

(No Model.)

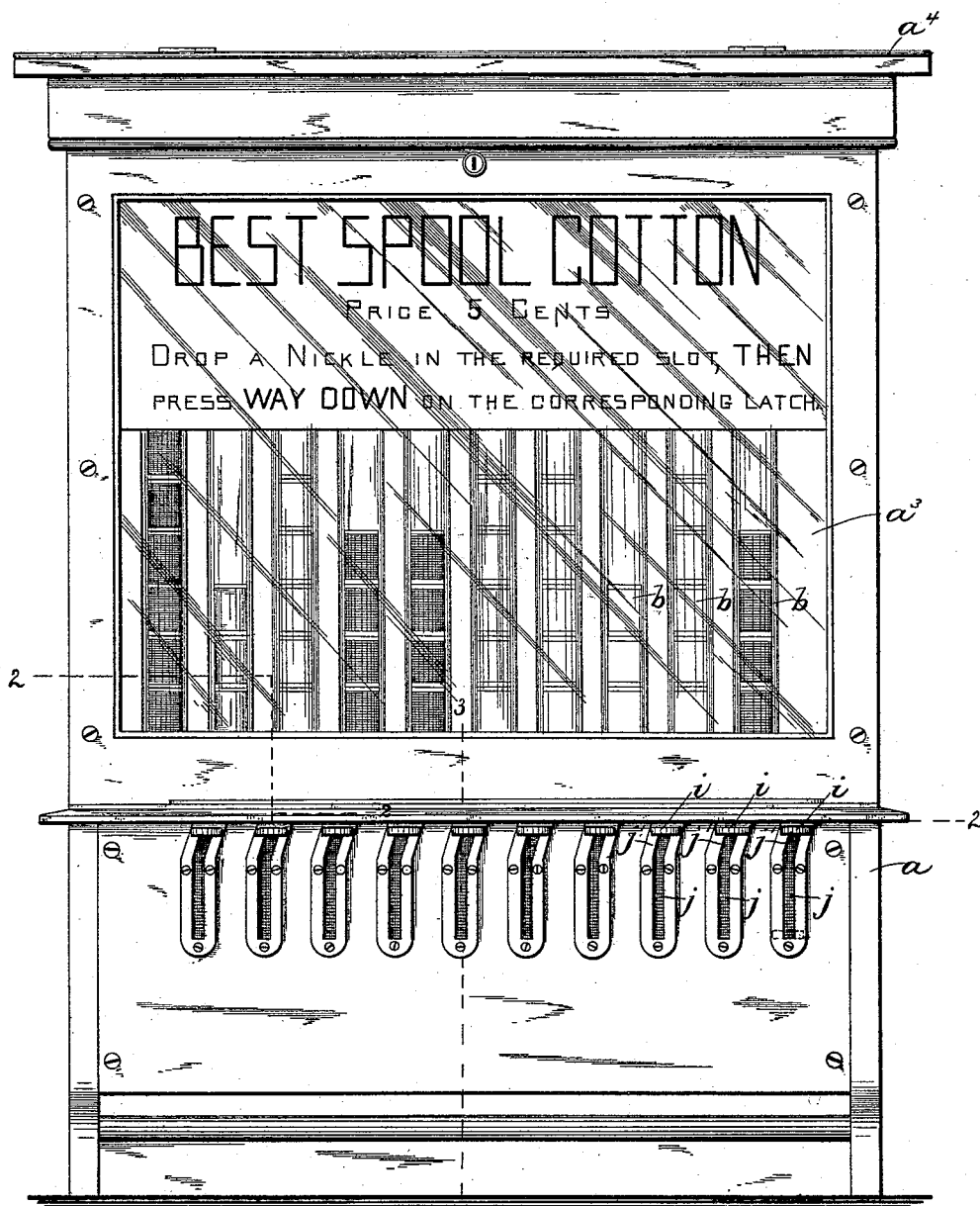
2 Sheets—Sheet 1.

C. W. SMITH.

COIN CONTROLLED VENDING MACHINE.

No. 487,008.

Patented Nov. 29, 1892.



WITNESSES

Irving T. Fay
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Fig. 1.

INVENTOR

C. W. Smith
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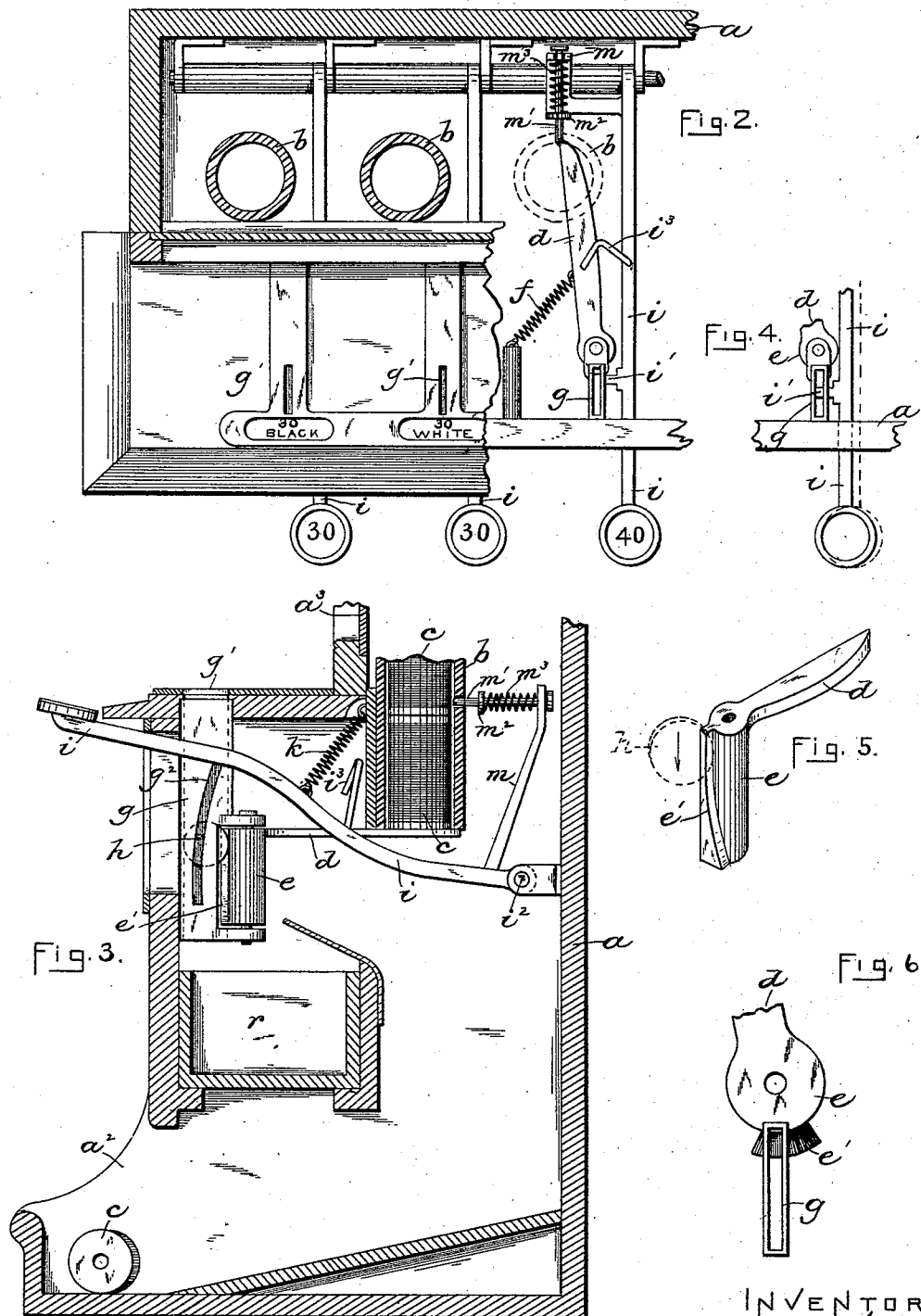
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UNITED STATES PATENT OFFICE.

CHARLES W. SMITH, OF WOBURN, MASSACHUSETTS.

COIN-CONTROLLED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 487,008, dated November 29, 1892.

Application filed March 25, 1892. Serial No. 426,423. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. SMITH, of Woburn, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Coin-Controlled Vending-Machines, of which the following is a specification.

This invention has for its object to provide a machine of simple construction adapted to contain articles to be sold and provided with means for retaining or supporting the articles out of reach and with devices for releasing said articles one at a time, which devices are normally inoperative and are made operative by the introduction of a suitable coin.

The invention consists in an automatic vending-machine comprising in its construction a receptacle for a charge of the articles to be sold, a movable stop or gate adapted to support said articles within the receptacle, a coin-chute, a lever adapted to be depressed by the operator and to positively move a coin in said chute, and a device co-operating with the positively-impelled coin in displacing the gate.

The invention also consists in certain other improvements incidental to the purposes of my invention, all of which I will now proceed to describe.

In the accompanying drawings forming part of this specification, Figure 1 represents a front elevation of a vending-machine embodying my invention. Fig. 2 represents a section on line 2 2, Fig. 1, and a plan view of the parts below said line. Fig. 3 represents a section on line 3 3, Fig. 1. Figs. 4, 5, and 6 represent views of parts of the machine.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents the casing of the machine, which may be of any suitable form. Said casing is provided with a series of receptacles *b*, each adapted to contain a charge or column of the articles *c* to be sold. Each receptacle *b* is provided at its lower end with a gate or stop *d*, which is normally held in position to support the articles *c* and prevent their escape from the receptacle. Each gate *d* is provided with a two-part mechanism whereby it can be displaced, the parts of said mechanism being normally disconnected and adapted to be coupled together or operatively

connected by means of a coin, so that the operator after inserting a coin may displace the gate of the receptacle from which he desires to obtain an article. Each gate-displacing mechanism is provided with a detent, which is thrown forward into the receptacle just as the gate is displaced and engages the second article to prevent the release from the receptacle of more than one article at a time. As each receptacle with its gate and gate-displacing mechanism is a duplicate of the others, a description of one receptacle and its appurtenances will be sufficient.

In the machine here shown the receptacle *b* is formed and arranged particularly to contain spools of thread, the receptacle being preferably a glass tube placed in a vertical position, its lower end being directly over the gate *d*. Said gate is arranged to swing horizontally and is preferably an arm affixed at one end to a hub *e*, which is journaled in a vertical position, so that it can rock or oscillate, and thus swing the arm *d* from its operative position under the receptacle *b* to a position at one side of said receptacle to release the lowest spool *c*, the gate being provided with a spring *f*, which normally holds it in its operative or spool-arresting position. The hub *e* is provided with an inclined flange or shoulder *e'*, extending from its upper to its lower end, the inclination of said flange being best shown in Figs. 5 and 6, the former being a perspective and the latter a top view of the hub and flange.

g represents a coin-chute or guide, which receives a coin *h*, introduced in a slot *g'* at the upper surface of the forwardly-projecting lower portion or base of the frame or casing, and is arranged to guide said coin to a bearing on the inclined flange or shoulder *e'*, the hub *e* being held by the spring *f* in such position that when the descending coin reaches the upper portion of the inclined flange *e'*, as shown in Figs. 3 and 5, it will be arrested by said flange and prevented from falling by its own weight.

i represents a lever, which is pivoted at *i'* to the supporting-frame and projects at its free end outside of said frame through a slot *j*, formed in the front of the frame. Said lever is provided near its swinging end with a tongue *i'*, which is adapted to enter a seg-

mental slot g^2 in the coin-chute g , the lever i being laterally movable, so that its tongue i' can enter and withdraw from said chute. The lever i is normally held in a raised position, as shown in Fig. 3, by means of a spring k . The upper end of the slot j , in which the outer end of the lever i moves, is inclined, as shown at j' , Fig. 1, this inclined portion of the slot giving the lever a lateral movement when it reaches the upper end of the slot, thus causing the tongue i' to withdraw from the coin-chute g , so that when the lever i is elevated the tongue i' will not obstruct the coin dropped into said chute.

m represents an arm, which is affixed to the lever i and is engaged at its upper end with a pin m' , which is adapted to slide into and out of the receptacle b through a hole formed in the latter. The pin m' passes loosely through a slot or orifice formed for it in the upper end of the arm m and is provided with a fixed shoulder or collar m^2 , between which and the arm m is interposed a spring m^3 . The office of the arm m and pin m' is to engage the second article c in the receptacle or the article above the one resting on the gate d when said gate is displaced, thus preventing the column of articles from falling with the lower article, which is released by the displacement of said gate.

The operation of the mechanism above described is as follows: The coin h is first introduced into the chute g and falls until it comes to a bearing on the inclined shoulder or flange e' , as shown in Fig. 3. The lever i is then depressed by the operator, and in moving downwardly said lever is moved laterally by the walls of the slot j , so that its tongue i' is caused to enter the slot g^2 in the chute g and bear upon the upper edge of the coin h . The coin is therefore forcibly depressed by the downward movement of the lever i and is caused by the inclination of the flange or shoulder e' to impart a swinging motion to the hub e and gate d , the gate being thus displaced from under the receptacle b and caused to release the lowest article c therein. Before the release of said article the pin m' is forced into the receptacle and bears upon the second article therein with sufficient firmness to prevent said second article and the column resting upon it from descending with the released article. The spring m^3 prevents the pressure of the pin m' from injuring the article on which it bears. The lever i is provided with a hooked arm i^3 , which is so formed and arranged that when the lever i is depressed and the gate d is displaced, as above described, the arm i^3 will engage said lever and prevent it from being moved back by the spring f to its operative position after the coin h has passed below the flange or shoulder e' , said arm i^3 holding the gate d in its displaced position so long as the operator holds the lever i down. When the operator releases the lever i , the spring k raises said lever, whereupon the arm i^3 releases the gate d and said gate is moved

to its operative position by the spring f in time to arrest the column of articles c , said column being released by the withdrawal of the pin or detent m' , caused by the elevation of the lever i . The article released falls to the bottom of the casing, which is inclined, so that the article rolls to the forward portion of the casing, which is provided with an opening a^2 , through which the article may be withdrawn.

r represents a money-drawer located below the coin-chute g and arranged to receive the coin that is pressed downwardly by the lever i .

It will be seen that the hub e , with its inclined flange or shoulder e' and the lever i , constitutes a normally-inoperative two-part mechanism for displacing the stop or gate d , the parts of said mechanism being adapted to be coupled together or operatively connected by a coin inserted in the chute g .

The receptacles b are preferably composed of glass tubes vertically arranged within the casing a , said casing having a light or pane of glass a^3 in its front portion arranged to expose the receptacles b to view from the front of the apparatus, so that the quantity of goods in the receptacles can be readily ascertained by a glance. The top of the casing is provided with a hinged cover a^4 , which may be opened to permit the insertion of a supply of articles into the receptacles b .

It is obvious that the apparatus may be adapted to contain various other articles besides spools of thread—such, for example, as cigars.

I claim—

1. In an automatic vending-machine, the combination of a receptacle for a charge of articles, a movable gate or stop normally in position to support said articles in the receptacle, a hub supporting said gate and provided with an inclined flange or shoulder, a coin-chute adapted to guide a coin to a bearing on said shoulder, and a lever adapted to depress said coin and thereby cause the latter to displace the gate or stop, as set forth.

2. In an automatic vending-machine, the combination of a receptacle for a charge of articles, a movable gate or stop normally in position to support said articles in the receptacle, a coin chute or guide, a device adapted to be operated by a moving coin in said chute to displace said gate, a laterally-movable lever adapted to be moved by the operator and provided with a projection, and means for giving a lateral movement to the lever while it is being depressed or moved by the operator, whereby said projection is caused to enter the chute and move a coin therein, as set forth.

3. In an automatic vending-machine, the combination of a receptacle, a movable stop or gate adapted to support a charge of articles therein, and a normally-inoperative gate-displacing mechanism adapted to be made operative by a coin inserted in the machine, said mechanism including a lever adapted to be

depressed by the operator and provided with
a device to engage the gate and hold it in
its displaced position while the lever is de-
pressed and with a stop or detent which is
5 engaged by the depression of the lever with
the second article in the receptacle, as set
forth.

In testimony whereof I have signed my

name to this specification, in the presence of
two subscribing witnesses, this 22d day of 10
March, A. D. 1892.

CHARLES W. SMITH.

Witnesses:

C. F. BROWN,
A. D. HARRISON.