No. 744,005. PATENTED NOV. 10, 1903.

C. C. KITTERMAN.

MAIL COLLECTION AND DELIVERY APPARATUS.

APPLICATION FILED JULY 7, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

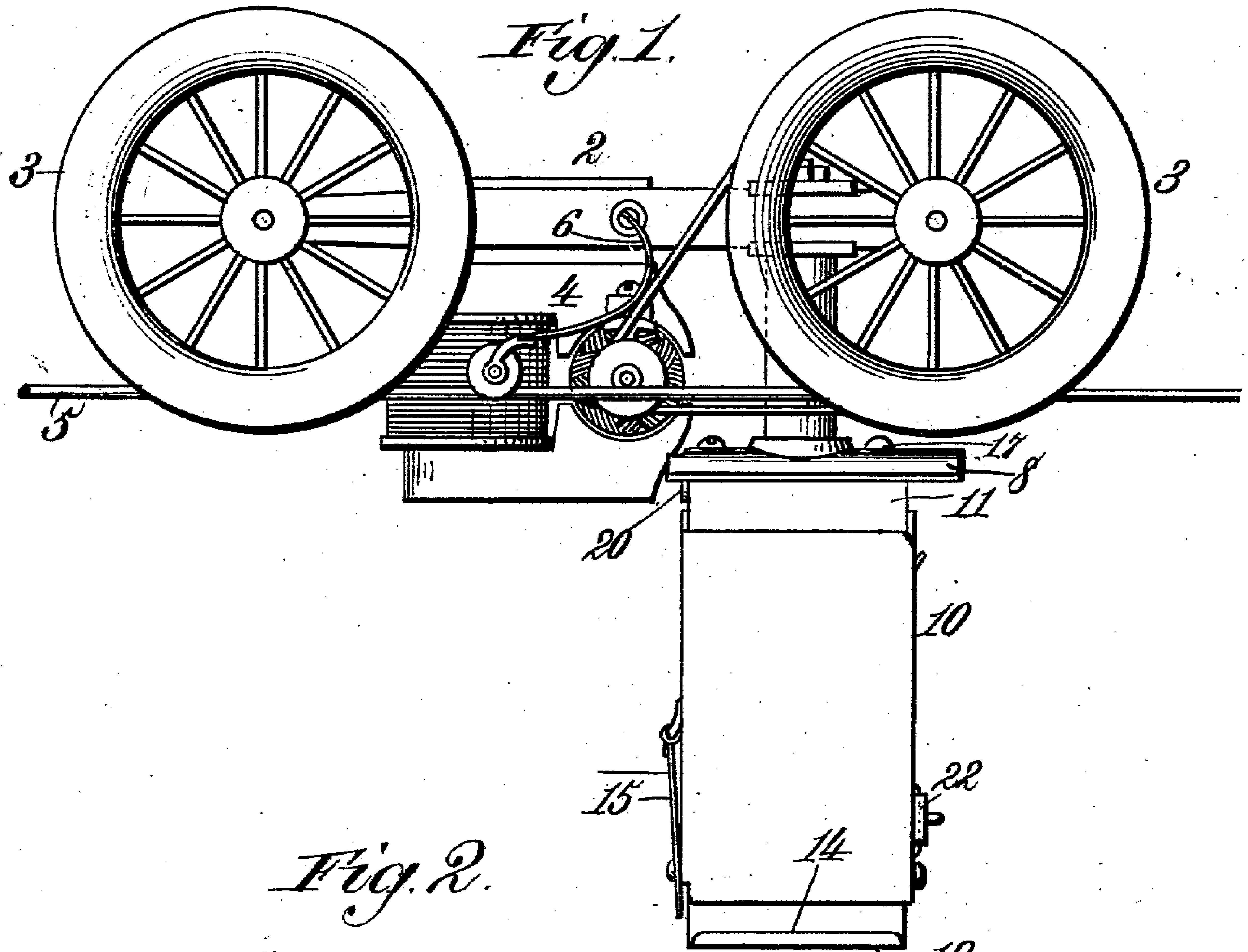
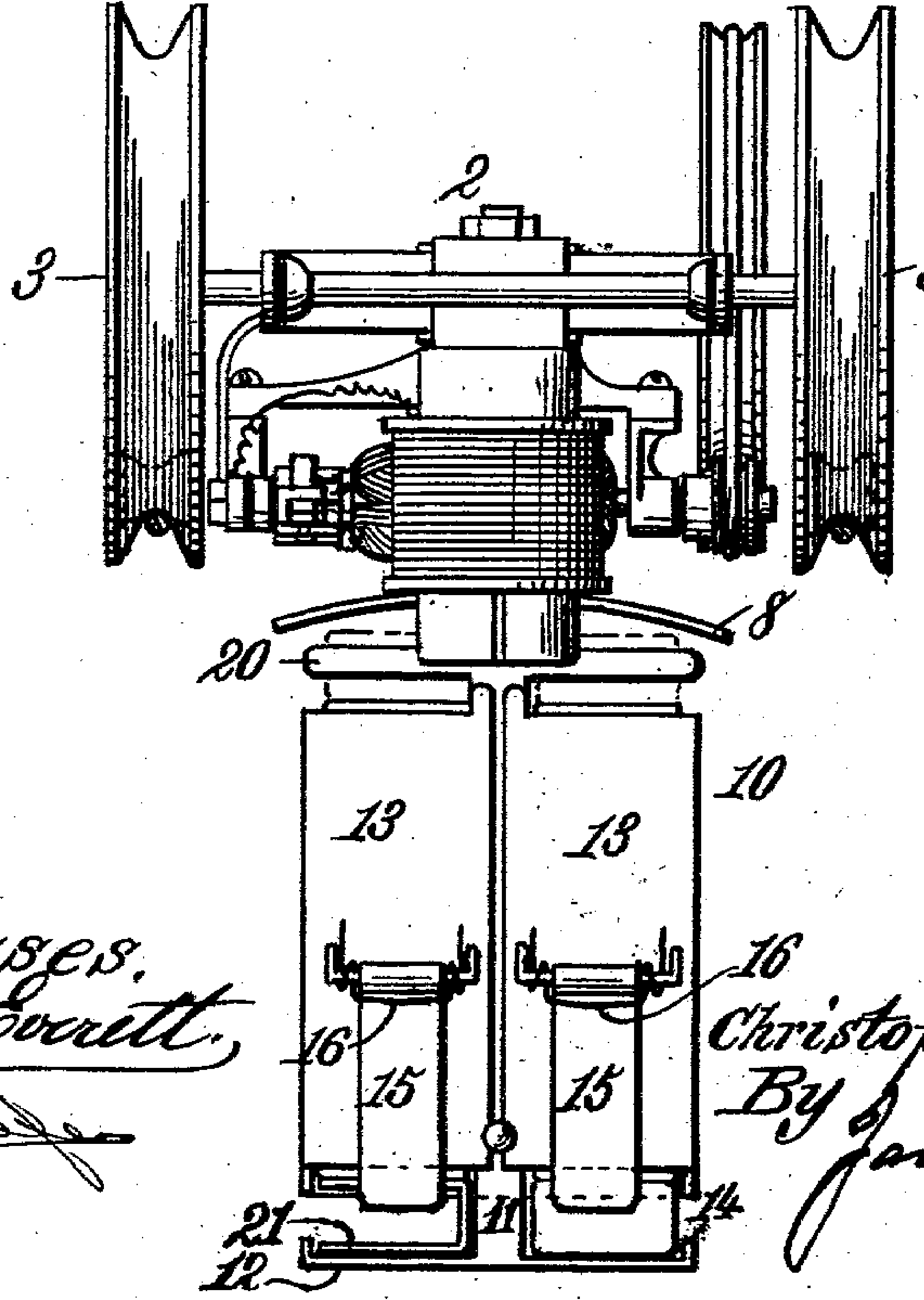


Fig. 2.



Witnesses.
Robert Everett,

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

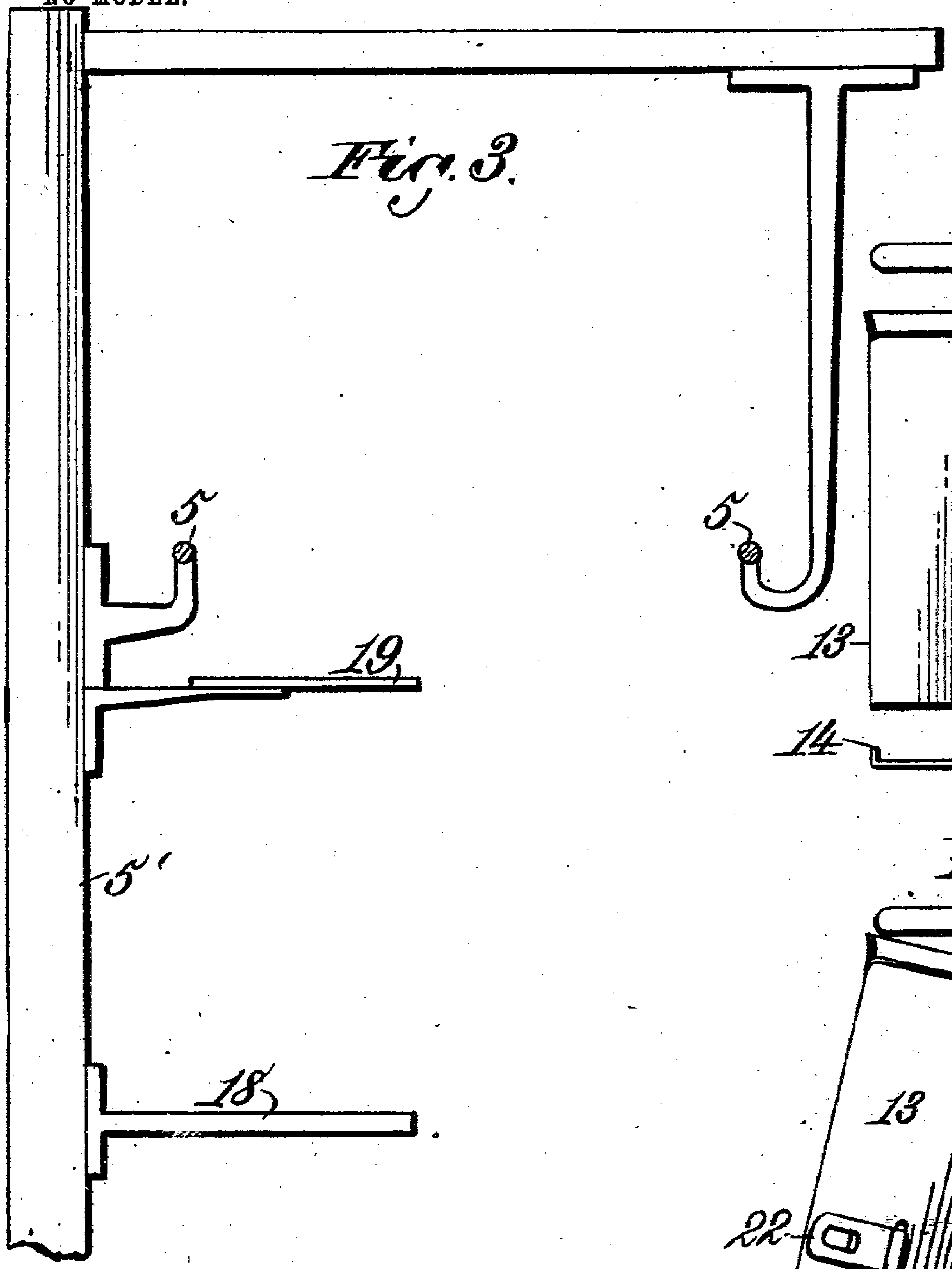


Fig. 4.

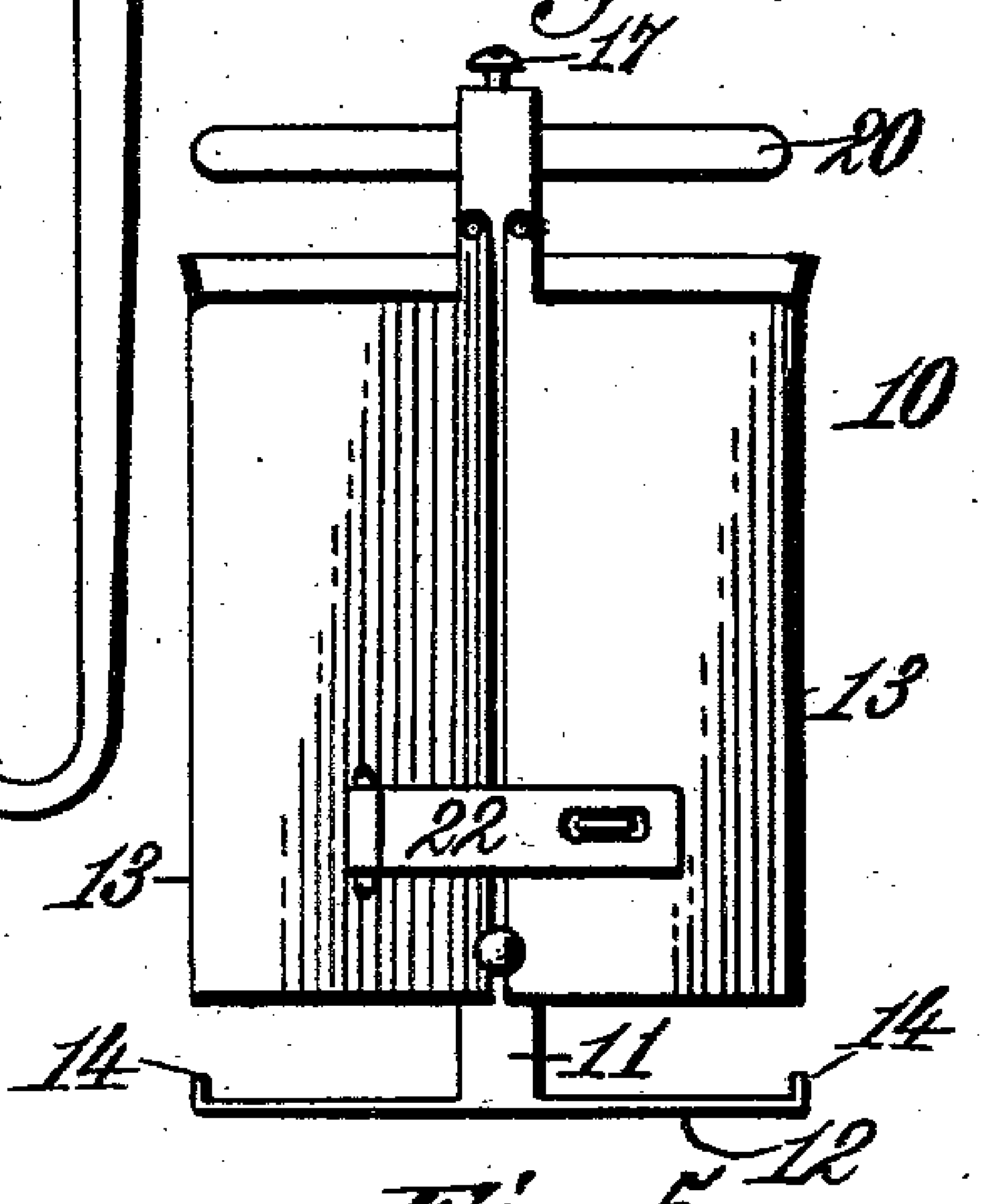


Fig. 5.

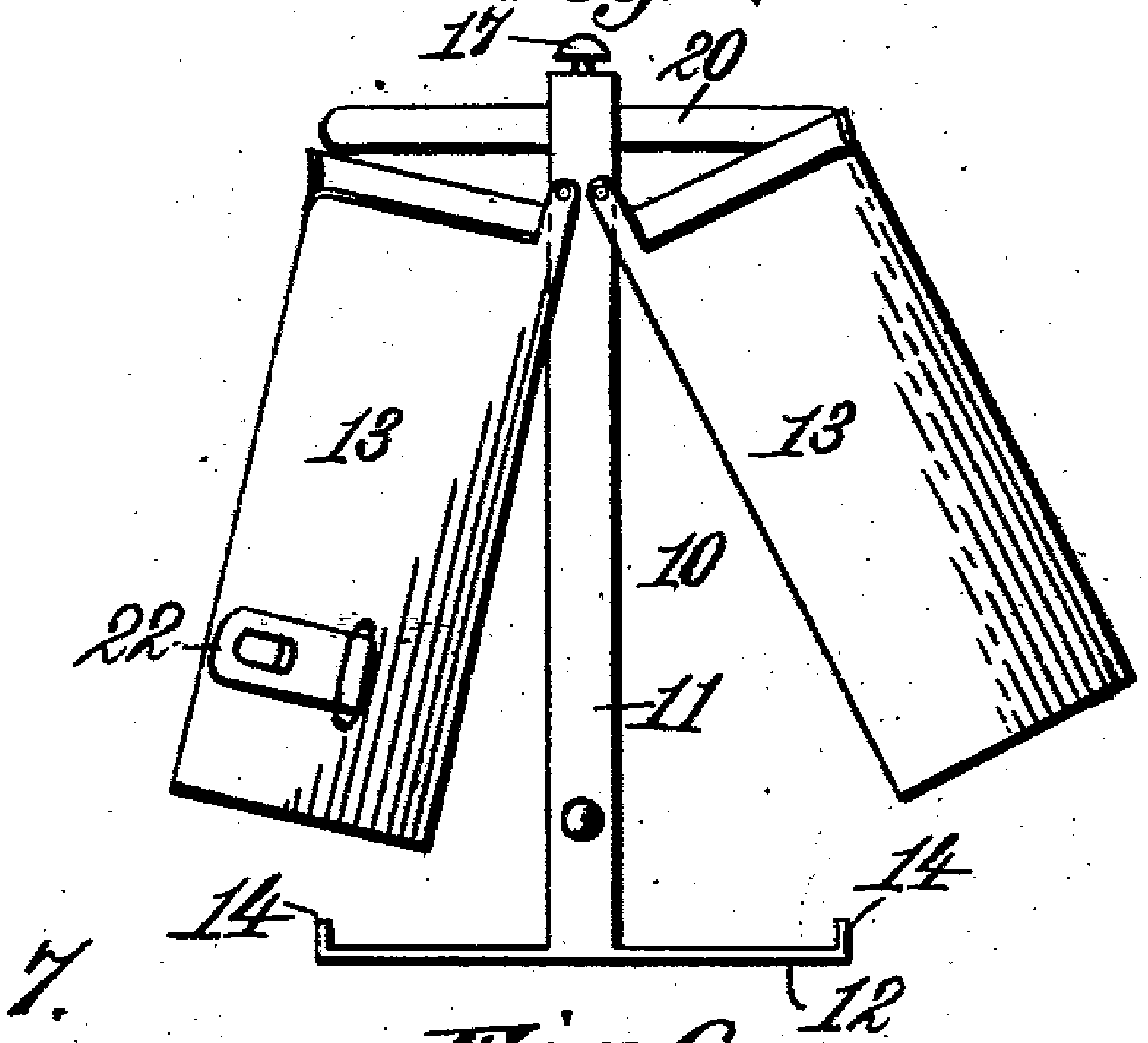


Fig. 8.

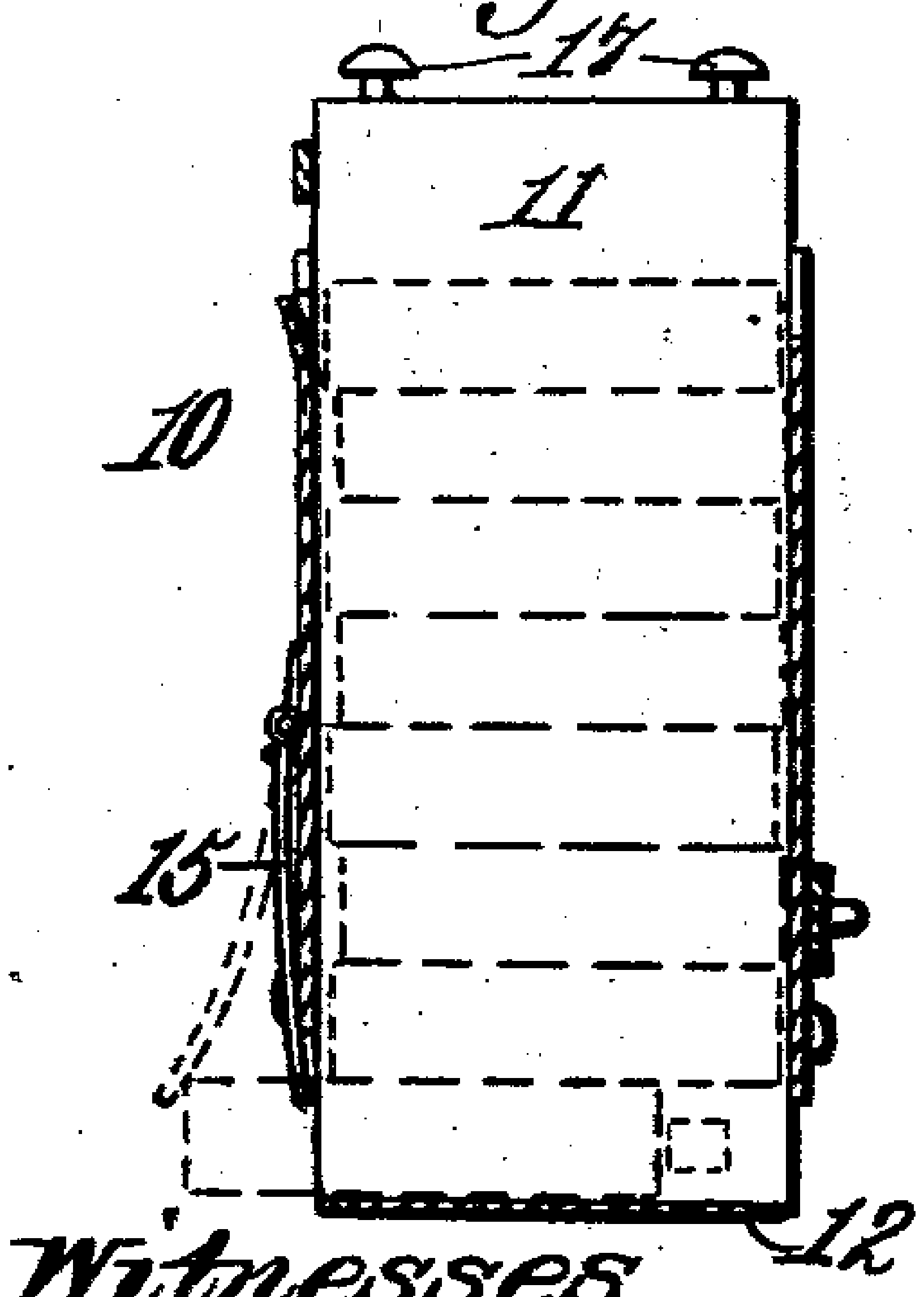


Fig. 7.

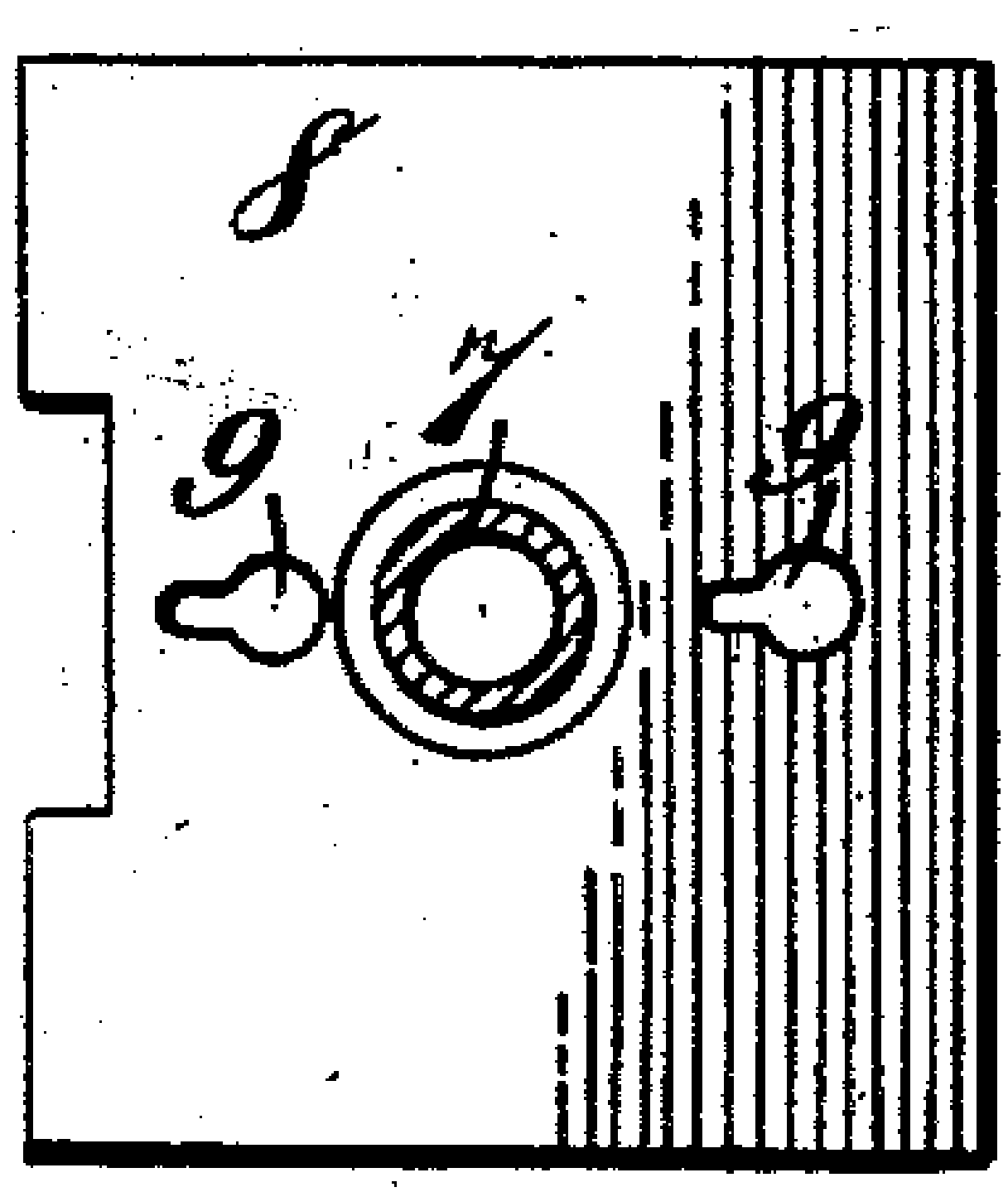
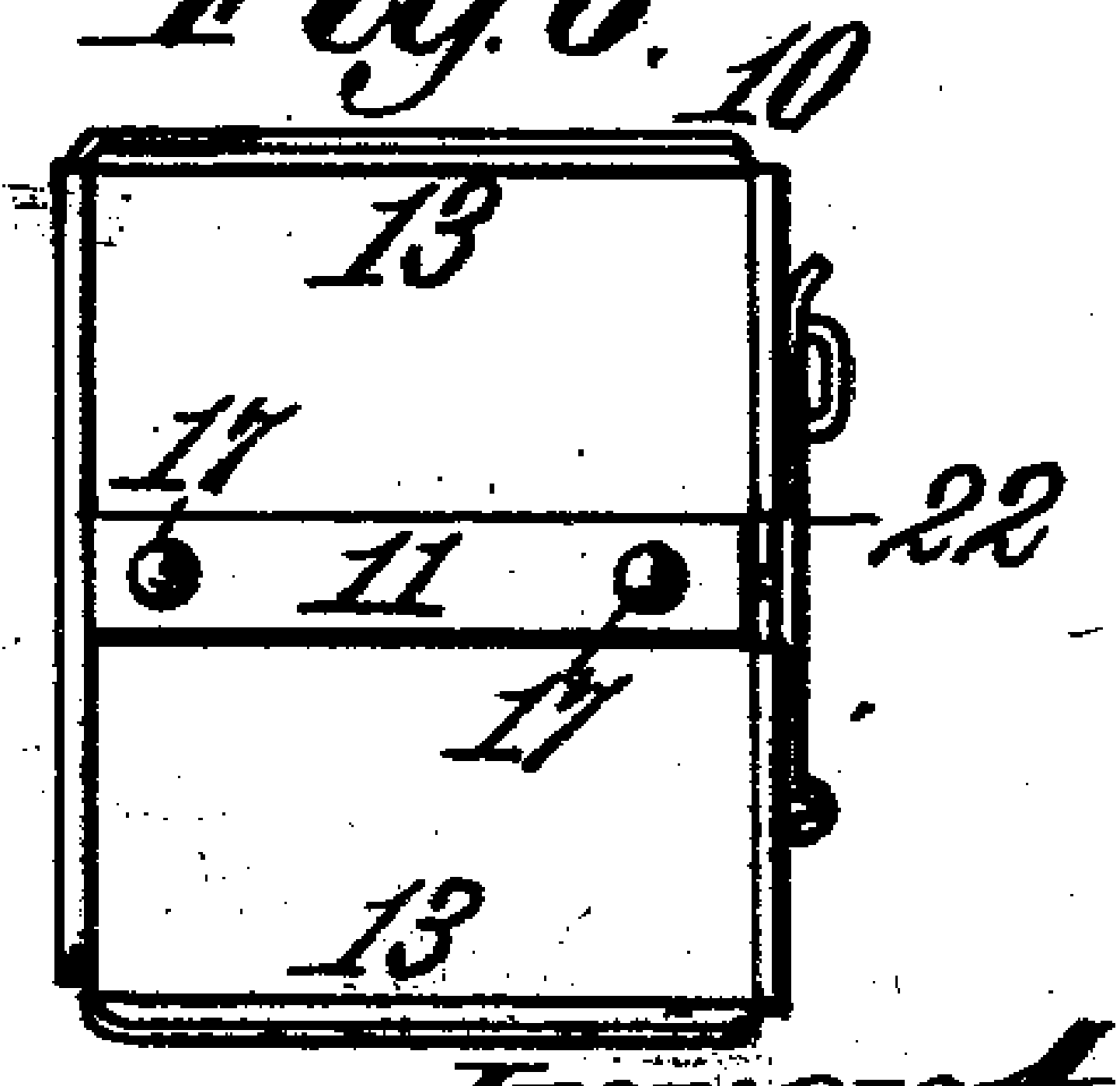


Fig. 6.



Witnesses.
Robert Everett,

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No. 744,005. Patented November 10, 1903.

UNITED STATES PATENT OFFICE.

CHRISTOPHER C. KITTERMAN, OF BOLCKOW, MISSOURI.

MAIL COLLECTION AND DELIVERY APPARATUS.

SPECIFICATION forming part of Letters Patent No. 744,005, dated November 10, 1903.

Application filed July 7, 1903. Serial No. 164,556. (No model.)

To all whom it may concern:

Be it known that I, CHRISTOPHER C. KITTERMAN, a citizen of the United States, residing at Bolckow, in the county of Andrew and State of Missouri, have invented new and useful Improvements in Mail Collection and Delivery Apparatus, of which the following is a specification.

This invention relates to what I shall for convenience term a "mail collection and delivery apparatus;" but I desire at this point to state that the invention is not limited in this respect, for the apparatus may be used with equal advantage in many other connections. For example, it may be employed for the collection or delivery of merchandise. However, it is of especial utility in the delivery and collection of mail along suburban routes, serving as a desirable substitute for the rural mail-carriers, whose equipments are very expensive to maintain.

The apparatus is illustrated in one simple adaptation thereof in the accompanying drawings, forming a part of this specification, which adaptation will be described in detail in the following description; but I do not restrict myself to the disclosure thus made, for material variations may be adopted as to several features of the invention within the scope of my claims succeeding such description.

The apparatus is simple, thoroughly effective, and can be readily and inexpensively installed.

Referring to the drawings, Figure 1 is a side elevation of an apparatus including my invention. Fig. 2 is a rear elevation of the same. Fig. 3 is an elevation of a pole for supporting the way along which the carriage constituting part of the system is adapted to travel. Fig. 4 is a front elevation of the multipart receptacle with the sections thereof closed. Fig. 5 is a rear elevation of the same with the sections thereof open for the removal or introduction of articles. Fig. 6 is a sectional plan view illustrating particularly the plate on the carriage to which the said receptacle is detachably connected. Fig. 7 is a plan view of the receptacle. Fig. 8 is a longitudinal sectional elevation of the receptacle, showing the boxes which are adapted to contain mail-matter therein.

Like characters refer to like parts throughout the different views.

The apparatus involves in its construction, in the embodiment thereof illustrated in the accompanying drawings and hereinafter described, a traveling carriage or vehicle which may be of any desirable character. The one illustrated in the drawings is denoted in a general way by 2, and it has a body of some suitable kind, upon which axles carrying wheels 3 are mounted. The carriage 2 is automatically operated, it being represented as carrying an electric motor 4 for the purpose in question. The motor is connected by suitable gearing to one of the axles. Four wheels 3 are shown, and in the present case they are adapted to roll upon rails 5, set in parallelism and made of some suitable electroconducting material, so as to supply a current to the motor 4 for operating the same, and consequently the carriage or vehicle 2. The rails 5 may be supplied with the necessary current by any suitable generator, which of course is not illustrated. The current is taken from the rails or wires 5 by the spring trolley-arms 6, suitably connected with the carriage and electrically connected with the motor 4 thereon. The rails or wires 5 in the present case are arranged overhead or at such a height from the ground that the carriage 2 and the receptacle (hereinafter described) connected therewith cannot be tampered with. The rails or wires 5 are suitably connected with the poles 5′.

The carriage 2, hereinbefore described, constitutes one convenient way for detachably supporting a receptacle containing the articles to be collected or delivered, and the receptacle illustrated is detachably connected with the carriage, as will now appear. From the body of the carriage, at a suitable point in its length, depends the hanger 7, terminating in an enlarged plate 8, to which the receptacle mentioned is directly detachably connected. The detachable union between the parts may be of any desirable kind. The plate is represented as having at opposite sides of the hanger 7 the keyhole-slots 9, adapted to receive headed studs or projections upon the receptacle.

The receptacle has an opening, hereinafter described as being located at or near the bottom thereof, through which the articles contained within said receptacle are successively discharged, an ejector supported independently of the carriage and along the line of way of the same being provided to positively remove the articles from the receptacle. Said receptacle also has a second opening, through which the articles may be supplied thereto, and it carries suitable means by which the last-mentioned articles can be dislodged from a support and delivered thereinto. The articles in question may be metallic boxes, generally made from sheet metal, adapted to inclose mail-matter. These boxes are discharged from the receptacle to patrons along the route, the patrons in turn placing empty boxes or boxes containing outgoing mail in position to be delivered into the receptacle.

The receptacle to which mention has been made is denoted in a general way by 10, and it comprises a plurality of compartments, illustrated in the drawings as being two in number, although this of course may be increased or decreased, if desired. The receptacle 10 includes in its construction a central wall 11, which divides the two compartments thereof from each other and which rises from the bottom 12, the two parts being united in any desirable manner. To the central wall 11, near the top thereof, are hinged the three-sided bodies 13. These bodies 13, with the common dividing-wall 11, constitute the article or box receiving compartments of the multipart receptacle 10, it being understood that the bodies 13 are open on the inner sides thereof. Said bodies are also open at their tops and bottoms. In fact, they present a structure that is of substantially channel form in cross-section. The bodies 13 extend short of the bottom 12, the side and front of each body extending a short distance below the rear thereof in order to provide a deep opening at the rear through which the boxes containing incoming mail can be passed. The outer extremities of the bottom have upturned flanges 14, against which the under portion of the lowermost box fits. The space between the lower edges of the front and side of each compartment of the receptacle 10 is less than the depth of the boxes contained therein, so that said boxes cannot accidentally escape either from the forward end or side of the receptacle, the flanges 14 aiding in preventing lateral motion of said boxes.

The rear wall of each body 13 is separated from the bottom 12 a distance equaling or slightly exceeding the depth of the boxes, so as to provide an opening through which said boxes can be passed by the action of an injector hereinafter described.

From the foregoing it will be understood that at the rear of the receptacle there are two discharge or delivery openings at or near the lower end thereof, (although of course this relation is not essential,) through which openings the boxes containing the incoming mail are passed as the carriage to which said receptacle is connected travels along its way.

I provide means normally effective for preventing the accidental removal of the boxes or other articles within the receptacle as the carriage is advanced along its way, and the means in the present case consist of spring-controlled detents each denoted by 15. These detents are pivotally mounted upon the rear of the receptacle 10 and are held in their vertical or effective positions by means of springs 16 acting against the same. The free ends of these detents extend downward across the delivery-openings in the receptacle to secure the object stated. It will be understood that there are openings in the forward side of the respective compartments of the receptacle 12, and into these forward openings an ejector may enter to dislodge the lowermost box of a pile in said compartments, the ejector in the present case being fixed. During the travel of the carriage an ejector will strike the lowermost box, and as the ejector is fixed relatively to the carriage the said lowermost box as the carriage is advanced will be pushed from the receptacle, the detent 15 being of course thrust rearward. As soon as said lowermost box has been discharged the detent will be instantly returned to its initial position by the power of its spring 16, and simultaneously therewith the second box in the compartment will drop onto the bottom 12. The ejector as it dislodges the lowermost box travels entirely through the receptacle, it being remembered that the bodies 13 extend short of the bottom 12 for this purpose.

Upon the top of the wall or partition 11 are headed studs or projections 17, adapted to be passed through the keyhole-slots 9, hereinbefore described, to detachably connect the receptacle 10 with the carriage. Upon the poles 5′ at proper intervals are suitably connected the ejectors 18, each patron of course having an ejector 18 within convenient distance of his premises. These ejectors are stationary relative to the traveling carriage 2. When the receptacle advanced by the traveling carriage reaches the first patron, the first ejector will be engaged by the lowermost box in said receptacle, and as the latter advances with the carriage said lowermost box will be pushed from the said receptacle. The second box thereafter drops onto the bottom 12 and will be subsequently removed from the receptacle by a second ejector, the same operation being repeated throughout the route or until all the boxes containing incoming mail are delivered. Naturally the same operation will be repeated with the two compartments of the receptacle.

In connection with the apparatus means are provided for effecting the collection of boxes from the patrons, containing outgoing matter, or empty boxes may be likewise collected. These empty boxes or ones containing outgoing matter are adapted to be supported upon shelves 19, located in a common horizontal plane and above the corresponding ejectors 18.

Upon the receptacle 10 and illustrated as carried by the central or dividing wall 11 thereof are the outwardly-disposed arms 20, which arms constitute a simple means for removing the boxes from the shelves 19 and causing their entrance into the upper open sides of the two compartments of the receptacle 10. As said arms strike the boxes they dislodge the same from the shelves and cause them to drop into said compartments.

Upon the uppermost box in each compartment containing the incoming mail is a channeled plate 21, the empty boxes as they enter the compartments falling onto the upper side of said plate, which in area agrees approximately with that of the boxes. The open side of this channeled plate is disposed outward, and when the last box in each compartment containing incoming mail has been delivered said plate drops onto the bottom 12, whereby on the return of the carriage 2 along its route the ejectors 18 will enter the openings in the bottom of the respective compartments of the receptacle and will traverse the space between the branches of the channeled plates without ejecting any of the boxes.

To facilitate the introduction and removal of the boxes inclosed by the two compartments of the receptacle 10, the bodies 13 are hingedly mounted, as hereinbefore described, and to secure the object in question they can be swung outward. They are normally held closed by a suitable fastening means, as a hasp and staple, (denoted in a general way by 22,) preferably secured under lock and key.

I have described the system in detail as especially adapted for the collection and delivery of mail. It may be used, of course, with advantage for the collection or delivery of articles of other kinds. The parts need not necessarily be constructed nor related, as hereinbefore set forth, for many deviations from these and other points may be made within the scope of the following claims.

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

1. The combination of a traveling carriage and a receptacle supported thereby for containing articles, having a delivery-opening for said articles, and means supported independently of the carriage for positively ejecting said articles through said opening.

2. The combination of a traveling carriage and a receptacle detachably connected with said carriage for containing articles, having a delivery-opening for said articles, and means supported independently of the carriage for positively ejecting said articles through said opening.

3. The combination of a traveling carriage and a depending receptacle supported thereby for containing articles, having a delivery-opening for said articles, and means supported independently of said carriage for positively ejecting said articles through said opening.

4. The combination of a traveling carriage and a receptacle supported thereby for containing articles, having a delivery-opening for said articles, means supported independently of the carriage for positively ejecting said articles through said opening, and means for effecting the delivery of articles into said receptacle.

5. The combination of a traveling carriage and a receptacle supported thereby for containing articles, having a delivery-opening for said articles, means supported independently of the carriage for positively ejecting said articles through said opening, and means carried by said receptacle for effecting the delivery of articles thereto.

6. The combination of a traveling carriage and a receptacle supported thereby, having front and rear openings, the rear opening being adapted for the delivery of articles from the receptacle, and means adapted to enter the front opening to effect the discharge of said articles from the receptacle.

7. The combination of a traveling carriage and a receptacle supported thereby, said receptacle having an opening near its bottom extending along the front, rear and side and deepest at its rear, and means adapted to enter the opening, as the carriage travels, to effect the discharge of articles from the receptacle.

8. The combination of a traveling carriage and a receptacle supported thereby, for containing articles, having a delivery-opening for said articles, yieldable means for preventing the accidental passage of said articles through said opening, and means for effecting the delivery of the articles through said opening as the carriage advances.

9. The combination of a traveling carriage and a receptacle supported thereby for containing articles, having a delivery-opening for said articles, a spring-controlled detent on the receptacle projecting across said opening and serving normally to prevent the accidental removal of the articles through said opening, and means for ejecting the articles through said opening.

10. The combination of a traveling carriage and a receptacle supported thereby for containing articles, having a delivery-opening for said articles, and a yieldable detent extending across the opening and serving normally to prevent the accidental removal of said articles through said opening.

11. The combination of a traveling carriage and a receptacle supported thereby, having receiving and delivery openings, means arranged to enter the receptacle and for positively effecting automatically the discharge of articles through said delivery-opening, and independent means for effecting the supply

of articles into the receptacle through said receiving-opening.

12. The combination of a traveling carriage and a receptacle supported thereby comprising a central dividing-wall, a bottom, and a plurality of bodies hingedly connected with the dividing-wall, the bodies extending short of the bottom, thereby to form an opening for the discharge of articles contained within the receptacle and for the entrance of an ejector.

13. The combination of a traveling carriage and a receptacle supported thereby comprising a central dividing-wall, a bottom and a plurality of bodies hingedly connected with the dividing-wall, the bodies extending short of the bottom, thereby to form an opening for the discharge of articles contained within the receptacle and for the entrance of an ejector, and means carried by the dividing-wall for effecting the delivery of articles into the receptacle.

14. A receptacle mounted for traveling movement and having an opening for the discharge of articles contained within the same, a second opening for the entrance of an ejector, and a third opening above the other openings for receiving articles to be supplied to said receptacle.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHRISTOPHER C. KITTERMAN.

Witnesses:
HEATH SUTHERLAND,
A. L. BRUMBAUGH.