

Nov. 22, 1932.

J. NEFF

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APPARATUS FOR DISTRIBUTING CIGARETTES FROM A CONTAINER

Filed May 5, 1930

2 Sheets-Sheet 1

Fig. 1

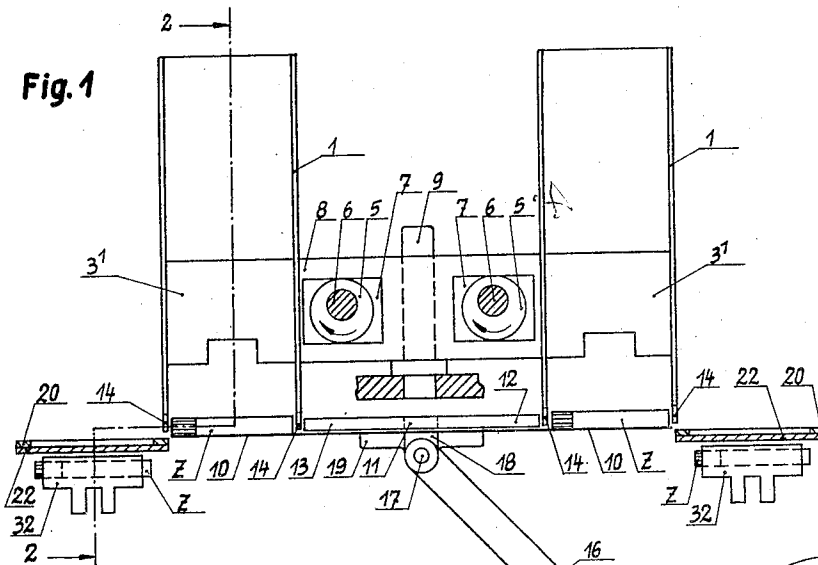
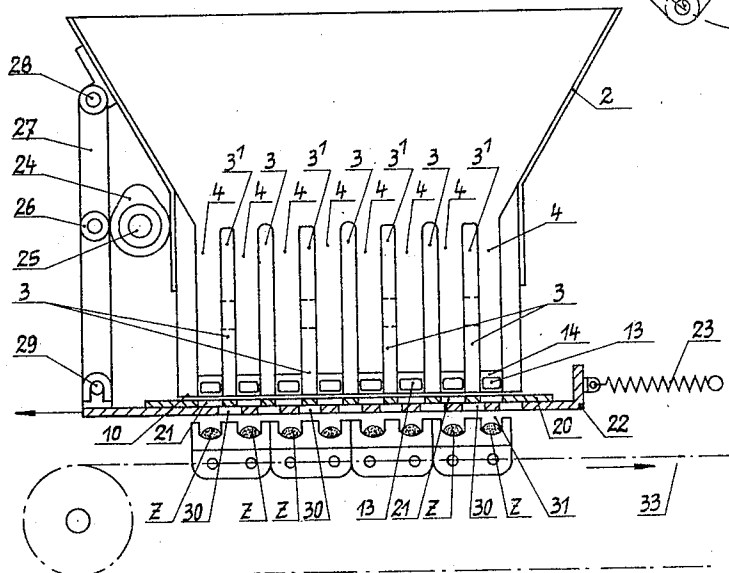


Fig. 2



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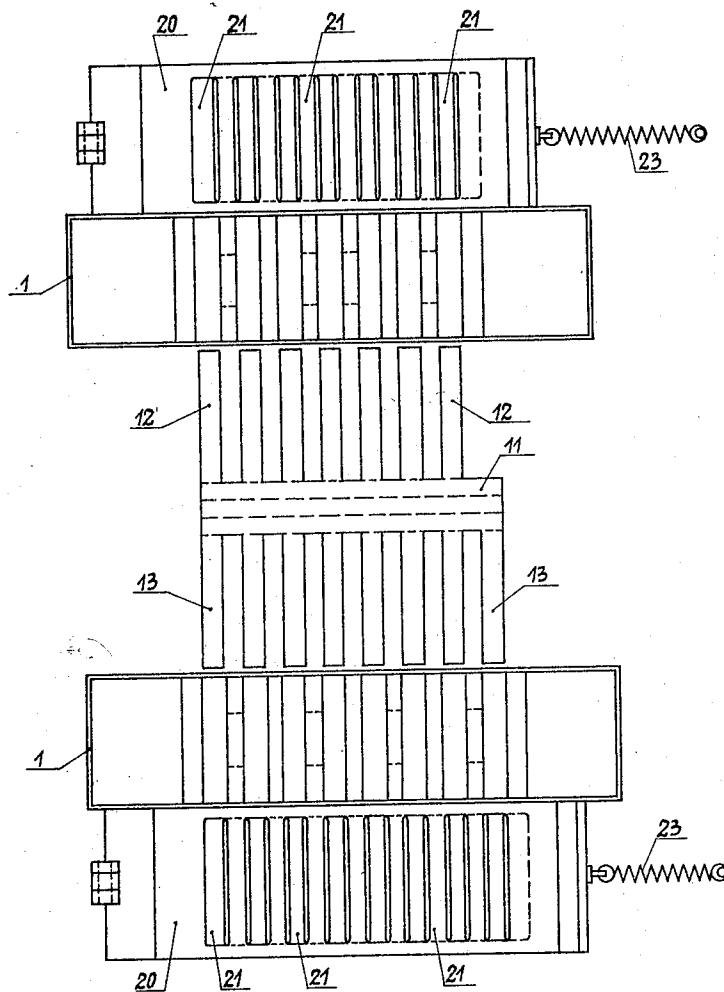
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Fig. 3



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APPARATUS FOR DISTRIBUTING CIGARETTES FROM A CONTAINER

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In packeting machines for mechanically inserting layers or groups of cigarettes in packets it is necessary first to separate out from a supply hopper a definite number of
5 cigarettes to form a layer or group and to feed this combined group or layer to other mechanism of the packeting machine in the right position. It is essential that the cigarettes should be transferred from the hopper
10 to the delivery station most rapidly and with the greatest care in the desired position and this position should then be maintained unaltered. In particular it is necessary that the cigarettes should be taken from the hopper
15 separately and grouped without being subjected in their passage to any clamping means or any means liable to damage them and without stoppage occurring by locking means or the like.

20 In accordance with the invention there is used for the solution of this problem first the usual distributor which is connected to the bottom of the cigarette hopper and is divided by vertical partition walls into separate parallel channels, the partition walls being vertically movable to facilitate entry of the cigarettes into the channels. In accordance with
25 the invention also the division walls are provided with a closed bottom. With this arrangement the cigarettes are removed by means of horizontal plungers from the pile. Now it is possible by these plungers to push the cigarettes on to a slotted slide which can be periodically operated in such manner that
30 it first receives the group of cigarettes arranged in the correct position and then delivers them through suitable openings in the slotted slide to a conveyor moving beneath the slide. Thus one can be certain that the cigarette group actually passes in the predetermined position to the conveying means which for example may consist of an endless chain with cigarette receiving pockets provided thereon.
45

With this construction the operating mechanism can be arranged particularly rationally by arranging two cigarette hoppers adjacent one another both of which are served
50 by a single rake-like plunger which is sim-

ply arranged between the two hoppers and moved horizontally to and fro.

The new apparatus in this form is illustrated in the accompanying drawings in which Fig. 1 is a vertical longitudinal section, 55 Fig. 2 a vertical cross section on the line 2—2 of Fig. 1 and Fig. 3 a plan view.

Referring to the drawings, two containers 1 are provided in each of which is arranged a supply of cigarettes. Both containers are
60 contracted at their lower end 2 to hopper shape and to each of these is connected a distributor which is divided by vertical partition walls 3 into vertical feed channels 4.

In order that the cigarettes can pass easily
65 into these feed channels alternate partition walls 3 are provided at their upper ends with a vertically reciprocating portion 3'. The reciprocating movement of the portions 3' of the partition walls is effected by means of
70 the eccentrics 5 mounted on the shaft 6 operating in rectangular slots 7 in the support 8. The partition walls 3' are connected with this support and the support is guided vertically in vertical rod 9.
75

The distributor is closed at its lower end by a plate 10 i. e. the separate channels 4 are closed at the bottom. A plunger carrier 11 is provided on which are arranged like tines a series of plungers 12 and 13. The groups
80 of plungers 12 and 13 lie in the same horizontal plane and are so disposed in relation to the two containers 1 that the separate plungers sliding directly over the bottom 10 can enter the chambers 4 provided with corresponding passages 14 in order to entrain the group of cigarettes Z resting on the bottom. The plunger carrier 11 is moved to and fro by means of a crank and connecting rod 15,
85 16 which is pivoted to the plunger carrier at 17. The bracket 18 to which the connecting rod 16 is connected passes through the corresponding longitudinal slot in the table 10 and is provided with a slide 19 guided
90 along the lower side of the table.
95

Adjacent each container is provided a slit feeding device. Each of the devices consist of a fixed plate 20 in which slots 21 are provided. These slots are of such dimensions that one cigarette Z can pass through them.
100

The slots are so positioned that they can be considered as an extension of a channel 4 so that the cigarettes fed forward by the plungers 12 and 13 are deposited in the correct position in the slots 21. Beneath the plate 20 is located a reciprocating slide plate 22 to which is connected a spring 2 which tends to pull the plate to the right in the direction of Figs. 2 and 3. The plate is operated by the cam disc 24 mounted on the shaft 25 to one side of hopper 2 so that it will not strike the latter. A roller 26 on a rock lever 27 tracks this cam disc. The rock lever swings about the pivot 28 on the container 1 and is pivotally connected with the plate 22 at 29. Also this plate is provided with passages 30 which correspond as regards size and position to the slots 21 in the plate 20.

If the movable plate 22 is positioned as shown in Fig. 2 then the cigarettes are held in the slots 21 of the fixed plate 20. If later the lower plate 22 is displaced in such manner that the slots 21 and 30 come into register the cigarettes fall out of the slide and into the pockets 31 in the members 32 which are mounted on an endless chain 33.

I claim:

1. Apparatus for distributing cigarettes from a container comprising partitions within said container forming separate feed channels for the cigarettes, said channels closed at their lower ends but having lateral openings, plungers acting to eject the cigarettes in said feed channels through said lateral openings, an intermittently actuated slotted feed mechanism, and a moving conveyor beneath said feed mechanism, said intermittently actuated feed mechanism serving in one position to receive the cigarettes ejected and in another position to deliver them to the moving conveyor.

2. Apparatus for distributing cigarettes from a pair of containers each comprising partitions forming separate feed channels for the cigarettes, said channels closed at their lower ends but having lateral openings, a rake-like plunger adapted to be reciprocated between the containers and to eject the cigarettes from adjacent containers in turn, feeding mechanism adjacent the containers onto which said cigarettes are pushed, conveyor means beneath said feeding mechanism and means for intermittently transferring said cigarettes from said feeding mechanism to said conveyor means.

3. Apparatus for distributing cigarettes from a container comprising partitions within said container forming separate feed channels for the cigarettes, said channels closed at their lower ends but provided with lateral openings, plungers acting to eject the cigarettes in said feed channels through said lateral openings, an intermittently actuated slotted feed mechanism, said feed mechanism consisting of an upper stationary plate, said

plate having parallel openings through which the cigarettes can pass and a reciprocating plate, said last mentioned plate having corresponding openings through which the cigarettes also can pass, and conveyor means onto which said cigarettes may fall through said openings when they are in registry.

4. Apparatus for distributing groups of cigarettes from a container to a conveyor comprising individual feed channels for the cigarettes in said container, means for ejecting individual groups of cigarettes from said container, said groups constituting the successive end cigarettes in each channel, means for receiving said ejected groups of cigarettes from said container and means intermittently delivering said groups to said conveyor from said receiving means.

5. Apparatus for distributing groups of cigarettes from two containers onto two conveyors comprising unitary means for alternately ejecting individual groups of cigarettes from each container, means for receiving each ejected group from its respective container and means for intermittently delivering the respective group on said receiving means to its respective conveyor.

In testimony whereof I affix my signature.

JOHANNES NEFF.