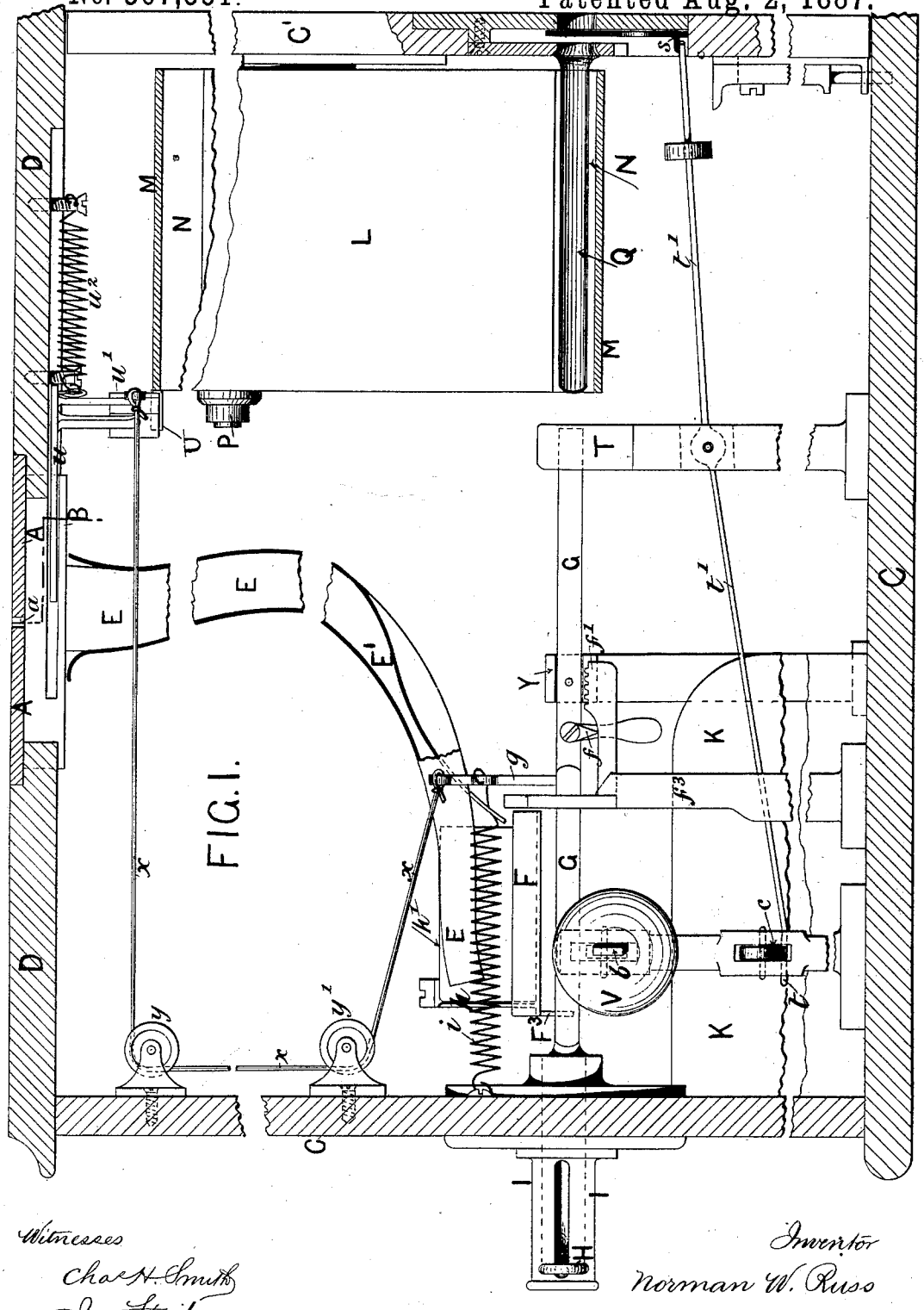
(No Model.) 5 Sheets—Sheet 1.

N. W. RUSS.

AUTOMATIC VENDING APPARATUS FOR CIGARS, CIGARETTES, &c.

No. 367,551. Patented Aug. 2, 1887.



Witnesses
Chas. H. Smith
J. Stail

Inventor
Norman W. Russ
for Lemuel W. Serrell
atty

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 5 Sheets—Sheet 2.

N. W. RUSS.

AUTOMATIC VENDING APPARATUS FOR CIGARS, CIGARETTES, &c.

No. 367,551. Patented Aug. 2, 1887.

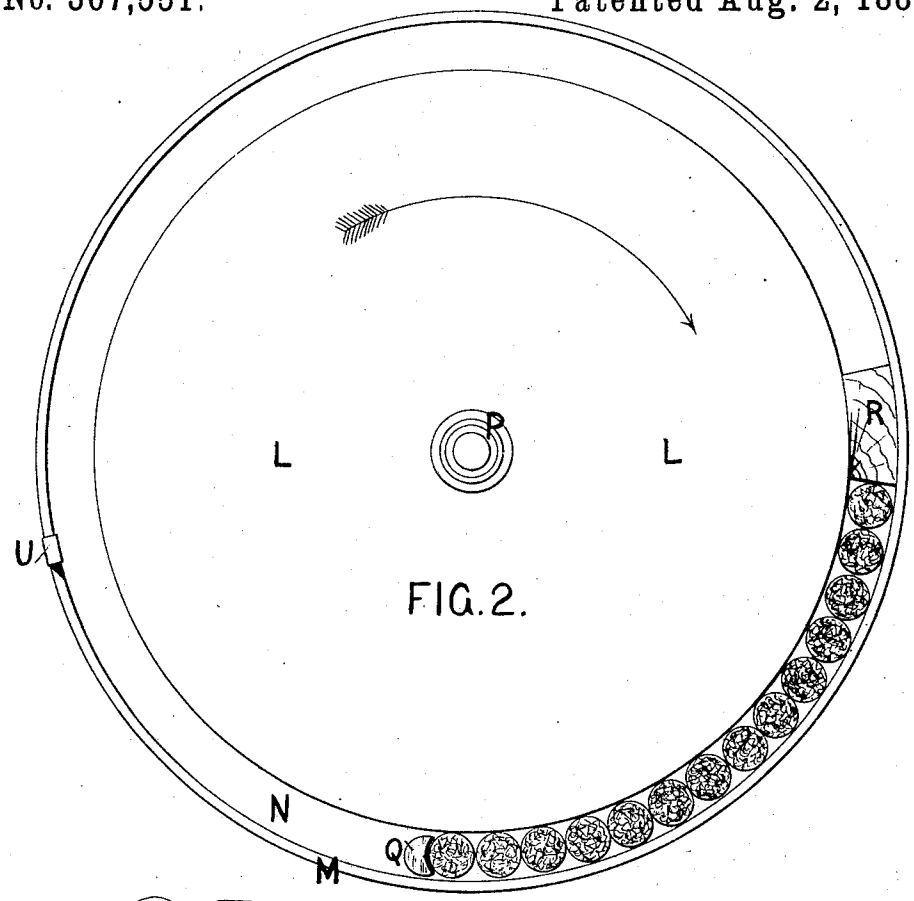


FIG. 2.

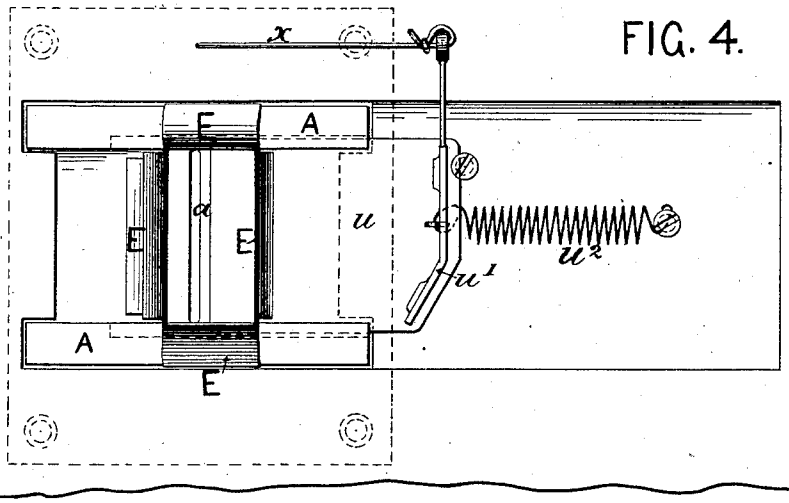


FIG. 4.

Witnesses
Chas. H. Smith
I. Stail

Inventor
Norman W. Russ.
per Samuel W. Serrell atty

N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 5 Sheets—Sheet 3.

N. W. RUSS.

AUTOMATIC VENDING APPARATUS FOR CIGARS, CIGARETTES, &c.

No. 367,551. Patented Aug. 2, 1887.

FIG. 7.

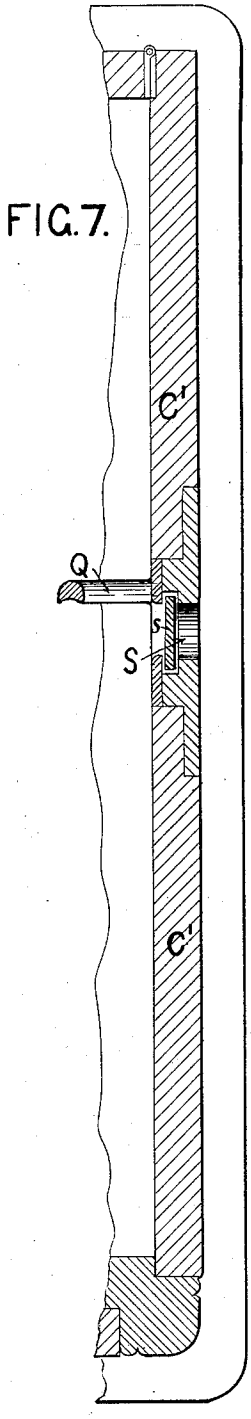


FIG. 3.

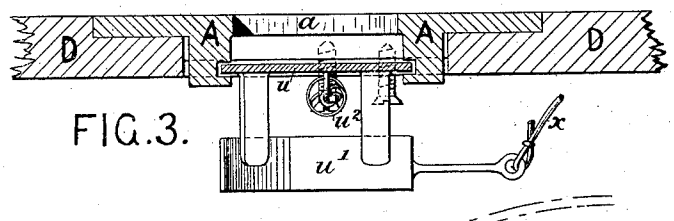


FIG. 8.

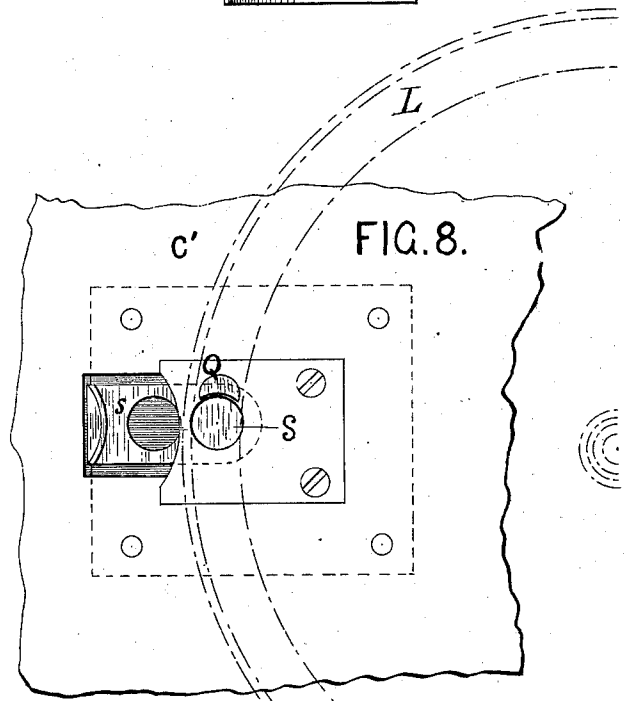
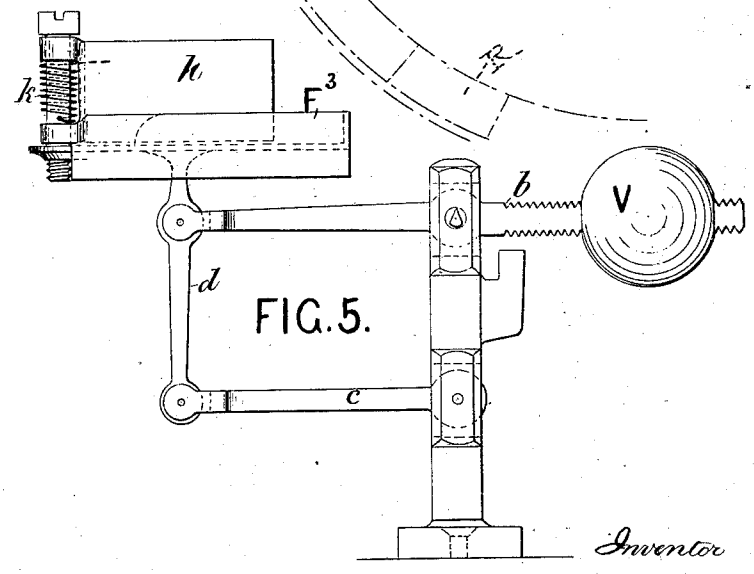


FIG. 5.



Witnesses
Chas. F. Smith
J. Stahl

Inventor
Norman W. Russ
per Samuel W. Serrell
Atty

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) N. W. RUSS. 5 Sheets—Sheet 4.

AUTOMATIC VENDING APPARATUS FOR CIGARS, CIGARETTES, &c.

No. 367,551. Patented Aug. 2, 1887.

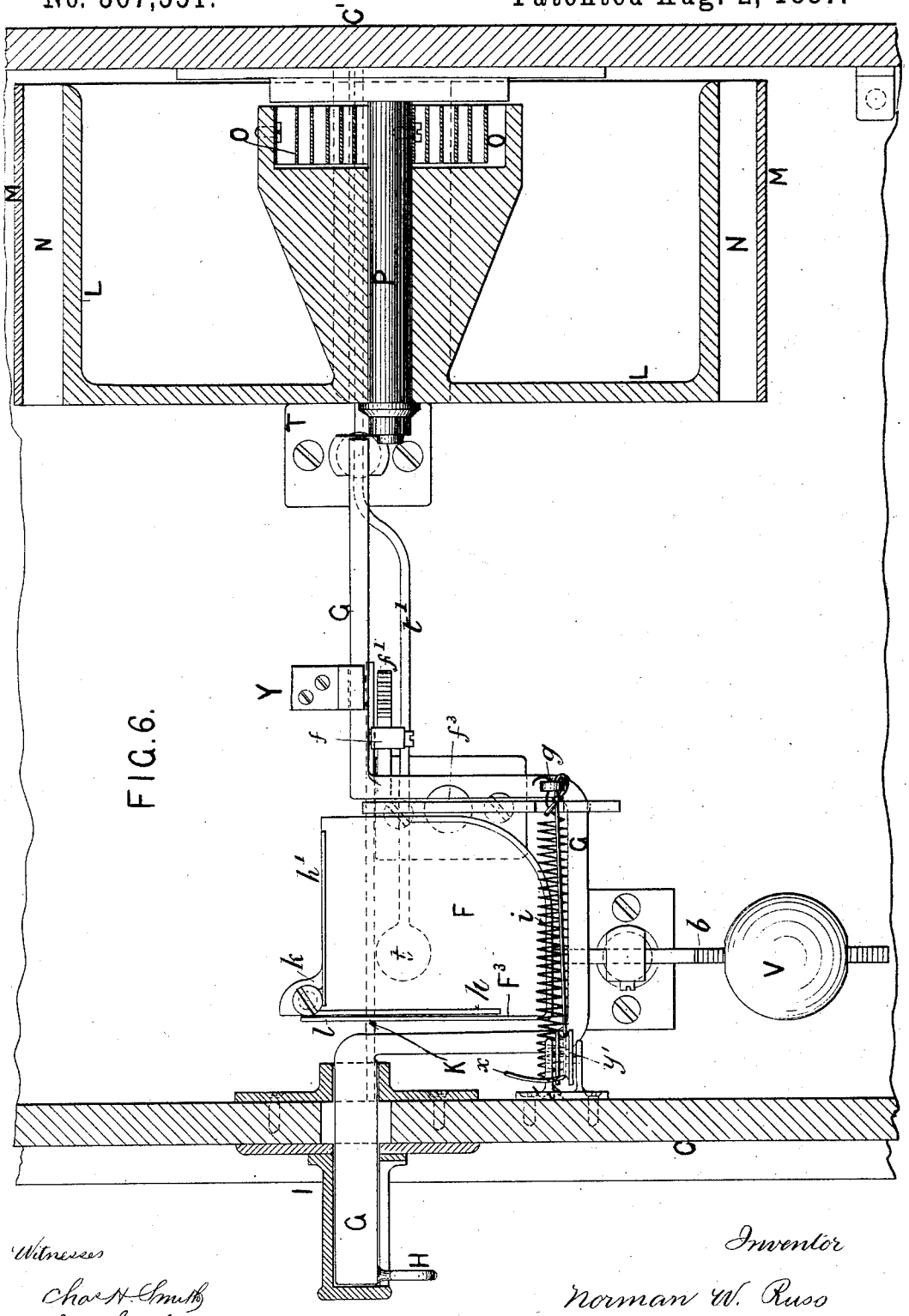


FIG. 6.

Witnesses

Chas. N. Smith

I. Staib

Inventor

Norman W. Russ

per Samuel W. Serrell

atty

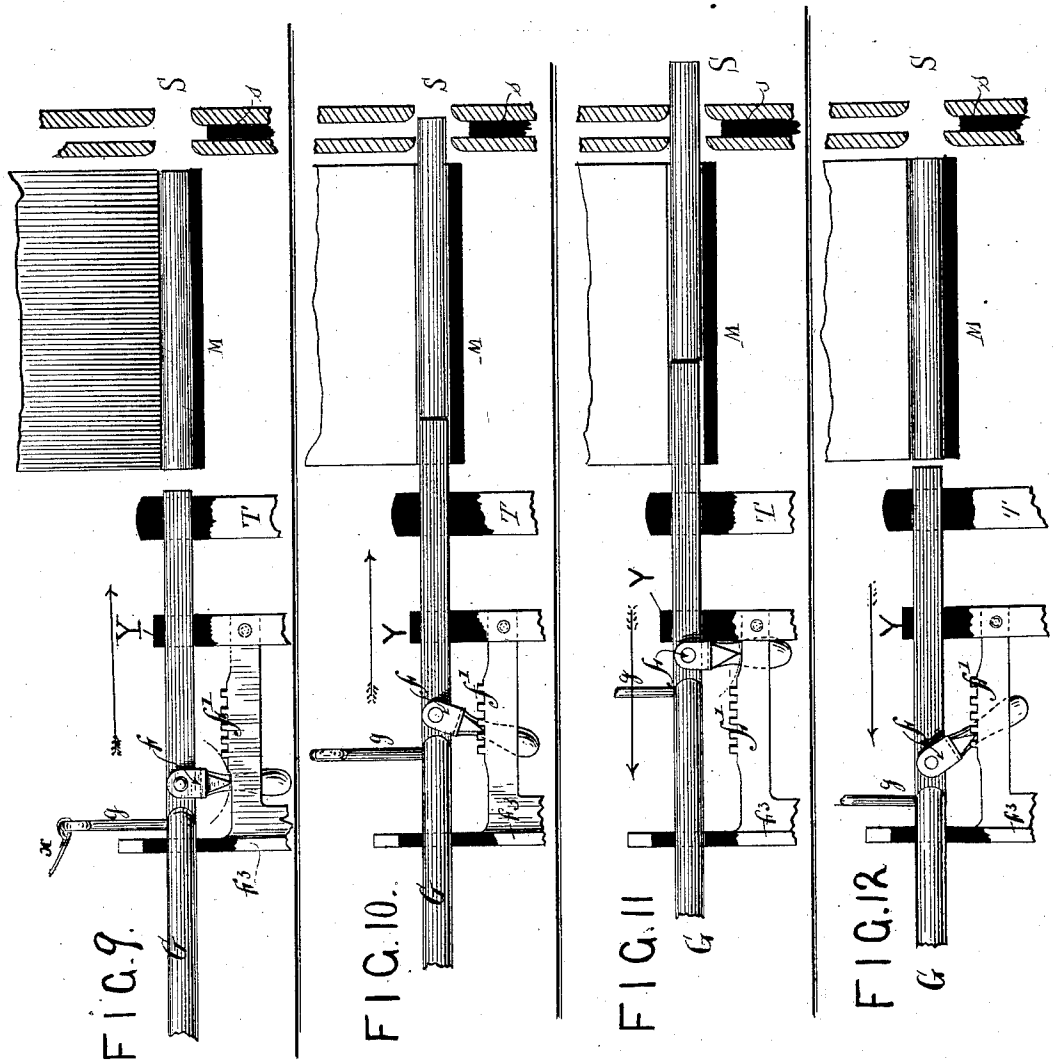
N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 5 Sheets—Sheet 5.

N. W. RUSS.

AUTOMATIC VENDING APPARATUS FOR CIGARS, CIGARETTES, &c.

No. 367,551. Patented Aug. 2, 1887.



Witnesses
Harold Serrell
Chas. H. Smith

Inventor
Norman W. Russ
per Lemuel W. Serrell
atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

NORMAN W. RUSS, OF DENMARK HILL, COUNTY OF SURREY, ENGLAND.

AUTOMATIC VENDING APPARATUS FOR CIGARS, CIGARETTES, &c.

SPECIFICATION forming part of Letters Patent No. 367,551, dated August 2, 1887.

Application filed August 15, 1885. Serial No. 174,464. (No model.) Patented in England, October 31, 1884, No. 14,428.

To all whom it may concern:

Be it known that I, NORMAN WILLIS RUSS, a subject of the Queen of Great Britain, residing at Denmark Hill, in the county of Surrey, England, gentleman, have invented a new and Improved Machine for the Automatic Sale and Delivery of Cigarettes, Cigars, Boxes of Matches, and other Goods in Packets, (for which invention Letters Patent were granted me in Great Britain, October 31, 1884, No. 14,428,) and the following is declared to be a description of the same.

The object of my invention is to produce a simple and effective means or machine for the automatic sale and delivery to any one, when paid for, of a cigarette, cigar, box of matches, or other goods in packets. I will describe my invention as applied to the construction of a box for the automatic sale and deliver of cigarettes.

In order that this my invention may be more readily understood, I will describe the same with reference to the accompanying drawings, of which—

Figure 1 is a sectional elevation of the whole machine. Fig. 2 is a side view of the round box or wheel for holding the cigarettes or other articles to be delivered. Fig. 3 is a detail view in cross-section through line A B, Fig. 1, with the chute left out. Fig. 4 is also a detail view in inverted plan of the slit for the money. Fig. 5 is a right-hand side view of the money-receiving-scale mechanism. Fig. 6 is a plan showing the top of the cabinet, the money-chute having been removed, and also showing the cigarette box or wheel in section. Fig. 7 is a section of the door C′ through the finger Q. Fig. 8 is a detail side view of the shutter for closing the cigarette-delivery aperture; and Figs. 9, 10, 11, and 12 are detailed views, on a larger scale, of the devices for delivering the cigarette or other article.

The apparatus or machine is contained in a cabinet, C, of the required size, sufficient to hold the required number of cigarettes—say fifty, or any other desired number. At the top D of the cabinet or box C and inside same there is a chute, E, or similar inclined device, communicating with an aperture, *a*, in the box sufficiently large for the insertion of, say, a penny or other coin. This coin falls into and down the chute E, curved, as shown, and said coin slides flatwise into and through a narrow throat at E′, which throat is inclined and more nearly horizontal than the chute, and it is prevented from toppling over, its momentum is checked, and it is guided into the tray F. The coin drops out of the chute E and onto a platform, F, which is always maintained in a horizontal position by being pivoted to a lever-rod, *b*, provided with a counter-weight, V, and on the under side with parallel motion *c d*, for keeping the tray in a horizontal position; but when the coin falls on the tray the latter descends sufficiently to allow a pushing-rod, G, to be pushed over the surface of the tray F, on which the coin is placed. When the tray is in its upper or normal position, as shown in Fig. 1, the rod cannot be operated to act on a cigarette, because if the rod G, which, as shown in Fig. 6, is cranked to go round the tray F, be pushed in from the outside by pushing on the little projection, knob, or handle H, which moves in a slot in the tubular cap I, the said cranked part comes against a rim, F^3, on the tray F, which stops its further progress.

The end of the tray opposite the pushing-rod is provided with a pivoted angular rim or shutter, *h h′*, hinged to one side of the tray F; and when the tray F is weighed down by the weight of the coin dropped in, it is against this shutter *h h′* that the pushing-rod G acts first and pushes back the shutter *h h′*, and with it the coin, off the tray F into a receptacle below, or it may fall onto the floor of the cabinet, being prevented from rolling into the tray mechanism by the guard K. The cranked rod G extends round the tray and forward to an opening in a box or receptacle, L M, containing cigarettes, hereinafter described.

Y is a guide for the pushing-rod G.

There is a spring, *i*, which is attached at one end to the cabinet C, and at the other end to the arm *g*, which is fixed to the rod G. This spring is for carrying back the push-rod G; and there is another, *k*, (see Fig. 5,) wound round the pivot of the shutter *h h′* to return the shutter to its normal position, and the tray is provided with a stop or flange, *l*, to prevent the two-sided shutter *h h′* from going back.

The cigarette-receptacle is made in the form of a double wheel, the distance between the outer periphery of the inner wheel or drum, L, and the inner periphery of the outer wheel

or rim, M, forming an annular space, N. The rim M is fixed to the drum L and kept at a proper distance therefrom by a spacing-piece, R, which also serves as a stop. In the space N the cigarettes are inserted parallel to the axis of the wheel L M, and the said wheel being made to correspond in width with the length of the cigarettes or other articles to be delivered, the latter are supported throughout their length. The wheel is supported in a pivot-bearing, P, in, say, the side or door C′ of the box or cabinet C, so that on opening the door C′ the wheel is exposed and can then be filled with the cigarettes. A spiral spring, O, connected at one end to the pivot P and at the other to the inner circumference of the drum L, always has a tendency to drive the wheel in one direction; but the wheel is prevented from so moving by a fixed finger-piece, Q, which passes through the annular space N in the wheel and by the stop R, which extends parallel to the axis from one side to the other of the drum M and presses against the cigarette or cigarettes. The stop or block R in the annular space travels with the wheel L M and pushes forward the cigarettes as the wheel rotates up to and against the fixed finger-piece Q, so long as there are any cigarettes in the wheel. Opposite the cigarette, against the fixed finger Q, there is an aperture, S, in the box for the exit of a cigarette, and this aperture is made conical or bell-mouthed for the free exit of the cigarette. There is a bearing, T, for the push-rod G opposite the annular chamber in the wheel, so that on pushing the rod toward the annular chamber, which is done by pushing the knob H of same, the coin is pushed off the tray F, as before described, and the push-rod G pushes out the cigarette which comes opposite to it—that is, the one next to the fixed finger Q. There is a shutter, *s*, over or inside of the exit-aperture S, which shutter is worked automatically by the rising and falling of the tray, the lower end of the rod *c* or shank of the tray acting on the disk *t* on the end of the lever *t′*, as shown. When all the cigarettes are used, a pin, U, on the outer circumference of the wheel, comes against a slide, *u*, having a cam-shaped edge, *u′*, whereby the slide is pushed over the coin-aperture *a*, which cannot be again opened until the door C′ is opened, or until there is a fresh supply of cigarettes placed in the wheel. The slide is provided with a small spring, u^2, for pulling it back into its normal position and to prevent it shutting by accident. The wheel must be set in position by the attendant who fills the same, which is done by turning the wheel once around in the reverse direction to the spring O, and then inserting the cigarettes. A door may be provided in front for gaining access to the interior in addition to the door C′.

It being necessary to prevent the cigarettes receiving damage, and to prevent more than one cigarette being obtained at a time by means of the pushing-rod G being indiscreetly moved to and fro through short distances without it being ever brought sufficiently far back to its normal position to allow of the balance-tray rising and locking the said pushing-rod, I provide the said pushing-rod with a weighted pawl or swing-catch, *f*, Figs. 1 and 6, and also shown in different stages of motion by the diagrams, Figs. 9, 10, 11, and 12. This weighted pawl *f*, during its transverse to and fro, travels above and falls consecutively between the teeth of a rack, *f′*, fixed or formed in a piece with a standard, f^3, which also serves as a guide for the cranked portion of the pushing-rod G. (Best seen in Fig. 1.) The distance between the base of the teeth of the rack and the swing center of the pawl *f* on the pushing-rod bears such a proportion to the length of the swinging pawl that on the rod being advanced in the direction of the arrow from the position shown by Fig. 9 the pawl *f* will strike the first tooth and be thrown out of a vertical line, as in Fig. 10, and will continue to be traveled over the teeth *f′* in that position; but when, for example, the pushing-rod has nearly reached the end of its stroke, supposing the operator attempted to withdraw it, he would be prevented by the length of the pawl *f* acting as a locking-toggle, whereas supposing the pushing-rod G to have been pushed in the extent of its full stroke (see Fig. 11) and then allowed to nearly resume its normal position, as at Fig. 12, any attempt made to push it in again before the balance-tray was allowed to rise would fail by reason of the pawl resuming a similar position to that shown by Fig. 12. The arm having the teeth *f′* is supported only at one end by the standard f^3, as shown in Fig. 1; but, if desired, it may be supported at both ends, as shown in Figs. 9, 10, 11, 12.

In order to prevent money from being placed in the tray F when the pivoted shutter *h h′* is sweeping across the tray, and thereby perhaps damaging the mechanism, the shutter or slide *u* is connected to the arm *g* on the pushing-rod G by means of a string or cord, *x x*, guided by pulleys *y* and *y′*, so that it is impossible to put a coin into the aperture *a* when the pushing-rod G is moved forward out of its normal position.

For the delivery of larger articles the exit-apertures must be arranged accordingly, as well as the annular spacing of the wheel, and the balance-weight must be altered to suit the amount of money to be paid for each article.

I claim as my invention—

1. In a machine for automatically delivering cigarettes or other articles, the curved tapering chute E, for receiving and conveying the coin, a contracted throat, E′, to said chute for checking the velocity of the coin, and the weighing-tray F, into which the coin is received, all combined substantially as specified.

2. The curved tapering chute E, having a contracted throat, E′, in combination with the balanced tray F, a bent pushing-rod, G, which is released and can be moved when the tray

F is overbalanced by a coin, the shutter *h h'*, connected to the tray and acted upon by the pushing-rod G to remove the coin from the tray, the wheel L, having an annular space adapted to receive cigarettes, a stop, R, a fixed stud within said space, a volute spring or weight, O, for operating said wheel, a pawl, *f*, for compelling a complete movement of the pushing-rod G, and a spring, *i*, for returning the pushing-rod to its normal position, substantially as set forth.

3. In a machine for automatically delivering cigarettes, the wheel L, having an annular space adapted to receive the cigarettes, a shaft, P, upon which said wheel turns, the volute spring O, connected to the wheel and shaft respectively, the stop R in the annular space, the stationary finger piece Q for stopping the cigarettes and presenting them to the delivery apparatus, and the projection for operating and closing the coin-aperture when the wheel is empty, all combined substantially as set forth.

4. In a machine for automatically delivering cigarettes, the balanced tray F for receiving the coin, in combination with the stop-flange *l*, the shutter *h h'* for retaining the coin upon the tray and for sweeping it from the tray, the pushing-rod G for operating the shutter upon the overbalancing of the tray and removing the coin, and the spring *k* for returning the shutter to a normal position, all combined substantially as set forth.

5. In a machine for automatically delivering cigarettes, the pushing-rod G and shutter *u*, in combination with the cord *x* for operating the shutter by the rod G and closing the coin-aperture, and the springs *i* and u^2 for returning the rod G and shutter *u* to their normal position, substantially as specified.

6. In a machine for automatically delivering cigarettes, the combination, with the pushing-rod *g*, of the weighted pawl *f*, the rack *f'*, over which the pawl passes, and the spring *i* for returning the rod G, whereby only a full-length movement in either direction can be imparted to the rod G, substantially as specified.

7. In a machine for automatically delivering cigarettes, the balance-tray F, the rod *b*, weight V, rods *d* and *c*, and standard for supporting the same, in combination with the lever *t'* and exit-shutter *s*, whereby the depression of the tray operates the lever *t'* and raises the shutter, substantially as and for the purpose set forth.

8. In a machine for automatically delivering cigarettes, the cabinet C D, in combination with the swinging door C', the circular cigarette-receiving wheel or drum L M, and its pivot P, secured upon the inner face of the door for supporting the wheel, whereby access is had to the wheel for refilling, substantially as specified.

9. The apparatus for the automatic delivery of cigarettes and other articles, consisting, essentially, of the chute E E', in combination with the balance-tray F and the angular shutter *h h'* for sweeping off the coin, and the cranked pushing-rod G and retractile spring *i*, the shutter *u*, spring u^2, and cord *x*, the cigarette-wheel L M, spring O, the stop U, the stationary finger Q, and block R in the annular space thereof, the pawl *f*, and rack *f'*, and the shutter *s*, the lever *t'*, connected to the shutter and operated from the balance-tray, and a cabinet inclosing the whole and provided with suitable apertures for inserting the coin for operating the pushing-rod and for the exit of the cigarette, substantially as described.

NORMAN W. RUSS.

Witnesses:
W. I. SKERTEN,
HERBERT E. DALE,
Both of 17 *Gracechurch Street, London, E. C.*