Nov. 7, 1944. F. F. RUAU ET AL 2,362,225

CIGARETTE MAKING MACHINE

Filed Nov. 7, 1941 2 Sheets-Sheet 1

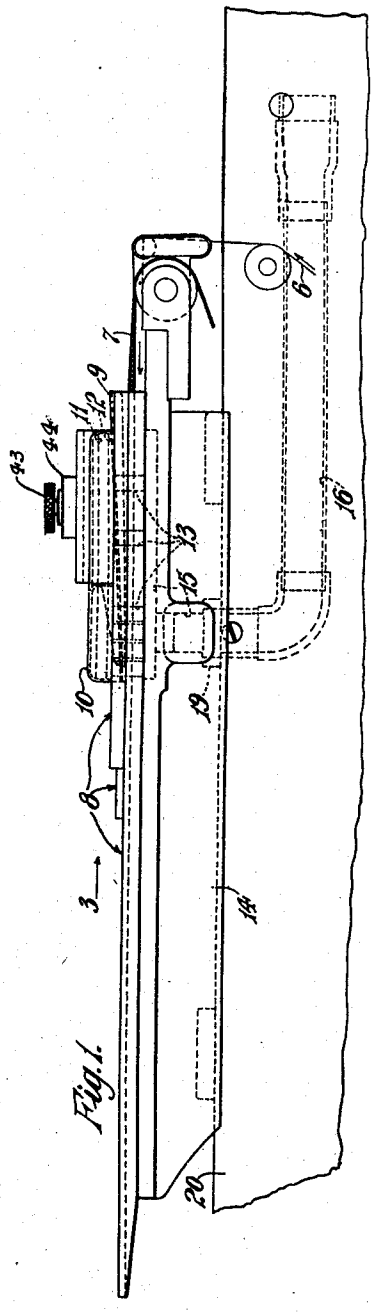


Fig. 1.

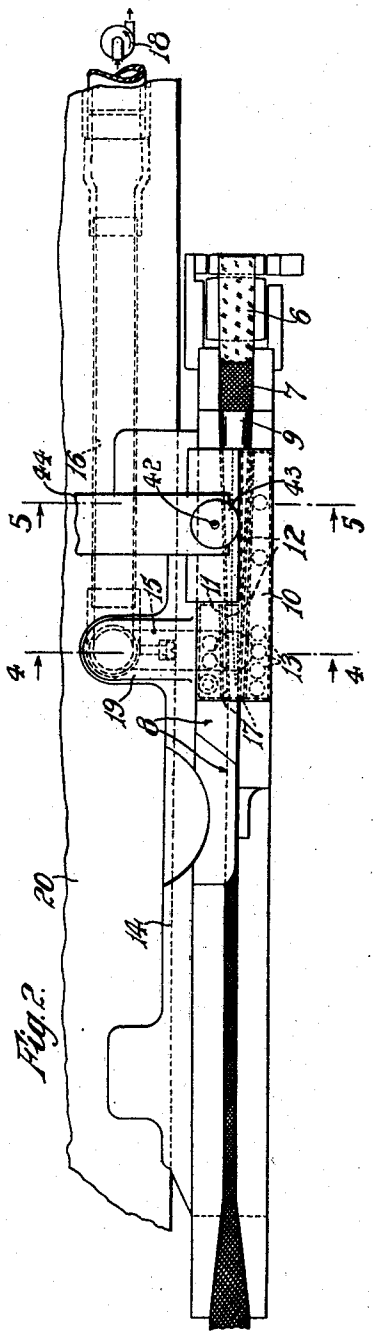


Fig. 2.

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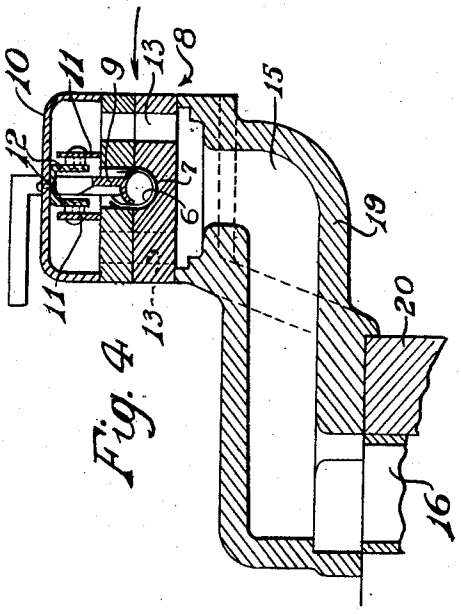


Fig. 4

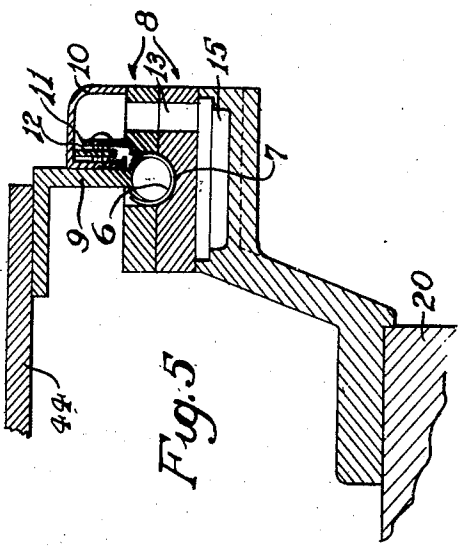


Fig. 5

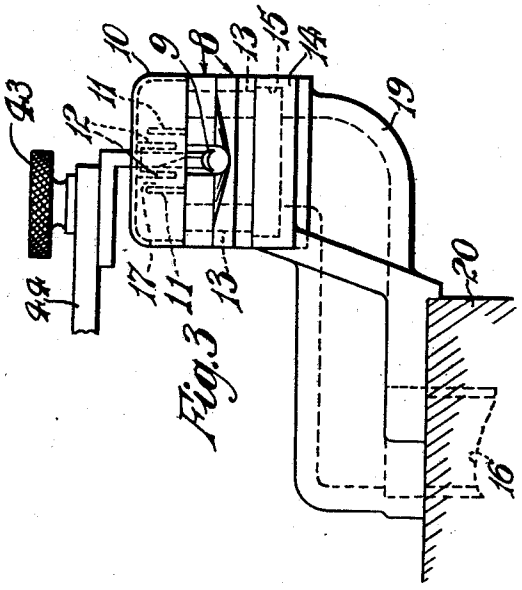


Fig. 3

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UNITED STATES PATENT OFFICE

2,362,225

CIGARETTE-MAKING MACHINE

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Application November 7, 1941, Serial No. 418,272
In Great Britain December 10, 1940

2 Claims. (Cl. 131—110)

This invention concerns improvements in or relating to cigarette making machines of the continuous rod type.

In such machines tobacco is showered on to a moving band or the like which conveys the tobacco along as a stream and during the movement the tobacco is formed into the desired cross-sectional shape and enclosed in a paper tube to produce the continuous rod which is thereafter cut into single cigarettes. The folding of the continuous web of cigarette paper around the tobacco core takes place in a part of the machine known as the garniture. It is well known that during these tobacco conveying and folding operations a quantity of tobacco dust or other fine particles of tobacco, hereinafter referred to as "dust," tends to be deposited upon the various elements of the garniture and other stream supporting means and it is usually considered desirable to remove such dust and particles as quickly as possible from the vicinity of the garniture and other parts.

In practice it is usual to employ, for the purpose of effecting this cleaning operation, a suction nozzle which is positioned above the stream supporting means, for example, the garniture adjacent the points at which the dust tends to be deposited. Previously, however, the pipes or conduits from the suction nozzle have been so arranged as to extend upwardly from the garniture and to trail over the bed of the cigarette making machine. This arrangement involves a number of undesirable obstacles which are in the way when it is desired to service the machine.

According to the present invention there is provided in or for a cigarette making machine of the continuous rod type a dust suction device, which comprises ducts which are arranged in the tobacco-stream-supporting-means and through which dust may be drawn downwardly. A shield may be disposed above the stream so as to provide a chamber with which the ducts communicate.

Further according to the present invention there is provided a device for removing dust particles from the vicinity of the garniture of a cigarette making machine of the continuous rod type, wherein a source of suction is connected with ducts in the garniture so as to draw dust downwardly through the ducts and wherein a shield is disposed above the garniture to guide dust into said ducts. The source of suction may be connected with a support for the garniture or other tobacco stream supporting means, the support being provided with ducts communicating with those in the said means, whereby dust is drawn downwardly through the ducts in both the stream supporting means and the support. Partitions may be disposed within the garniture shield and arranged to extend upwardly from the garniture at positions adjacent to those at which dust normally tends to accumulate, the upper edges of the partitions terminating below the top of the shield whereby the dust is drawn upwardly over the partitions and thereafter downwardly into said ducts. The shield may be arranged partly or wholly to envelop a tongue piece which co-operates with the garniture.

An embodiment of the invention will now be described with reference to the accompanying drawings in which:

Figure 1 is a side elevation of part of a continuous rod cigarette making machine showing the garniture and the devices for feeding the tobacco filler and paper web thereto.

Figure 2 is a plan of Figure 1.

Figure 3 is an end elevation of Figure 1 looking in the direction of the arrow 3.

Figure 4 is a section of Figure 2 on the line 4—4.

Figure 5 is a section of Figure 2 on the line 5—5.

Referring to the drawings, tobacco is fed by any suitable tobacco feeding mechanism (not shown) and the tobacco stream formed thereby is delivered onto a cigarette paper web 6 which in turn is supported by an endless band 7, is conveyed through the garniture (indicated generally by the arrows 8) which folds the paper web about the tobacco stream to form the continuous cigarette rod. This garniture may be of any suitable construction. Co-operating with the garniture is a tongue element 9 beneath which the tobacco stream passes. Above the tongue and resting on the garniture is a box-like shield 10, the open side of which is adjacent the garniture, the tongue 9 depending from a bracket 44 on which it is mounted by means of a thumb screw 43 received on a threaded opening 42 in the bracket. The shield is so arranged so as almost completely to envelop the tongue. The shield is provided with partitions 11 and 12, see Figures 3, 4, and 5, which form channels 17 extending lengthwise in the direction of movement of the tobacco through the garniture. The partitions 11 extend upwardly from the garniture and are arranged to have their lower edges in engagement with the garniture. The upper edges of these partitions terminate before they reach the top of the shield. Other partitions 12 which co-

operate with the partitions 11 to form the channels extend downwards from the shield. The construction is clearly shown in Figure 4. In this way the channels 17 serve to guide the dust which is sucked upwardly by the suction device referred to below, into ducts 13 formed in the garniture and which extend downwardly therethrough and into a garniture support 14 which is secured to the bed 20 of the cigarette making machine. Ducts 15 are also provided in the support and communicate with the ducts 13 formed in the garniture and also with a suction conduit 16 connected with any suitable means, such as a fan 18 for producing suction. This fan is indicated diagrammatically in Figure 2. The conduit extends downwardly into the bed of the cigarette making machine so that only the shield and hollow bracket 19 leading from the duct 15 to the conduit 16 are located above the bed 20 of the cigarette making machine and only the said shield is located directly above the garniture.

It is found that the dust tends to collect mostly at positions adjacent those where the tongue closely co-operates with the garniture. It will be seen from Figure 4 that the partitions 12 extend into close proximity with the upper face of the garniture and form a restricted passage for the air and thus the velocity thereof is relatively high at the position where dust tends to accumulate. By arranging the shield in the manner above described, the dust can be removed almost as soon as it is raised or as it settles on the garniture or the tongue.

As above stated, the tobacco dust is drawn upwardly between the guiding partitions disposed in the shield, over the tops thereof and downwardly through the ducts in the garniture and its support, the dust being thereafter conducted to some suitable receptacle at a position remote from that at which it is removed from the garniture.

What we claim as our invention and desire to secure by Letters Patent is:

1. Dust removing apparatus for use with cigarette making machines of the continuous rod type having a support along which a stream of tobacco is conveyed, said apparatus comprising a shield associated with said support and extending above said tobacco stream to form a dust chamber overlying the stream, a duct communicating with said chamber and affording a passage extending downwardly from said chamber and into said support, suction means for withdrawing air and entrained dust from said chamber downwardly through said passage, and upstanding partitions disposed within said chamber at each side of said stream and extending in the direction of movement of the latter, said partitions being so positioned that air and entrained dust removed from said chamber are caused to flow upwardly over said partitions and downwardly into said ducts.

2. Dust removing apparatus for use with cigarette making machine of the continuous rod type having a bed, and an endless band on which a stream of tobacco is conveyed along said bed and through a garniture, said apparatus comprising a shield extending above said garniture to form a dust chamber overlying the tobacco stream, a duct communicating with said chamber and affording a passage extending downwardly from said chamber through said garniture and into said bed adjacent said garniture, suction means for withdrawing air and entrained dust from said chamber downwardly through said passage, and devices associated with said dust chamber and extending into close proximity with the upper face of said garniture to afford a restricted passage for the air so withdrawn, whereby the velocity of the moving air is relatively high adjacent the garniture face.

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