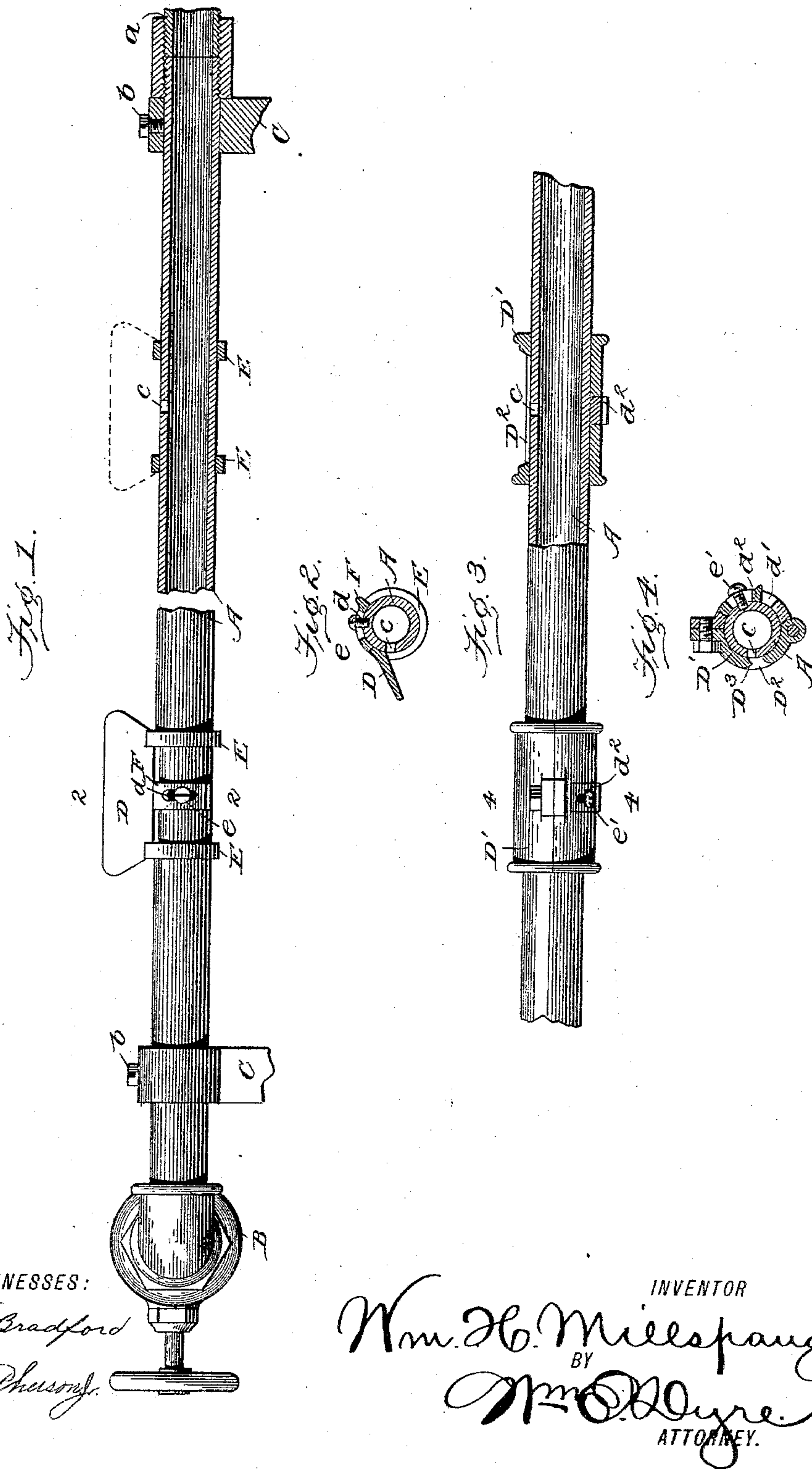


(No Model.)

W. H. MILLSPAUGH.
CLEANSING APPARATUS FOR PAPER MAKING MACHINES.
No. 596,941. Patented Jan. 4, 1898.



WITNESSES:

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CLEANSING APPARATUS FOR PAPER-MAKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 596,941, dated January 4, 1898.

Application filed September 22, 1896. Serial No. 606,652. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. MILLSPAUGH, a citizen of the United States, residing at Pulteney, in the county of Steuben and State of New York, have invented certain new and useful Improvements in Cleansing Apparatus for Paper-Making Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to paper-making machines, and has particular reference to cleansing or washing apparatus for use in connection therewith, being a modified embodiment of the principle disclosed in an application filed by me simultaneously herewith and designated as "Case A," claiming Letters Patent of the United States covering means for delivering a cleansing fluid in one continuous sheet to parts of a paper-making machine.

This invention therefore presents certain new and useful features of construction constituting improvements upon the perforated shower-pipes heretofore employed for washing the rapidly-moving endless making-wire and felt conveyers, and also the wires of a dandy-roll or other cylinders and parts common to paper-making machines.

As further objects this invention provides for the economical but thorough distribution of water or other cleansing agents, a reduction in the size and expense of pumps employed, and a more efficient apparatus generally.

The invention will be hereinafter described, and particularly pointed out in the claims following.

In the accompanying drawings, which form part of this specification and whereon like letters of reference indicate same parts wherever used, Figure 1 represents, partly in plan and partly in horizontal section broken away, opposite ends of the invention, showing a perforated discharge-tube, adjustable deflectors thereon, and a waste-valve. Fig. 2 is a transverse central section through said tube and one deflector, taken on the line 2 2, Fig. 1. Fig. 3 is a fragmentary view, partly in plan and partly in horizontal section, of a modified

form of the invention, showing a perforated discharge-pipe surrounded by independently-adjustable spraying-sleeves; and Fig. 4 is a transverse central section on line 4 4 of Fig. 3.

Reference being had to the drawings and letters thereon, A indicates a discharge-tube or shower-pipe communicating at one end through coupling *a* with a source of water-supply under pressure from a pump (not shown) and at its opposite end communicating with a waste-pipe guarded by a gate-valve B. At suitable intermediate points, two or more, this pipe is adjustably supported by fixed brackets C C, being therein retained by the action of set-screws *b b*, and throughout its length is perforated by a series of equidistant discharge-ports *c*.

Upon tube A is mounted a series of adjustable deflecting-planes D, corresponding in location and number with the discharge-ports *c*, each being of diverging or fan shape, provided with side supporting-rings E, encircling the tube, and bearing a central adjusting tailpiece F, slotted as at *d*. Through slot *d* and into the surface of tube A passes a set-screw *e*, by means of which slot and screw the deflector may be retained at any given angle during operation of the apparatus.

In the modification represented by Figs. 3 and 4 it will be noted that in place of the fan-shaped deflectors D are substituted a series of surrounding sleeves D', each having a slotted delivery-port D², flanked by an angular spraying-lip D³, against which the stream forcibly impinges. It will also be noted that said sleeve D' is broken transversely by a slot *d'*, in which is located an adjusting-shoe *d'*², retained by the set-screw *e'*, thus limiting rotation of said sleeve in both directions, locking it against accidental dislodgment and permitting of a graduated delivery—that is to say, the delivery of a coarse or fine spray, according to requirements. In all cases, however, it will be observed that the several discharges are in sheet-like form with rapidly-diverging side lines, which latter may be caused to meet at points of utilization upon the surface of the making-wire, the felts, or cylinders to be cleansed, and in the washing of expensive felts particularly it has been

demonstrated that the employment of a continuous sheet or sheets, delivered substantially as above, is not only more efficient in its operation, but has also the very important effect of greatly increasing the life of felts for paper-making purposes.

The operation of my invention, as embodied in the accompanying illustrations, is as follows: Water under proper pressure admitted to pipe A finds an exit through all ports *c* and forcibly impinges against deflectors D, Figs. 1 and 2, or spraying-lips D³, Figs. 3 and 4, being thereby instantly converted into a series of fan-like sheets. By rotation of said deflectors D or nozzles D' these sheets may be given a common angle of deflection, being thus united in a continuous unbroken sheet where they encounter and operate upon the parts being cleansed. When tube A becomes foul or its ports *c* clogged, the apparatus may be cleansed by the employment of an ordinary swab, coupling *a* and dependent parts being first removed for its admission. Preferably, however, such cleaning operation is effected through the agency of gate-valve B, which when opened diverts the current of water through tube A into an attached waste-pipe, and this operation may be facilitated by the rotation of deflectors D until ports *c* are closed thereby.

It will be noted that, if desirable, deflectors D may be connected by a common control-

ling-rod and be thereby simultaneously operated, and other similar changes in the location or arrangement of parts may be made and substituted for those herein shown and described without departing from the spirit of my invention, which is as follows:

1. In a paper-making machine the combination with a shower-pipe, of an adjustable deflecting-plane mounted thereon for delivering a cleansing liquid in sheet form, substantially as described.

2. In a paper-making machine the combination with a shower-pipe, of a series of independently-adjustable deflecting-planes mounted thereon for delivering a cleansing liquid in sheet form, substantially as described.

3. In a paper-making machine the combination with a shower-pipe broken by a series of discharge-ports, of a corresponding series of deflecting-planes rotatably mounted upon the pipe, and a tailpiece upon each of said planes in slotted connection with the common pipe for delivering a cleansing liquid in sheet form, substantially as described.

In testimony whereof I subscribe my signature in presence of two witnesses.

WILLIAM H. MILLSPAUGH.

Witnesses:

CHARLES O. ROGERS,

FRED J. EMENY.