

(No Model.)

2 Sheets—Sheet 1.

A. J. DOUGHTY.
CIGAR VENDING MACHINE.

No. 535,752.

Patented Mar. 12, 1895.

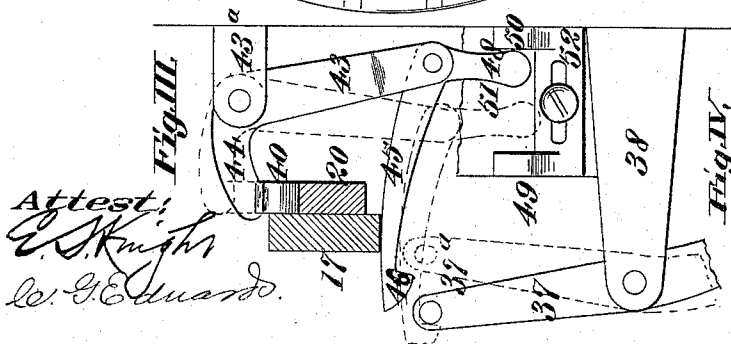
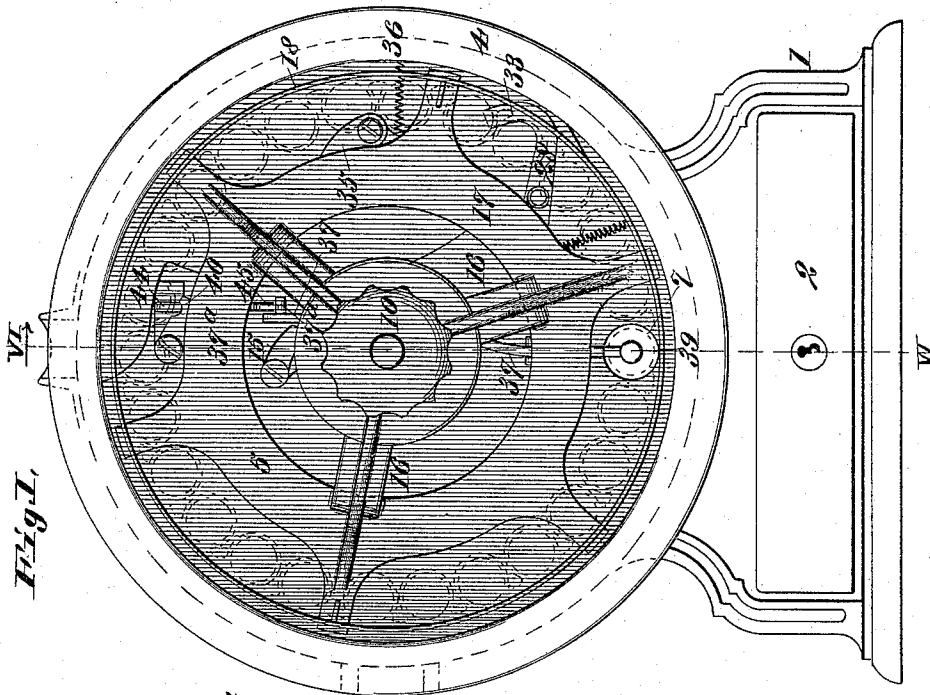
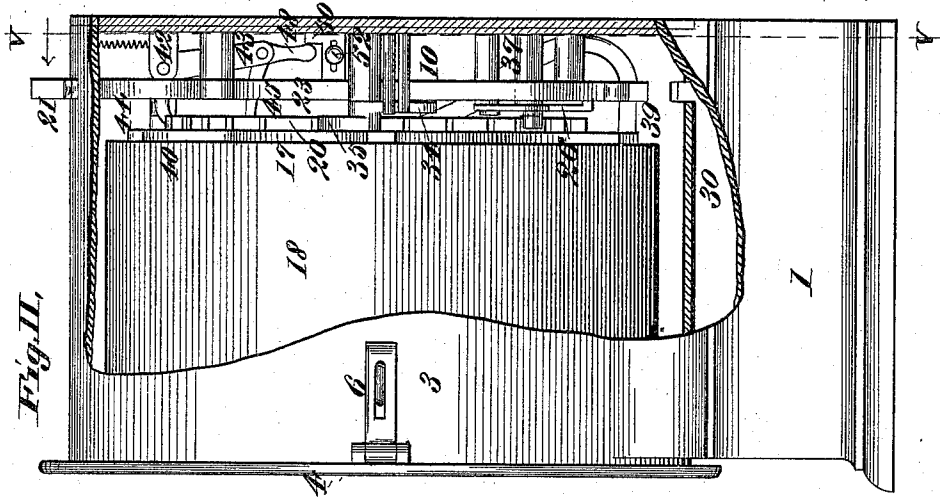


Fig. IV.

Inventor
Atfred J. Doughty
By Knight Bros
Atty's.

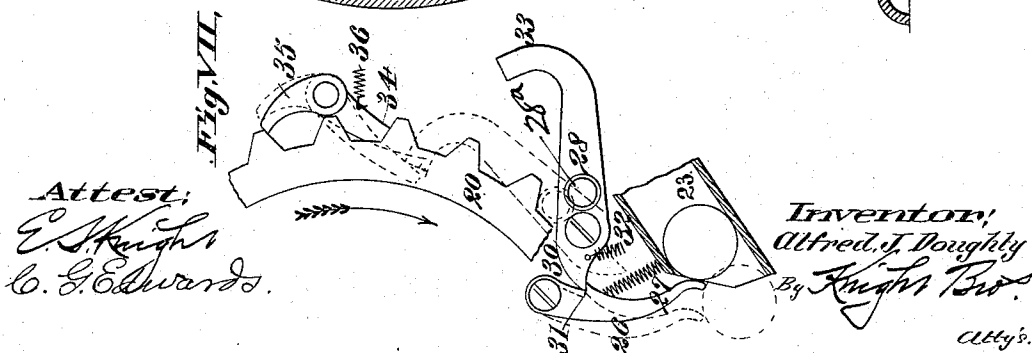
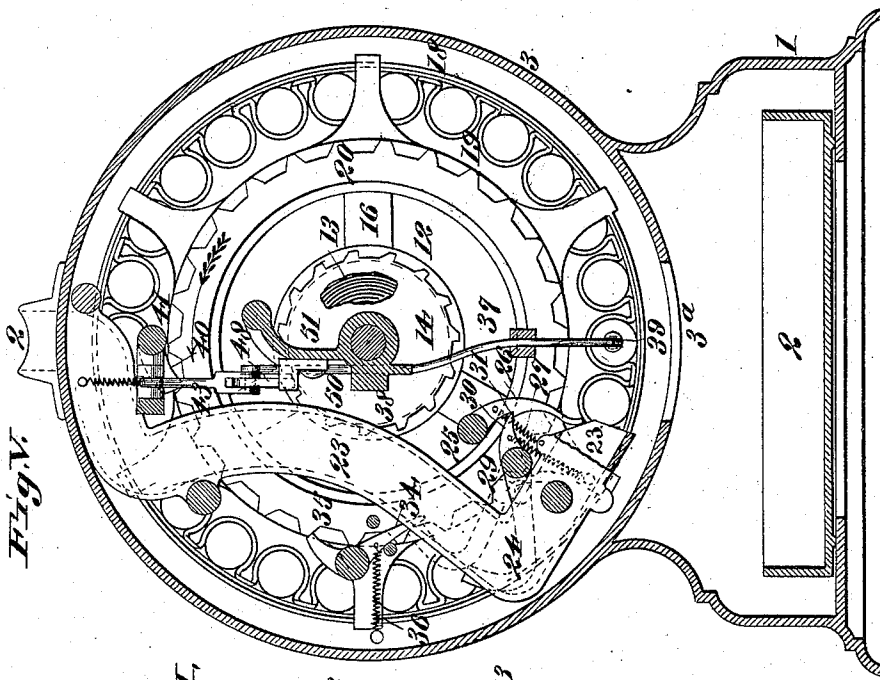
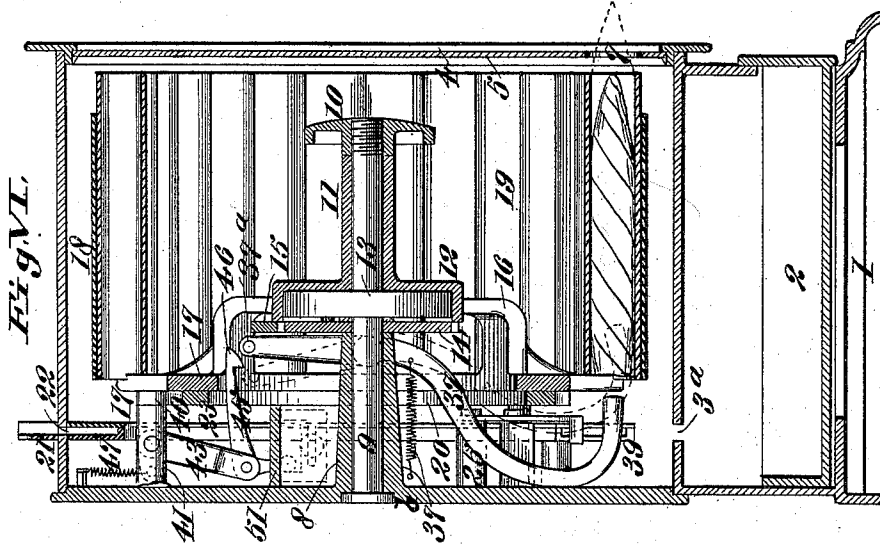
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2 Sheets—Sheet 2.

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Patented Mar. 12, 1895.



UNITED STATES PATENT OFFICE.

ALFRED J. DOUGHTY, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE NATIONAL CIGAR VENDING MACHINE COMPANY, OF SAME PLACE.

CIGAR-VENDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 535,752, dated March 12, 1895.

Application filed July 2, 1894. Serial No. 516,248. (No model.)

To all whom it may concern:

Be it known that I, ALFRED J. DOUGHTY, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Cigar-Vending Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to machines for vending cigars, or like objects, the mechanism of which is operated through the medium of a coin introduced into the machine.

My invention consists in features of novelty hereinafter fully described and pointed out in the claims.

Figure I is a front elevation of the machine. Fig. II is a side elevation, a portion of the back and side of the case being broken away and shown in section. Fig. III is an enlarged, detail elevation of the trip mechanism that operates the lever that forces the cigar partly out of the machine. Fig. IV is an enlarged, detail view of the upper end of the trip arm shown in Fig. III, and of the pivoted dog by which said arm is moved. Fig. V is a vertical section, taken on line V—V, Fig. II, from side to side of the machine, and looking toward the front of the machine. Fig. VI is a vertical section, taken on line VI—VI, Fig. I, looking in the direction indicated by the arrow above Fig. I. Fig. VII is an enlarged, detail elevation of the coin operated trip mechanism.

Referring to the drawings, 1 represents the base of the machine, provided with a suitable cash drawer 2.

3 represents the cylindrical case of the machine having a door 4, with a central portion of glass, as shown in Fig. I, so that the interior of the machine and cigars located therein, may be seen. The door has a suitable fastening, as shown at 6, and is provided with an opening 7, (see Figs. I and VI,) through which the cigars are removed.

Extending forward from the back of the machine is a hub 8, in which a shaft 9 has bearing, and on the forward end of the shaft 9 is a hand wheel 10 provided for the purpose of turning said shaft. On the forward end of the shaft 9, back of the hand wheel 10 is a

sleeve 11, enlarged at its inner end to form a barrel or cup 12, and 13 represents a spring within the cup 12, and which is coiled around and secured at one end to the shaft 9, and at the other end to the barrel 12.

14 represents a toothed wheel secured to the shaft 9, with the teeth of which a pawl 15 engages, to prevent retrograde movement of the shaft 9, after the spring 13 has been wound by means of the hand wheel 10.

Connected to the barrel 12 are the arms 16 of a spider, to whose rim 17 is secured a cylinder 18, within which is a cylindrical box 19, containing the cigars, as illustrated in Figs. V and VI, and in dotted lines in Fig. I. The box 19 is composed of a number of semi-circular pockets formed by fluting a strip of paper or other material. On the rim 17 of the spider is a toothed wheel 20, which turns with the spider and the cylinder 18, under the action of the spring 13.

On top of the cylindrical case 3 is a plate 21 against which the coin is placed in inserting it into the machine. This plate is formed with a solid back and ends, and its front and top are left open to allow of the coin being placed between the ends and against the back of the plate without the necessity of finding the slot opening, as is necessary where the slot is open only at the top.

22 is an opening in the case 3, beneath the plate 21, which opening registers with the chamber of a chute 23, the lower end of which chute turns abruptly at 24 so that the coin in passing through the chute, comes approximately to a standstill before rolling to the end of the chute, and through the opening 3^a into the cash drawer 2. The reason for so forming the chute with this abrupt bend is to cause the coin to lose its momentum in order that when it reaches the lower end of the chute to operate the trip mechanism of the machine, it will roll smoothly to the trip. I thus provide for only coins of a sufficient diameter to strike the lower end of the trip arm, operating the mechanism of the machine.

I have discovered that in a coin chute made to allow the coin to pass directly through the chute, without any stoppage, there is a vibration in the coin's movement that would cause the trip arm to be operated by a smaller coin

than intended, owing to the fact that in its vibration it is possible for a small coin to jump upward as it reaches the end of the chute, and thus strike the end of the trip arm. This vibration or jumping is avoided by the bend 24 bringing the coin to a standstill, from which bend it runs smoothly to the exit of the chute.

Pivoted to a stud 25 is an arm 26, the point of which is normally in position in the open end of the chute 23, and is held in such position by a coil spring 27, the said spring always returning the arm to its normal position after a coin has passed out of the chute.

28 is an arm pivoted to a stud 29, and having a point 30 that normally engages with a notch 31 in the arm 26, said arm 28 being provided with a spring 32, the action of which is to throw the free end 33 of the arm 28 up into the position shown in dotted lines, see Figs. V and VII, on the tripping, by a coin, of the arm 26, whereby the point of the arm 28 is released from the recess 31. In the upward movement of the free end 33 of the arm 28, said end strikes the lower arm 34 of a pawl 35, normally held in contact with one of the teeth of the toothed wheel 20 by means of a spring 36 and in so striking the arm 34, the pawl is thrown out of engagement with the tooth, against which it is bearing, thus allowing the spring 13 to carry the toothed wheel 20 forward one notch, when the movement of the wheel 20 is again arrested by the pawl 35 being thrown into engagement with the next tooth by the tension of the spring 36, and the arm 28 is returned to its normal position by one of the teeth of the wheel 20 bearing on the roll 28^a on said arm, where its point 30 engages in the notch 31 of the arm 26, and is there held until the introduction of another coin that trips the mechanism as before.

As the toothed wheel turns to bring a cigar before the opening 7 in the door of the machine, mechanism is simultaneously operated to press a cigar, brought in line with the opening, out where it may be grasped by the hand. This mechanism I will now describe.

37 represents a lever, pivoted to a boss 38 on the side of the hub 8, and curved near its lower end 39, so that said end extends in a horizontal direction, in order that when the lower end of the lever is thrown forward it will strike the end of the cigar and eject its opposite end out through the opening 7.

40 represents a pivoted dog mounted upon a stud 41 and provided on its upper edge with a notch 42, the free end of which dog rests in one of the notches between the teeth of the wheel 20, and is raised on the turning of the wheel 20, by the adjacent tooth passing under it in the movement of said wheel. This dog also serves as a stop to prevent the wheel 26 from retrograde movement.

43^a represents a bracket in which is pivoted a bell crank lever 43, provided with a spring 47, and the forward free end 44 of which lever normally rests in the notch 42 of the dog 40,

while to the lower end of the bell crank lever 43 is pivotally connected an arm 45, provided with a hook 46 that engages with a pin 37^a in the upper end of the lever 37, when the machine is operated, as will be presently described.

On the arm 45 below its point of connection with the arm 43 is an extension 48, which, in the movement of the arm 45, comes in contact with bosses 49 and 50 on a bracket 51, to respectively cause the hook 46 to engage with, and to be disengaged from the pin 37^a on the lever 37.

The bracket 51 is capable of adjustment by means of slot and screw connection shown at 52, to regulate the throw of the arm 45, and consequently the movement of the lever 37. The operation of this trip mechanism is as follows: When by the coin trip mechanism, the wheel 20 is allowed to move the distance of one tooth, the pivoted dog 40 is raised out of the notch of the wheel 20, in which it normally rests, and rides over a tooth, in which movement it raises the forward end 44 of the bell crank lever 43, and throws the bell crank lever and arm 45 forward, as indicated in dotted lines in Fig. III. When the hook 46 engages with the pin 37^a on the lever 37, and when the wheel 20 has completed its movement, the dog 40 is returned to its normal position by the bell crank 43 and spring 47, and the hooked arm 45 pivoted at lower end of crank 43 draws the upper end of the lever 37 backward and throws the lower end of the lever forward, thereby ejecting the cigar through the opening 7; and as the arm 45 approaches the end of its stroke the extension 48 comes in contact with boss 50, and releases hook 46, allowing lever 37 to be returned to its normal position by the spring 37^b. By this arrangement of mechanism, I obtain a strong stroke to eject the cigars, while the mechanism is easily tripped by the light weight of the coin.

I claim as my invention—

1. In a vending machine, the combination of a case, a revoluble cylinder, and toothed wheel in said case, means for revolving said cylinder and wheel, coin operated trip mechanism allowing a specified movement of said cylinder and wheel, and a lever operated by independent trip mechanism to project a cigar or other object from the machine; substantially as and for the purpose set forth.

2. In a vending machine, the combination of a case, a revoluble cylinder and toothed wheel in said case, means for revolving said cylinder and wheel, coin operated trip mechanism allowing a specified movement of said cylinder and wheel, a lever adapted to project a cigar or other object, from said machine, and mechanism for operating said lever, consisting of a bell crank lever carrying a hook, and a pivoted dog moved by the teeth of said toothed wheel to operate said bell crank lever and arm; substantially as and for the purpose set forth.

3. In a vending machine, the combination of a case, a revoluble cylinder adapted to carry the articles to be vended and a toothed wheel located within said case, means for revolving
5 said cylinder and wheel, coin operated trip mechanism allowing a specified movement of said cylinder and wheel, and a lever operated by independent trip mechanism which is controlled by the revolution of the toothed wheel,
10 to project the articles from the cylinder, substantially as shown and described.

4. In a vending machine, the combination of a case, a shaft mounted within said case, a cylinder mounted on said shaft and adapted
15 to carry the articles to be vended, a coiled spring carried by said cylinder and adapted to revolve the same, suitable means for allowing a specified movement of the cylinder, and

independent means for discharging the articles from the cylinder as and for the purpose
20 set forth.

5. In a cigar vending machine, the combination of a case, a cigar case movably mounted in said case, a coin chute, a pivoted arm having its point arranged to be struck by a coin passed
25 through said chute, a pivoted arm normally in engagement with a stop connected to said cigar case, an intermediate trip arm arranged to be released by said first mentioned arm, and strike said second mentioned arm to throw it
30 out of engagement with said stop, substantially as and for the purpose set forth.

ALFRED J. DOUGHTY.

In presence of—

E. WENGER,
E. S. KNIGHT.