

No. 890,402.

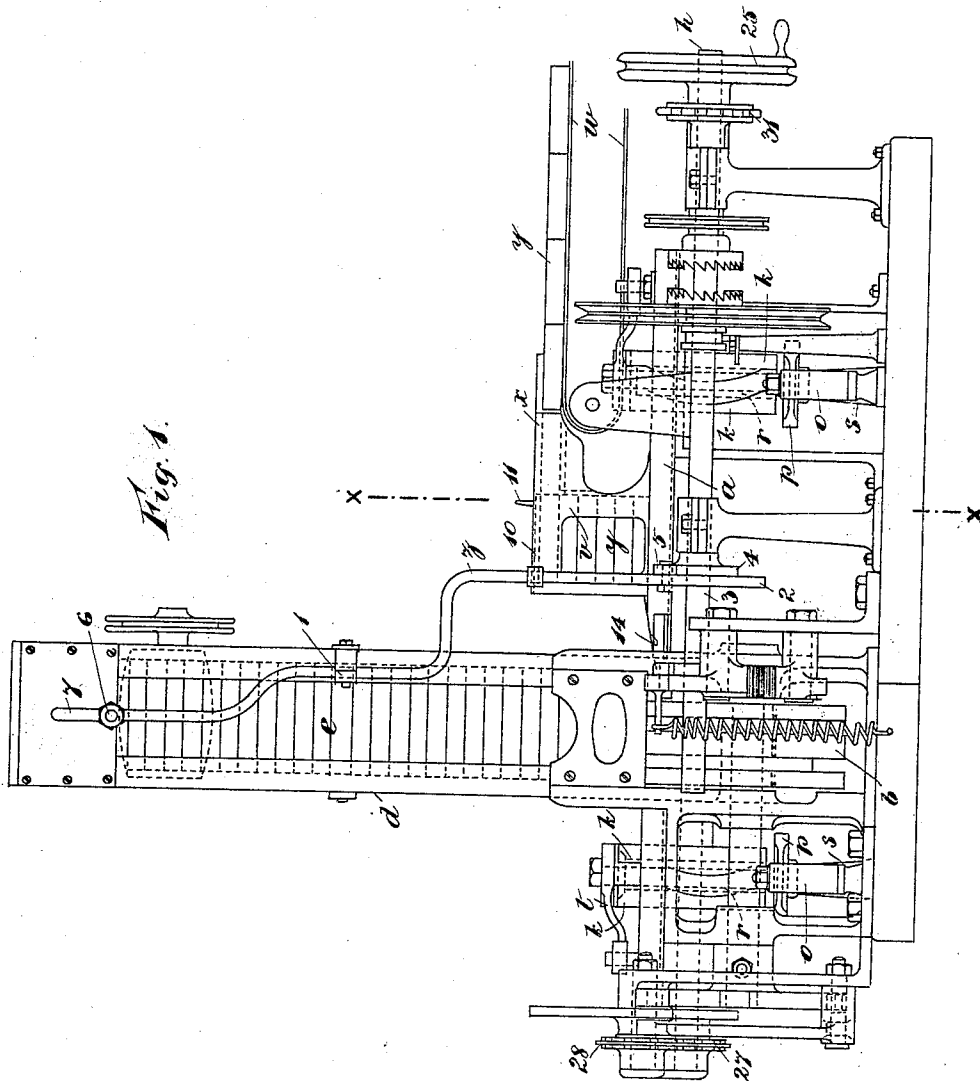
E. L. BRACY.

PATENTED JUNE 9, 1908.

MACHINE FOR INTRODUCING PACKETS INTO PAPER OR OTHER LIKE CUPS
OR CASES.

APPLICATION FILED DEC. 30, 1907.

4 SHEETS—SHEET 1.



Witnesses
Stephen Edward Gungor
Charles Alfred Eliot Chandler

Inventor
Edward Leroy Bracy

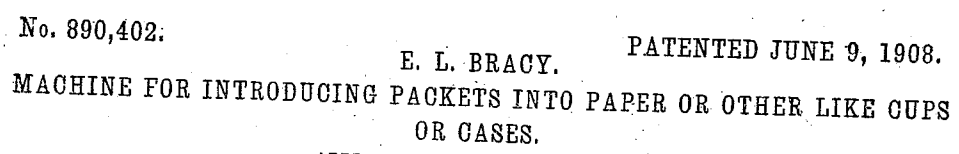
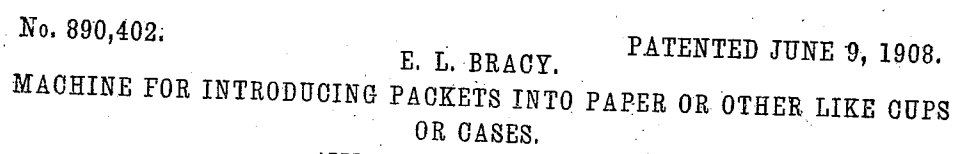
No. 890,402: E. L. BRACY. PATENTED JUNE 9, 1908.
MACHINE FOR INTRODUCING PACKETS INTO PAPER OR OTHER LIKE CUPS
OR CASES.

No. 890,402: E. L. BRACY. PATENTED JUNE 9, 1908.
MACHINE FOR INTRODUCING PACKETS INTO PAPER OR OTHER LIKE CUPS
OR CASES.

No. 890,402: E. L. BRACY. PATENTED JUNE 9, 1908.
MACHINE FOR INTRODUCING PACKETS INTO PAPER OR OTHER LIKE CUPS
OR CASES.

No. 890,402: E. L. BRACY. PATENTED JUNE 9, 1908.
MACHINE FOR INTRODUCING PACKETS INTO PAPER OR OTHER LIKE CUPS
OR CASES.

No. 890,402: E. L. BRACY. PATENTED JUNE 9, 1908.
MACHINE FOR INTRODUCING PACKETS INTO PAPER OR OTHER LIKE CUPS
OR CASES.



Witnesses:
Stephen Edward Junyon
Charles Alfred Elst Chandler

Witnesses:
Stephen Edward Junyon
Charles Alfred Elst Chandler

Inventor.
Edward Lloyd Tracy

Inventor:
Edward Leroy Tracy

No. 890,402.

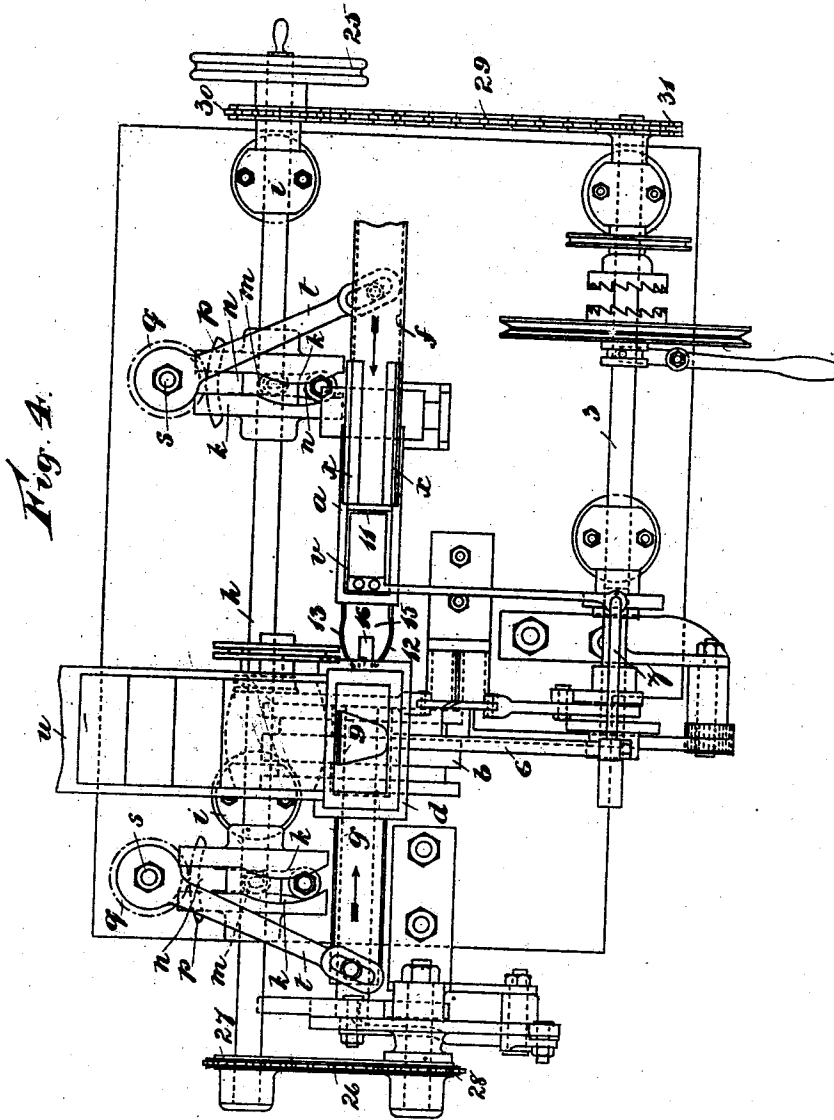
E. L. BRACY.

PATENTED JUNE 9, 1908.

MACHINE FOR INTRODUCING PACKETS INTO PAPER OR OTHER LIKE CUPS
OR CASES.

APPLICATION FILED DEC. 30, 1907.

4 SHEETS—SHEET 3.



Witnesses
Stephen Edward Gumpson
Charles Alfred Elst Chandler.

Inventor.
Edward Leroy Bracy.

No. 890,402.

E. L. BRACY.

PATENTED JUNE 9, 1908.

MACHINE FOR INTRODUCING PACKETS INTO PAPER OR OTHER LIKE CUPS
OR CASES.

APPLICATION FILED DEC. 30, 1907.

4 SHEETS—SHEET 4.

Fig. 8.

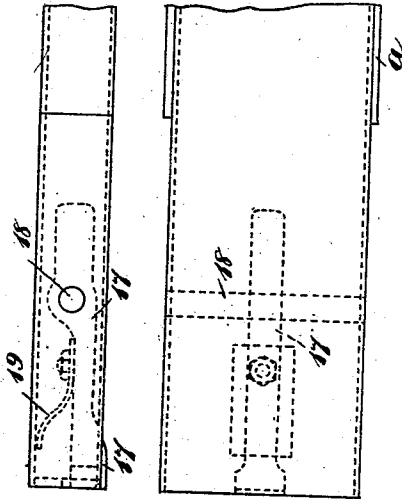


Fig. 10.

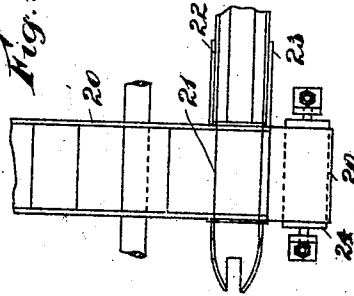


Fig. 9.

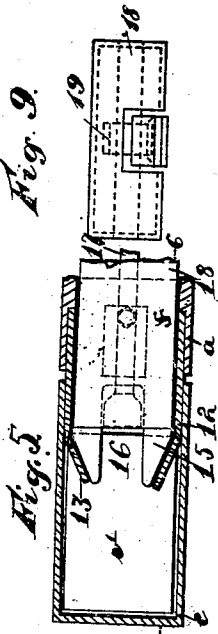
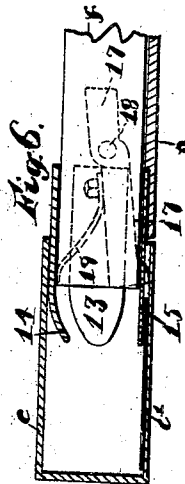


Fig. 7.



Witnesses

Stephen Edward Gungor
Charles Alfred Eliot Chandler

Inventor.

Edward Leroy Bracy.

UNITED STATES PATENT OFFICE.

EDWARD LEROY BRACY, OF SCOTLAND NECK, NORTH CAROLINA, ASSIGNOR TO RICHARD HARVEY WRIGHT, OF DURHAM, NORTH CAROLINA.

MACHINE FOR INTRODUCING PACKETS INTO PAPER OR OTHER LIKE CUPS OR CASES.

No. 890,402.

Specification of Letters Patent.

Patented June 9, 1908.

Application filed December 30, 1907. Serial No. 408,694.

To all whom it may concern:

Be it known that I, EDWARD LEROY BRACY, a citizen of the United States of America, residing at Scotland Neck, North Carolina, United States of America, have invented a new and useful Improved Machine for Introducing Packets into Paper or other Like Cups or Cases, of which the following is a specification.

10 This invention relates to improvements in that class of machinery which has heretofore been employed for placing inner sliding trays or drawers (containing matches for example) into outer open-ended shells or cases, and in
15 which the said trays or drawers and outer shells or cases are brought into position by conveyer belts, or are fed from vertical stacks into horizontal guideways, where each inner tray or drawer is caused to enter its
20 outer shell or case by the action of reciprocating plungers, spring blades assisting the entrance of each tray or drawer into its outer shell or casing, the tray or drawer contained within its outer shell or casing being afterwards removed from the machine by conveyer belts for example.

The special object of my present invention is to enable inclosed packets of cigarettes to be packed into what are known as paper
30 cups, that is to say, envelops or covers having one end folded and closed, and the other end left open for the reception of the goods. But it will be obvious that my invention may be employed for similarly packing other articles or materials.

35 According to my present invention the packets of cigarettes, for example, may be delivered into my improved machine in any convenient manner from packeting and
40 folding devices, of any suitable construction and which forms no part of my invention.

In order that my invention may be fully understood I will proceed to describe the same by the aid of the accompanying four
45 sheets of drawings in which

Figure 1 is a front elevation of my improved machine; Fig. 2 a vertical transverse section on line X—X of Fig. 1 looking from right to left; Fig. 3 an end elevation looking
50 from left to right of Fig. 1; Fig. 4 a plan; Fig. 5 is a horizontal section showing the cup held on the springs at the end of the trough and showing the plunger in plan; Fig. 6 is a section through line 6—6 of Fig. 5 but showing
55 the plunger in elevation; Fig. 7 is a plan view

of the plunger showing its end projecting beyond the trough *a*; Fig. 8 is a side view of Fig. 7; Fig. 9 is an end view; and Fig. 10 is a modification.

a is a horizontal guide-way or trough running longitudinally of the machine and into which the packet of cigarettes (for example) is introduced as hereinafter explained. As will be understood the cigarettes are formed into packets by another machine which
60 forms no part of my invention, and these packets are delivered into trough *a* in a manner hereinafter described. The guide-way *a* is intersected by an intermittently rotating carrier wheel *b* furnished with recesses *c*
65 across its circumferential periphery for the reception of the paper cups into which the said packets are to be introduced. Each of the recesses *c* in turn forms a continuous connection between the two parts of the guide-
70 way *a* on each side of the beforementioned gap as the carrier-wheel *b* is intermittently rotated. Above the carrier-wheel *b* is a vertical guide-way *d* for the reception of a number of empty paper cups *e* which are stacked
75 one upon another therein with their open ends to the right in Figs. 1 and 4, the lowermost cup lying in the uppermost recess of the carrier-wheel *b* and the others vertically above it in the vertical guide-way *d*.

f and *g* are two plungers each of which is arranged to slide along different parts of the guide-way *a* at predetermined periods of time, each plunger acting independently of the other. Intermittent reciprocatory motion is imparted to each of these plungers by similar mechanism from a shaft *h* rotating in bearings *i* on columns *j* and having two pairs of cam-plates *k* mounted thereon. Each pair of cam-plates *k* engages with a roller or
85 bowl *m* upon an arm *n*, one end of which turns upon a fixed vertical stud or standard *o*, and is provided with a toothed sector *p* at its other end. This toothed sector *p* engages with a toothed wheel *q* at the lower
90 end of a sleeve *r* rotatably mounted upon a fixed vertical stud or standard *s* which carries at its upper end one end of an arm *t*. The other end of each of the arms *t* is suitably jointed to the plungers *f* and *g* respectively, whereby the necessary reciprocating motion is imparted to the said plungers at the required periods of time. By this arrangement a comparatively small movement
100 of the bowls *m* between the cam-plates *k*

effects the requisite increased amount of reciprocatory movement of the plungers *f* and *g* in the horizontal guide-way *a* in a simple and effectual manner. The intermittent rotation of the carrier-wheel *b* may be effected by any of the known means usually employed in machinery of this description, and such means form no part of my present invention.

The empty paper cups *e* may be fed into the vertical guide-way *d* by the conveyer belt *u*, and the packets of cigarettes (for example) *y* may similarly be fed into the vertical guide-way *v* by the conveyer belt *w*, a guide *x* being provided for insuring the entry of the said packets *y* in a proper position notwithstanding the continued movement of the conveyer belt *w*.

z is a vertically reciprocating rod guided in a bearing 1 and forked at its lower end (Figs. 2 and 3) which fork 2 embraces the shaft 3 on which is mounted a cam 4 the edge of which engages with a bowl 5 on the fork 2 and thereby imparts a vertical reciprocatory motion to the rod *z* as the shaft 3 rotates. At the upper end of the rod *z* is a light bar 6 which passes through a slot 7 (Fig. 1) in the front of the vertical guide-way *d*, passes across such guide-way, and, when in its lowermost position, forms by means of its bent-up end 9 a barrier to the passage of empty paper cups *e* from the conveyer belt *u* into the guide-way *d*. But when the rod *z* and bar 6 are raised by means of the cam 4 the bent-up end 9 no longer forms a barrier to the empty paper cups which are then free to pass from the belt *u* into the guide-way *d*, and when the bar 6 is again lowered it descends lightly upon the uppermost paper cup and insures their regularity and evenness of position in the guide-way *d*. The vertically reciprocating rod *z* also carries a second light bar 10 which with its bent-up end 11, acts in a similar manner in relation to the packets *y* as the bar 6 does in relation to the empty paper cups *e*. It will be understood that when the empty cups *e* and the packets *y* are prevented by the bent-up ends 9 and 11 of the two bars 6 and 10 from entering the vertical guide-ways *d* and *v* respectively, the continuous movement of the conveyer belts *u* and *w* will cause the said belts to slip or slide underneath the cups *e* and packets *y* while the said cups and packets remain stationary and blocked side to side and end to end respectively one against another, until the cam 4 raises the vertical rod *z* and with it the bars 6 and 10, the bent-up ends 9 and 11 of which no longer prevent the passage of cups *e* and packets *y* from the belts *u* and *w* into the vertical guide-ways *d* and *v*.

12, 13, 14 and 15 are four thin spring blades attached at one end to the open end of the guide-way *a* in the position shown most clearly in Figs. 1, 4, 5 and 6. Said

blades are very thin and they form collectively a slightly contracted continuation or extension of the trough *a*. They are attached to the trough by rivets or in any other suitable manner. As shown in Figs. 5 and 6 the springs 12, 13 and 14 are slightly convergent while spring 15 is straight. The free ends of these springs form approximately a parallelogram of slightly less dimensions than those of the open ends of the paper cups *e*, and are so situated that their said free ends are just clear of the open end of the paper cup *e* which lies in the uppermost of the recesses *c* in the carrier-wheel *b*. The bottom spring blade 15 has a recess 16 therein as shown, and the acting end of the plunger *f* is provided with a latch 17 fulcrumed at 18 to the plunger *f* and forced downwards by a spring 19 (see Figs. 5, 6, 7, 8 and 9). The forward end of this spring latch 17 projects slightly below the bottom of the plunger as seen clearly in Fig. 8, and, when the plunger is in its forward position, enters the before-mentioned recess 16 in the spring blade 15 and serves to insure that the end of the photograph or other card which is sometimes inclosed in the packet of cigarettes shall not project beyond the end of the said packet when it is being fed into one of the paper cups *e* as hereinafter more fully described.

Instead of the packet of cigarettes *y* being fed into the machine endwise in the manner illustrated in Figs. 1, 2 and 4, they may be fed in sidewise, as shown in Fig. 10, in which 20 is a conveyer belt which traverses the bottom of the guide-way *a* at right angles thereto. A gap is provided at 21 in one side 22 of the guide-way *a* of sufficient length to allow a single packet *y* to be deposited by the conveyer belt 20 into the said guide-way, its further progress being prevented by the side 23 of the guide-way which is intact, with the exception of a slot in the lower part thereof of sufficient size only to allow of the passage therethrough of the conveyer belt 20 on its way to the roller 24.

After a packet *y* of cigarettes for example, with or without a photograph or card, has been deposited into the paper cup *e* within the uppermost recess of the carrier-wheel *b*, the said carrier-wheel is rotated sufficiently to bring the next empty recess uppermost, the paper cup last filled being thereby brought opposite the folding devices. As the packet inclosed within the paper cup, (with or without a photograph or other card) is carried round by the carrier-wheel until the next empty recess is brought uppermost, the open end of the said cup which projects beyond the side of the carrier-wheel is folded and sealed by any suitable or known devices, or by those which are shown in the drawings, but as these devices do not form part of my present invention, I have not described them in detail. The inclosed packet is finally re-

moved from the recess in the wheel on to a conveyer belt or otherwise as may be required.

The action of the machine is as follows:—

5 Assuming that the vertical guide-way *d* is charged with empty paper cups *e* with a photograph card *e'* (see Figs. 5 and 6) placed loosely in each, the lowermost one of which cups lies within the uppermost recess *c* of the carrier-wheel *b*; and that a packet of cigarettes *y* has been deposited in position within the horizontal guide-way *a* (either from the vertical guide-way *v* or from the conveyer belt 20 (Fig. 10) as the case may be); the plunger *g* advances towards and engages with the closed end of the empty paper cup *e* within the uppermost recess of the carrier-wheel *b*; and pushes the said cup forward until its open end is wedged on to the outer inclined surfaces of the spring blades 12, 13, 14 and 15 (see Figs. 5 and 6). The plunger *g* then retires, leaving the paper cup in the position just described. The plunger *f* then advances towards the open end of the empty paper cup *e*, and engaging with the intervening packet *y* lying in the guide-way *a*, pushes the said packet before it and forces it past the thin spring blades 12, 13, 14 and 15 into the paper cup *e*, its entry thereinto being facilitated by the distention of the open end of the cup *e* effected by the said spring blades, which yield as the packet *y* is pushed home into the cup *e*, but remain inclosed between the packet *y* and the cup *e* until the continued movement of the plunger *f* forces the cup with its contents off the spring blades 12, 13, 14 and 15 back into the uppermost recess *c* of the carrier-wheel *b*, that is to say, into the position occupied by the empty paper cup *e* before the plunger *g* forced in on to the spring blades.

Should it happen that the photograph card at the bottom of the empty cup *e* projects towards the advancing packet *y*, and that the said packet fails to carry it forward with itself into the paper cup *e*, the advancing spring latch 17 having been forced downwards by its spring 19 into the recess 16 in the spring blade 15 and on to the paper of the cup, will engage with the edge of the photograph card and push it home into the paper cup *e* so that it shall be flush with the end of the packet *y*, and shall not form an obstruction to the subsequent process of folding-in the ends of the paper cup *e*.

A partial rotation of the carrier-wheel *b* is then made, the inclosed packet is thereby conveyed downwards, an empty recess *c* of the carrier-wheel *b* is brought into the uppermost position, another empty paper cup *e* is deposited therein, and the cycle of operations is repeated. The beforementioned partial rotation of the carrier-wheel *b* brings the inclosed packet into the position in which the folding devices folding the open ends of

the paper cup and the continued intermittent rotation of the carrier-wheel allows the inclosed packet with folded ends to be removed from the wheel on to a conveyer belt or otherwise as may be required.

The machine may be driven by hand or by power applied by belts or otherwise to the wheel 25 on the shaft *h*, which in turn may impart motion by means of the chain 26 and sprocket wheels 27 and 28 to the device for imparting intermittent motion to the carrier-wheel *b*. The devices for folding-in the ends of the paper cups *e* may also be operated from the shaft *h* by means of the chain 29 and the sprocket wheels 30 and 31, but I do not limit myself to the methods illustrated for driving the various parts of the machine as they may be varied without departing from my invention. Other suitable devices than those shown and described may also be desired be employed for effecting the reciprocatory movement of the plungers *f* and *g* and for introducing the empty paper cups *e* and the packets *y* into the machine.

Claims.

1. A machine for introducing packets into paper cups comprising an intermittently rotating recessed carrier wheel, a horizontal guide way located on each side of said wheel, the recesses in said wheel connecting the guide ways together, a plunger in each guide way, means for reciprocating the plungers in succession, means for feeding paper cups to the recesses in the wheel, and means for feeding packets into the horizontal guide way, one of said plungers placing the paper cup into position for receiving the packets and the other forcing the packet into such cup.

2. A machine for introducing packets into paper cups comprising a horizontal guide way, an intermittently rotating recessed carrier wheel intersecting the said guide way, means for feeding paper cups to the recesses in the wheel, means for feeding packets to the guide way, a reciprocating plunger in the guide way for placing the paper cup into position for receiving the packets, a second reciprocating plunger in said guide way for forcing the packet into the said cup, and means for reciprocating said plungers, said means consisting of cams, means for rotating the cams, arms pivoted at one end, toothed sectors on the other ends of said arms, toothed wheels engaging with the said sectors, arms connected to the plungers and oscillated by said toothed wheels, and rollers on the sector carrying arms engaging with the cams.

3. A machine for introducing packets into paper cups comprising a horizontal guide way, an intermittently rotating recessed carrier wheel intersecting said guide way, means for feeding paper cups to the recesses in said wheel, means for feeding packets to the horizontal guide way, a reciprocating plunger in

the guide way for placing the paper cups into position for receiving the packets, a second plunger in the guide way for forcing the packet into the paper cup, and means for
5 holding the open end of the paper cups distended, said means consisting of spring blades secured to the end of the guide way adjacent the carrier wheel over which the open end of the paper cup is forced by the reciprocating
10 plunger.

4. A machine for introducing packets into paper cups comprising a horizontal guide way, inclined blades secured to one end of said guide way on the two sides and the top
15 thereof, and a flat spring blade secured to the bottom thereof, said blades forming a con-

tinuation of the guide way, said lower blade having a slot therein, means for forcing the open end of the paper cup over said blades, said cup containing a card, a plunger sliding
20 in said guide way and forcing the packet into said cup, a spring latch secured to said plunger and having its end arranged to enter the slot in the lower blade so as to force the card into the cup.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD LEROY BRACY.

Witnesses:

LUTHER J. PARR,

STANLEY C. PHILLIPS.