R. G. LEWIS & H. BROOKER.

COIN FREED APPARATUS AND THE LIKE.

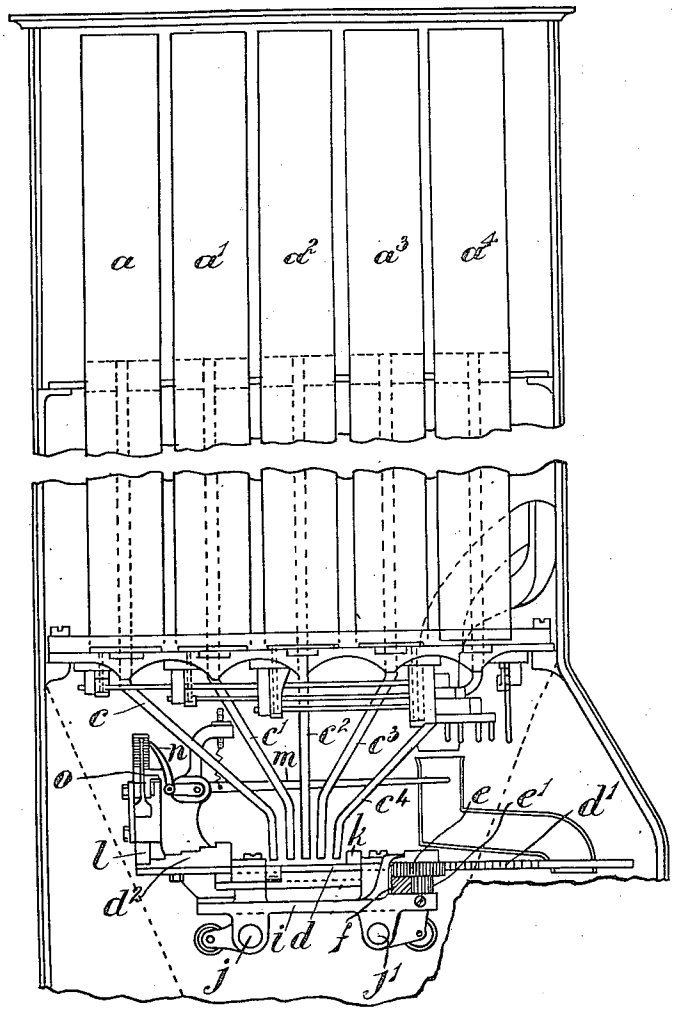
APPLICATION FILED MAY 24, 1918.

1,282,436.

Patented Oct. 22, 1918.

3 SHEETS—SHEET 1.

FIG. 1.



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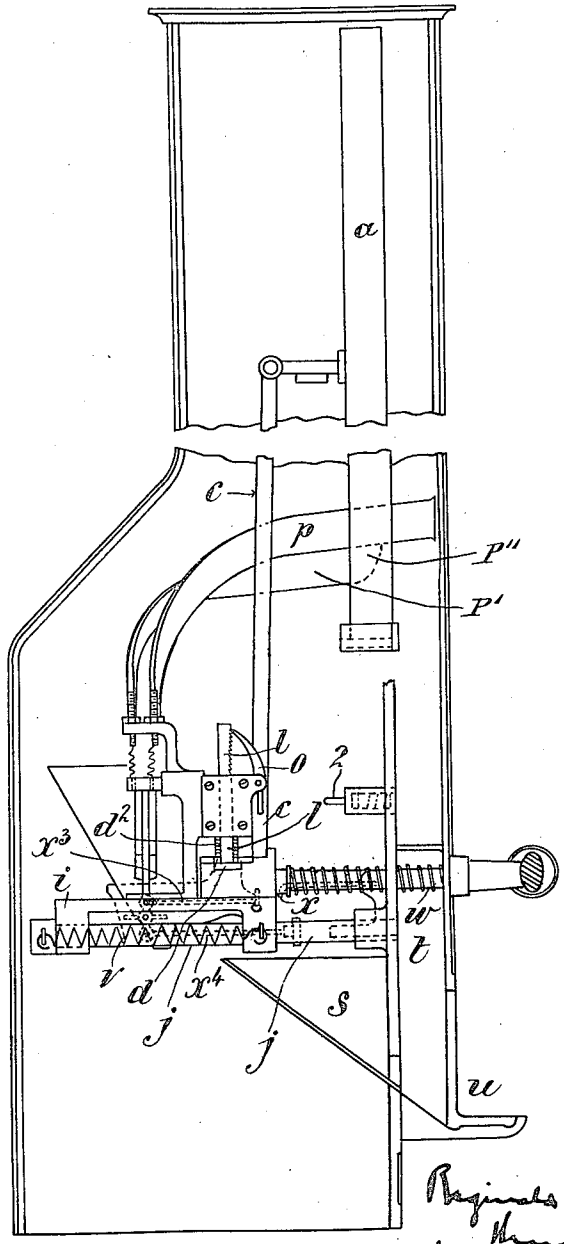
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3 SHEETS—SHEET 2.

Fig 2.



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3 SHEETS—SHEET 3.

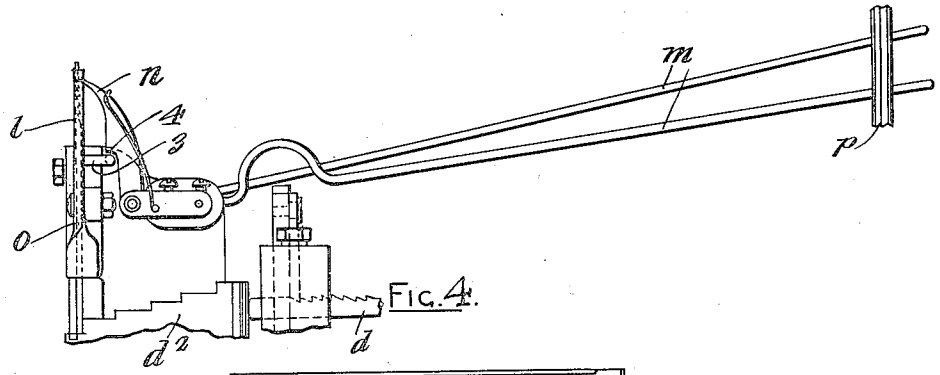


FIG. 4.

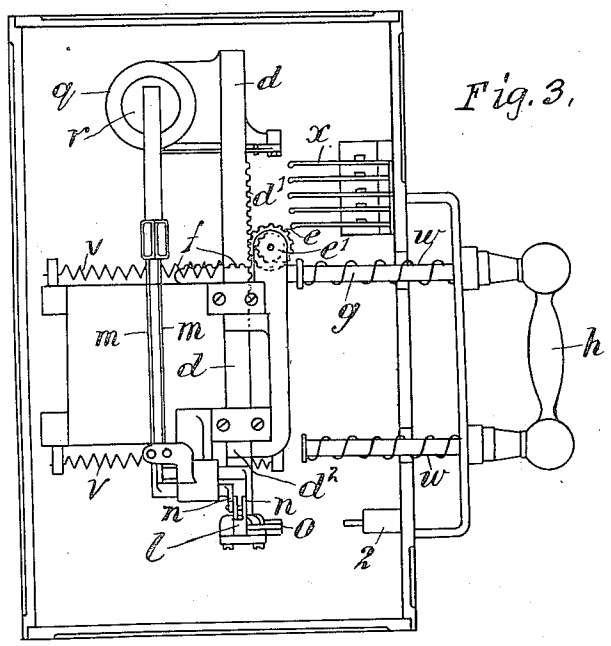


Fig. 3.

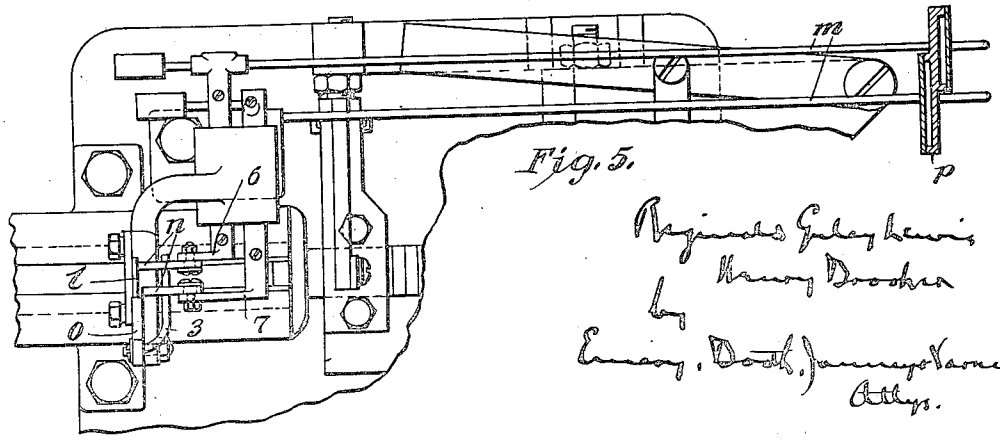


Fig. 5.

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UNITED STATES PATENT OFFICE.

REGINALD GULEY LEWIS AND HENRY BROOKER, OF LONDON, ENGLAND.

COIN-FREED APPARATUS AND THE LIKE.

1,282,436. Specification of Letters Patent. Patented Oct. 22, 1918.

Application filed May 24, 1918. Serial No. 236,331.

To all whom it may concern:

Be it known that we, REGINALD GULEY LEWIS and HENRY BROOKER, subjects of His Majesty King George V of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Sea and Emperor of India, residing at London, England, have invented certain new and useful Improvements in Coin-Freed Apparatus and the like, of which the following is a specification.

The present invention relates to a coin-freed apparatus or the like for delivery of goods, and being particularly applicable to solid articles stored in vertical pile, whether in one pile or several piles, it will be hereinafter described in that application.

A chief aim of the present invention is to provide an improved multiple coin mechanism by which the use of one coin or two or more coins together equivalent in value to the one coin shall be optional, also in which the value received shall be optional and proportionate to the value of the coin or coins inserted for a unit delivery of the machine.

For example, a machine under this invention may be so provided for use with copper coinage of English currency that the use of two halfpennies or one penny is optional; similarly is optional four halfpennies or two pennies or two halfpennies and one penny and so on. Similarly also for optional values any value within the range of values provided, as ½d, 1d, 1½d, 2d, 2½d, and 3d values, may be obtained by the use of any number of halfpennies from 1–6, or in the case of the even values by the use of a corresponding number of pennies or in the case of the odd values above one penny by the use of both pennies and halfpennies.

To this end we propose the control or release for travel of an operating slide by a climb-up ratchet or step by step advancing stop-bar, the climb-up or advance in steps or stages of which is arranged to be effected by actuating means which are operated by the passage of the coins.

One step or stage advance of the ratchet or stop-bar must correspond to the lowest value coin, the use of which the machine allows, and the number of steps or stages in advance of the ratchet or stop-bar for the largest value coin must be to one as the largest value coin is a multiple in value to the lowest coin. Thus if the ratio be 2 to 1; two of the smaller coins must be instrumental in producing the same advance of the ratchet or stop-bar as one of the larger coins.

The improved mode of controlling delivery according to the present invention is by a straight vertically set ratcheted bar which may be called a climb-up stop-bar. Upon the ratchet face of this stop-bar a series, or group, of levers operates one at a time; these levers operating by lifting the stop-bar. Each of these levers is actuated by a coin or coins and the device is so ordered that the unit coin or smallest value raises the vertically traveling stop-bar one tooth. Thus, for example, when the unit amount is a halfpenny a throw or action of the halfpenny lever raises the vertically traveling stop-bar one tooth. Two halfpence in succession will give two throws of the halfpenny lever and will raise the stop-bar two teeth, but a penny gives one throw of the lever actuated by pence and raises the stop-bar two teeth. Thus two halfpence or a single penny will produce similar action on the stop-bar: the monetary score is mechanically kept on the stop-bar, a pawl falling in the ratchet at each raising. The addition being mechanically complete; the customer pulls an operating handle which brings forward the delivery slide. The downward or non-gripping end of the pawl is then by a touch piece lifted out of the ratchet, whereupon the stop-bar is freed and slides down in a vertical path ready for another setting.

By preference in order that all coins shall be inserted in the same slot, provision is made for sorting out and delivering to the proper levers. Such provision may take the form of side by side runways having a common mouth, the runway for the larger coins, opening at the side for side tipping the smaller coins into the runway appertaining thereto.

In normal position the stop-bar may engage a step face, or the lowest of a series of step faces on a selector bar or operating slide to lock this against movement. In accordance with the advance of the stop-bar, the selector bar or slide is freed itself for an advance in the line or direction of its axis over a distance equal to the depth of said single step, or if there is a series of steps, the depth of one or more of its steps, and on being so advanced the selector bar

or slide is registered for suitable operative engagement with, or operates the ejecting mechanism of the pile, or, otherwise that one of the several piles of articles which corresponds to the value of the coin or coins through the mediation of which the controlled movement of the selector bar was determined.

A single step on the selector bar or slide will serve for use with a single pile in the sense of setting for delivery either by a single coin, as one penny, or by two coins, as two halfpennies. In this case the selector bar or operating slide is released for equal movement by two small coins or one larger but equal aggregate value coin to move to engage a single actuating lever for delivery. For use with several piles of similar value which shall come into service sequently as exhaustion occurs, one step on the selector bar or operating slide will similarly serve for release for a delivery movement by one or two coins and as the similar value piles exhaust one by one manually or automatically actuated stops corresponding to said piles can be arranged to come into the path of the selector bar or slide to limit its travel, and register it for engagement with the proper actuating lever for delivery.

In cases where the piles are of similar value but of different goods, the manually operated stops allow an optional limiting of the stroke of the selector bar or operating slide after this has been released for travel, so that it shall register with the actuating lever corresponding to the delivery desired.

It is not essential to provide the step or the series of steps on the selector bar or operating slide itself. An equivalent would be the provision of the step or steps on the climb-up stop device, the step rises then being horizontal instead of vertical.

The invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a front elevation of the interior of a coin-freed apparatus with multiple coin mechanism constructed according to this invention.

Fig. 2 is a side elevation.

Fig. 3 is a plan of the multiple coin mechanism.

Figs. 4 and 5 are enlarged front view and plan respectively of the stop bar lifting levers, the stepped block which controls the selector slide being also shown.

In a machine as depicted having a number of piles a, a', etc., of goods differing in value arranged side by side in a plane parallel to the front of the machine, each pile a, a', etc., is arranged to rest partly or wholly on a slide having an upstanding edge adapted to put out one article in well known manner when the slide is moved forward through the mediation of a lever c pivoted on the frame of the machine, the lower ends of these levers c, c', etc., being conveniently side by side at equal distance from one another in a plane parallel to the front of the machine.

For controlling the ejectment of single deliveries from any pile we may employ a delivery device as described and claimed in our concurrent application Serial No. 236,322 filed of even date herewith.

This delivery device forms no part of the present invention, is not claimed herein, and, by way of example, is referred to only for the purpose of promoting a clear understanding of the present invention.

In this delivery device a selector bar d with rack d' is adapted to slide horizontally in a line or direction parallel to the front of the machine and when freed is adapted to be actuated by a pinion e itself actuated by a rack f through a companion e'. The rack f is free to slide in a direction at right angles to the selector bar, the rack f and the selector bar d lying in parallel horizontal planes and the rack f being integral with a stem g which passes through the front of the machine and carries on the projecting end a knob or handle h accessible to the purchaser.

A slide or carriage i supported and free to slide horizontally on rods j, j' in a direction normal to the front of the machine carries the selector bar d, the pinion e, and the actuating rack f.

On the selector bar d is a stop or catch k which registers with one or other of the slide levers c, c', etc., above mentioned according to the distance the selector bar d is freed by the stop-bar l to travel in its own direction before moving forward with the slide or carriage i.

l designates the straight vertically set ratcheted stop-bar which is operatable as described by a series of levers m, m and clicks n, n, being arranged free to slide in a vertical direction. When used with the delivery mechanism of our concurrent application the stop-bar l with its associated parts may be mounted on the slide or carriage i to move therewith. In this case the coin-actuated levers, m, m, for operating the stop-bar l are pivoted on an upstanding portion of the slide or carriage i and have pawls n, n engaging a ratcheted face of the stop-bar l, a detent or locking pawl o being arranged to retain the stop-bar l at any height to which it may be lifted.

The coin runway p, illustrated as arranged to separate pence from halfpence, by any known or approved method, is provided to deliver pence to actuate one of the levers m above described, the throw or action of which is arranged to lift the stop-bar, two teeth, for example, for each coin passing; and to deliver halfpence to actuate the other lever m, the throw or action of which is arranged to lift the stop-bar one tooth, for ex-

ample, for each coin passing, so that whether one penny be inserted, or two halfpence, the stop-bar will be lifted two teeth as a result.

One convenient way of bringing about this result is to connect the auxiliary runway p' for smaller coins to the lower surface of runway p, providing a connecting opening p'' sufficiently large to insure the smaller coins falling therethrough but too small to allow any of the coins of largest diameter to pass therethrough. In case coins of more than two sizes are employed, a small runway may, of course, branch from runway p' to separate coins of smaller diameter from those of second largest diameter.

To bring about proper action of the stop bar, I provide load arms 6, 7 for levers m, whose lengths are in direct proportion to the weight of the coin corresponding thereto, pawls n being preferably connected to the free ends of said load arms. For a given deflection of the power arms of levers m, the corresponding pawl will obviously deflect the stop bar a distance proportional to the length of the load arm, which is proportional to the weight of the inserted coin.

The selector bar d is stepped as described at the stop bar end d^2 to engage with the stop-bar l; the particular step engaged being determined by the height to which the stop bar l has been lifted.

Action of the machine.

The purchaser inserts, for example, a number of dissimilar coins as pence and halfpence in the one slot provided; these are sorted into pence and halfpence and run down their proper runways and actuate the levers m, m, appertaining thereto one or more times as there are one or more coins of similar value. The stop-bar l is thus lifted by the levers and clicks a number of steps equal to the sum counted or expressed in halfpennies in value inserted. The purchaser pulls the handle h provided and actuates the rack f and pinions e, e', to move the selector bar against the influence of a spring or equivalent v, v in a direction parallel to the front of the machine until the step face appertaining to said value engages with the stop-bar l and locks the selector bar d against further movement in its own direction. Continuing to pull the handle h, the purchaser now pulls the whole slide or carriage i forward against the influence of a stronger spring or equivalent w, w and during this movement the catch or stop k on the selector bar d engages the lever c or c', etc., corresponding to the pile of articles selected, whereby as the whole is continued to be pulled forward an article is put out and falls down to the opening.

The detent pawl o and coil lever pawls n are arranged to be disengaged in any appropriate manner to allow the stop bar l to drop back to normal position. For example, 2 designates a touch piece against which a tail piece of the pawl o is brought for withdrawing the pawl by the operation of the delivery slide. Simultaneously the pawls n, n are withdrawn by the lifting motion of the finger 3 which is fixed to the pawl o and presses under projections 4 of the pawls n, n as shown in Figs. 4 and 5.

What we claim is:—

1. In coin freed apparatus, in combination, a source of supply for delivery, an ejecting mechanism, a reciprocable member, a lever adapted to operate said member when a coin is inserted to cause the latter to be deflected from normal position by an amount substantially proportional to the value of inserted coins, means for holding the reciprocable member in the position to which it has been deflected, an operating member for said ejecting mechanism, whose position is limited by that of said reciprocable member to permit ejection of a commodity corresponding in value to that of the inserted coins, and means for releasing said holding means.

2. In coin freed apparatus, in combination, a plurality of sources of supply for delivery, an ejecting mechanism, a ratcheted stop-bar, a plurality of levers associated with said stop-bar, a pawl connected to each said lever and adapted to ratchet said stop-bar, a locking pawl for holding said stop-bar in any position to which it is displaced, each said lever having its power arm in the path of a course for coins of a distinct magnitude, each said lever having a power ratio to ratchet said stop-bar through a distance for each coin, proportional to the value of its associated coin, an operating member for said ejecting mechanism, whose position is limited by that of said stop-bar to permit ejection of a unit from the source of supply corresponding to the value of the inserted coin or coins and means affected by the actuation of said operating member to release said locking pawl, said locking pawl having means thereupon actuating all said other pawls to release them and cause resetting of said stop-bar.

In testimony whereof, we affix our signatures.

REGINALD GULEY LEWIS.
HENRY BROOKER.