

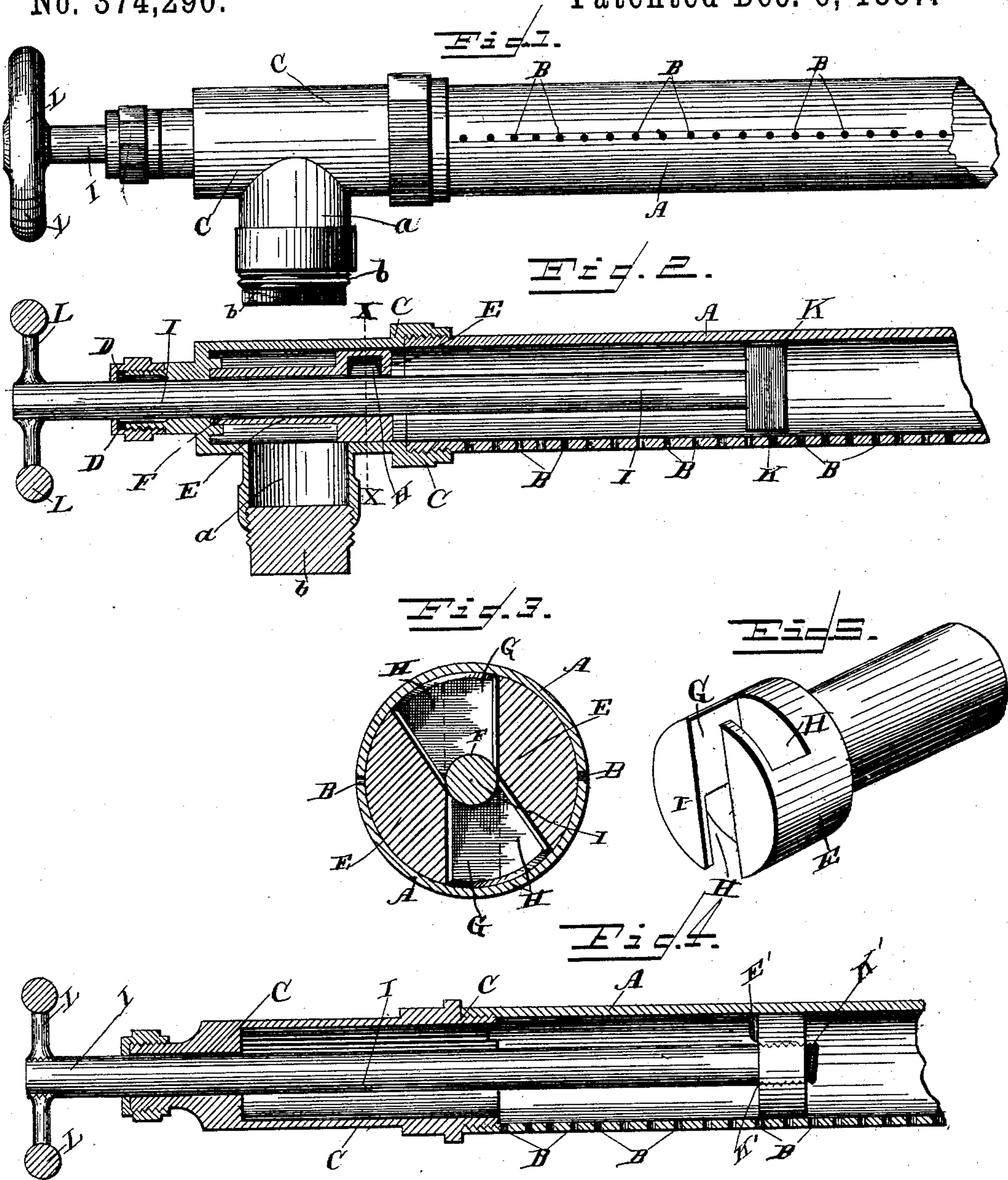
(No Model.)

G. H. BOORN.

DEVICE FOR CLEANING THE SHOWER PIPES USED IN PAPER MILLS.

No. 374,290.

Patented Dec. 6, 1887.



WITNESSES

*M. H. Humphrey*  
*J. W. Garner*

INVENTOR

*Geo. H. Boorn*  
*by C. A. Howden*  
Attorney



# UNITED STATES PATENT OFFICE.

GEORGE HENRY BOORN, OF BELLOWS FALLS, ASSIGNOR OF ONE HALF TO  
CHARLES E. ROBERTSON, OF ROCKINGHAM, VERMONT.

DEVICE FOR CLEANING THE SHOWER-PIPES USED IN PAPER-MILLS.

SPECIFICATION forming part of Letters Patent No. 374,290, dated December 6, 1887.

Application filed June 2, 1887. Serial No. 240,061. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE HENRY BOORN, a citizen of the United States, residing at Bel-  
lows Falls, in the county of Windham and  
5 State of Vermont, have invented a new and  
useful Improvement in Devices for Cleaning  
the Shower-Pipes used in Paper-Mills, of  
which the following is a specification.

My invention relates to an improvement in  
10 devices for cleaning the shower-pipes used in  
paper-mills; and it consists in the peculiar  
construction and combination of devices, that  
will be more fully set forth hereinafter, and  
particularly pointed out in the claims.

15 The object of my invention is to provide  
devices adapted to clean the shower-pipes of  
paper-mills and to open the perforations  
therein when the same become clogged or  
stopped up while the mill is in operation, and  
20 without the necessity of stopping the flow of  
water through the pipes.

In the accompanying drawings, Figure 1 is  
an elevation of a shower-pipe provided with  
my improved cleaning devices. Fig. 2 is a  
25 vertical longitudinal sectional view of the  
same. Fig. 3 is a transverse sectional view  
taken on the line *xx* of Fig. 2. Fig. 4 is a  
longitudinal sectional view of a modified form  
of my invention. Fig. 5 is a detailed perspec-  
30 tive view of the piston.

A represents the shower-pipe, provided on  
one side with the usual openings or perfora-  
tions, B. This shower-pipe is exteriorly  
threaded at one end, (not shown,) and thereby  
35 adapted to be connected to a water-supply  
pipe, through which water is introduced un-  
der pressure, and to the opposite end of the  
shower-pipe is screwed a cap, C. This cap is  
provided with a packing-box, D, on its outer  
40 side.

E represents a piston or plunger, which fits  
snugly in the pipe A and is adapted to move  
longitudinally therein. This piston or plunger  
is provided with a longitudinal bore, F, and  
45 has at its outer end a transverse groove or re-  
cess, G, which communicates with the bore  
and is of suitable depth. At the bottom of  
the recess G and on opposite sides of the same  
are formed recesses H, which communicate  
50 therewith.

I represents an operating-rod, which extends

through the packing-box and through the bore  
of the piston or plunger, and is provided at its  
inner end with a T-shaped head, K. The  
length of this rod is equal to the length of the 55  
pipe A, and to the outer end of the rod is at-  
tached a handle or wheel, L.

The operation of my invention is as fol-  
lows: The rod has its T-head K normally dis-  
engaged from the plunger or piston E, and 60  
the said rod is extended entirely through the  
length of the pipe A while the plunger or  
piston is at the outer end of the said pipe, thus  
permitting the unobstructed flow of water  
through the pipe A and through the openings 65  
B. When the pipe becomes fouled with sedi-  
ment, and the openings B become partly  
clogged and stopped up therewith, the rod I  
is drawn outward by means of a handle, L,  
and is turned to cause the T-shaped head K 70  
to enter the recess G. When the said head  
reaches the bottom of the said recess, a partial  
rotation or turn is given to the rod, which  
causes the head K to move into the recesses  
H, which communicate with the lower side of 75  
the recess G. This secures the head to the  
piston or plunger, and the operator then forces  
the rod I inward, thereby causing the pis-  
ton or plunger to move through the pipe A  
with the head of the rod I against the pressure 80  
of the water in the pipe, and thus effectually  
clear out the pipe and the openings B therein  
by compressing the water in the said pipe to  
such an extent as to cause it to force the ob-  
structions from the openings B as the water 85  
escapes through the same.

In Fig. 4 I illustrate a modified form of my  
invention, in which I dispense with the T-  
shaped head K and provide the end of the rod  
I with screw-threads K' instead. The bore of 90  
the piston or plunger is provided with screw-  
threads adapted to engage the threads K', and  
the outer side of the piston or plunger has a  
stud or offset, E', adapted to engage a recess  
in the annular flange of the cap C. It will be 95  
readily understood by reference to the draw-  
ings that the stud and recess prevent the pis-  
ton from rotating while the rod is being turned  
to connect its threaded end to or disconnect  
the threaded end from the piston, the opera- 100  
tion of the latter being the same as in the pre-  
vious instance.



By reference to Figs. 1 and 2 it will be observed that the packing-box is provided on its lower side with an outlet, *a*, having a screw-plug, *b*. After the openings in the pipe have  
5 been cleared by moving the plunger through the pipe, as previously described, and while the piston or plunger is at the outer end of the pipe, the plug is unscrewed from the outlet  
10 *a*, thus permitting the escape of sand and particles of dirt and waste from the pipe.

Having thus described my invention, I claim—

1. The combination of the perforated show-  
er-pipe A, the piston therein, and the rod I,  
15 the inner end of the said rod being adapted to be connected to or disconnected from the piston, for the purpose set forth, substantially as described.

2. The combination of the pipe A, the piston  
20 therein, having the recess G and the communicating recesses H, and the longitudinally-movable rod I, extending through the closed end of the pipe and through the longitudinal bore in the piston, said rod being provided  
25 at its inner end with a head, K, adapted to engage the recesses in the piston and thereby

connect the rod thereto or disconnect the rod from the same, for the purpose set forth, substantially as described.

3. The combination of the perforated pipe 30  
A, having one end closed and provided with the stuffing-box, the longitudinally-movable piston in the said pipe, and the rod I, extending through the stuffing-box and connected to the piston to operate the latter, for the pur- 35  
pose set forth, substantially as described.

4. The combination of the perforated pipe  
A, having one end closed and provided with the stuffing-box, having the outlet *a* and the  
40 plug *b* to close the same, the longitudinally-movable piston in the said pipe, and the rod I, extending through the stuffing-box and connected to the piston to operate the latter, for the purpose set forth, substantially as de-  
45 scribed.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

GEORGE HENRY BOORN.

Witnesses:

GEORGE A. WESTON,  
JAS. H. WILLIAMS.