Oct. 24, 1939. F. G. FOSTER 2,177,429

SHOWER PIPE CLEANER

Filed Feb. 16, 1937

Fig. 1.

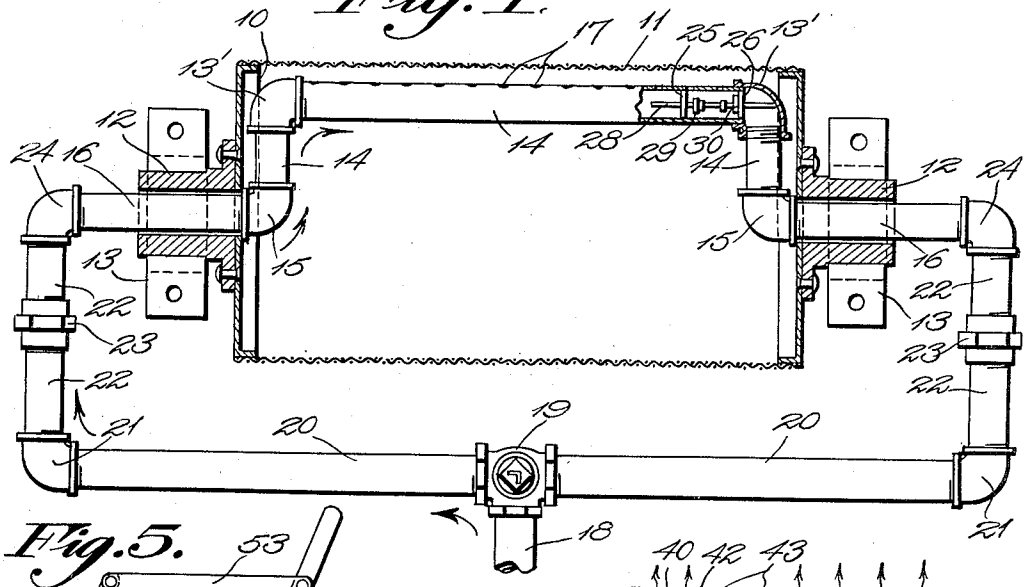


Fig. 5.

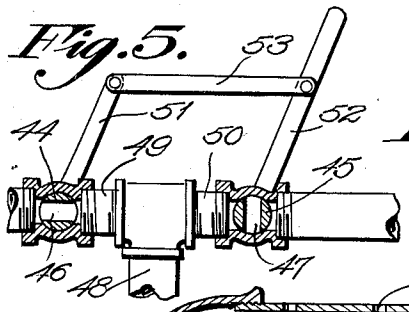


Fig. 4.

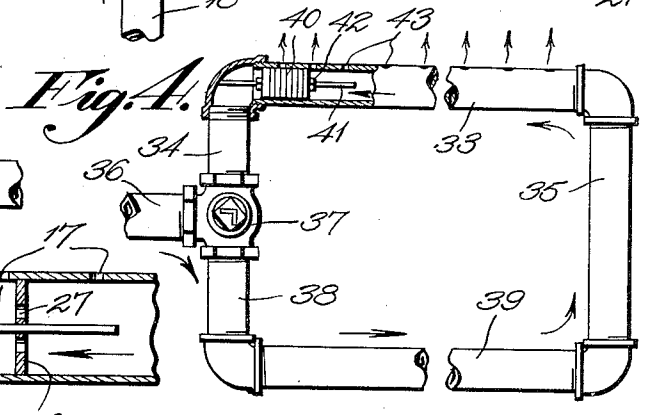


Fig. 2.

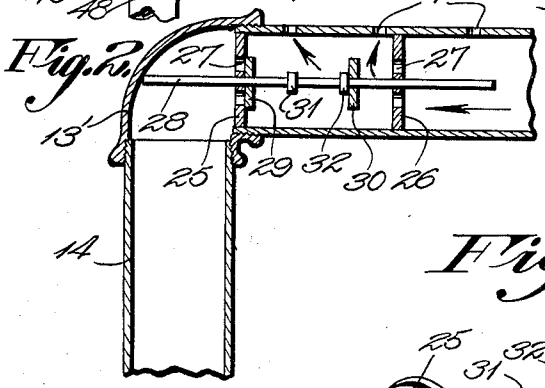
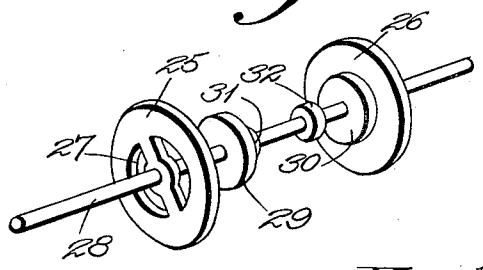


Fig. 3.



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SHOWER PIPE CLEANER

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Application February 16, 1937, Serial No. 126,055

1 Claim. (Cl. 15—104.06)

This invention relates to shower pipe cleaners for pulp, paper, board, and shingle machines and has for an object to provide a novel cleaner plug in the shower pipe and valve controlled pipes for reversing the flow of water through the shower pipe to alternately move the cleaner plug from one end of the shower pipe to the other to thereby effectively clean the jet openings in the shower pipe in minimum time and without manual exertion.

A further object is to provide a device of this character which will be formed of a few strong simple and durable parts, which will be inexpensive to manufacture and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claim without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawing forming part of this specification,

Figure 1 is a longitudinal sectional view of a wire covered cylinder used in machines of the class described and showing a shower pipe and cleaner plug therein constructed in accordance with the invention.

Figure 2 is a detail sectional view drawn to enlarged scale, and showing the plug at the opposite end of the shower pipe from the position shown in Figure 1.

Figure 3 is a detail perspective view of the cleaner plug.

Figure 4 is a side elevation of a shower pipe and valve controlled supply pipe and showing a modified form of cleaner plug.

Figure 5 is a side elevation, with parts in section, showing two valves, opening oppositely, in lieu of the three-way valve illustrated in Figures 1 and 4.

Referring now to the drawing in which like characters of reference designate similar parts in the various views, 10 designates a cylinder of the type used in pulp mills and the like, the same being covered with wire screen 11, and being equipped with hollowed journals 12 which are mounted in pedestals 13 or other suitable supports.

In carrying out the invention a shower pipe 14 is mounted in the cylinder to extend longitudinally thereof close to the screen 11 and is provided with elbows 13 at the ends into which short pipes 14 are fitted and these latter are also equipped with elbows 15 which receive pipes 16 that extend through the hollow journals 12.

In order that water may be let into the shower pipe from either end and sprayed against the wire screen through the jet openings 17 in the shower pipe, a supply pipe 18 is provided with a conventional three-way valve 19 to the housing of which are connected branch pipes 20 which extend oppositely to each other and are equipped with elbows 21. Short pipes 22 are connected together by a coupling 23, and these pipes are connected to the elbows 21 and to elbows 24 that are secured to the ends of the beforementioned pipes 16 which extend through the hollow journals 12.

Mounted to slide longitudinally in the spray pipe is a cleaner plug for preventing clogging of the jet openings 17. The cleaner plug is best shown in Figure 3 to comprise a pair of discs 25 and 26 having passages 27 formed therein. These discs are fixed on a short rod 28. A pair of disc valves 29 and 30 are slidably fitted on the rod and are of sufficient size to close the passages 27 in the discs 25 and 26. Stop collars 31 and 32 are fixed to the rod and limit opening movement of the disc valve 30.

In practice when the three-way valve 19 is turned in one direction water will flow as indicated by dotted lines in Figure 1 whereupon the valve 29 will be forced open and moved against a stop collar so that continued flow of the water will push the cleaner plug endwise to the opposite end of the shower pipe during which time the cleaner discs 25 and 26 will wipe over the jet opening 17 and remove clogging material. By reversing the three-way valve the flow will be as indicated by arrowheads in Figure 2 so that the cleaner plug will be moved in a retrograde direction to the opposite end of the shower pipe.

A modified form of the invention is shown in Figure 4 in which the shower pipe 33 is provided with supply pipes 34 and 35 at the ends through which the water may be fed in either direction to the shower pipe. In this embodiment of the invention a supply pipe 36 is equipped with a three-way valve 37. The pipe 34 enters one end of the housing of the valve. A pipe 38 enters the other end of the housing and is connected to a pipe 39 which in turn is connected to the pipe 35.

By turning the three-way valve in one direction the flow in the shower pipe will be through the pipes 39, 38 and 35 as indicated by the arrowheads and when the valve is reversed the flow will be reversed and will enter the shower pipe through the pipe 34.

The cleaner plug **40** illustrated in Figure 4 may be simply a wood plug having an axial opening to receive a rod **41**. The plug is centered on the rod by means of stop nuts **42** which are threaded on the rod outside of the ends of the plug. The operation of the plug is the same as previously described, the plug when moved in either direction by flow of water serving to wipe over and open the jet openings **43** of the shower pipe.

In Figure 5 there is shown a modified form of valve which may be used in lieu of the three-way valve. In this modified form of valve a pair of plug valves **44** and **45** are mounted so that their openings **46** and **47** will turn respectively opposite to each other so that when one valve is open the other valve is closed and thus flow from the supply pipe **48** through the branch pipes **49** and **50** to the shower pipe, may be reversed.

For simultaneously manipulating the valves **44** and **45** the handles **51** and **52** of the valves are extended parallel to each other and are connected by a link **53** so that both valves will move in unison.

From the above description it is thought that the construction and operation of the invention will be fully understood without further explanation.

What is claimed is:

A cleaner member adapted to be reciprocated longitudinally in a pipe by the reversal of liquid flow, comprising, a rod, spaced discs on the rod of substantially the same diameter as the bore of the pipe to be cleaned, said discs having passages therethrough, valves slidably mounted on the rod between said discs for controlling said passages, and stop collars on the rod intermediate said valves and against which said valves abut when actuated away from said discs to establish said passages in open condition.

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