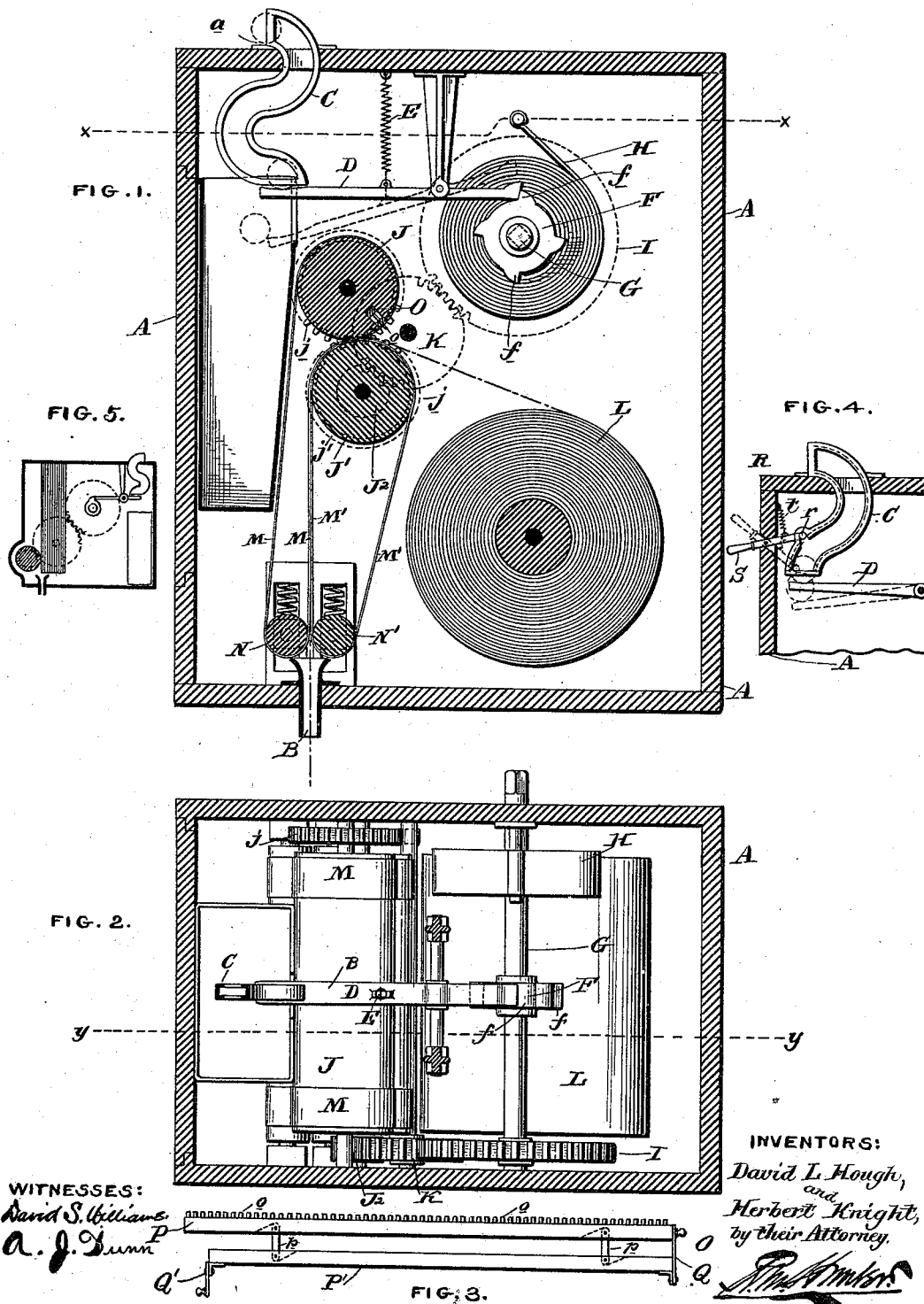


(No Model.)

D. L. HOUGH & H. KNIGHT.
COIN OPERATED MECHANISM.

No. 417,726.

Patented Dec. 24, 1889.



UNITED STATES PATENT OFFICE.

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COIN-OPERATED MECHANISM.

SPECIFICATION forming part of Letters Patent No. 417,726, dated December 24, 1889.

Application filed March 23, 1889. Serial No. 304,538. (No model.)

To all whom it may concern:

Be it known that we, DAVID L. HOUGH, of Camden, in the county of Camden and State of New Jersey, and HERBERT KNIGHT, of the city, county, and State of New York, have invented an Improvement in Coin-Operated Mechanism for Toilet or other Paper, of which the following is a specification.

Our invention relates to coin-operated mechanism for toilet or other paper; and it consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings, which form a part thereof.

In hotels, railway-carriages, and other public places it has been found difficult to supply the public with toilet-paper in a satisfactory manner, for the reason that the paper is constantly stolen, and heretofore no satisfactory device has been produced to prevent this.

Mechanism of various kinds has been constructed to more perfectly protect the paper by making it necessary to consume a large amount of time and labor to obtain any very large amount of paper from the receptacle or box, and thus to some extent the paper has been protected from theft, but only to a slight degree, as it has always been possible in such apparatus to take the entire contents from the box or receptacle by continuously operating the mechanism.

It is the object of our invention to prevent entirely the theft of paper from the box by employing coin-operated mechanism, so that by the deposit of a cent or penny in the box a reasonable amount of paper can be obtained therefrom, when the apparatus is again locked and can only be operated by the deposit of another coin.

If desired, in place of a penny or cent a metal disk of a particular size or shape may be used, which can be obtained from the porter or attendant in the hotel or railway-train, as the object of these devices is not so much to obtain a profit as to prevent the loss arising from the constant stealing of the paper.

In carrying out our invention we employ the apparatus hereinafter more fully described, by which the regulated amount of paper is fed from a suitable support and car-

ried out through an opening in the case or box upon the deposit of the coin.

While our invention is particularly adapted to toilet-paper, and the description and drawings show it employed for that purpose, it is not necessarily limited thereto, and may be used equally well for any kind of paper or material which it is desired to feed out in regulated quantities from a magazine.

In the drawings, Figure 1 is a vertical sectional view of our improved apparatus on the line *y y* of Fig. 2. Fig. 2 is a horizontal sectional view through the line *x x* of Fig. 1. Fig. 3 is a detail view on an enlarged scale of the device for perforating the paper into sheets, detached from the feeding mechanism. Fig. 4 is a modification of the lever-actuating mechanism, and Fig. 5 is an outline sectional view of a modification of our invention.

A is a closed case or box provided with a suitable slot or opening *a*, to receive the coin or disk, and an orifice or opening B, for the delivery of the paper. The box is also provided with a suitable door or doors for the purpose of placing the paper within the box and removing the coins from the coin-receptacle.

C is the coin-tube extending downward from the coin-slot *a*.

D is a lever pivoted in suitable bearings or supports in the box and having the end of one arm immediately beneath the opening in the coin-tube C, so that the coin descending through the tube C will fall upon this end of the lever D and depress it.

E is a spring to normally hold the end of the lever in position under the opening of the coin-tube; but it is apparent that this spring may be dispensed with if the shorter arm of the lever be that operated by the coin, as the weight of the longer arm would perform the same function as the spring E.

We prefer to construct the coin-tube C curved or S-shaped, as shown, to prevent the operation of the lever by means of a wire inserted in the slot, and also to make it open or perforated upon the sides to prevent the operation of the lever D by blowing into the slot. The other arm of the lever D is adapted to engage with the cam projections *f* of a

cam-wheel F, mounted upon a shaft G, which is pivoted within the case A and is caused to rotate by a strong spring H.

I is a gear-wheel carried upon the end of the shaft G.

J J' are feeding-rollers running in contact with each other and geared together by suitable gear-wheels *j j'* upon their respective shafts. These rollers are preferably constructed of wood with a coating of rubber or soft material.

Motion is imparted to the rollers J J' by means of an intermediate gear-wheel K between the gear-wheel H and a gear-wheel J² upon the shaft of one of the rollers J or J'.

L is the supply of paper—preferably a roll—which is supported upon a shaft loosely journaled in a box or case A.

M M' are endless cords running over the rollers J J' and suitable guide-rollers N N' near the opening B to guide the paper to and through said opening. The rollers N N' are preferably journaled in slotted bearings to take up any stretch in the cords M M'.

O is the perforating device for the purpose of perforating the paper into sheets. It may consist simply of projecting teeth *o* on one of the feed-rollers J or J' and a recess or groove on the other feed-roller; but in practice I prefer to employ the mechanism illustrated in Fig. 3, which may be put either into or out of operation, according as to whether the paper L is perforated or not. This mechanism consists of two parallel bars P P', connected together by suitable links *p*. The lower of these bars P' is secured in a groove or recess in the roller J, and the upper bar is free to swing upon the links *p*, and is provided with perforating-teeth *o*. This upper bar P is brought into or out of operation by being raised or lowered from the bar P', so that the perforating-teeth *o* project above the surface of the feeding-rollers when the bar is raised and are below the surface of the roller when the bar is lowered, said bar fitting into the groove within said roller.

Q Q' are arms pivoted to the ends of the bar P', for the purpose of locking the bar P in its raised or lowered positions. When non-perforated paper is used, the bar P is raised and held in position by the arm Q, and with perforated paper the bar P is lowered and held fixed by the arm Q'.

The operation of the machine is as follows: The coin is inserted in the slot *a*, and, descending the coin-tube, strikes the end of the lever D, depressing one arm thereof and freeing the other arm from a projection *f* of the cam-wheel F. The shaft G will immediately be rotated by the spring H, transmitting motion through the gear-wheels I, K, and J² to the feeding-rollers J and J', by which the paper is fed from the supply or roll L and out through the opening or orifice B, and is perforated in the manner heretofore described. The cords M M' guide the paper properly in its course. It is apparent that the circum-

ference of the feed-rollers J J' is equal to the length of the sheet of paper, and the number of sheets delivered from the orifice or opening B is of course regulated by the number of teeth in the gear-wheels I, K, and J², and it is apparent that any other satisfactory connections for transmitting power from the shaft G to the feeding-rollers may be substituted for that shown, as they and other similar matters are mere details of construction and may be varied in many ways without departing from the principles of our invention. The shaft G will rotate through the action of the spring H until the next projection *f* of the cam-wheel comes in contact with the lever D, when the apparatus is again locked and can only be operated by the deposit of another coin. The cam projections *f* and the lever D thus act as a coin-operated lock for the shaft G and feeding devices. The number of cam projections *f* upon the cam-wheel F may, of course, be varied to suit the amount of paper to be delivered, and, if desired, only one cam projection may be used.

In Fig. 4 is shown a form of lever apparatus which may be employed for the purpose of operating the lever D, if the weight of the coin is not sufficient for that purpose. This mechanism consists of a lever or equivalent device R, pivoted in the case or frame A and having a handle S projecting outside of the case, by which the lever may be operated. The end of this lever is adapted, when depressed, to press upon the coin which is in the coin-tube and resting upon the end of the lever D to depress that end of the lever D and release the cam F. This lever R may be formed with a lateral pin or projection *r* to strike the coin, or it may be made to enter the coin-tube through a small opening therein. A pin or stop is placed in a suitable position upon the coin-tube C or the frame A to prevent this lever R descending low enough to operate the lever D without the presence of a coin in the coin-tube. A spring *t* may be used to hold the lever R out of operation.

It is apparent that the paper on the roll L may be continuous or divided into lengths each of the number of sheets which are to be delivered on each operation of the machine.

In Fig. 5 is shown a modification of our invention, in which the paper-supply consists of a package of separate sheets in place of the roll L. In this construction the paper is fed out sheet by sheet by the feeding-roller J', running in contact with the paper, which is forced against the roller by a suitable spring, the other feeding-roller J, the cords M, and the perforating devices being, of course, dispensed with, the other parts remaining the same.

While we prefer the specific construction herein shown, our invention contemplates, broadly, the use of coin actuated or controlled feeding devices to feed a given quantity of paper or other material from a suitable support upon the deposit of a coin.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A closed box or case having a coin-aperture and a delivery-opening, in combination with a support for a quantity of paper, feeding devices to feed the paper from the support out of the delivery-opening, a lock normally locking said feeding devices and adapted to receive the coin from said coin-aperture, and means to press the coin upon said lock to unlock the feeding devices and permit them to rotate.

2. A closed box or case having a coin-aperture and a delivery-opening, in combination with a support for a quantity of paper, spring-actuated feeding devices to feed the paper from the support out of the delivery-opening, a lock normally locking said feeding devices and adapted to receive the coin from said coin-aperture, and means to press the coin upon said lock to unlock the feeding devices and permit them to rotate.

3. A closed box or case having a coin-aperture and a delivery-opening, in combination with a support for a quantity of paper, feeding devices to feed the paper from the support out of the delivery-opening, a lock normally locking said feeding devices and adapted to receive the coin from said coin-aperture, and means to press the coin upon said lock to unlock the feeding devices and permit them to rotate, consisting of a lever adapted to be projected upon the coin to depress the lock.

4. A closed box or case having a coin-aperture and a delivery-opening, in combination with a support for a quantity of paper or other material, feeding devices to feed said paper from the support out of said delivery-opening, an adjustable perforator carried by said feeding devices to perforate said paper into sheets, and a coin-actuated lock to normally lock said feeding devices against operation, but controlled by the coin deposited in the coin-aperture to unlock the feeding devices and permit them to operate.

5. A closed box or case having a coin-aperture and a delivery-opening, in combination with a support for a quantity of paper or other material, feeding devices to feed said paper from the support out of said delivery-opening, an adjustable perforator consisting of a bar provided with perforating-teeth pivoted to said feeding devices and capable of being raised or lowered therefrom, and means to lock said pivoted bar in its raised or lowered position to perforate said paper into sheets, and a coin-actuated lock to normally lock said feeding devices against operation, but controlled by the coin deposited in the coin-aperture to unlock the feeding devices and permit them to operate.

6. In a coin-operated mechanism, the combination, with a suitable support for a quantity of an article, of feeding devices to feed the article therefrom, a lock to normally prevent the operation of said feeding devices, a coin-guide, and means operated from without to press the coin upon said lock to unlock said feeding devices and permit them to operate.

7. In a coin-operated mechanism, the combination, with a suitable support for a quantity of an article, of feeding devices to feed the article therefrom, a lock to normally prevent the operation of said feeding devices, a coin-guide, and a movable part operated from without, held at all times out of contact with said lock and adapted to press the coin upon said lock to unlock the feeding devices and permit them to operate.

In testimony of which invention we hereunto set our hands.

DAVID L. HOUGH.
HERBERT KNIGHT.

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Witnesses as to Herbert Knight:

JOSEPH N. TUTTLE,
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