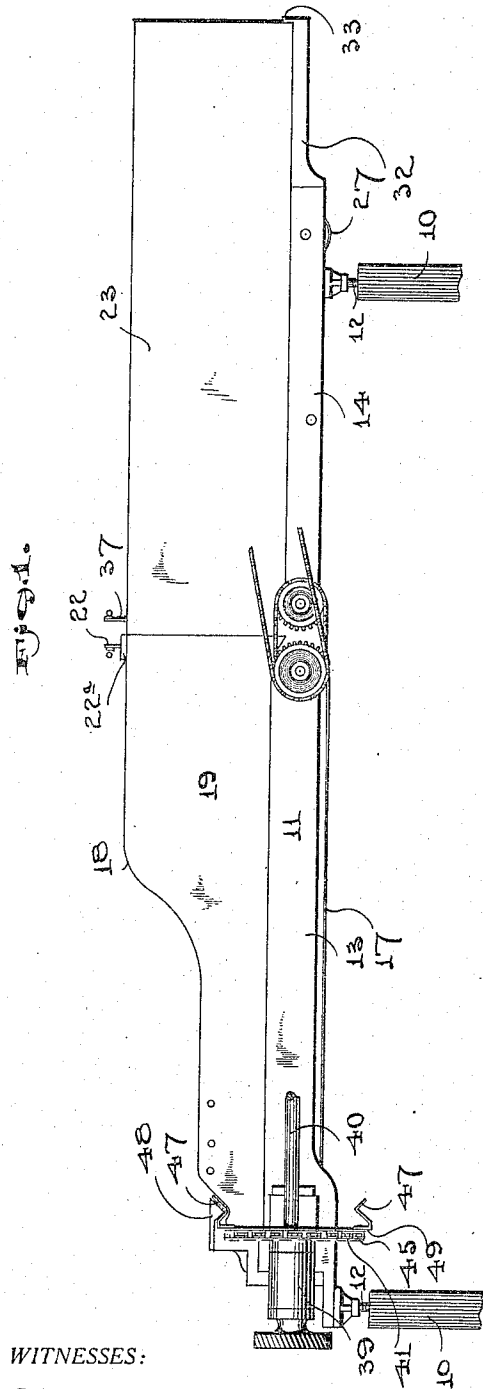
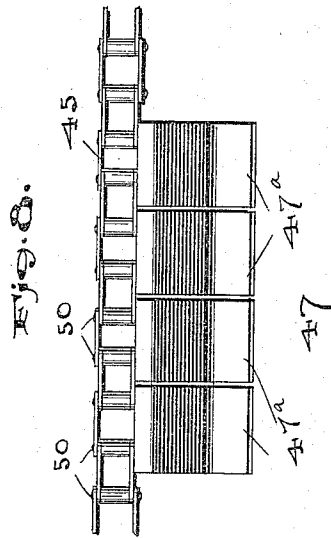
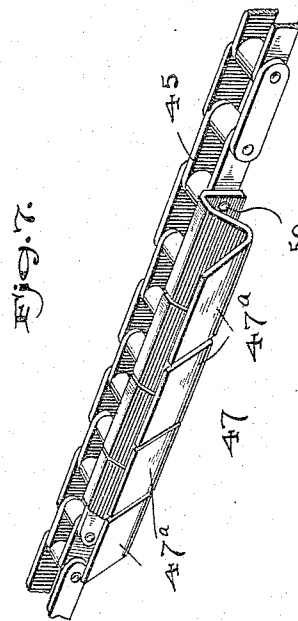


A. L. EWERS.  
RECEIVING AND ASSORTING MECHANISM FOR CIGARETTE MACHINES.  
APPLICATION FILED APR. 26, 1913.

1,168,795.

Patented Jan. 18, 1916.

3 SHEETS—SHEET 1.



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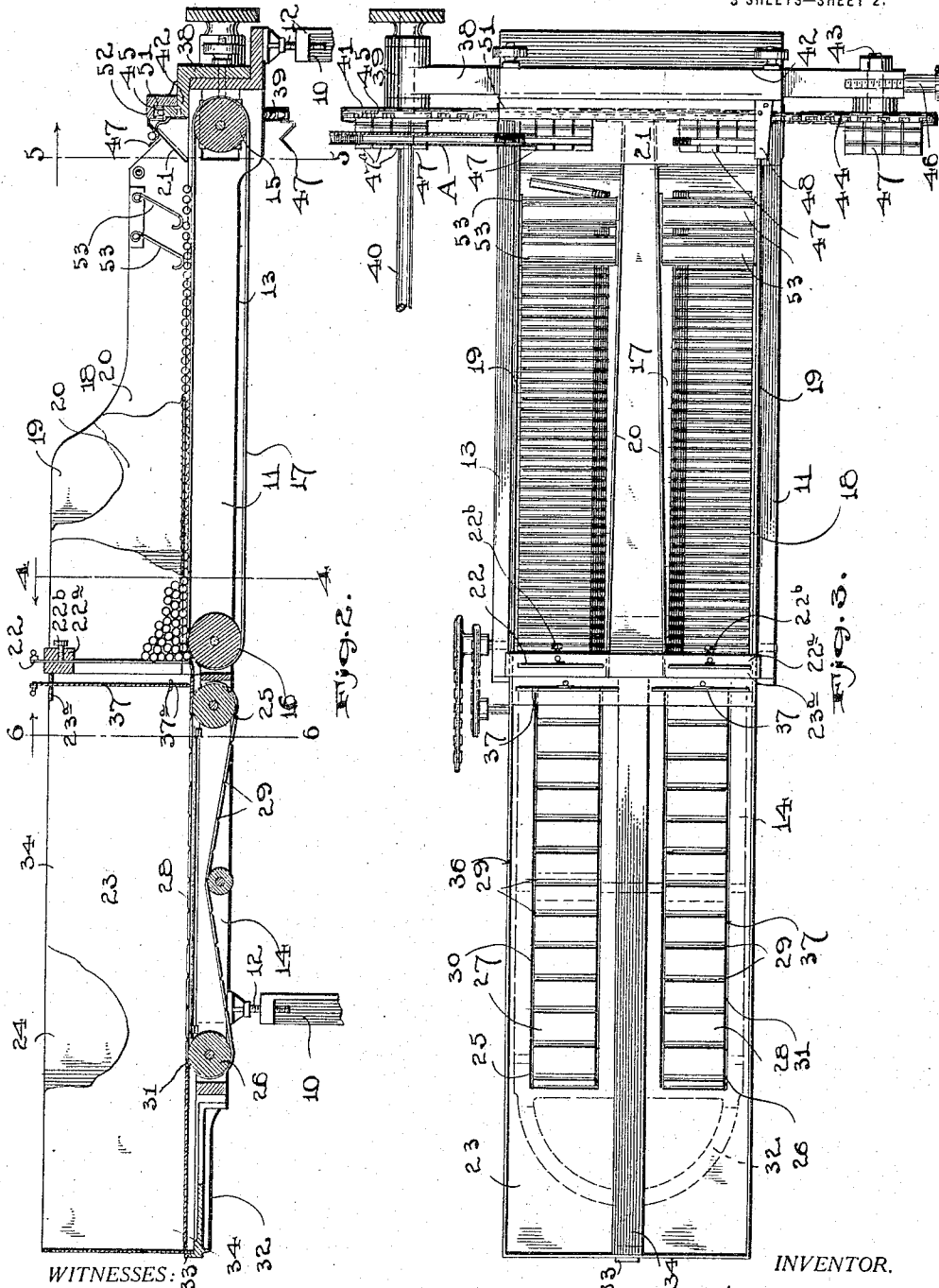
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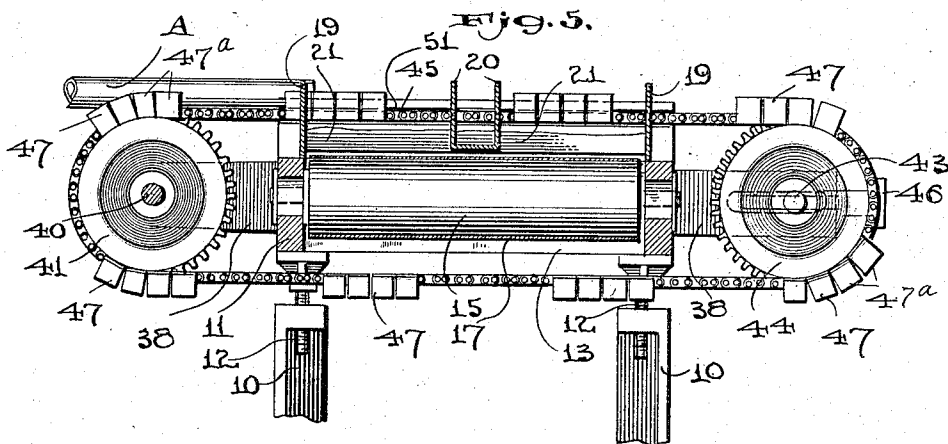
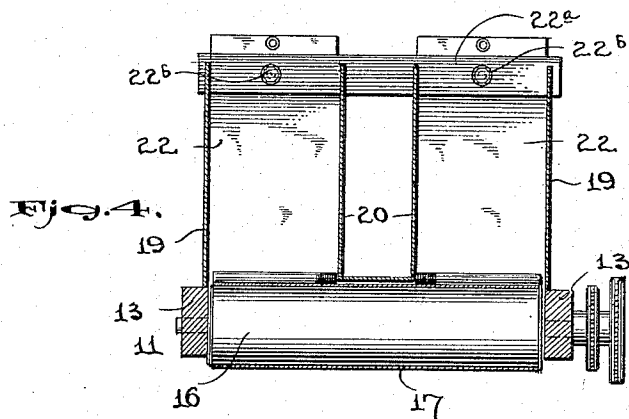
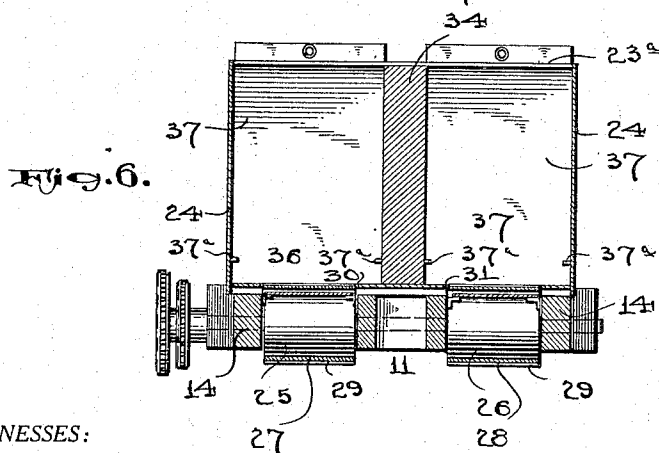
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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

ALEXANDER L. EWERS, OF DURMID, VIRGINIA, ASSIGNOR TO UNITED CIGARETTE MACHINE CO., LTD., OF LONDON, ENGLAND, A CORPORATION OF GREAT BRITAIN AND IRELAND.

RECEIVING AND ASSORTING MECHANISM FOR CIGARETTE-MACHINES.

1,168,795.

Specification of Letters Patent.

Patented Jan. 18, 1916.

Application filed April 26, 1913. Serial No. 763,766.

*To all whom it may concern:*

Be it known that I, ALEXANDER LEE EWERS, a citizen of the United States, residing at Durmid, in the county of Campbell and State of Virginia, have invented new and useful Improvements in Receiving and Assorting Mechanism for Cigarette-Machines, of which the following is a specification.

This invention relates to automatic cigarette making machines, and has for its object to provide such machines, particularly those making tipped cigarettes and delivering them with tipped ends abutting, with automatic means for separating and stacking the cigarettes in two rows, those in one row having their tipped ends pointing in one direction while the tipped ends of those in the other row point in the opposite direction. Cigarettes of this type are made on a continuous rod machine, and either before the continuous wrapper enters the folding channel or after the cigarette rod is completed, a strip of very thin cork or other material of the width of two tips is pasted at intervals on the wrapper or around the rod, the distance between the centers of said strip being equal to the length of two cigarettes. The "cigarette rod" on emerging from the folder with its tip strips thereon is cut into lengths, the knife passing between the tip strips and also centrally through them, the cigarettes emerging from the machine with their tipped ends abutting.

Before packaging the cigarettes, it is necessary to arrange them with their tipped ends all in one direction, and to do so manually is a slow expensive operation which the present invention will render unnecessary, as the cigarettes upon their exit from the machine are gathered in a receptacle arranged in two separated rows, the tipped ends of all the cigarettes in one row pointing one direction while the tipped ends of those in the other row point in the opposite direction. After a receptacle has been filled it is removed and an empty receptacle substituted in its place, the filled receptacle being forwarded to the packers.

The mechanism for assorting the cigarettes is both simple and accurate and performs its work speedily and with little attention from the operator. It comprises a moving belt or chain to which are attached

spaced shelves on which the alternate cigarettes, or those with the tips turned in one direction, are deposited as they leave the cigarette machine, the intervening cigarettes or those with their tips turned in the opposite direction fall between the shelves on one side of a traveling apron forming the bottom of a trough through the center of which is a division wall. The cigarettes on the shelves are carried beyond this division wall and dropped from the shelves on the other side of the apron. The movement of the apron carries the cigarettes in two separate rows with all the tipped ends in each row pointing the same way, to the centrally partitioned receptacle and delivered thereinto on opposite sides of the partition.

With this as the principal object in view, the invention further consists of the novel construction, combination, and arrangement of parts hereinafter described and pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the receiving and assorting mechanism, as applied to a cigarette making machine. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a top plan view. Fig. 4 is a cross sectional view on the line 4—4 Fig. 2, looking in the direction of the arrow. Fig. 5 is a similar view on the line 5—5. Fig. 6 is a like view on the line 6—6. Fig. 7 is a detail perspective view of one of the assorting shelves, showing its connection with the driving chain. Fig. 8 is a top plan view of the same part.

In the drawings 10, 10 indicate upstanding portions of a rigid frame which may be a portion of the frame of a cigarette making machine. Between these two uprights extends a horizontal frame 11 supported at its ends on adjustable screws 12 projecting upwardly from the parts 10 for the purpose of adjusting and leveling said frame 11. The frame 11 in the present instance is divided transversely into two sections 13 and 14. In the section 13 there is mounted upon horizontal rollers 15 and 16 at the respective ends of said section, a conveyer preferably in the form of an endless traveling apron or belt 17 extending across the same from side to side, the roller 15 being mounted in adjustable bearings for the purpose of maintaining the tension of the endless belt 17.

Upon the top of the section 13 over the endless belt 17, is fixed a trough 18 comprising parallel side walls 19 and a central longitudinal and double wall partition 20 which divides the surface of the belt 17 into two separated collecting surfaces for supporting the cigarettes and divides the trough 18 into two separated compartments. The bottom of the trough is formed by the endless belt 17, its entering end by a downwardly and inwardly inclined plate 21, and its outlet end furnished with vertically movable gates 22, the lower edges of which obstruct the path of the cigarettes as they advance with the belt. These gates are supported by a bar 22<sup>a</sup> extending between the sides of the trough 18 at their top, said gates sliding through slots in the supporting bar and held elevated by thumb screws 22<sup>b</sup> threaded in the bar.

Removably supported by the section 14 of the frame 11 is a collecting receptacle 23 for the cigarettes having one open end adjacent the outlet end of the trough 18 and sides 24 in line with the sides 19 of the trough. Across the top of the receptacle 23 at its open end is a plate 23<sup>a</sup> fastened to the sides of the receptacle and having two slots extending longitudinally of the plate formed therein. Through each of these slots a gate 37 is adapted to slide vertically being guided at its upper end by said plate and near its lower end by two pins 37<sup>a</sup>, between which the gates pass. These pins prevent the gate from being pushed outwardly by the cigarettes within the receptacle after the latter has been filled and the gates closed. Mounted on horizontal rollers 25, 26, journaled in the ends of the section 14, are two parallel endless belts 27, 28, preferably made of leather and provided on the upper or working surfaces with a number of transverse grooves 29. The upper run of each belt 27, 28 projects above the section 14 of the frame 11, and into horizontal slots 30, 31, cut through the bottom of the receptacle 23, the upper or notched surfaces of the belts being substantially in the same plane as the bottom of the receptacle. The rear end of the receptacle which is closed, projects a greater or lesser distance beyond the belts 27, 28, and is supported by a bracket 32 fastened against the end of the section 14, and having an up-turned lip 33 against which the end of the receptacle 23 bears when in place. Extending longitudinally through the center of the receptacle 23 from end to end is a wall 34 that divides said receptacle longitudinally into two receiving and collecting channels 35, 36, into which are gathered two rows of cigarettes fed thereinto by the belts 17, 27 and 28. The inner end of each channel next the trough 18 is provided with the vertically movable gates 37, as described.

Bolted or otherwise attached transversely

to the section 13, at its entrance end, is a bar 38 at one end of which is a bearing 39 for a longitudinal shaft 40 driven in any suitable manner from the cigarette making machine, and carrying thereon a sprocket wheel 41 in line with a lip 42 projecting inwardly from the top of the bar 38 over the endless belt roller 15, as clearly shown in Fig. 2. The other end of the bar 38 gives support to a short shaft 43 on the inner end of which is a sprocket wheel 44 in line with a sprocket wheel 41, and between which sprocket wheels there extends an endless chain 45. The short shaft 43 is adjustably mounted in the end of the bar 38, and by means of a thumb screw 46 may be moved horizontally therein for the purpose of tightening the sprocket chain 45.

Connected to the sprocket chain 45 at suitable distances apart are shelves or cigarette carriers 47 upon which each alternate cigarette as it emerges from the cigarette making machine is deposited and carried along in a horizontal direction a predetermined distance when it strikes a finger 48 extending over the shelves 47 and held stationary, while the shelf continues to move,—the latter passing from beneath the cigarette permits the same to drop into the trough below. The spaces between the shelves 47 are of sufficient length to permit such cigarettes as do not drop upon the shelves to fall therebetween into the trough 18 on the side of the partition 20 in line with the channel 35 of the receptacle 23, while the cigarettes that are caught by the shelves 47 pass to the trough on the other side of said partition in line with the channel 36.

The shelves 47 by means of which each alternate cigarette is transferred laterally at a predetermined time comprise in the present instance a plurality of sections 47<sup>a</sup>, each section being V-shaped with a downwardly projecting flange 49. The length of each section is substantially the same as that of the links of the chain 45, and are secured to the chain by the same pins 40 which connect the several parts of the chain, the flanges 49 serving in the present instance in place of the outer links of the chain. By thus constructing the shelves of sections said shelves are made flexible and pass around the sprocket wheels with great freedom. The pivot pins 50 of the chains being within the bottom of the shelves, said shelves as they pass around the sprocket wheels separate between the sections, and said sections being of the same length as the links, they offer no more resistance to the movement of said chain than said links. When passing along the straight portions of the chain the shelves lie close together and form a secure support for the cigarettes. The upper stretch of the chain 45 travels in a guide-way 51 formed by the up-turned

inner end of the lip 42 and the overhanging portion of an L-shaped plate 52 secured to said lip.

Cigarettes from the machine are fed outwardly through a channel or chute A, the delivering end of which overlies the adjacent end of the trough 18, as shown in Figs. 3 and 5, and drop from thence alternately into the trough and upon one of the shelves 47, and from said shelves into the opposite side of the trough. The cigarettes falling this distance, though but short, are liable to become displaced upon the belt or apron 17, and to straighten said cigarettes swinging fingers or plates 53 hang downwardly into said trough nearly to the traveling belt, and as the cigarettes are advanced thereby they engage said plates or fingers and are straightened. The plates or fingers having little weight readily swing aside to permit the cigarettes to pass.

This assorting and collecting device is designed particularly for machines that make tipped cigarettes by applying a tipping strip to the cigarette rod or the endless wrapper of sufficient width to make two tips, and then cutting the cigarette rod through the center of the strip and between the strips. As thus made the cigarettes emerge through the channel or chute A with their tips abutting and to collect and gather the cigarettes in two stacks each with their tips pointing in the same direction, the device hereinabove described is placed below the channel or chute A with the end of the channel projecting slightly over the channel 18 and just above the shelves 47. Motion being given to the belt 44 the cigarettes as they pass out to the chute A fall alternately upon the shelves 44 and between said shelves. Those cigarettes falling between the shelves drop upon the inclined plate 21 and roll from thence upon the traveling belt 17. The cigarettes that fall upon the shelves are carried thereby beyond the double wall partition 20, where they encounter the finger 48 projecting from the L-shaped plate 52 over the trough 18 and are arrested in their movement, the shelves however being unimpeded pass from beneath the cigarettes and the latter drop into the far side of the trough. The movement of the belt 17 carries the cigarettes in two rows toward the receptacle 23, the tips of the cigarette in one row facing in one direction, while those in the other row face in the opposite direction. The gates 22 and 37 being open the cigarettes pass from the trough 18 into the receptacle 23 and upon the belts 27 and 28, and are transported by the latter to the closed end of said receptacle, where they pile up on each side of the partition 34 until the box is practically filled. The gates 22 are then lowered to prevent any more cigarettes passing into the receptacle, after which

the gates 37 of the receptacle are closed and the latter removed and an empty receptacle substituted therefor. The gates 22 are then opened and the cigarettes delivered into the new receptacle. The act of changing receptacles is so rapid that few cigarettes will collect in the trough 18 while the change is being made, and these few will be immediately delivered as soon as the gates 22 are opened.

On account of the fact that the belt 17 is smooth, the gate 22 may be adjusted to positively prevent any movement of cigarettes from the trough into the receptacle because the belt can slip under the cigarettes at the gate. Such an arrangement as this is not possible where the cigarettes are received in pockets or corrugations in the belt, for it will be evident that the gate cannot prevent the cigarettes from moving out under it.

What I claim is:—

1. In a cigarette making machine, the combination with a cigarette deliverer, of a trough having a continuously traveling carrier in the bottom thereof upon one part of which cigarettes are deposited directly from the deliverer, continuously traveling means between said deliverer and carrier for transporting each alternate cigarette to another part of said carrier, a receptacle to receive the cigarettes, conveyers at the bottom of said receptacle onto which the cigarettes are deposited from the carrier, and gates extending transversely over the carrier with the lower edges of the gates disposed near the carrier to obstruct the movement of the cigarettes with the carrier and thereby cause an accumulation of the cigarettes in said trough.

2. In a cigarette making machine, the combination with a cigarette deliverer, a traveling carrier upon one part of which alternately issuing cigarettes are deposited directly from the deliverer, continuously traveling means having spaced supports between said deliverer and the carrier for transporting the intermediately issuing cigarettes to another part of said carrier, means for removing the cigarettes from said spaced supports, conveying means having two separated traveling collecting surfaces onto which the separate cigarettes are transferred respectively from said carrier, and a receptacle having a movable gate under which the cigarettes pass, for taking the cigarettes from said conveying means and in which said cigarettes are stored by the collecting surfaces in two separate rows.

3. In a cigarette making machine, the combination with a cigarette deliverer, of a continuously traveling carrier divided longitudinally by a fixed partition upon one side of which partition cigarettes are deposited from the deliverer, continuously moving means between said deliverer and the car-

rier for receiving and transporting each alternate cigarette to the opposite side of said partition, means for removing said cigarette from the transporting means to the carrier, a longitudinally divided receptacle into which said cigarettes are delivered by the carrier, and a traveling means at the bottom of said receptacle on each side of the division therein for stacking the cigarettes in the receptacle.

4. In a cigarette making machine, the combination with a cigarette deliverer, a trough below said deliverer having a central longitudinal partition therein, a traveling carrier at the bottom of said trough, and extending substantially the full width of the same upon one part of which cigarettes are deposited from the deliverer, and continuously traveling shelves to receive the alternate cigarettes from the deliverer and deposit them on the belt on the side of the partition opposite those first deposited.

5. In a cigarette machine in combination, a trough, a smooth endless belt in the bottom of said trough adapted to receive the cigarettes lying transversely thereupon, means for continuously advancing said belt, a gate at the end of said trough adapted to arrest the advance of the cigarettes when closed and adapted to permit the passage of the cigarettes when the gate is open, a belt beyond said first belt and adapted to receive

the cigarettes therefrom, means for continuously driving said last belt, and a receptacle having an opening in the bottom thereof adapted to receive said last belt so that the cigarettes on said last belt may be advanced into the bottom of said receptacle beyond said opening.

6. In a cigarette machine in combination, a trough, a smooth endless belt in the bottom of said trough adapted to receive the cigarettes lying transversely thereupon, means for continuously advancing said belt, a gate at the end of said trough adapted to arrest the advance of the cigarettes when closed and adapted to permit the passage of the cigarettes when the gate is open, a belt beyond said first belt and adapted to receive the cigarettes therefrom, means for continuously driving said last belt and a receptacle having an opening in the bottom thereof adapted to receive said last belt so that the cigarettes on said last belt may be advanced onto the bottom of said receptacle beyond said opening, and a gate in the end of said receptacle adjacent to said trough.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALEXANDER L. EWERS.

Witnesses:

E. H. BICKERTON,  
J. GRANVILLE MEYERS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."