

(No Model.)

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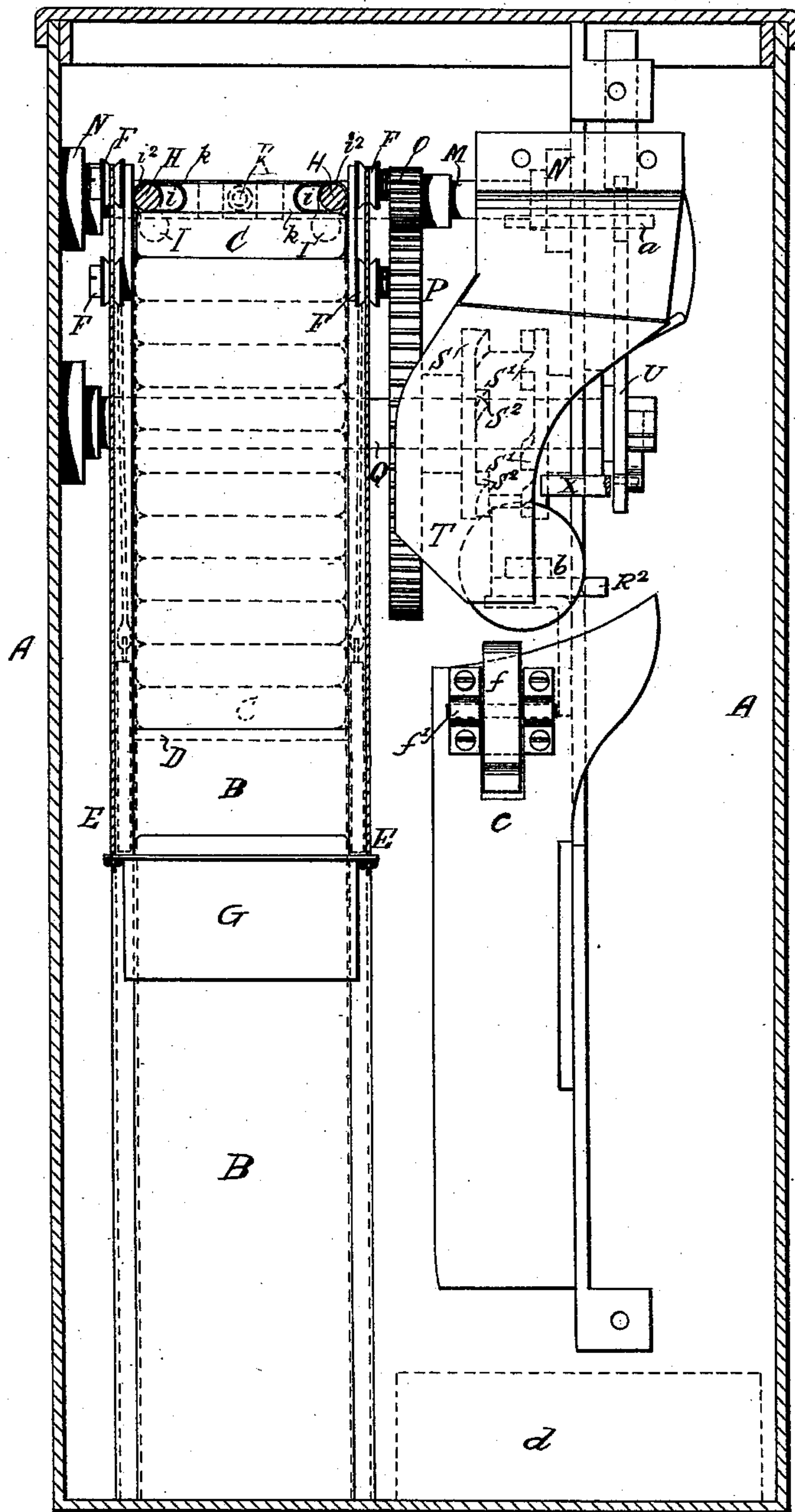
S. STANBRIDGE.

APPARATUS FOR DELIVERING GOODS.

No. 392,139.

Patented Oct. 30, 1888.

Fig. 1.



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Martin A. Curtis,

Inventor:

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(No Model.)

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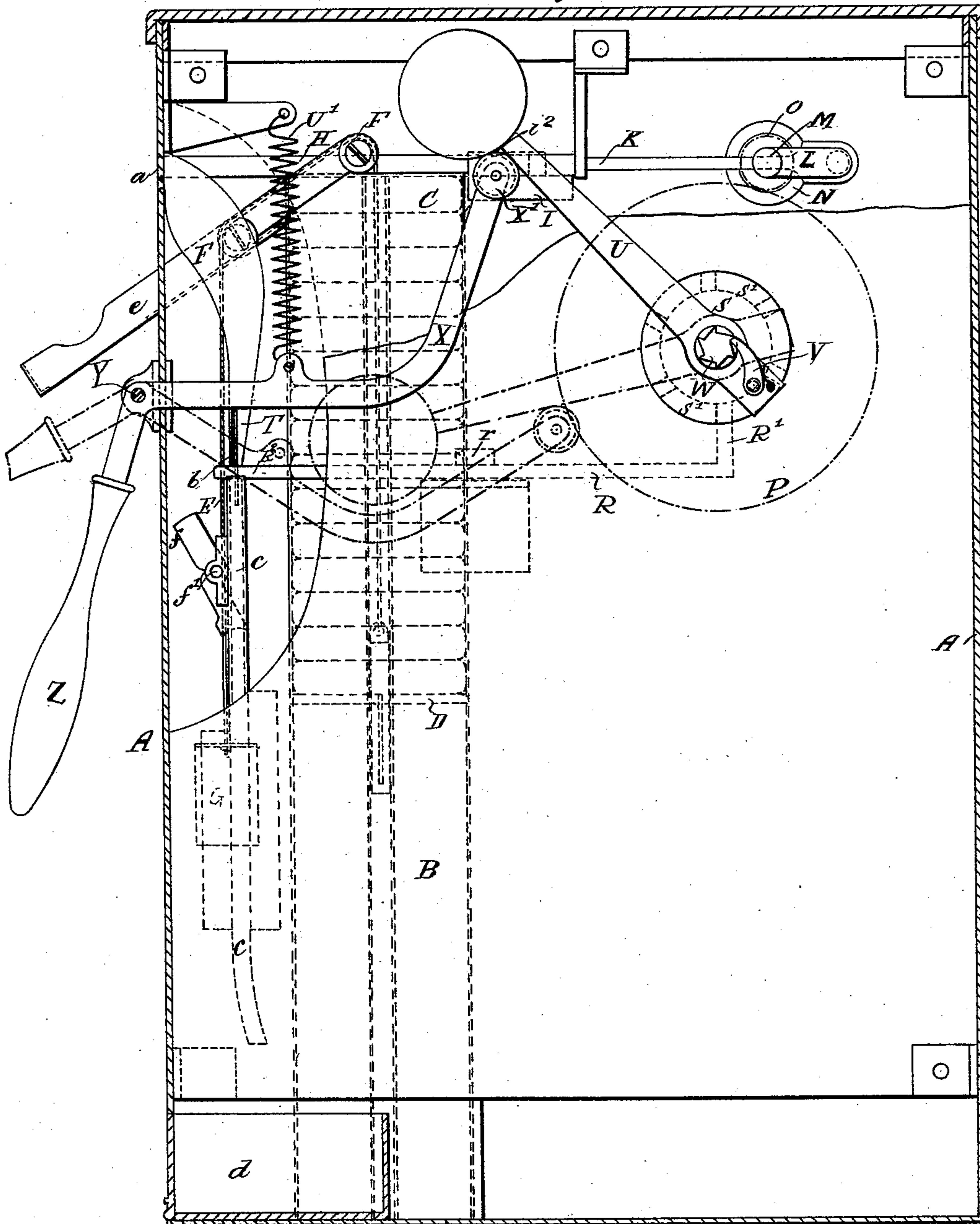
S. STANBRIDGE.

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Fig. 2



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S. STANBRIDGE.
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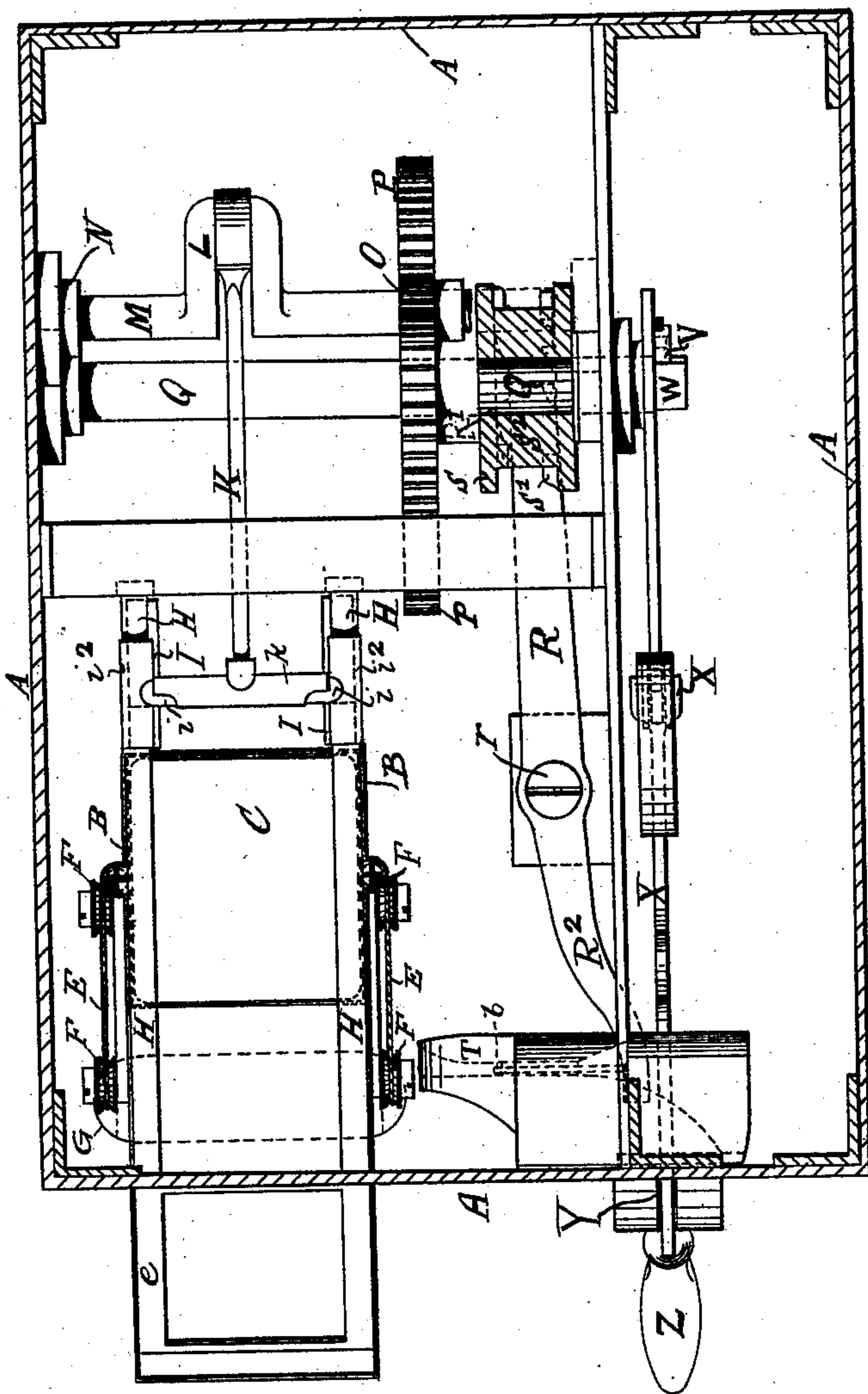


Fig. 3.

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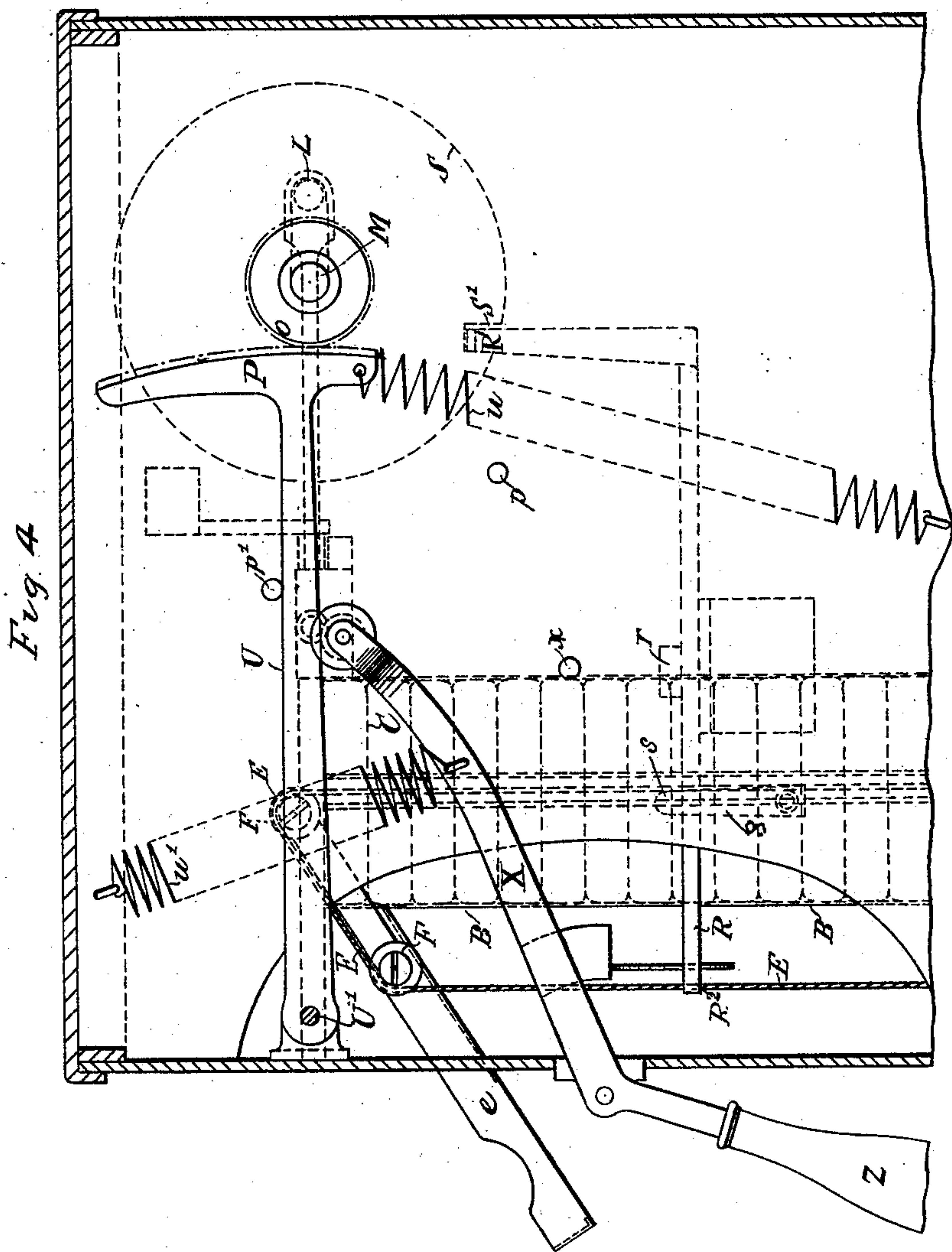
4 Sheets—Sheet 4.

S. STANBRIDGE.

APPARATUS FOR DELIVERING GOODS.

No. 392,139.

Patented Oct. 30, 1888.



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UNITED STATES PATENT OFFICE.

SAMUEL STANBRIDGE, OF STAMFORD HILL, COUNTY OF MIDDLESEX,
ENGLAND.

APPARATUS FOR DELIVERING GOODS.

SPECIFICATION forming part of Letters Patent No. 392,139, dated October 30, 1888.

Application filed January 30, 1888. Serial No. 262,417. (No model.) Patented in England March 24, 1887, No. 4,422.

To all whom it may concern:

Be it known that I, SAMUEL STANBRIDGE, engineer, a subject of the Queen of Great Britain and Ireland, and residing at 4 Woodville Grove, St. Ann's Grove, Stamford Hill, in the county of Middlesex, England, have invented certain new and useful Improvements in Apparatus for Delivering Goods after the Insertion thereinto of a Coin in Payment for the Goods, (for which I and Godfrey Louis Lyons have applied for a patent in Great Britain on the 24th March, 1887, No. 4,422,) of which the following is a specification.

This invention has for its object to provide efficient and simple apparatus for delivering goods after the insertion of a coin in payment therefor.

In an apparatus constructed according to this invention the coin inserted into the apparatus in prepayment for the goods to be thereafter delivered takes up a position by which it acts as a thrust-piece for enabling a lever to be released from the normal position in which it retains a wheel and a shaft, to which the said wheel is attached, in position, so that it is prevented from rotating under the action of a weight or spring which tends to give the said wheel and shaft motion of rotation. When the lever is so operated and the wheel is released, it and its shaft rotate or partly rotate until they are stopped by the lever (which has returned to its normal position) engaging with the retaining stop or tooth on or in the wheel, or with one of a series of such stops or teeth, and this rotation or partial rotation of the wheel and shaft turns a crank-shaft, the connecting-rod of the crank being connected to a sliding and guided pusher, by which the article to be delivered is pushed out from the apparatus, the said pusher then being returned by the crank to its normal position, ready to be again operated on the insertion of another coin. The lever is operated (when a coin intervenes between it and the coin-chute) from the exterior of the apparatus by means of a movable piece projecting to outside the case of the apparatus; but this movable piece can only act on the releasing-lever when a coin intervenes. The wheel, which is released by the lever, has a grinding surface or surfaces opposite a re-

taining-tooth or series of retaining-teeth, by which the lever is with certainty guided back into engagement with the retaining-tooth or the next of the series of retaining-teeth of the said wheel. The goods are arranged in a pile, which, by a spring or weight, is preferably fed upward in order to reduce the height of the apparatus, the topmost of the goods being then always presented opposite the pusher, the store of the goods being contained in a suitable receptacle at a lower level than the pusher. The coin, after it has acted on the lever, falls into a box or receptacle beneath.

In order that the said invention may be fully understood, I will now proceed more particularly to describe the same, and for that purpose shall refer to the several figures on the accompanying sheets of drawings, the same letters of reference indicating corresponding parts in all the figures.

I have shown in Figures 1 to 3 (which I will first describe) an apparatus in which a series of teeth or retaining projections are made on the retaining-wheel, and gearing is used to give the full rotation to the crank-shaft which actuates the pusher which ejects the goods, and I have shown a weighted lever to operate the delivery apparatus when the wheel is released; but it will be understood that there may be but one stop or tooth on the wheel, and that its shaft may be connected directly to or be formed in one with the crank-shaft, so that one complete rotation of the wheel is made at each operation of the machine. Instead of a weighted lever, a spring (which may be like a clock-spring) or a weight attached to a cord or chain wound on a pulley on the shaft of the wheel can be used.

Fig. 1 is a front elevation (with the front plate removed) of an apparatus constructed according to this invention, and Fig. 2 is a transverse section of the same. Fig. 3 is a sectional plan showing clearly the pusher for ejecting the goods and the retaining-lever which is operated by the movable piece on the intervention of a coin.

A is the case of the apparatus, in the interior of which is a trunk or receptacle, B, to contain the goods to be delivered, which goods are represented in the drawings as consisting

of tablets or packets C. The goods are supported on a plate or platform, D, fitted to slide in the trunk B, and connected to one end of the cords E, which pass over pulleys F and have attached to their other ends weights G, which tend to raise the platform D and force the goods upward against bars H, which serve as guides for a reciprocating pusher, I, (here shown as consisting of two pieces,) which deliver the goods, as hereinafter described. A spring or a single weight may be used to urge the goods upward. Parts of the pusher I are provided with tubes i^2 , sliding on the bars H, and connected by a cross-piece, i , fitted with a sleeve, k , to which is connected one end of a rod, K, the other end of which is connected to a crank, L, on a shaft, M, mounted in bearings N in the interior of the apparatus and carrying a pinion, O, in gear with a toothed wheel, P, fast on another shaft, Q, so that when the shaft Q is rotated motion is imparted through the pinion O and crank L to the pusher I to move it forward along the bars H to deliver one of the goods C and then to return the said pusher I to its normal position in readiness for a fresh operation. The shaft Q is normally prevented from rotating by a lever, R, one end, R', of which engages with projections or stops S' in the periphery of the wheel S, fast on the shaft Q, the opposite end, R², of the said lever being arranged in proximity to a chute, T, so that when a coin is inserted it falls into the chute T and lodges between it and the end R² of the lever, and is in position to be pressed down into the receptacle for it by the movable piece or lever X. In being so pressed down the coin, being larger in diameter than the space normally between chute T and the end R² of the lever R, is moved so that its end R' is released from engagement with the stop S', and thus allows the wheel S to partially rotate under the action of the weighted arm or lever U, mounted loosely on the shaft Q and carrying a pawl, V, engaging with the teeth of a ratchet-wheel, W, fast on the shaft Q, so that when the end R' of the lever R is disengaged from the stop S' the lever U will descend and, through the pawl V, impart a partial rotation to the shaft Q, and thereby, through the wheel P, pinion O, and crank L, give to the pusher I the reciprocating motion hereinbefore described.

S² are guides in or on the wheel S and opposite the stops S', which guides S², as the wheel P rotates, force the end R' of the lever R into position to insure it engaging with the next stop S' of the series on or in the wheel S.

The weighted lever U is raised back to its normal position by means of a spring, U', attached to the lever X, the inner end of which is provided with a roller, X', which bears against the under side of the lever U. The lever X is pivoted at Y to the case of the apparatus, through which it passes to the exterior, where it is provided with a handle, Z, by means of which it can be depressed against

the power of the spring U'. The lever X constitutes the aforesaid movable piece for pressing upon the coin to liberate the automatic delivering mechanism.

The operation of the apparatus is as follows: A coin (for example, a penny) being inserted through an opening, a , provided for the purpose in the case of the apparatus, the said coin enters the chute T and takes the position shown at b , projecting through an opening in the bottom of the chute T, which opening is sufficiently large to allow of the coin passing through, but through which the coin is prevented from passing by the end R² of the lever R. Upon raising the handle Z the lever X descends and presses upon the coin, which forces the end R² of the lever R to one side, and so causes the lever to turn on its fulcrum r , and the coin falls and passes through the opening in the hopper into a chute, c , which conducts it into a drawer, d , or other receptacle arranged to receive it. The end R' of the lever R, by the aforesaid movement of the said lever, is disengaged from the stop S', with which it was in contact, so that the shaft Q will be turned through a partial rotation, owing to the descent of the weighted lever U, causing the pawl V to act on the ratchet-wheel W. The extent of rotation given to the shaft Q is regulated by the distance between the stops S' on the periphery of the wheel P, and should be such that the wheel P will impart a complete rotation to the pinion O and crank L, whereby the pusher I will be moved forward along its guides, and will move the top one of the pile of goods C into the delivery-spout e outside the apparatus for removal by the purchaser, and the pusher I will then be returned to its normal position in readiness for a fresh operation. When the topmost of the pile of goods in the trunk B is thus removed, the rest will be elevated by the weight or weights G, so as to bring that which is now the uppermost of the pile of goods into position opposite the pusher I to be delivered by it on the next operation of the apparatus. The dotted lines in Fig. 2 show the lever X and arm U in their lowest positions after operation and before they return to their normal positions.

Without the interposition of the coin, as described, the lever X may be raised and lowered without operating the delivery mechanism, as the lever R will not be disengaged from the retaining-stop S until a coin is inserted. In order to prevent the goods from being fraudulently extracted by the insertion and subsequent withdrawal of a coin attached to a wire or string, a lever or catch, f , is hinged at f' to the chute c , the lower end of which lever passes through an opening into the interior of the chute, so that when the coin is forced past the releasing-lever into the chute the weight of the coin will be sufficient to turn the lever f , so as to allow the coin to pass; but the said lever, after the coin has passed, will return to

its normal position, (that shown,) and thereby prevent the coin from being withdrawn by the wire or string attached thereto.

Fig. 4 is a sectional elevation of the upper 5 portion of a modified arrangement in which the delivery of the goods is effected by means of a pinion and rack, the latter operated by a spring, and in which the shaft Q, hereinbefore described, is dispensed with, as a partial rota- 10 tion is given directly to the shaft of the ejector arrangement at each operation of the apparatus. The lever U is pivoted at U', and at its other end is provided with a rack, P, in gear with the pinion O, fast on the crank-shaft 15 M, and is connected to a spring, *u*, which tends to draw the lever in a downward direction, but which is prevented from descending by the lever R engaging the stop-wheel S, which is also fast on the crank-shaft M, and is pro- 20 vided with a notch or stop, S', with which the end R' of the lever R engages. When a coin is inserted in the chute and the lever X is depressed by means of the handle Z, so that the coin acts on the lever R to release its end R' 25 from the notch or stop S', the lever U will be drawn down by the spring *u* until it reaches the stop *p*, and thereby, through the rack P and pinion O, a partial rotation is imparted to the crank-shaft of the ejector, and thus by 30 means of the pusher I the uppermost of the pile of goods is ejected into the spout *e*, as hereinbefore described. Upon releasing the handle Z the lever X will be raised by the spring *u'* (which is stronger than the spring 35 *u*) to its normal position against a stop, *p'*, and carry upward with it the lever U against the power of the spring *u*, and as the lever so rises the rack P will partially rotate the shaft M in the reverse direction, and thus return the 40 pusher I (hereinbefore described) to its normal position in readiness for the next operation, the notch or stop on the wheel or disk S being also brought into position for the end R' of the lever R to engage therewith. To 45 insure the end R' engaging the notch or stop S, a spring, *s*, may be employed to press the end R' of the lever R against the side of the wheel or disk S, so that when the notch or stop S' comes opposite the said end R' it will 50 be caused to engage therewith; or, instead of the spring, a guiding-surface similar to those S², hereinbefore described with reference to Figs. 1, 2, and 3, may be employed.

Instead of the rack and pinion hereinbefore described, straps attached to the lever U 55 and passing round pulleys fast on the crank-shaft M may be employed for imparting motion to the said crank-shaft by the rising and falling motions of the lever U.

60 Weights may of course be employed instead of springs for effecting the raising and lowering of the lever U.

x is a stop for the lever X.

Having now particularly described and as- 65 certain the nature of this invention and in what manner the same is to be performed, I declare that what I claim is—

1. In apparatus for delivering goods after the insertion of a coin in payment thereof, a reciprocating pusher to deliver the goods 70 and an actuating mechanism which, when released, operates said pusher, in combination with a chute and a retaining-lever, between which the coin falls and is held, a pressure lever or handle for pressing the coin down past 75 the retaining-lever, and thus imparting movement to the latter, and a retaining-wheel connected with said pusher-actuating mechanism and normally engaging the retaining-lever, so as to hold the parts at rest, the arrangement 80 being such that the coin, when acted on by the pressure lever or handle, will move the retaining-lever out of engagement with the retaining-wheel, substantially as and for the purposes hereinbefore set forth. 85

2. The sliding pusher and the crank L and mechanism for rotating said crank, in combination with the retaining-wheel, the retaining-lever, the pressure-lever, and the chute, sub- 90 stantially as and for the purposes hereinbefore set forth.

3. In apparatus for delivering goods after the insertion of a coin in payment therefor, a sliding pusher, I, and mechanism which actu- 95 ates said pusher when released, the retaining-wheel, retaining-lever, pressure-lever, and chute, in combination with a guide or trunk for containing the goods, provided with an automatically-adjustable bottom or supporting- 100 platform which is fed toward the pusher as the goods are delivered, substantially as and for the purposes hereinbefore set forth.

4. The sliding pusher, the lever U, and mechanism through which movement therefrom is imparted to the pusher, and the retaining- 105 wheel and retaining-lever for holding said parts at rest, in combination with the chute and the pressure-lever X Z, operating when moved in one direction to cause (through the intermediary of the coin) the retaining-lever 110 to release the retaining-wheel, and when moved in the opposite direction to return the lever U to its original position, substantially as hereinbefore set forth.

In testimony whereof I have signed my name 115 to this specification in the presence of two subscribing witnesses.

SAMUEL STANBRIDGE.

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WM. JOHN WEEKS,
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