

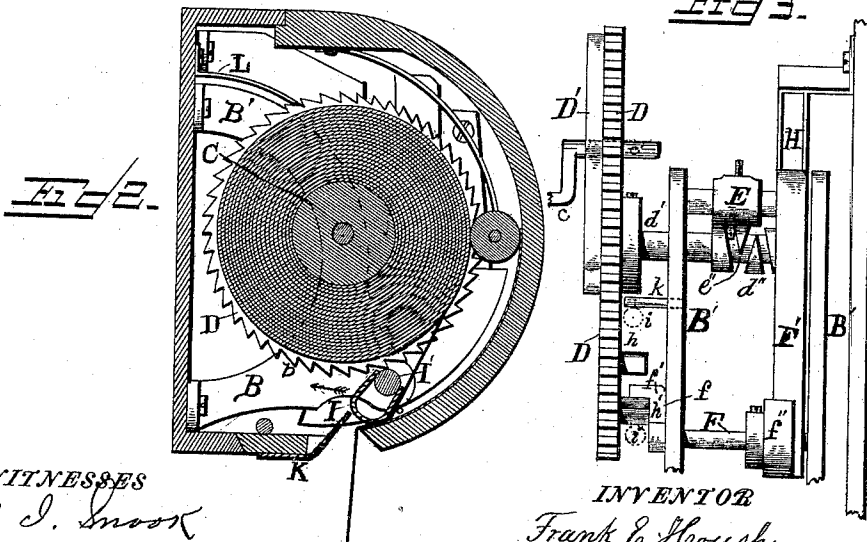
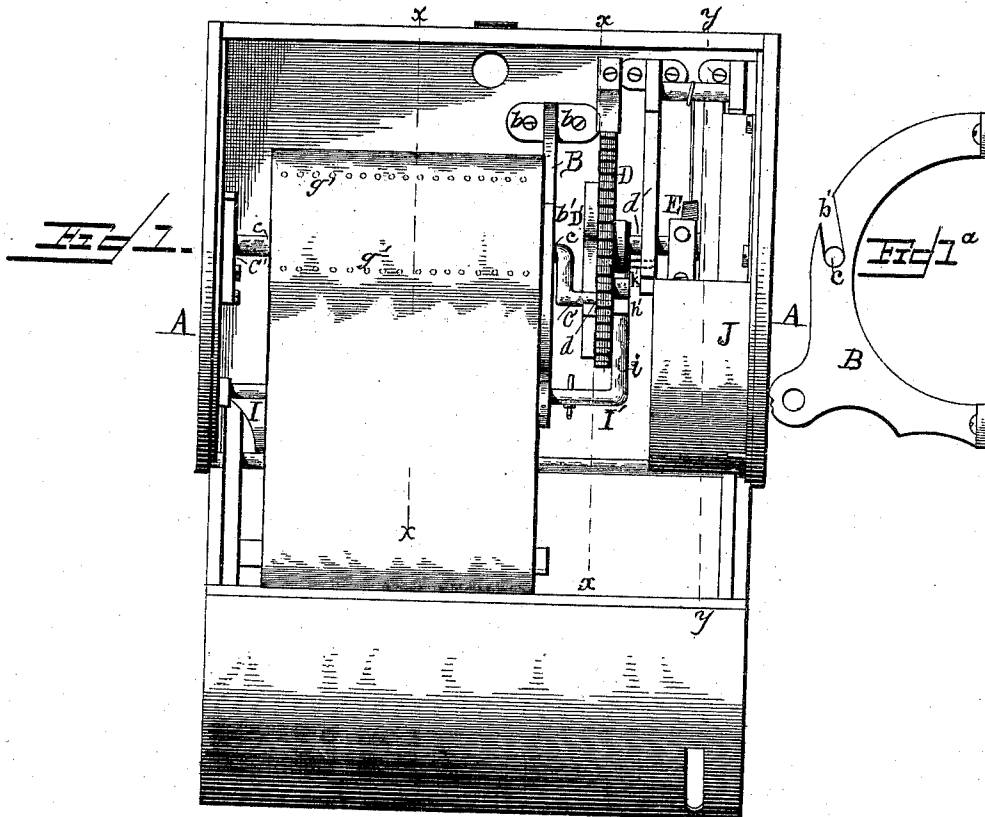
(No Model.)

2 Sheets—Sheet 1.

F. E. HOUSH.
TOILET PAPER SLOT MACHINE.

No. 488,500.

Patented Dec. 20, 1892.



WITNESSES

Chas. J. Snook
Chas. V. Hood

INVENTOR

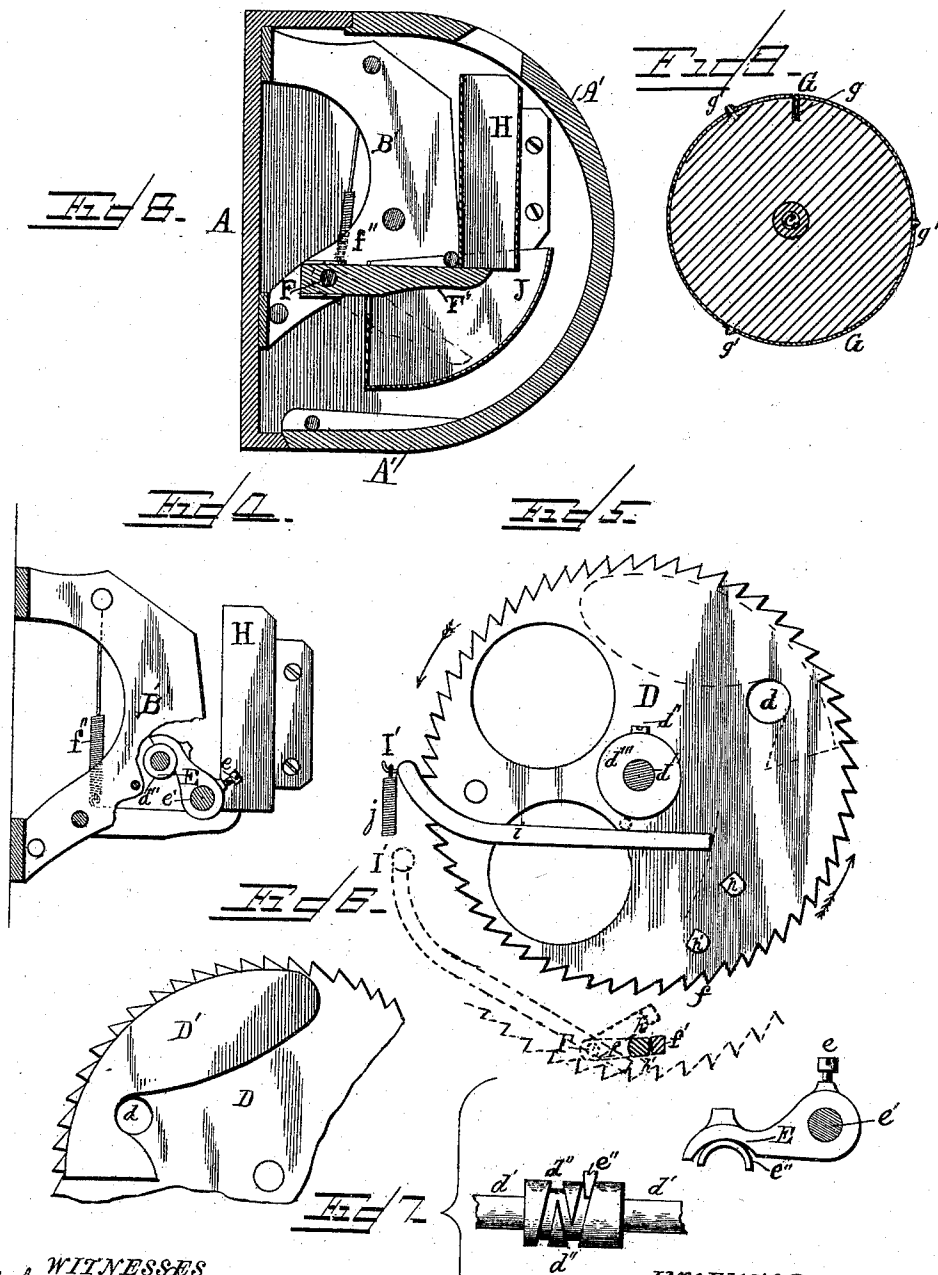
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UNITED STATES PATENT OFFICE.

FRANK E. HOUSH, OF BOSTON, MASSACHUSETTS.

TOILET-PAPER SLOT-MACHINE.

SPECIFICATION forming part of Letters Patent No. 488,500, dated December 20, 1892.

Application filed May 18, 1892. Serial No. 433,423. (No model.)

To all whom it may concern:

Be it known that I, FRANK E. HOUSH, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Toilet-Paper Slot-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in toilet paper slot machines which will be hereinafter more particularly described and pointed out.

In the accompanying drawings forming part of this specification: Figure 1 is an inside view of the machine showing the working parts. Fig. 1^a is a side view of one of the standards. Fig. 2 is a transverse vertical section on line *x—x* of Fig. 1. Fig. 3 is a partial inside view showing the reversing screw and the coin tripping lever, &c. Figs. 4, 5, 6 and 7 are details of the several operative parts. Fig. 8 is a transverse section on line *y—y* of Fig. 1. Fig. 9 is an enlarged section of the paper roll core about the full size.

A is the frame or shell to which all the operative machinery is attached on the inside. This shell can be made of cast or sheet metal. Within the shell, A, is secured, by screws or bolts, *b*, a standard, B, seen in Figs. 1 and 1^a. A slot, *b'*, is formed to permit the axle, *c*, of a paper roll core, C, to be put in or taken out easily, for replacing the rolls of paper. This axle, *c*, has a crank, *c'*, which is extended to pass loosely through a hole, *d*, in a ratchet wheel, D, which wheel, D, has a shaft, *d'*, having on its outer end a reversing screw thread, *d''*, shown in Fig. 7, within a female screw box, E, Figs. 1 and 7. This box, E, has a set-screw, *e*, by which it can be secured on the shaft, *c'*, where it is to be placed relative to the screw, *d''*. The single thread, *e''*, of E is so beveled as to operate upon the threads of the reversing screw, *d''*. The connection of the two screw threads is shown in Fig. 3.

Beneath the shaft, *d*, is a crank shaft, F, having on one end the crank, *f*, with a square wrist, *f'*. On the shaft, F, is secured, in a

proper manner, the arm or coin lever, F'. These shafts, *d'* and F, are supported in the two standards, B', secured by screws to the shell, A. A spring, *f''*, is attached at one end to the arm or coin lever, F', and the other end to the standard, B', of the shell, A, and its resiliency is adjusted to the weight of the coins to be used. The crank, *f*, is so arranged on the shaft, F, that when the arm, F', is, as represented in dotted lines in Fig. 8, the arm, *f*, and wrist, *f'*, will be in the position shown in Fig. 3, for a purpose which will be hereinafter explained.

The ratchet wheel, D, is placed on the shaft, *d'*, and when properly adjusted thereon is secured in position by the set-screw, *d''*, in the collar, *d'''*. On the opposite side of the ratchet wheel, D, near the periphery, is a counterweight, D', shown in black lines in Fig. 6 and in dotted lines Fig. 5. There is a hole, *d*, through the wheel, D, for the insertion of the crank handle, *c'*, of the shaft, *c*, of the core of the paper roll, C. The free end of the core shaft, *c*, is supported in the slot C', secured to the end of the shell, A. It will be seen that at any time the shaft and the core can be removed and replaced with but little trouble or delay. The core is seen in section about the full size in Fig. 9; it is represented within a circular case made of sheet metal or hardened paper pulp or other material, which is shown in the figure to have an inner flange, *g*, inserted in a slot longitudinally cut in the core, C. This circular case covers the entire length of the core, and has three rows of holes, *g'*, punched from the inside, so as to have slight projections or burrs exteriorly, as shown in Figs. 1 and 9, for the purpose of holding the sheet roll of paper. It will thus be seen that when the paper is rolled upon the metal lining at the factory, and the core, C, run into it, the core and paper will be under the same influence—that is, when the shaft, *c*, is in place, and the paper is pulled, it must turn the shaft, and as the shaft is turned, the crank being inserted in the hole, *d*, in the ratchet wheel, D, the ratchet must also move correspondingly. Now, if there be any obstruction intervening to prevent the ratchet wheel from turning, the paper roll cannot be turned to deliver the paper. It will also be observed that when the ratchet wheel turns, the shaft

having upon it the reversing screw threads, d'' , working in the female thread, e'' , the wheel, when revolving on its shaft, gives the shaft a lateral movement in both directions.

Near the lower edge of ratchet wheel, D, are seen two lugs, h h' . In broken lines beneath is shown the arm, f , with its wrist, f' . These parts are so arranged that, when the wheel, D, has revolved a certain number of times, the screw thread, e'' , has drawn the shaft, d' , so far in as to bring the lug, h' , immediately in contact with the wrist, f' , which stops the wheel, D. This is regulated by means of the arm, F' , which is set on the shaft, F, by the set-screw and collar, f'' , so that, when the arm, F' , is in its normal position, as in section Fig. 8, to close the coin channel, H, in which position it is kept by the spring, f'' , the wrist is precisely in the way of the lug, h' , on the wheel, D. The counterweight is at such a position that, should the wheel, D, be released, its weight will carry the wheel over that point. Now if a coin be dropped in the channel, H, it will fall upon the end of the arm, F' , force it down and consequently the crank arm, f , will be lifted into the position shown in dotted lines on the wheel, D, the lug, h' , will immediately be thrown clear of the wrist, f' , and pass freely under it, the reversing screw, d'' , will at once move the shaft, d' , in the direction away from the frame, B', and by the time the lug, h' , has again reached the wrist, it will clear it altogether and permit another revolution of the wheel. It should be understood that after a person has dropped a coin into the slot, he takes hold of the end of the paper roll which has emerged a few inches by the power of the counterweight on the ratchet wheel, D, and gives it a pull, and, as before stated, the counterweight, having prevented the wrist, f' , from engaging the lug, h' , the operator can pull the roll and deliver the paper until, by the reverse motion of the shaft, d' , it again causes the wheel, D, to approach the frame, B', until the lug, h' , encounters the wrist, f' , again, when it is arrested until another coin is dropped into the slot. The shutter, I, as seen in section in Fig. 2, and side elevation in Fig. 1, is swung on a shaft, I', having at one end a crank arm or cam lever, i , shown at its length in Fig. 5. This lever, i , has attached to it a coiled spring, j , to keep the shutter in a fixed position until the lever, i , is operated upon by the lug, h , on the side of the ratchet wheel, D. As the wheel revolves in the direction of the arrows always, this lug, h , impinges upon the lever, i , and carries it down-

ward, until the lever is in the position shown in Fig. 5 in dotted lines below. The continued revolution of the wheel, D, carries the lug, h , beyond the end of the lever, i , but h' still impinges upon the lever, i , and holds it down after the lug, h' , is arrested by the wrist, f' , of the arm, f . This is shown in dotted lines below in Fig. 5. When the end of lever, i , is released by the lifting of the wrist, f' , when the coin drops on the arm, F' , then the spring, j , causes the end of i to pass upward until it is stopped by a pin, k , projecting from the standard, B', as seen in Fig. 3. The shutter, I, will be thrown in the direction of the arrow Fig. 2. The main purpose of shutter, I, is to clamp the end of the paper to hold it while being torn off and to keep it in right position to emerge through the opening.

H is the channel for the coin, and its bottom is partially closed by the end of the arm or lever, F' .

J is the receptacle for the coin after it drops from the arm, F' .

I claim—

1. In a slot machine for delivery of paper in rolls, the core, having a longitudinal slit, in combination with a removable tube having an inwardly projecting flange to correspond with the slit, and a series of punctured holes on the exterior, substantially as and for the purpose described.

2. The shutter, I, made of any suitable form and suspended on a shaft, I', which has at one end a cam lever, i , controlled by a spring, j , in combination with the lug, h , on the side of the ratchet wheel, D, and the wrist, f' , and arm, f , of the shaft, F, and the coin arm, F' , substantially as and for the purpose described.

3. The ratchet wheel, D, with its lugs, h and h' , and counterweight, D', in combination with the shutter, I, hinged to a shaft, I', having a cam lever, i , whereby the loose end of the paper in a slot machine is controlled and to insure its perfect delivery, substantially as and for the purpose described.

4. The combination of the reversing screw d'' and thread e'' , coin arm or lever F' , shaft F crank arm f the wrist f' , ratchet wheel D having lugs h , h' , and counter weight D', shutter I hinged on the shaft I' having a cam lever i , all substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK E. HOUSH.

Witnesses:

WARREN E. LOCKE,
WM. MEEHAN.