B. J. TUCK.

PLUNGER MOISTENING AND CLEANING DEVICE FOR PACKING MACHINES.

APPLICATION FILED JUNE 1, 1918.

1,276,452. Patented Aug. 20, 1918.

Fig. 1.

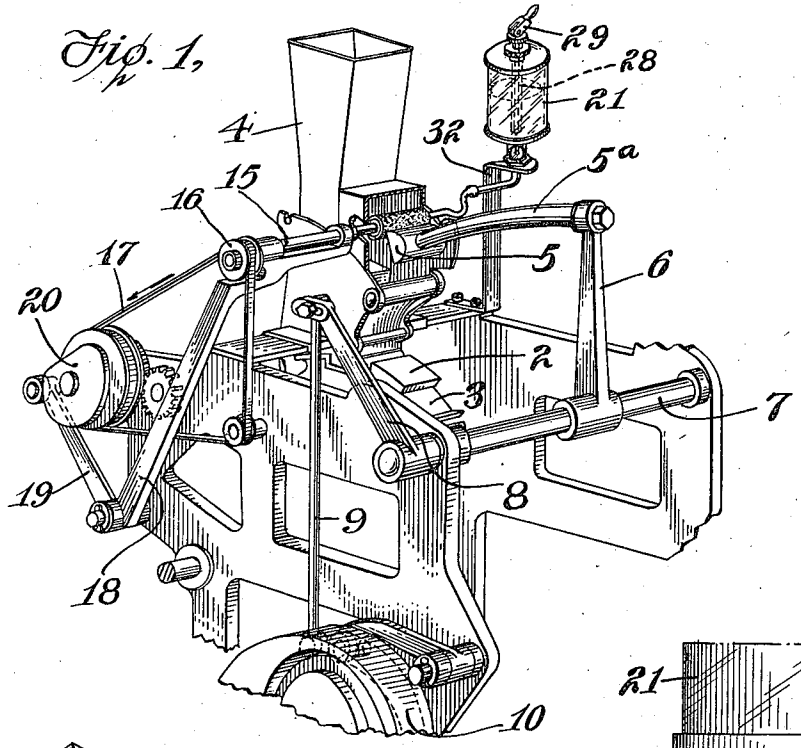


Fig. 2.

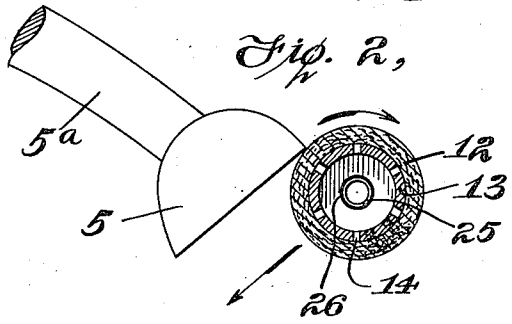
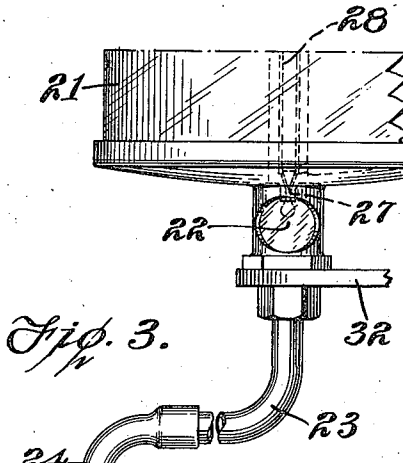
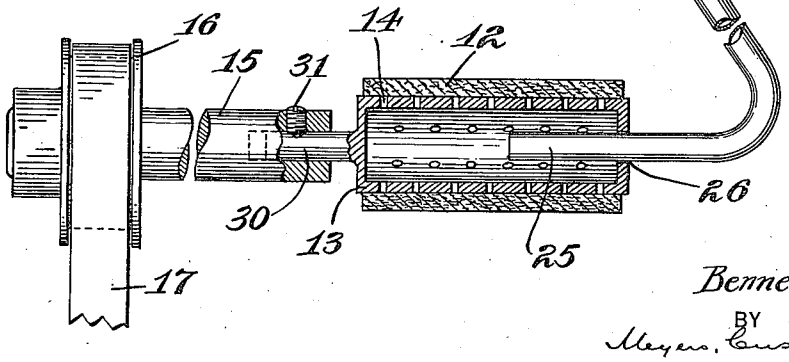


Fig. 3.





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PLUNGER MOISTENING AND CLEANING DEVICE FOR PACKING-MACHINES.

1,276,452. Specification of Letters Patent. Patented Aug. 20, 1918.

Application filed June 1, 1918. Serial No. 237,699.

To all whom it may concern:

Be it known that I, BENNETT J. TUCK, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented new and useful Improvements in Plunger Moistening and Cleaning Devices for Packing-Machines, of which the following is a specification.

My present invention relates to a plunger moistening and cleaning device for packing machines, and has for its objects, among others, to provide a simple, cheap and efficient device that will keep the face of the plunger of such machines well and uniformly moistened and cleaned at all times, and which is entirely automatic in its operation except for the occasional filling of the reservoir provided for the moistening fluid, usually consisting of denatured alcohol, rum, or mixtures thereof, or of other fluids suitable for the purpose.

I have elected to show my invention as applied to a well known and largely used tobacco packing machine of the type shown in the patent to W. Rose, #586,076, dated July 6, 1897, but I do not wish to be understood as limiting myself to the use of the invention in connection with such machines, as obviously it may be applied to other plunger machines with equally advantageous results.

In machines of the Rose type a reciprocating plunger is employed to pack the charges of tobacco into pockets in a rotating mold-wheel and as the tobacco is usually packed when in a more or less moist condition and is generally shredded or otherwise finely divided, there is a great tendency for the tobacco particles to stick to the face of the plunger and foul the same, thus requiring the machine to be frequently stopped until the plunger face can be scraped off and cleaned. As there are usually from eight to ten operatives employed at, or in connection with, each machine, it will be apparent that every time the machine is stopped for the purpose stated a great loss is incurred as the operatives' services are required only when the machine is running.

It has been proposed to clean the face of the plunger by means of a rotary brush, such a brush being shown in the Rose patent referred to, but this means has not proved satisfactory for several reasons not necessary to mention here, suffice it to say that it was the inefficiency of the brush cleaning roller that resulted in the means of the present invention, the latter now being very successfully employed in connection with a large number of machines of the Rose type, with the resulting advantages that the plungers of the machines are kept constantly clean and no stopping of the machines for the purpose of cleaning the plungers is required.

According to the present invention, I employ a moistening pad, here shown in the form of a felt-covered roller, which is caused to roll, with a wiping action, across the face of the plunger after each packing operation thereof, the roller not only cleaning the plunger face, but leaving its face uniformly moistened with a suitable fluid having qualities that counteract or are inimical to the sticky characteristics of the tobacco. I further employ as an important feature of the invention, automatic means for feeding a regulable supply of the moistening fluid to the plunger moistening device, so that a minimum quantity of the fluid will be required, the whole contrivance being simple to construct, easy to attach to the machine, and efficient and economical in operation.

In order that others may fully understand, construct and operate the invention, I will now proceed to describe the same in detail, reference being made for this purpose to the accompanying drawing, wherein:

Figure 1 is a perspective view of a portion of a known type of packing machine having my improved plunger cleaning device applied thereto.

Fig. 2 is a transverse, sectional view of the cleaning device, and

Fig. 3 is a view partly in elevation and partly in section of the invention.

Packing machines of the type illustrated and described in the Rose Patent #586,076, to which I have successfully applied an embodiment of my invention, embody a rotary mold-wheel 2, having a series of peripherally arranged pockets 3, which are brought successively beneath a hopper 4, into which charges of tobacco are deposited by any suitable mechanism. A plunger 5, is caused to reciprocate at regular intervals and press the tobacco charges into the pockets 3, of the mold-wheel 2, into which pockets wrapper sheets have been previously deposited. The plunger 5 is mounted upon a stem 5^a that

projects outwardly from an arm 6, secured to an oscillating shaft 7, the latter being oscillated through the medium of an arm 8, and rod 9, actuated from a cam 10, so that regularly timed reciprocating movements will be imparted to the plunger 5.

My improved plunger moistening and cleaning device, in the instance shown, consists of an absorbent pad in the form of an absorbent face 12, surrounding a hollow roller 13, provided with perforations 14. The roller is carried by a shaft 15, having a pulley 16, driven from a belt 17, so as to constantly rotate the roller.

The roller is caused to move across the face of the plunger 5, to clean the latter, each time the plunger reaches the upward limit of its travel. To accomplish this the roller is given an oscillating movement by means of a bell crank lever upon the arm 18 of which the shaft 15 is rotatably mounted, the arm 19, of said lever, being in engagement with a cam 20, properly timed in its movements so the cleaning roller or pad will be caused to move across the face of the plunger 5, with a moistening and cleaning action each time the plunger reaches the limit of its upward or outward movement, rotary movements being imparted to the roller by means of the pulley 16, acted upon by the continuously moving belt 17, so that the plunger face will be maintained in a thoroughly clean condition.

According to the invention, I provide means for maintaining the absorbent face of the pad or roller moist at all times, so as to insure proper cleaning of the plunger face and also to keep the face of the plunger moistened with a fluid inimical to the sticky properties of the tobacco particles. This means in the instance shown comprises a fluid reservoir 21, having a sight opening 22, and a pipe 23, having a movable section 24, shown in the present instance in the form of a rubber tube having its free end 25, extending into the hollow pad or roller 13, through an opening 26, in the end thereof as more clearly shown in Fig. 3. The pipe 23, and section 24, convey a regulable supply of the moistening and cleaning fluid from the reservoir 21, into the hollow perforated roller 13, so as to maintain the absorbent pad 12, moist at all times, while the movable pipe section 24, is capable of partaking of the oscillating movements of the cleaning roller or pad. I prefer to provide the reservoir 21, with a valve 27, carried by a stem 28, and an adjusting device 29, for the valve stem so that the quantity of fluid passing from the reservoir through the pipe connection with the cleaning pad or roller may be properly regulated to maintain the absorbent pad in a properly moist condition.

In order that the cleaning roller may be readily removed for the purpose of applying new absorbent pads, I prefer to provide the roller with a shank 30, that enters a socket in the rotary shaft 15, the shank being secured by means of a screw 31, all as shown in Fig. 3.

The reservoir 21 may be secured in proper position so that the fluid will be fed to the cleaning pad or roller by gravity. In the present instance, I have shown the reservoir as mounted upon a bracket 32 secured to the frame of the machine.

While I have illustrated and described a preferred embodiment of my invention, and one which has been successfully employed, I do not wish to be limited to the specific construction illustrated except as I may be limited by the appended claims as I am aware that changes may be made without departing from the spirit of the invention.

What I claim and desire to secure by Letters Patent is:—

1. In a packing machine, and in combination with the plunger thereof, a moistening and cleaning pad operable to move over the face of the plunger when the latter is in its inactive position, and means for automatically feeding a regulable supply of moistening fluid to said pad.

2. In combination with the reciprocating plunger of a packing machine, a cleaning device for said plunger, comprising an absorbent pad, means for moving the pad back and forth across the face of the plunger, and automatic means for maintaining the pad in a moist condition.

3. In a packing machine of the plunger type, means for cleaning the plunger of such a machine, comprising a roller having an absorbent face, means for moving the roller back and forth across the face of the plunger to moisten and clean the latter, and means for feeding a moistening fluid to the absorbent face of the roller to maintain the latter in a moist condition.

4. In a packing machine of the plunger type, means for cleaning the plunger face of such a machine, comprising a hollow perforated roller having an absorbent face, means for moving the roller back and forth across the face of the plunger to moisten and clean the same, and means for feeding a moistening fluid into said hollow roller to maintain the absorbent face in a moist condition.

5. In a packing machine of the plunger type, a cleaning device for the plunger, comprising a hollow perforated roller having an absorbent face, means for oscillating the roller across the face of the plunger, means for rotating the roller, a reservoir for a moistening fluid, and a pipe leading from the reservoir to the hollow roller, said pipe having a section adapted to move with the roller during its oscillating movements.

6. In a packing machine of the plunger type, a cleaning device for the plunger, com-

prising a hollow perforated roller having an absorbent face, means for oscillating the roller across the face of the plunger to moisten and clean the same, means for rotating the roller during oscillation, a reservoir for a moistening fluid, and a pipe leading from the reservoir to the hollow roller to supply the fluid thereto, said pipe having a flexible section adapted to partake of the oscillating movements of the roller.

In testimony whereof I have hereunto set my hand.

BENNETT J. TUCK.