J. B. CARY.

MAIL DELIVERY APPARATUS.

APPLICATION FILED MAY 4, 1910.

976,433.

Patented Nov. 22, 1910.

Fig. 1.

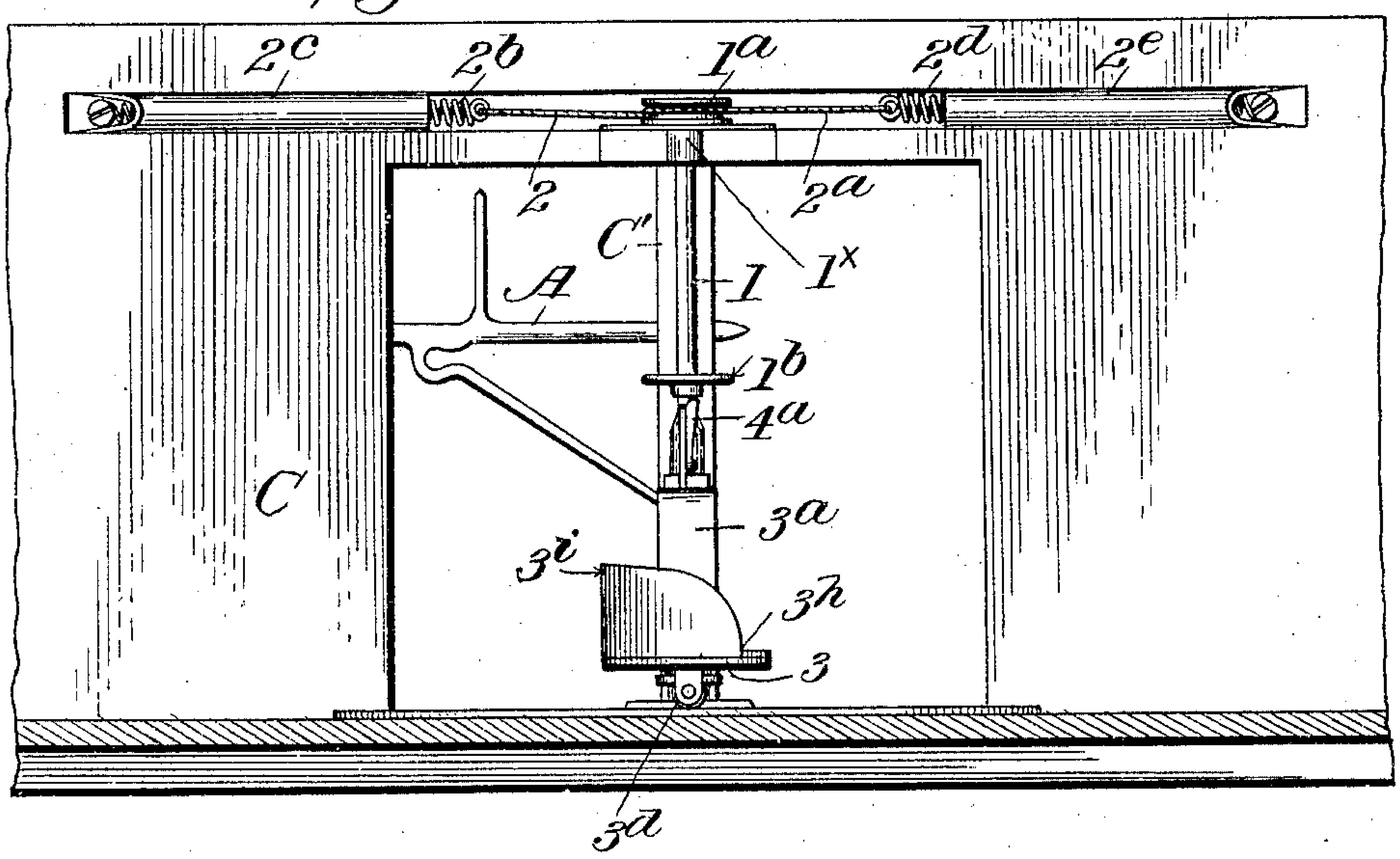


Fig. 2.

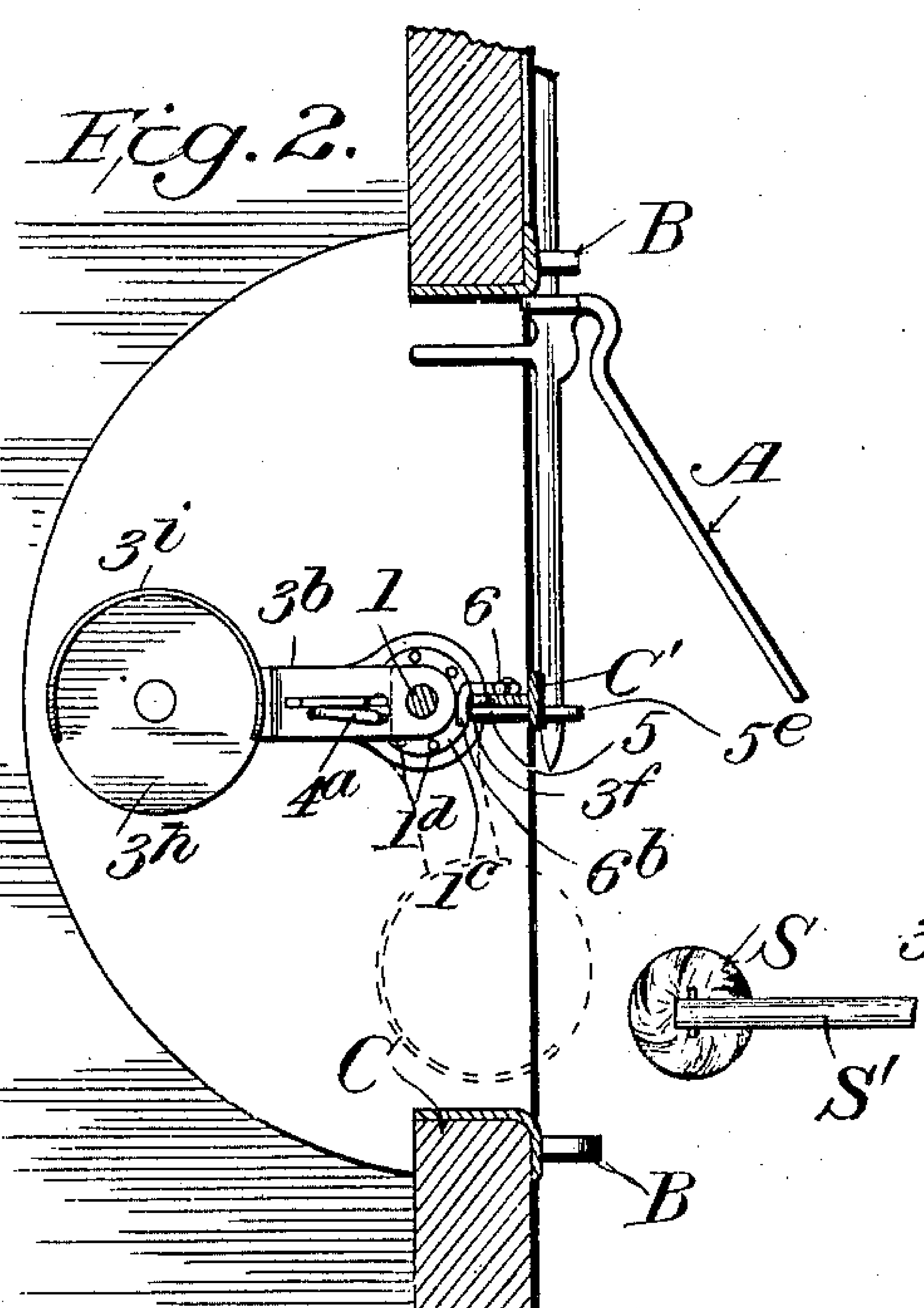
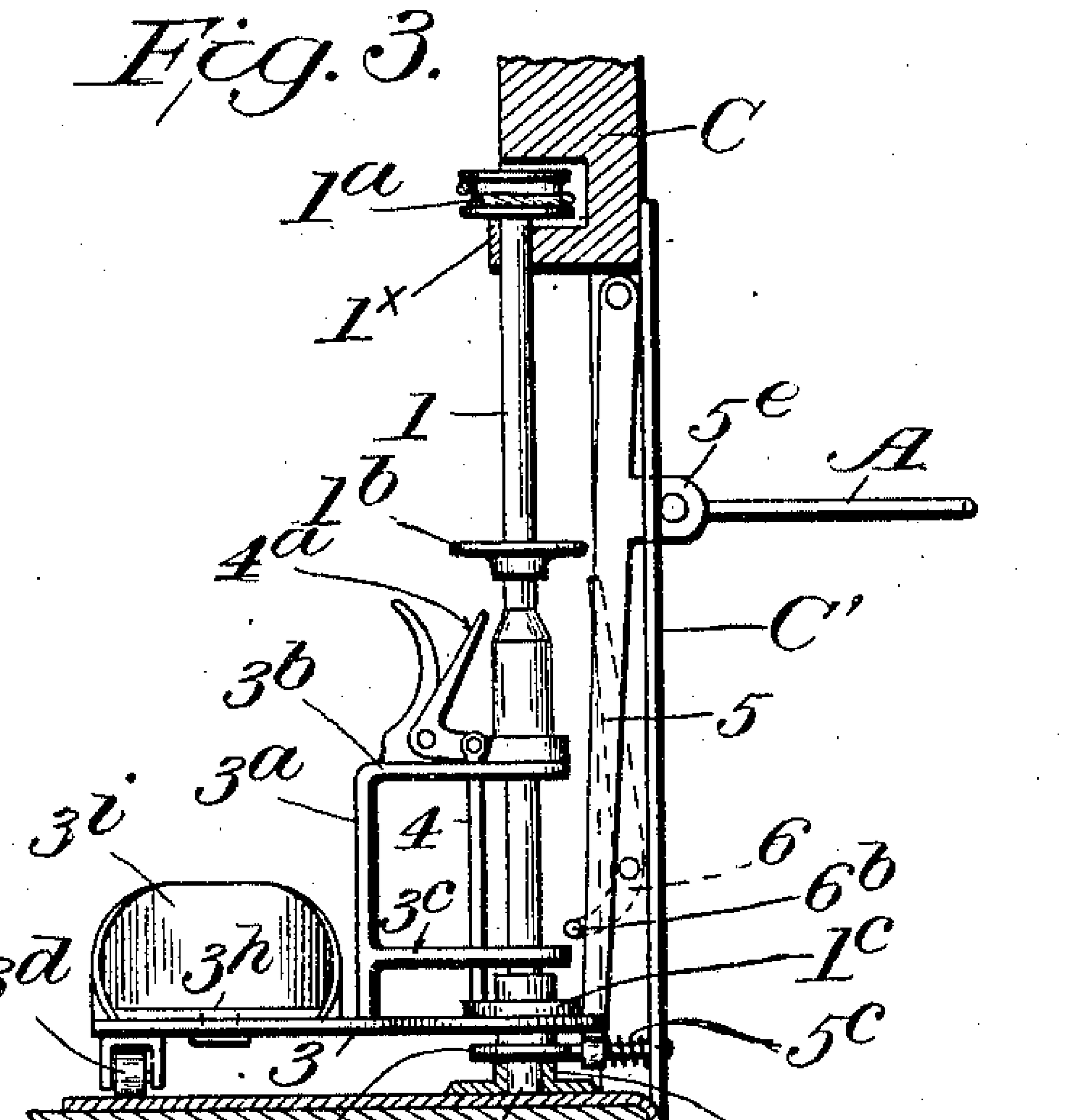


Fig. 3.



Witnesses

C. H. Walker.

James R. Mansfield

Inventor

James B. Cary

By Alexander & Dowell

Attorneys

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES B. CARY, OF GRAND ISLAND, NEBRASKA.

MAIL-DELIVERY APPARATUS.

976,433. Specification of Letters Patent. Patented Nov. 22, 1910.

Application filed May 4, 1910. Serial No. 559,374.

To all whom it may concern:

Be it known that I, JAMES B. CARY, of Grand Island, in the county of Hall and State of Nebraska, have invented certain new and useful Improvements in Mail-Delivery Apparatus; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is a novel mail delivery apparatus especially designed for delivering mail from express mail cars at the desired points without stopping the car.

The principal object of the invention is to so construct the apparatus that the mail can be safely and quickly discharged from the car without danger to the mail clerks, and be thrown sufficiently far away from the car to insure its not being sucked under the car and crushed or injured in any way.

The apparatus can be arranged to discharge the mail to right or left as desired, and I preferably discharge the mail rearwardly, or opposite the direction in which the car is moving so as to lessen its momentum due to the movement of the train; and while throwing the sacks sufficiently far away from the train to prevent injury thereto reduce the impact or shock on the discharged mail.

The invention also provides means whereby the mail catching devices (which however form no part of the present invention) may be made to release the discharging devices; thus insuring that the mail will be discharged from the car at the moment, or immediately after, the mail bag is caught by the catcher, so that the mail will be received and discharged at approximately the same point. Means are also provided whereby the discharger can be operated by hand to deliver mail where desired, or where there is no mail to be received.

I will now describe the invention with reference to the accompanying drawings which conventionally illustrate a practical form of my mail discharging apparatus, and will enable any one familiar with the art to construct and use same.

In the drawings: Figure 1 is an elevation of the apparatus as applied to a car, looking from the inside of the car. Fig. 2 is a plan view of the apparatus showing the discharger in retracted position in full lines, and in projected position in dotted lines. Fig. 3 is an elevation of Fig. 2.

When applied to a mail car of the usual standard type I place within the car at the side of the door thereof a vertical shaft 1, journaled in suitable bearings 1^x, 1^y, attached to the top and floor of the car. The upper end of this shaft is provided with a grooved pulley 1^a to which are connected cords or chains 2 and 2^a; the cord 2 being attached, as shown, to a stout helical spring 2^b which is located in the transom of the car out of the way, and may be protected by a casing 2^c. The cord 2^a may be similarly connected to a spring 2^d, which may be protected by a casing 2^e. The arrangement is such that when the shaft 1 is preferably turned the springs will be tensioned; and when the shaft is released the retraction of the springs causes a quick return rotative movement of the shaft. While I have shown and described springs for imparting a return rotation to the shaft 1, any other suitable means may be employed for rotating this shaft at the proper moment; and other arrangement of springs could be used therefor. I do not wish to be restricted to the specific construction shown. This shaft may be provided with means—such as a hand-wheel 1^b, by which it can be turned in either direction so as to put the springs under tension.

Mounted to swing upon shaft 1 is a lever 3, the inner end of which engages the shaft 1 and may be supported upon a washer 1^e on the shaft or resting upon the cup 1^g in which the lower end of the shaft 1 is stepped or journaled. This lever 3 may be provided with an upstanding bracket 3^a which is provided with lateral branches 3^b, 3^c, that are also loosely engaged with the shaft 1 and will help to support the outer end of the lever 3. The outer end of the lever may be provided with a roller 3^d adapted to run upon the floor of the car or a suitable metal plate or track concentric with the shaft 1, as shown in Fig. 2.

The lever 3 may be locked to move with the shaft 1 by any suitable means. As shown a catch bolt 4 extends through the arms 3^b, 3^c, and is adapted to be engaged with any one of the openings 1^d in a disk 1^c attached

to shaft 1; and when engaged therewith, as in Figs. 2 and 3 the lever 3 is caused to move with the shaft 1. The bolt 4 may be drawn out of engagement with disk 1^c, so as to free lever 3 from shaft 1, by means of a hand lever 4^a pivoted on the upper bar 3^b.

In the inner end of lever 3 is a notch 3^f which is adapted to be engaged by a suitable catch which may be in the form of a catch-bar 5 pivoted to a suitable adjacent portion of the car C. As shown the catch-bar 5 is pivoted at its upper end on a vertical standard C′ secured at the center of the doorway of the car, and parallel with and in front of the shaft 1.

After the springs have been suitably tensioned by rotating the shaft 1 by hand wheel 1^b; the lever is locked to the shaft as described; and then the lever is swung inward—(turning the shaft against the tension of the springs)—until the lever is locked by the engagement of catch-bar 5 with the notch 3^f; the lever is thus held in innermost position, as shown in Fig. 2. When the catch-bar 5 is disengaged from the notch the springs will cause the shaft 1 to turn and swing the lever 3 forcibly outward, to the position indicated in dotted lines Fig. 2. By properly turning the shaft in initially tensioning the springs, the latter can be made to rotate the shaft either right or left, as desired.

On the free end of lever 3 is mounted a mail holding and discharging receptacle 3^h, which is preferably made in the form of a disk, pivoted upon the lever 3, provided with an upstanding flange 3^i extending about half way around it. The receptacle is turned or adjusted on the lever so that the flange will be at the rear or innermost side of the disk, when the lever is in its outermost position (Fig. 2), so that anything placed in the receptacle can be discharged therefrom when the lever is swung outward as in dotted lines Fig. 2.

The catch-bar 5 may be normally pressed inward toward the lever 3, to engage with the notch 3^f when it registers therewith, by means of a spring 5^c, and it may be disengaged therefrom when the operator desires by means of a hand lever 6 pivoted on the upright C′ and having a finger 6^b which is adapted to engage the catch bar 5 and force it out of the notch 3^f when the hand lever 6 is properly actuated.

When applied to standard mail cars I preferably attach a stud 5^e to the catch bar 5, and this stud projects through an opening in the front standard C′ and has an eye in its outer end adapted to form the forward guide for an ordinary mail-bag catcher-arm A, see Fig. 2. The other guide B for such arm being attached to the car at the sides of the door in the usual manner. If such device is used when the mail bag is seized by the catcher A, the outward pull on the catcher causes the latter through stud 5^e to swing catch bar 5 outward and disengage it from the notch 3^f, and thus permit the shaft to rotate and swing the mail discharger.

Operation: In operating the discharger, the shaft 1 is first turned so as to put sufficient tension upon the springs to cause them to tend to rotate the shaft in the direction in which it is desired to swing the lever 3 in discharging the mail. Then the lever 3 is locked to the shaft, as described; and then the discharger is swung inward as indicated in Fig. 2 until notch 3^f is engaged by the catch bar 5. Then the mail to be discharged is placed in the receptacle. When the car reaches the station the operator can release the discharger by a pull on lever 6, thereby disengaging catch bar 5 from the lever 3, whereupon the latter is swung quickly forward and outward, until arrested by striking against the upright C′ or any other suitably arranged stop. On such movement of the discharger the mail thereon is discharged from the receptacle by momentum. The discharger can be set to work right or left,—I prefer to make it throw in a direction opposite to that in which the car is moving so as to offset the momentum of the car's movement when discharging the mail. The springs are tensioned to cause the discharger to throw the mail sufficiently far away from the car to prevent it falling thereunder or being drawn under the train by suction.

The mail must of course be placed in the receptacle in time to discharge it as the station is passed. If mail is to be received at the station the discharger is made ready as described; but the catcher arm A is supported in the usual manner, in the studs 5^e and B, and as the car passes the station the catcher arm takes the mail sack S, (Fig. 2) from the crane arm S′ and at the same time the impact on the arm is sufficient to cause it to pull the stud 5^e outward and cause bar 5 to disengage the lever 3, so that the mail is discharged automatically when the sack is caught. The person who operates the mail catcher of course stands at the side of the lever opposite that toward which it will swing.

This invention is applicable to ordinary mail cars using the type of catcher shown, which is not claimed herein. In new cars I prefer to put a partition or standard intermediate the door as shown, and use two small doors sliding in opposite directions, in place of one; such doors being much easier to handle than one large door. By reason of the adjustable locking devices between the arm and the shaft the tension on the springs can be adjusted so as to eject the sacks with any desired force. To prevent the sacks being thrown too far away when

discharged, a wire trap may be erected beside the mail sack holder or track, to catch the ejected mail.

What I claim is:

1. In a mail discharging apparatus for cars, the combination of a rotatable shaft located adjacent the door of the car, a lever loosely connected with the shaft, means for rotating the shaft in one direction; means for locking the lever to the shaft; means for locking the lever in retracted position; and means for releasing the lever and shaft to permit the lever to eject the mail.

2. In a mail discharging apparatus, the combination of a vertical shaft, means connected with said shaft and adapted to rotate it in one direction, a lever loosely hung on said shaft and having a mail receptacle at its outer end, means for locking the lever to the shaft; a catch for holding the lever in retracted position when locked to the shaft, and means for releasing the catch to allow the lever to discharge the mail.

3. In a mail discharging apparatus, the combination of a rotatable vertical shaft located adjacent the door of a car, a horizontally movable lever loosely connected with the shaft, spring means for rotating the shaft in one direction; means for locking the lever to the shaft; means for locking the lever and shaft in retracted position, and means for releasing the lever and shaft when the mail is to be discharged.

4. In a mail discharging apparatus, the combination of a rotatable shaft located adjacent the door of the car, a lever loosely connected with the shaft, spring means for rotating the shaft in one direction; means for locking the lever to the shaft, and means for locking the lever and shaft in retracted position; with a mail catcher, and devices, operated by the mail catcher when it catches a mail bag, for releasing the discharge lever.

5. In a mail discharging apparatus, the combination of a vertical shaft, springs connected with said shaft and adapted to rotate it in one direction, a lever loosely hung on said shaft and having a mail receptacle at its outer end, means for locking the lever to the shaft, and a catch for holding the lever in retracted position; with a swinging catch bar adapted to lock the lever in retracted position, and a mail catcher adapted to cause the catch bar to release the lever when the catcher takes a mail bag, substantially as described.

6. In a mail discharging device for railway cars, the combination of a vertical shaft, a horizontally swinging lever adjustably connected with said shaft; means for forcibly rotating the shaft in one direction to swing the lever outward to eject the mail; a catch for locking the lever in retracted position; and means for causing the latch to release the lever when the mail is to be discharged.

7. In a mail delivery apparatus for railway cars, the combination of a vertical rotatable shaft located adjacent the door of the car; means for turning the shaft in one direction, a horizontally disposed lever adjustably connected with the shaft at one end, a mail receptacle on the free end of said lever; a catch bar adapted to lock the lever in retracted position against the action of the shaft turning means, and manually operable means for causing the catch bar to release the lever to discharge the mail.

8. In a mail discharging device for railway cars, the combination of a vertical shaft, a horizontally swinging lever mounted on said shaft adjacent the door of the car, and means for forcibly turning the shaft in one direction to swing the lever and eject the mail; with means for locking the lever in retracted position; with a mail bag catcher-arm on the car, and a supporting device for said arm connected with the lever locking means, whereby when the catcher-arm catches a mail bag the lever is released to discharge the mail.

In testimony that I claim the foregoing as my own, I affix my signature in presence of two witnesses.

JAMES B. CARY.

Witnesses:

JOHN A. CARY,

HENRY E. CLIFFORD.