle to the car. As herein shown this arm has a piece 24 rigidly connected to it, which piece is connected by a link 25 with a part 26 rigidly connected to the rod 18. When the handle 19 is pressed down so as to rotate the rod 18, the pieces 24 and 25 and 26 cause the arm 20 to move out to a position substantially at right angles to the car. At the end of the arm 20 is a hook 27. This hook is preferably connected to a bolt 28, so as to have universal movement, as for example by means of a hook and eye connection. The hook 27 has a projection 29 which fits into a slot 30 in the arm 20. A releasing part 31 is rotatably mounted on the bolt 28, and is notched to receive the end of the projection 29. A spring 32 is also pivoted on the bolt 28 and has at one end lugs 33 to engage the releasing part 31, the other end of the spring engaging the rod 18. A pivoted piece or ring 34 permits the article or mail bag to slip upon the hook 27 but prevents it accidentally sliding therefrom. When the article such as a mail bag or the like is suspended from the hook 27, and the arm 20 is moved out to its discharge position, the releasing part 31 engages an engaging part or trip 35 attached to the post 7, and is moved to one side by the spring 32 sliding off of the arm 20; thus releasing the hook 27 which then drops away from the part 34 so that the article will be released. The engaging part or trip 35 is preferably flexible, and may simply consist of a piece of rubber hose. It is at least arranged so that it will give when

struck by the releasing part 31 so as to prevent injury to the parts. It is of course evident that this yielding trip may be of any desired construction.

When the construction of Fig. 3 is used there is provided an engaging part or trip 35 at each end of the receiving device. The flexible pieces 1 may be elastically connected to the supports 2 in any desired manner. In Figs. 1 and 8 I have shown one arrangement for this purpose. In this construction, the ends of the flexible device are adjustably connected to the part 4 by means of the adjustable pieces 36. The part 4 passes through one or more loops 37 which enter the spring 5 and which are provided with hooks 38 (see Fig. 8) which engage the end of the spring. A similar loop 39 substantially at right angle to the loop 37 passes through the spring in the opposite direction, and is fastened to the support 2 in any desired manner. When pressure is applied to the flexible pieces 1, it will be seen that they can give longitudinally as well as laterally, the spring 5 being compressed between the hooks on the ends of the loops 37 and 39. Any suitable bracing may be used for the supports 2. In addition to the braces 3 I have shown guy wires 40. The bracing will, of course, be made sufficient to withstand the stress due to the blow caused by the article discharged from the car.

If desirable a releasing device for the receiver may be provided. In Fig. 9 one form of releasing device is shown by means of which one of the walls is slackened or loosened when it is desired to remove the article. The spring 5 instead of being connected directly to the support 2 is connected to a movable part 41 which is movably fastened to the support 2 so that it may be moved to and from said support. As illustrated one of the movable parts 41 is pivoted and the other is connected by links 42 with a pivoted arm 43, the connection being such that when the arm 43 is in the position shown in full lines it engages the support 2 and holds the part 41 rigidly in position. When the article has been received by the receiver and it is desired to remove it, the arm 43 is moved up to the position shown in dotted lines, thus permitting the part 41 to move back and the side of the receiving device to be slackened. This permits the easy removal of the article.

The use and operation of my invention are as follows: The article to be discharged from the car is placed on the hook 27 and the arm 20 moved out to its discharge position as the car approaches the receiving device. The releasing device 31 then strikes the engaging device or trip 35 and is moved so as to release the hook 27 and discharge the article. This article moving at a high rate of speed passes into the mouth of the receiving device and engages the flexible

pieces 1. The shock of the blow is relieved by these flexible pieces moving laterally and also longitudinally because of the spring 5, and the article is thus gradually brought to a standstill without injury to it or to the receiving device. If it is desired to simultaneously take up an article such as a mail bag, the article is fastened to the hooks 9 and 11 (Fig. 2) and the part 17 on the car which is moved out simultaneously with the arm 20, will engage the article and remove it from these hooks. The part 17 is placed ahead of the arm 20 so that articles may be both received and discharged as the car moves past the receiving device. It will be seen that the receiving device as herein constructed is always ready to receive mail bags or other articles, which may be successively discharged from different cars on the same train into the same receiving device, the number of course depending upon the size and construction of the receiving device. The articles to be discharged are at the mouth of the receiving device, before being released from the car, so that there can be no chance of missing the receiving device. It will be noted that the receiving device as herein shown, consists of flexible pieces elastically connected to a stationary support, this result being secured by connecting one end of the cables 4, which in turn is elastically connected, to a stationary support. The flexible pieces 1 may be of course arranged in any desired manner, but the receiving device should have at least one flexible side inclined with relation to the other for at least a portion of its length, and particularly at the point where the article enters. It will be seen that this receiving device forms, as it were, a frictional stop for the article and that the receiving device conforms to the shape of the article received. When the flexible pieces 1 are crossed as shown in Fig. 3, the point or throat of the wedge recedes as the article passes into it, and in that case the length of the receiving space is varied by the article as it enters, this variation depending upon the speed and weight of the article.

I claim:

1. A device for catching articles discharged from a moving vehicle, comprising two flexible sides between which the article is received and adapted simultaneously to engage the article, one side inclined with relation to the other for a portion of its length.

2. A device for catching articles discharged from a moving vehicle, comprising two parts between which the article is received, said parts adapted to frictionally engage said article at a plurality of points between its top and bottom and retard its movement.

3. A device for catching articles discharged from a moving vehicle, comprising

a wedge-shaped receiving device having flexible sides between which the article is received.

4. A device for catching articles discharged from a moving vehicle, comprising two sets of flexible pieces, the two sets being separated for different distances at different points and adapted to engage the article after its discharge from the vehicle, and gradually bring it to a standstill.

5. A device for catching articles discharged from a moving vehicle, comprising a series of flexible pieces, suitable supports to which they are connected, said flexible pieces forming separated sides between which the article is received.

6. A device for catching articles discharged from a moving vehicle, comprising a wedge-shaped receiving device fixed in position having sides made up of a series of flexible pieces.

7. A device for catching articles discharged from a moving vehicle consisting of a flexible wedge-shaped receiving part open at the large end, and adapted to receive the article discharged from the vehicle into said enlarged end.

8. A device for catching articles discharged from a moving vehicle, comprising a series of flexible pieces connected with suitable supports so as to form two sides, one of which is inclined with relation to the other, and means for elastically connecting one end of said flexible pieces to their support.

9. A device for catching articles discharged from a moving vehicle, comprising two flexible sides between which the article is received, said sides free to move laterally and longitudinally to relieve the force of the blow when the article makes contact therewith.

10. A device for catching articles discharged from a moving vehicle, comprising a flexible device located in proximity to said vehicle and having two receiving openings facing in opposite directions and adapted to receive the article when the vehicle is moving in either direction.

11. A device for catching articles discharged from a moving vehicle, comprising two sides of flexible pieces, the flexible pieces of one set crossing those of the other set, and suitable supports with which said flexible pieces are connected so as to be held in position.

12. A device for catching articles discharged from a moving vehicle, comprising two sides of flexible pieces, the flexible pieces of one set crossing those of the other set, and suitable supports with which said flexible pieces are connected so as to be held in position, one end of each flexible piece being elastically connected with the support.

13. A device for discharging articles from a moving vehicle and catching the same, comprising a receiving device, having two vertical flexible sides, one inclined with relation to the other, and between which the article is received, a holding device on the car for said article, a releasing part therefor, and a trip associated with said receiving device adapted to engage the releasing part as the vehicle moves forward.

14. A device for discharging articles from a moving vehicle and catching the same, comprising a receiving device, having two vertical flexible sides, one inclined with relation to the other, and between which the article is received, a holding device on the car for said article, a releasing part therefor, and a yielding trip associated with said receiving device adapted to engage the releasing part as the vehicle moves forward.

15. A device for discharging articles from a moving vehicle, comprising a holding device on the vehicle for holding the article while the vehicle is moving, a releasing part therefor, a flexible trip separate from the vehicle, and mounted on a fixed support, said flexible trip adapted to engage the releasing device as the vehicle moves past it and cause the article on the vehicle to be released so as to be discharged from the vehicle.

16. A device for discharging articles from a moving vehicle, comprising a supporting device on the vehicle, an arm movably mounted thereon, a rotatable rod on said vehicle, a connection between said rod and said arm so that when the rod is rotated the arm will be moved to a position substan-

tially at right angles to the side of the vehicle, and an engaging device on said arm for engaging said article, and a releasing device for releasing the same.

17. A device for catching articles discharged from a moving vehicle, comprising two flexible sides between which the article is received, one side inclined with relation to the other for a portion of its length, and a releasing device associated with one of said sides whereby it may be moved to decrease its grip on the article.

18. A device for catching articles discharged from a moving vehicle, comprising a wedge-shaped receiving device having flexible sides between which the article is received, and means for releasing the article after it is received in the receiving device.

19. A device for catching articles discharged from a moving vehicle, comprising a series of flexible pieces, suitable supports to which they are connected, said flexible pieces forming separated sides between which the article is received, and means for releasing the tension in one of said sides after the article has been received between them.

20. A device for catching articles discharged from moving vehicles, comprising two substantially vertical flexible engaging sides inclined with relation to each other, and adapted to engage the article at a plurality of points between its top and bottom.

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