

(No Model.)

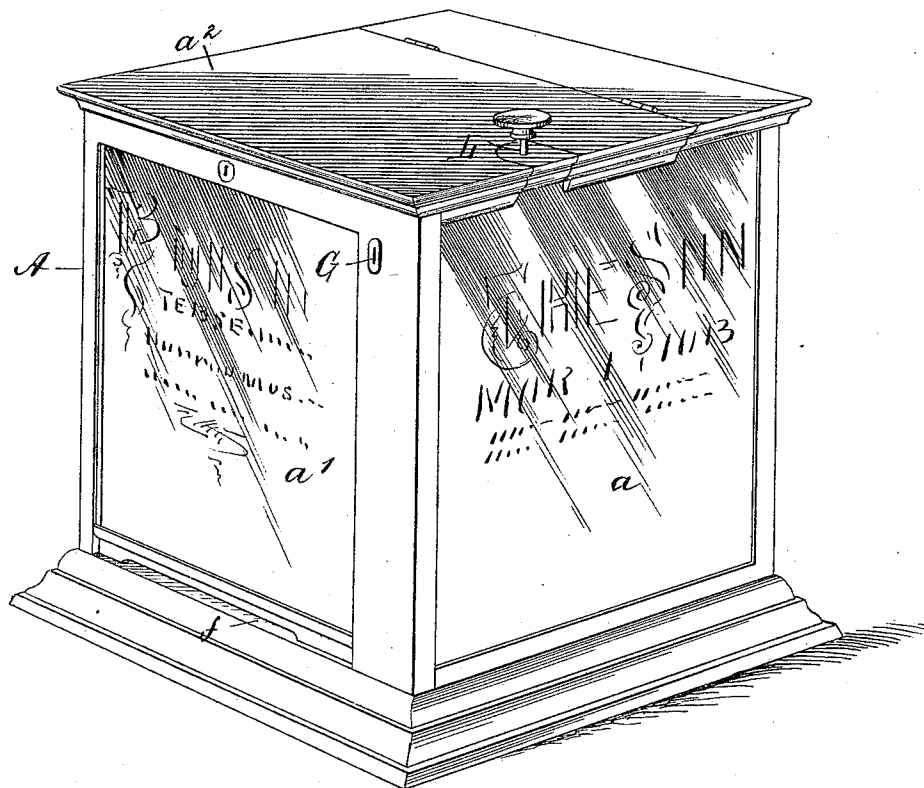
4 Sheets—Sheet 1.

C. A. COOK.
VENDING MACHINE.

No. 470,347.

Patented Mar. 8, 1892.

Fig. 1.



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(No Model.)

4 Sheets—Sheet 2.

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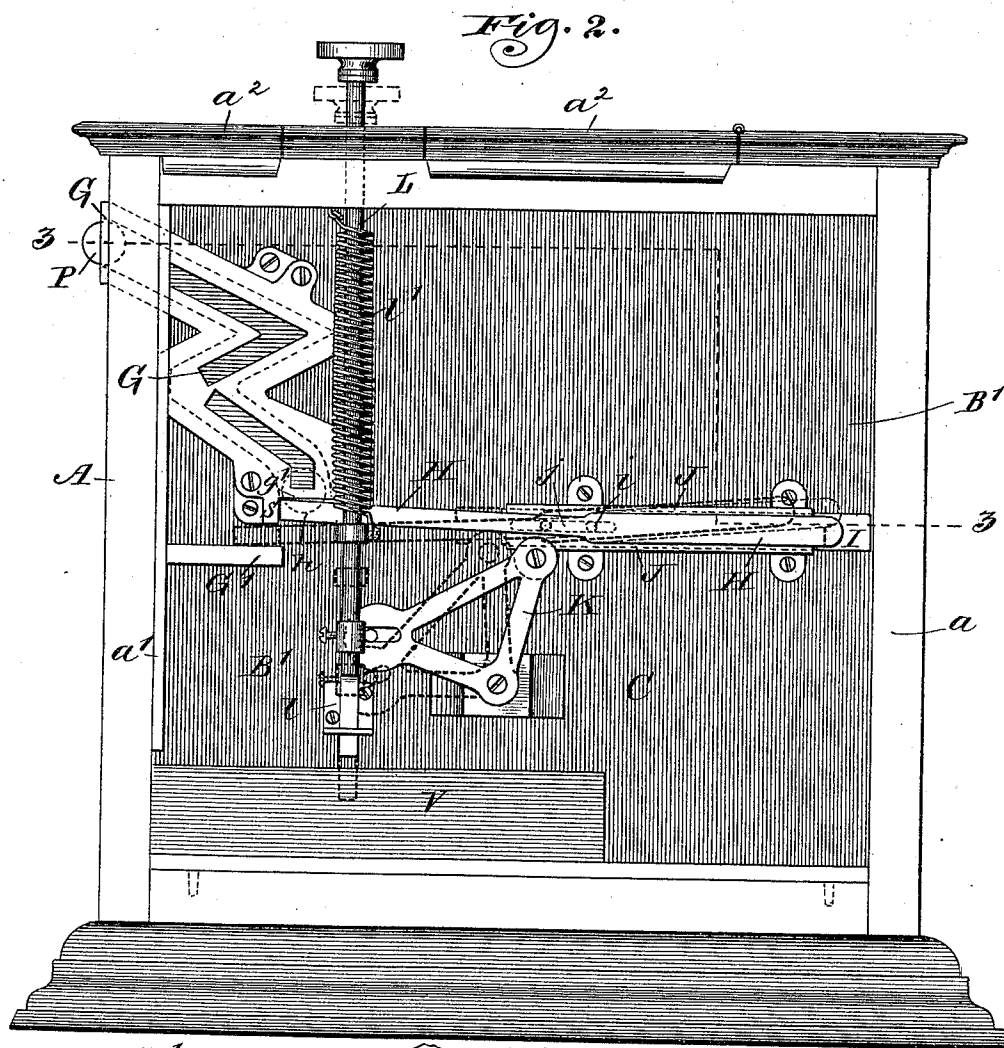


Fig. 2^a *Fig. 2^b* *Fig. 2^c*

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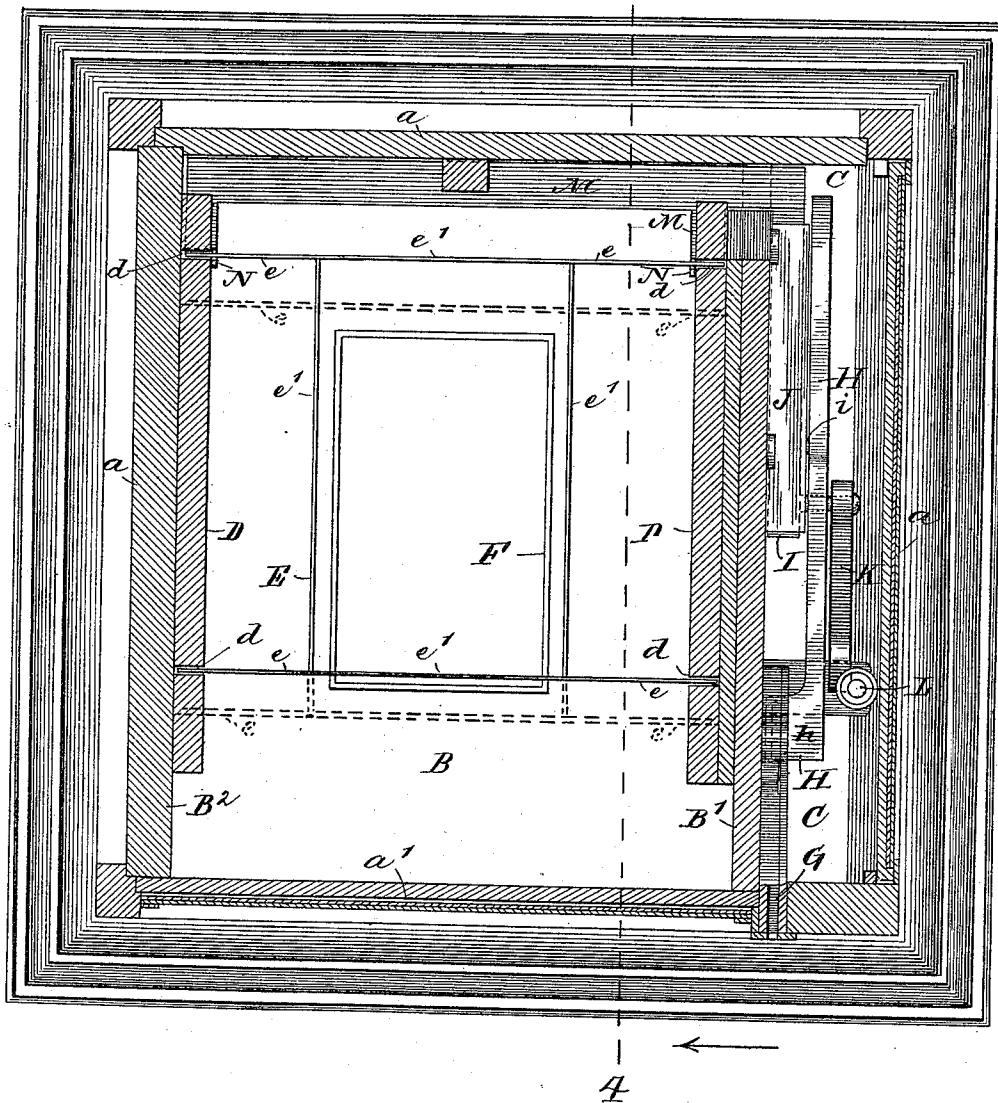
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Fig. 3. 4



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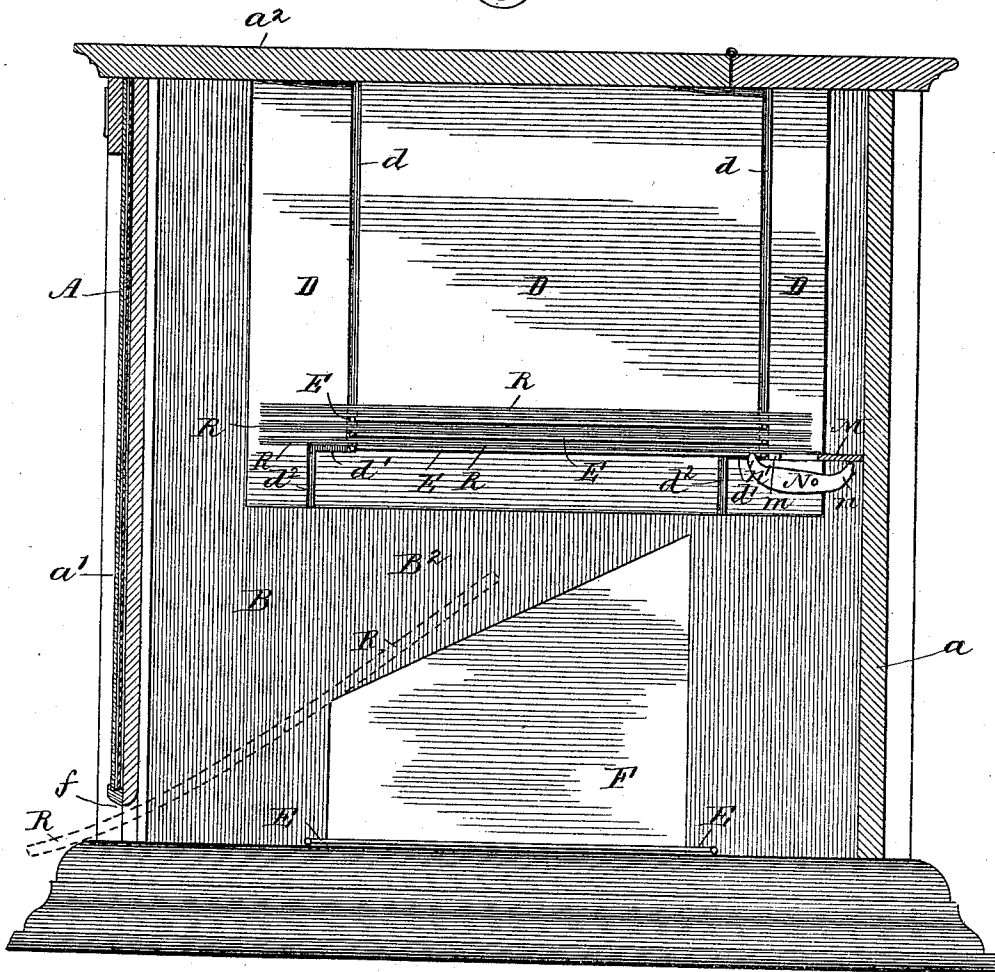
4 Sheets—Sheet 4.

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VENDING MACHINE.

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Fig. 1.



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UNITED STATES PATENT OFFICE.

CARLOS A. COOK, OF CHICAGO, ILLINOIS.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 470,347, dated March 8, 1892.

Application filed November 5, 1891. Serial No. 410,922. (No model.)

To all whom it may concern:

Be it known that I, CARLOS A. COOK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Vending-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The invention relates to vending-machines of the class wherein the delivery mechanism is normally held as against operation by locking devices which are coin-operated to effect their release; and it consists in the matters hereinafter set forth, and pointed out in the appended claims.

While the invention is applicable to the vending of merchandise generally, I have shown herewith a machine specially arranged and adapted to vend newspapers, the drawings illustrating the machine being as follows:

Figure 1 is a perspective view; Fig. 2, a side elevation with the outer side plate removed, showing the coin-slot and the coin-operated locking and delivery operating mechanism; Fig. 2^a, a top plan detail of the locking end of the coin-operated lever; Figs. 2^b, 2^c, and 2^d, details in rear elevation of the locking end of said lever and the lower end of the coin-slot, illustrating the respective positions occupied by the lever and coin through the unlocking operation of the machine and the delivery of a newspaper; Fig. 3, a top plan view taken on the lines 3-3 of Fig. 2; and Fig. 4, a vertical section taken through the machine on the line 4-4 of Fig. 3, the view being in the direction indicated by the arrow shown in said Fig. 3.

To particularly describe the details of construction shown, A indicates the main frame of the machine; *a*, the sides and rear; *a'*, the front, and *a''* a hinged cover forming the top thereof; B' B², vertical plates located interior of the main frame, forming compartment B C; D D, guide-plates fixed to the inside plates B' B², provided with or forming irregular guides *d* *d'* *d''*; E, newspaper separating, supporting, and delivery frames adapted to work within said guides; F, an

inclined delivery-guide located in the bottom of compartment B, and *f* an opening provided above the lower end of the front plate *a'*, through which the papers pass from the machine.

G represents an irregularly-formed coin-chute having its discharging end *g'* within compartment C; V, a coin-receptacle located within said compartment; H, an axially and longitudinally-movable lever having its free end *h*, which is horizontally L-shaped and provided with a slot *h'*, normally in position under the discharging end of the coin-chute; S, a lug or stop preventing longitudinal movement of the lever H until moved from its normal position by the coin P; G', a stop controlling the length of downward swing of the free end of the lever; I, a longitudinally-reciprocable slide, to which the lever H is fulcrumed by pivot *i*; J, a fixed cover-plate, forming a guide-bearing for the slide I; *j*, a slot provided in the cover-plate J to admit of to-and-fro motion of the slide I and lever H; K, a bell-crank connected by one end with a slide I and by the other end with a perpendicular rod L; *l*, lower guide for said rod; *l'*, a resistance or retracting spring connected with the said rod; M, a horizontally-movable push-bar projecting laterally from the slide I and extending athwart the rear end of compartment B; *m*, horizontal guides for the bar M, connected with the guides *d'* *d''*, and N a pivoted frame-locking dog controlled by said bar.

The frames E are preferably formed of wire, with a conformation, substantially as shown in Fig. 3, being thus adapted by the legs *e* thereof to work within the guides *d* *d'* *d''*, and by the rectangle *e'* to pass over the delivery-guide F to the bottom of the compartment B on passing from the guides *d''*, the delivery-guide F being desirably of the form indicated particularly in Fig. 4.

The manner of operatively arranging the frames E and papers R within the machine (see particularly Fig. 4) is as follows: The cover *a''* being raised a frame E is inserted within the guides *d*, passing downwardly until reaching the bottoms thereof, which are in alignment with the horizontal guides *d'*, at which point the rear legs *e* pass behind the engaging ends *n'* of the dogs N. A newspa-

per is then dropped within the compartment upon the frame, then a frame upon the newspaper, then another paper, and so on, alternately frames and papers, until the machine is filled, if so desired. The office of the locking-dogs N is to prevent the lower frame E within the guides d' from moving forward upon the guides d' toward the guides d^2 , and therefore to discharge in case the machine should be tipped forward accidentally or otherwise, also to prevent the surreptitious drawing of the frame forward upon the horizontal guides to the point of discharge—as, for example, by means of a wire inserted through the opening f —in avoidance of placing the requisite coin within the chute G. The dog, which is located beneath the plane of motion of the push-bar, is pivoted desirably in rear of its longitudinal center, and is therefore heaviest in advance of its axis, which lends some advantage to the certainty of its prompt motion to unlock or release the frame E when the push-bar moves forward, its rear end forming a toe or projection n , which bears against the under surface of the push-bar when the machine is at rest, thus holding the forward end n' in locking engagement with the frame. The forward stroke of the push-bar is so timed and distanced with relation to the motion of the dog and the position of the frame to be driven from the guide d that it is brought in contact with the lowest frame substantially simultaneous with the release of the rear end of the dog, its forward motion carrying it under the next upper frame within the guide d and preventing its dropping down until after the return stroke of the bar is completed, the rear end of the bar on its return stroke engaging with the toe n and driving it downwardly, which causes the forward end of the dog to be again carried upwardly, thus locking the next frame in position. Should gravity fail to carry the dog from its locking position with the promptness intended, the forward stroke of the push-bar forces the frame about to be discharged against the forward or projecting end n' , which causes the dog to move downwardly, as desired.

Referring particularly to Sheet 2 of the drawings, it will be observed, Figs. 2 and 2^b, that the lever H is in its normal or locked position under the discharging end of the coin-chute with a coin P (indicated by broken lines) resting in the lever-slot h' , which is made of sufficient length to admit of the coin passing therein to the extent, preferably, of about one-third of its diameter, the forward edge of the coin resting against the front wall of the chute. The weight of the coin then forcing the lever downwardly to a point below the stop S, (see Fig. 2^c), where its movement is interrupted by the stop G', the machine is unlocked and ready for operation. Perpendicular motion of the rod L carries the bell-crank K downwardly and the lever H and slide J forward, the latter carrying with it the push-bar,

which operates the locking-dog N and drives the lower frame E through the guides d' to the guides d^2 , from which it drops to the bottom of the compartment, the paper, which had been sustained thereby, dropping upon the inclined guide F, by which it is impelled toward and sufficiently through the opening f , as indicated by the broken lines, Fig. 4. As the lever H is driven forward and the push-bar carried to its work, the coin, still held by the slot, is gradually lifted from its seat (see Fig. 2^c) by the under-passing heel h^2 , which forms the rear wall of the slot. The lever continuing its forward stroke, the heel passes from beneath the chute and the coin, thus permitting the coin to be discharged, as shown in Fig. 2^d, coincident with the discharge of the paper. The return stroke of the rod L carries the lever, slide, and push-bar back to their normal positions, the next frame dropping to the bottom of the slot d to be caught and secured in position by the dog, as above described.

Referring to the coin-chute G, (shown particularly in Fig. 2,) it will be observed that the same is composed of a series of downwardly-inclined zigzag angles, such irregular form rendering it a valuable adjunct to a coin-operated vending-machine, inasmuch as it prevents tampering with the locking mechanism to bring about operation of the machine. Thus, for example, if the chute described a single plane, or curve, or mixed line it would be possible to reach the lever by means of a wire inserted in the chute and to force the same from its locking position, thereby enabling the manipulation of the machine. By my coin-chute construction it is obviously impossible to accomplish this.

It may be noted that I do not limit myself to the employment of the rod L in its perpendicular position, nor do I limit myself to the employment of said rod, or the rod and the bell-crank connecting it with the slide I, to effect operation of the machine, inasmuch as it is clearly within the intent and scope of my invention to substitute other means for such purpose, which means I have not deemed it necessary to illustrate herewith. It may be mentioned, however, as a single example that should I desire to arrange the machine for automatic operation—as, for instance, through the employment of electro-mechanical devices—the rod or the rod and bell-crank could be dispensed with.

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

1. In a coin-operated vending-machine, the combination of the separating, supporting, and delivering frames, the irregular frame-guides, the push-bar, the axially and longitudinally movable coin-operated lever, the slide carrying the lever and push-bar, devices for imparting reciprocating motion to the lever and slide, the delivery-guides, and the zigzag coin-chute, substantially as described.

2. In a coin-operated vending-machine, the combination, with locking mechanism, coin-operated to the unlocking position thereof, of the separating, supporting, and delivering
5 frames, the irregular frame-guides, the reciprocating push-bar, devices for actuating the push-bar through its to-and-fro movement,

the frame-locking dog, and an inclined delivery-guide, all arranged and operating substantially as described.

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