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L. A. MOLL

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COIN OPERATED VENDING MACHINE FOR CLEANING TOBACCO PIPES

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Fig. 1.

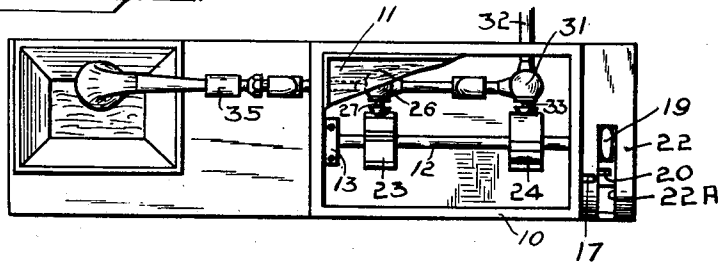


Fig. 2.

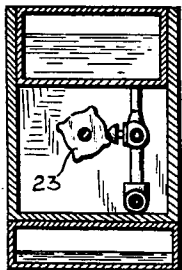
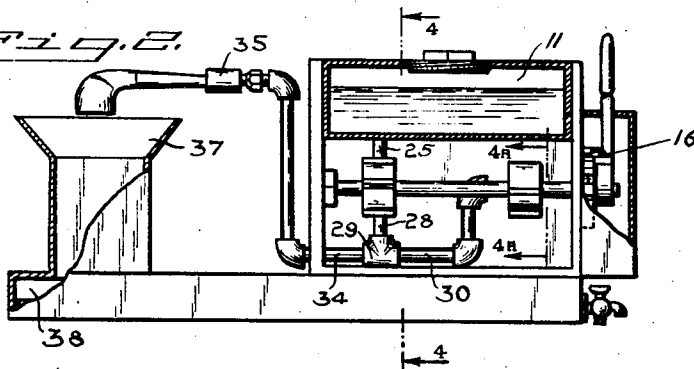


Fig. 4.

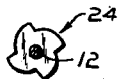


Fig. 4A.

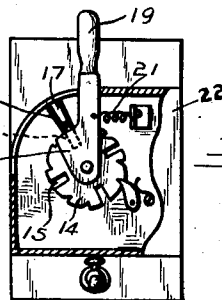


Fig. 3.



Fig. 5.

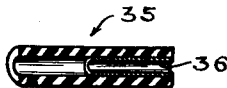


Fig. 6.

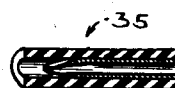


Fig. 7.

INVENTOR
LLOYD H. MOLL.
BY *Carver Leisner*
ATTORNEY

UNITED STATES PATENT OFFICE

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COIN OPERATED VENDING MACHINE FOR
CLEANING TOBACCO PIPESLloyd A. Moll, Allentown, Pa., assignor of one-
half to Meyer Stettner, Allentown, Pa.

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5 Claims. (Cl. 131—13)

My invention relates to improvements in coin operated vending machines for cleaning tobacco pipes of the deposit which ordinarily collects in the stem and bowl of a pipe after the same has been in use for any length of time.

Many machines have been devised to remove the deposit of nicotine, saliva and other objectionable substances from the interior of tobacco pipes, and the more common practice is to force a jet of alcohol through the stem and bowl of the pipe. This, in a way, removes some of the deposit but it has been found that a thorough cleaning is not accomplished by means of the alcohol alone. Other machines have been used in the attempt to rid tobacco pipes of thin deposit and these machines have been of the pneumatic type which were designed to force air through the bowl and stem to blow out the nicotine and other substances, but air, even when under compression, will not remove the hard crust which adheres to a pipe as a result of long and hard usage. A still further type of cleaning apparatus has been contemplated and this consists in a purely mechanical cleaner, using reamers and other rotary drills to attack the walls of the pipe encrusted by deposits. The last type has been found efficient enough as regards the removal of the deposit, but in the hands of the amateur it is more often the case that the cleaning has been done all too well and the walls of the bowl and stem retreat from the attack of the reamer with deep scars which ruin the pipe for further use.

With the foregoing clearly in mind, it is the purpose of my invention to provide a cleaning device for tobacco pipes especially designed for use on the counters of cigar stores and other shops where tobacco products are offered for sale, which device is coin operated and adapted in a single operation to force a cleaning fluid through the pipe from stem to bowl with compressed air as a carrier for the fluid so that the latter will find its way into every crack and opening which may be availed of to loosen the deposits. After the fluid has been entirely passed through the pipe, continued blasts of compressed air will follow the fluid to remove the already loosened substances and to evaporate any of the fluid which may have been absorbed by the walls of the bowl and stem.

In a machine of the character described in the foregoing it is essential that it be designed to accommodate substantially every type and design of pipe and stem, and for this purpose I have devised a flexible rubber nipple embodying there-

in an interchangeable nozzle which may have various forms or shapes for its tips to be inserted into either a small round opening in the tip of the mouthpiece, a large opening formed in another model, or a long oval slot used in still another mouthpiece.

A still further object of my invention is to provide a receptacle located directly beneath the inverted bowl of the pipe being cleaned to receive the fluid after having been blown through the pipe.

It is also intended that pipe accommodating nipples, such as herein contemplated, be independently vended. These may be made of several suitable materials, and such as are intended either for a single use or such as are intended for repeated uses.

I have accomplished these objects by means of a machine which embodies in its structure an air line, a receptacle for the cleaning fluid and a conduit leading into the air line, means for supporting the pipe at its mouthpiece and for introducing the fluid and air into and through the pipe, and a coin controlled device operatively associated with valves controlling the flow of fluid and air, whereby the fluid is first carried through the pipe on a blast of air and thereafter collected in a receptacle while the air continues to pass through the pipe.

One embodiment of my invention is described in the following specification, set forth in the appended claims and illustratively exemplified in the accompanying drawing in which,

Figure 1 is a top plan elevational view of my improved cleaning device;

Figure 2 is a front elevational view of the same with the front panel removed;

Figure 3 is an end elevational view of the device showing the coin operated attachment;

Figures 4 and 4A are substantially transverse sectional views through the fluid and air conduit taken on lines 4—4 and 4A—4A, respectively, of Figure 2;

Figure 5 is a substantially longitudinal sectional view of one form of nozzle with a pipe in place;

Figure 6 is a similar view of another form of nozzle; and

Figure 7 is a sectional view of still another modification of a nozzle.

Referring to the drawing, 10 denotes a box-like container which houses all of the mechanism of the device and which in the upper portion contains a tank or reservoir 11 adapted to receive the supply of cleaning fluid to be used to clean

the pipes. A cam shaft 12 is journaled in bearings 13 disposed longitudinally of the box 10 and at one end projects through the end wall to receive a coin wheel 14. The coin wheel 14 is provided with four equally spaced radial slots 15 to receive a coin 16 which is fed thereto through an inclined coin chute 17. The chute 17 is disposed at about an angle of 30° from the perpendicular line of the center of the shaft 12 so that the coin will drop of its own weight towards one of the slots 15 in the wheel 14. Loose on the shaft 12, adjacent the wheel 14, is the hub 18 of a lever 19, the hub 18 being provided with a radial slot 20 adapted to register with a slot 15 of the wheel 14 so that as the coin enters the slot 15 it will project into the slot 20 and cause the wheel 14 to revolve approximately 90° with the hub 18 and lever 19. At this point the coin will roll out of the slots 15 and 20 and the handle or lever may be returned to its initial upright position by means of a spring 21. A removable housing 22 is carried by the end wall of the box 10 to enclose the coin operating mechanism, as illustratively exemplified in Figure 3.

The cam shaft 12 carries two cams 23 and 24, the latter being provided with four high points and gradual risers leading thereto in the direction of rotation of the shaft. The other cam 23 is provided with four long dwells and four short high points, the latter being disposed or arranged slightly in advance of the high points of the cam 24.

Leading downwardly from the bottom of the reservoir 11 is a pipe 25 and spring closing valve 26 which is provided with a stem 27 arranged in the path of the high points of the cam 23, so that as each high point passes the valve the same will open and allow a certain quantity of the fluid to escape from the reservoir. Below the valve 26 a pipe 28 leads to the stem of a T fitting 29, the cross head thereof being connected at one end to a pipe conduit 30 and spring closing valve 31. The conduit 30 beyond the valve 31 is connected to an air line 32 which receives a supply of compressed air from a source, not shown. The stem 33 of the valve 31 is disposed in the path of the high points of the cam 24 so that for each quarter turn of the latter the valve will open and remain open for substantially the entire 90° through which the cam turns and in accordance with the contour of the risers the cam will cause the opening in the valve to increase until the full movement has been completed, thus a small amount of air will first pass through the conduit 30 to join the fluid which has been allowed to escape into the T fitting from the advance opening of the valve 26.

The other end of the cross piece of the T fitting 29 is connected to a pipe 34 which leads through the end wall of the box 10 opposite that carrying the coin mechanism to receive a rubber nipple 35. The nipple 35 is a tubular device adapted at its free end to be forced over the tip of the mouthpiece of the pipe to support the latter in position to be cleaned. Arranged inside the nipple 35 is a nozzle 36 which is a metal tube having a tip shaped to fit into the opening of the tip of the mouthpiece. In Figure 5 the opening is a small round orifice and the end of the nozzle 36 is reduced accordingly. Figure 6 shows a larger opening leading into the mouthpiece and the nipple which may be interchanged for any other form, is also larger to fit such mouthpiece. Figure 7 shows a mouthpiece with a long narrow slit and in this case the nipple is flattened to be

accommodated in the slit. It will be clear that any number of nipples may be provided to suit the particular mouthpiece opening of the pipe to be cleaned.

After the cleaning fluid has passed through the pipe, it is collected in a funnel 37 arranged below the inverted bowl of the pipe and conducted into a receptacle 38 disposed along the bottom of the box, as shown in Figure 2.

In operation, the pipe to be cleaned is inserted tip end first into the nipple 35 to bring the nozzle 36 into the opening in the end of the mouthpiece. The bowl in inverted position is placed over the funnel 37 and the cleaning operation started by placing a coin in the chute 17 and allowing it to drop into the slots 15 and 20. The lever 19 is then pulled downwardly until stopped by the end of the slot 22a in the housing 22. The short high point of the cam 23, as it passes, opens the valve 26 long enough to allow some of the liquid cleaner from the reservoir to collect in the T-fitting 29. The valve 26 is then released and it closes after which the cam 24 slowly opens its valve to permit air to pass into the T-fitting 29 and carry the liquid through the pipe 34, nipple 35 and into the pipe. As the volume of air increases the liquid has loosened the deposit in the pipe and carries it through the stem and bowl into the funnel 37 and receptacle 38. While the high point of the cam 24 is held against the stem of the valve in the downward position of the lever, the full force of air will be directed into and through the pipe to remove all deposit loosened by the liquid and to evaporate any portion of the latter which may have been absorbed by the walls of the stem and bowl. When the operation has been completed the lever is released and returns to its initial upright position, bringing the coin slot of its hub into register with the next slot in the wheel 14.

Having now described my invention in detail, what I claim and desire to secure by Letters Patent is:

1. A pipe cleaning machine, in combination, a housing and a reservoir therein for supplying cleaning fluid, a conduit from said reservoir, a spring closed valve arranged in said conduit, an air conduit for supplying compressed air in communication with said fluid conduit, a spring closed valve arranged in the air conduit, a conduit from the air and fluid conduits leading outside the housing, an injector for the end of the last conduit to receive the mouthpiece of a tobacco pipe for the passage of the fluid and air therethrough, a pair of cams for operating the liquid and air valves to first open and then allow the liquid valve to close and thereafter to hold the air valve open, and means operated from the exterior of the housing to rotate the cams.

2. A pipe cleaning machine, in combination, a housing and a reservoir therein for supplying cleaning fluid, a conduit from said reservoir, a spring closed valve arranged in said conduit, an air conduit for supplying compressed air communicating with said fluid conduit, a spring closed valve arranged in the air conduit, a conduit from the fluid and air conduits leading outside the housing, a nipple on the end of the last conduit to connect a tobacco pipe to said last conduit, a shaft journaled in said housing and projecting outside at one end thereof, two cams turning with the shaft and in operative contact with said valves to first open the fluid valve and then allow it to close and thereafter hold the air valve open, and coin controlled means operating said shaft.

3. A pipe cleaning machine, as claimed in claim 2, in which each cam is provided with four equally spaced high points, the high points of the cam operating the fluid valve being disposed in advance of the high points of the air valve cam, whereby the fluid valve opens and a supply of fluid is drawn into the last named conduit and the fluid valve closed before the air valve is opened.

10 4. As an article of manufacture, a pipe cleaning nipple comprising a tubular flexible member housing a metal nozzle, the free end of which fits into the slot in the tip of the mouthpiece of a smoking pipe, with said flexible member engaging over said mouthpiece for retaining said nozzle in said slot.

15 5. A pipe cleaning machine, in combination,

a housing and a reservoir therein for supplying cleaning fluid, a conduit from said reservoir, a spring-closed valve arranged in said conduit, an air conduit for supplying compressed air communicating with said fluid conduit, a spring-closed valve arranged in the air conduit, a conduit from the fluid and air conduits leading outside the housing, a nipple on the end of the last conduit adapted to be connected to a tobacco pipe, a shaft journaled in said housing and projecting outside at one end thereof, two cams turning with the shaft and in operative contact with said valves to first open the fluid valve and then allow it to close and thereafter hold the air valve open, and means for rotating the shaft.

LLOYD A. MOLL.