

June 23, 1970

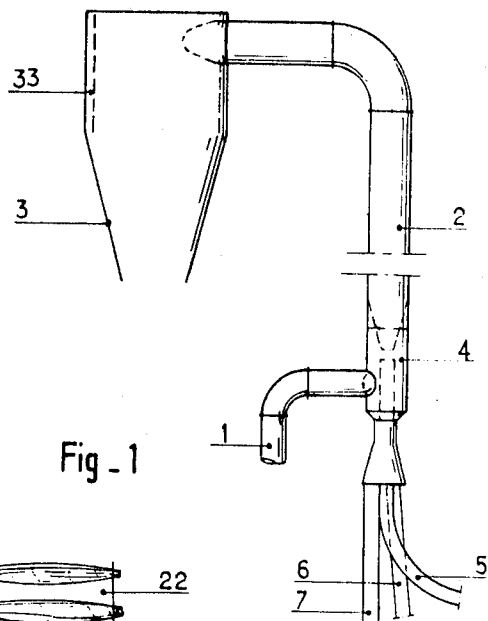
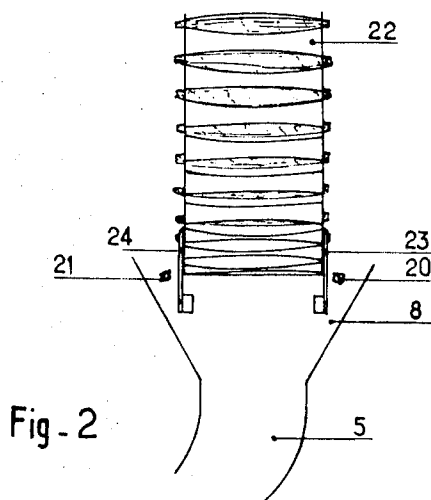
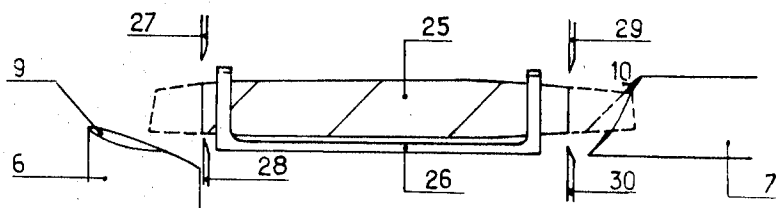
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FROM CIGAR BUNCHES AND CIGARS IN A CIGARMaking MACHINE

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2 Sheets-Sheet 1



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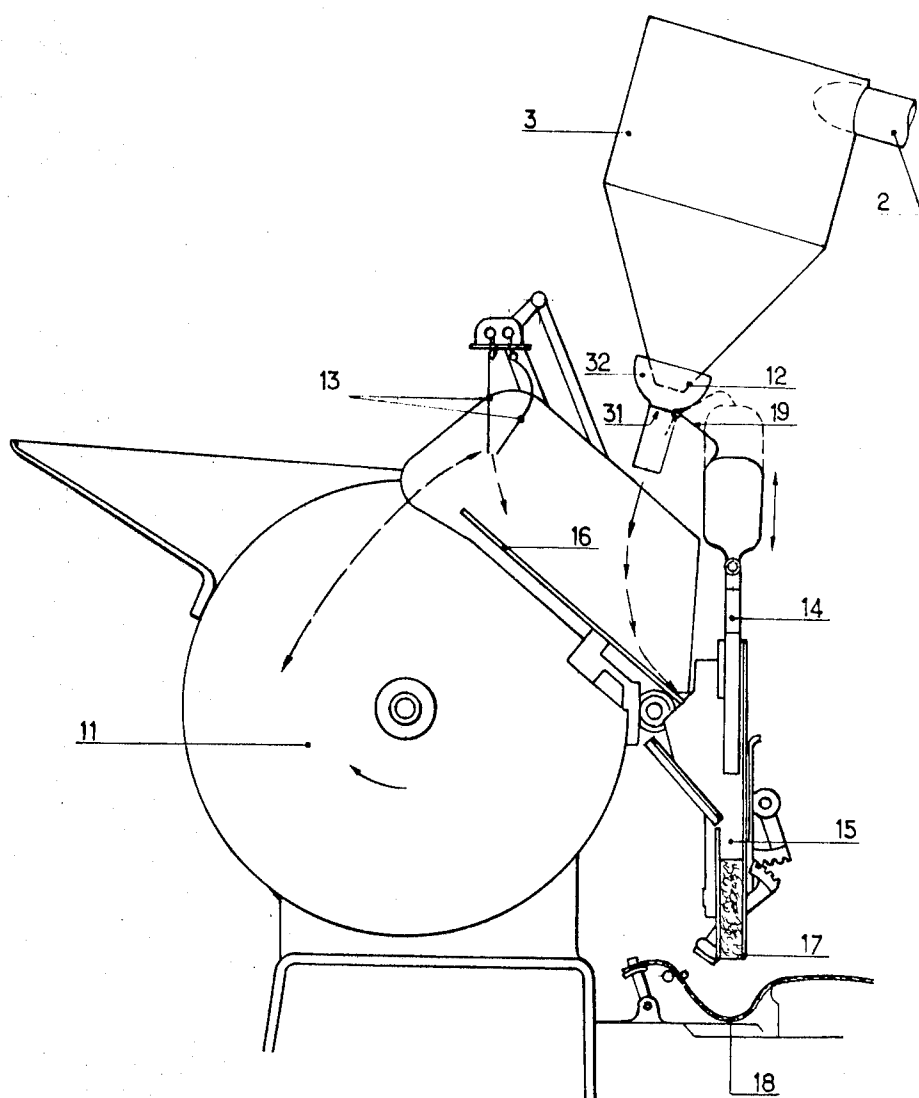
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Fig. 4



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DEVICE FOR THE DIRECT REINTRODUCTION OF CUT END TRIMMINGS FROM CIGAR BUNCHES AND CIGARS IN A CIGARMAKING MACHINE

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Filed June 23, 1967, Ser. No. 648,303

Claims priority, application France, June 24, 1966, 66,858

Int. Cl. A24c 1/02, 1/24

U.S. Cl. 131—23

4 Claims

ABSTRACT OF THE DISCLOSURE

Device for the re-use of rejects in a cigarmaking machine, wherein the trimming rejects from a cigar and cigar bunch are collected and re-grouped progressively in a collecting device as they are recovered. The rejects are reintroduced in the re-grouped state directly and immediately in the cigar production cycle into the means for pressing and forming the cigar fillers and in synchronism therewith.

The present invention relates to the direct reintroduction of raw material consisting of tobacco or tobacco-base material produced by cutting tobacco leaves or smoking products which have either been formed or are in process of being formed on machines for manufacturing such products and especially cigars.

The invention accordingly applies to all cigar smoking products irrespective of their constituents and the number of wrapping layers with which they may be provided.

During manufacture, the ends of the cigar bunches and those of the wrapped cigars are cut so as to bring the finished cigar to the normal length. These ends or "stubs" which are composed of rolled and wrapped filler tobacco are collected by suction immediately after cutting in recovery boxes which are provided on each machine.

The so-called "trimmings" and the discarded filler-leaf fragments on each side of the bunch-rolling apron are manufacturing rejects.

In the remainder of this description, the stubs, trimmings, discard ends, and, in fact, any material which is discarded by the machine and which is suitable for re-use will be designated hereinafter as "rejects."

It is expedient to re-use such starting material as long as this latter still remains in the normal utilization state rather than to re-use the material after it has been allowed to dry in the recovery boxes.

However, some fragments and trimmings which are derived from the cutting of wrappers and binders call for suitable processing in order to be reduced to predetermined dimensions.

Another object of the invention is to provide a device which essentially comprises means for recovering and re-grouping rejects of a cigar, means for conveying said rejects which have thus been grouped together and means for feeding said rejects into one of the sections of the cigar production cycle, for example into the filler-tobacco supply distributor.

In a particular embodiment, the means for recovering and re-grouping rejects comprise compressed-air ducts which are connected to a common duct in which the air can be driven by a blast pump to which said ducts are connected.

The common duct referred to can open into a drum which is designed as a cyclone in order to separate the driving air from the rejects. Said cyclone can have two opposite outlets, one outlet being located at a higher level for discharging air whilst the other outlet is located

at a lower level for delivering rejects, said openings being dimensioned as a function of the air velocity so that said air escapes entirely or almost entirely through the upper opening.

According to a particular mode of execution, the air which is injected by the blast pump is the blowing air of a fan which ensures the cyclic functions of the machine and the cyclone is so dimensioned that a periodic partial vacuum is established at the level of the bottom outlet under the effect of variations in the air flow.

Provision can also be made beneath the bottom outlet of the cyclone for a collector-spout having a movable base which opens in synchronism with the operation of the units which form doses of tobacco for the fabrication of a cigar.

The cyclone can be mounted directly above the feed distributor and comprises a flap for closing off its discharge opening, said flap being adapted to open in such a manner as to ensure that the rejects are fed into the introduction passageway at the same time as the dose of filler tobacco.

One exemplified embodiment of the device according to the invention is illustrated by way of non-limitative example in the accompanying drawings, in which:

FIG. 1 is a diagrammatic view showing the assembly of ducts employed for conveying rejects to the collector cyclone;

FIG. 2 is a diagrammatic view of the station in which cigar bunches are cut to the proper length;

FIG. 3 is a diagrammatic profile view of the station in which finished cigars are cut to the proper length;

FIG. 4 is a diagrammatic view showing the device which is mounted on the distributor of a cigarmaking machine.

In the example which is illustrated in the drawings, the duct 1 which is shown in FIG. 1 provides a passageway through which air is delivered from a fan (not shown in the drawings) which is intended to perform the cyclic functions of the machine. Said duct 1 is connected to a duct 2 with interposition of a blast pump 4, the low-pressure inner tube of which is connected to the ducts 5, 6, 7. The duct 5 terminates at the nozzle 8 for receiving bunch rejects whilst the other ducts terminate at the suction tubes 9 and 10. The cyclone 3 into which the duct 2 opens tangentially is placed above the distributor reservoir 11 (shown in FIG. 4) in such a manner that the bottom outlet 12 is located between the opening zone (in the position shown in FIG. 4) of the extractor 13 which takes the doses of tobacco from the distributor reservoir 11 and the plunger 14 which is intended to carry out a reciprocating motion inside the passageway 15 for the purpose of compressing the tobacco. The compression process is performed in the bottom portion of the duct 15 on the tobacco which is conveyed downwards on the inclined plate 16, retained by the cut-off knife 17 which separates volumetric doses before said tobacco is delivered onto the apron 18 on which the charge of filler tobacco is rolled into bunches.

A flap 31 which forms the bottom of the funnel 32 is controlled to open by the upward motion of the plunger 14 which actuates the lever 19.

There is shown in FIG. 2 the spout 8 which collects the rejects 20 and 21 from cigar bunches which are cut on each side of the drum 22 by means of stationary cut-off knives 23 and 24.

In FIG. 3, the cigar 25 is shown in the cutting cradle 26 and the cigar ends to be cut are shown in broken lines.

The openings 9 and 10 of the compressed-air ducts 6 and 7 are located beneath the cigar ends which project beyond the cutting plane of the moving cut-off knives 27-28 and 29-30.

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The operation of the device is as follows:

The rejects 20 and 21 which are cut by the knives 23 and 24 during a movement of rotation of the drum 22 fall into the collector-spout 8 and are drawn into the pipe 5; the rejects of the cigar 25 which are cut off by the knives 27-28 and 29-30 are drawn respectively through the openings 9 and 10 of the pipes 6 and 7. Said rejects are sucked into the above-mentioned pipes as a result of the partial vacuum which is produced by the blast pump, then transported by the air into the duct 2; the rejects are thus conveyed into the interior of the cyclone 3 in which they circulate in a vortical motion, are unrolled, disintegrate and drop through the outlet 12. Obstacles 33 which are mounted in the interior of the cyclone 3 serve to complete the disintegration process if necessary and are adapted either to cut or tear the rejects. Said rejects are received in the funnel 32, the flap 31 of which opens as a result of the thrust exerted by the plunger 14 which frees the opening of the passageway 15 as it moves upwards and when the cut-off knife 17 releases a further charge onto the bunch-rolling apron 18. The unrolled rejects which had previously rested on said flap 31 are released, fall onto the plate 16 and mix with the dose which the extractor 13 has just deposited on the same plate 16.

What I claim is:

1. In a cigar machine comprising a container for the filler tobacco having means for taking doses of tobacco from said container, means for receiving said doses, movable means for pressing said doses and forming the fillers of the cigars in said receiving means, and means for recovering tobacco rejects such as cut ends and trimmings of cigar bunches and wrapped cigars; the combination of a device for the reuse of said rejects comprising a collecting chamber for receiving said recovered rejects, said chamber having a closable discharge opening, means for conveying said rejects to said collecting chamber, means for closing said closable opening, and said pressing

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means being synchronized with said closing means for controlling simultaneously said closing means and said pressing means of said doses.

2. In a cigar machine according to claim 1, wherein said collecting chamber is a cyclone for separating air from said rejects and connected with a collector-spout having said closable discharge opening.

3. In a machine according to claim 1, wherein said receiving and said forming means for said filler doses is located on the path of said rejects falling from said collector chamber discharge opening.

4. In a machine according to claim 2, wherein said receiving and said forming means for said filler doses is located on the path of said rejects falling from said collector chamber discharge opening.

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SAMUEL KOREN, Primary Examiner

U.S. Cl. X.R.

131—81, 83, 96, 110