

No. 684,676.

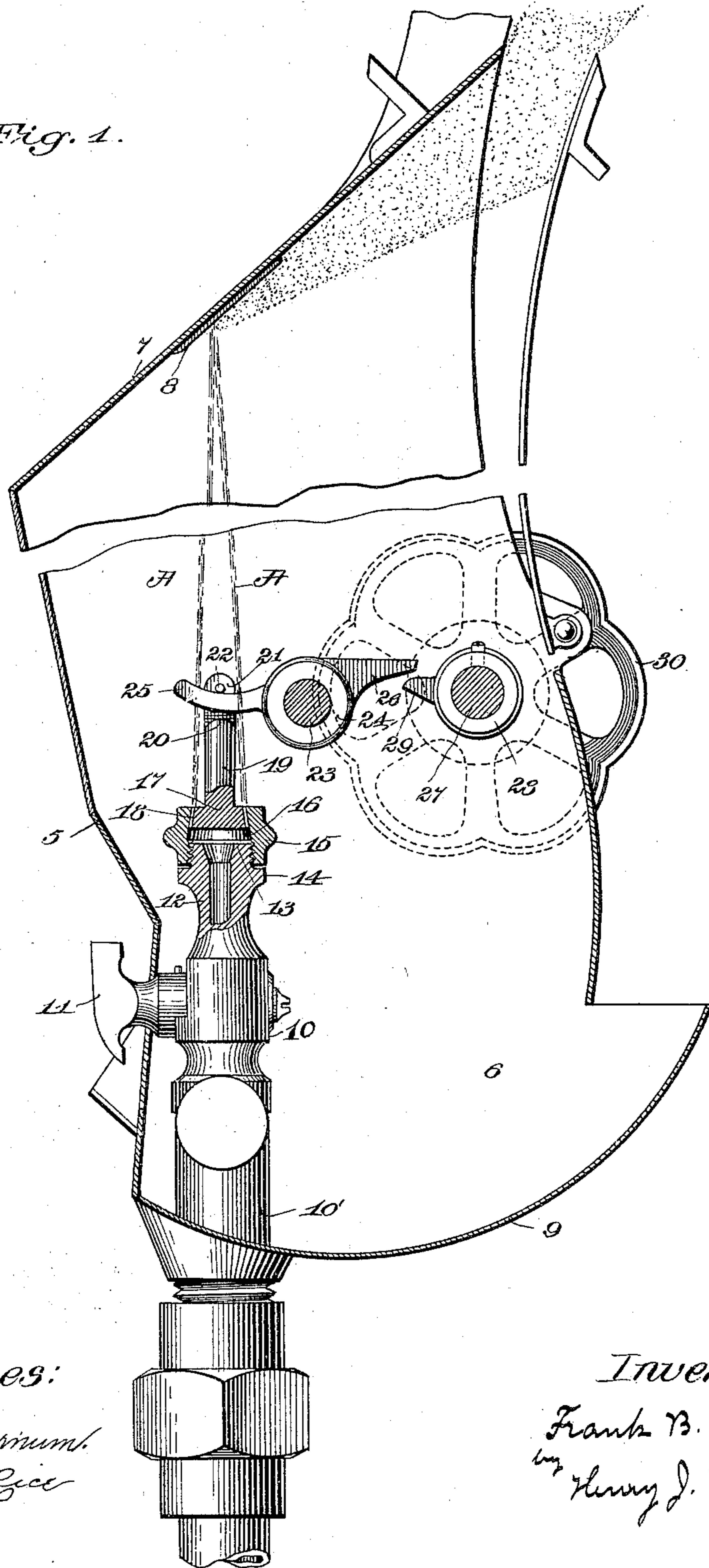
Patented Oct. 15, 1901.

F. B. COMINS.
DAMPENING MACHINE.
(Application filed Feb. 14, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



Witnesses:

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A. G. Rice

Inventor:

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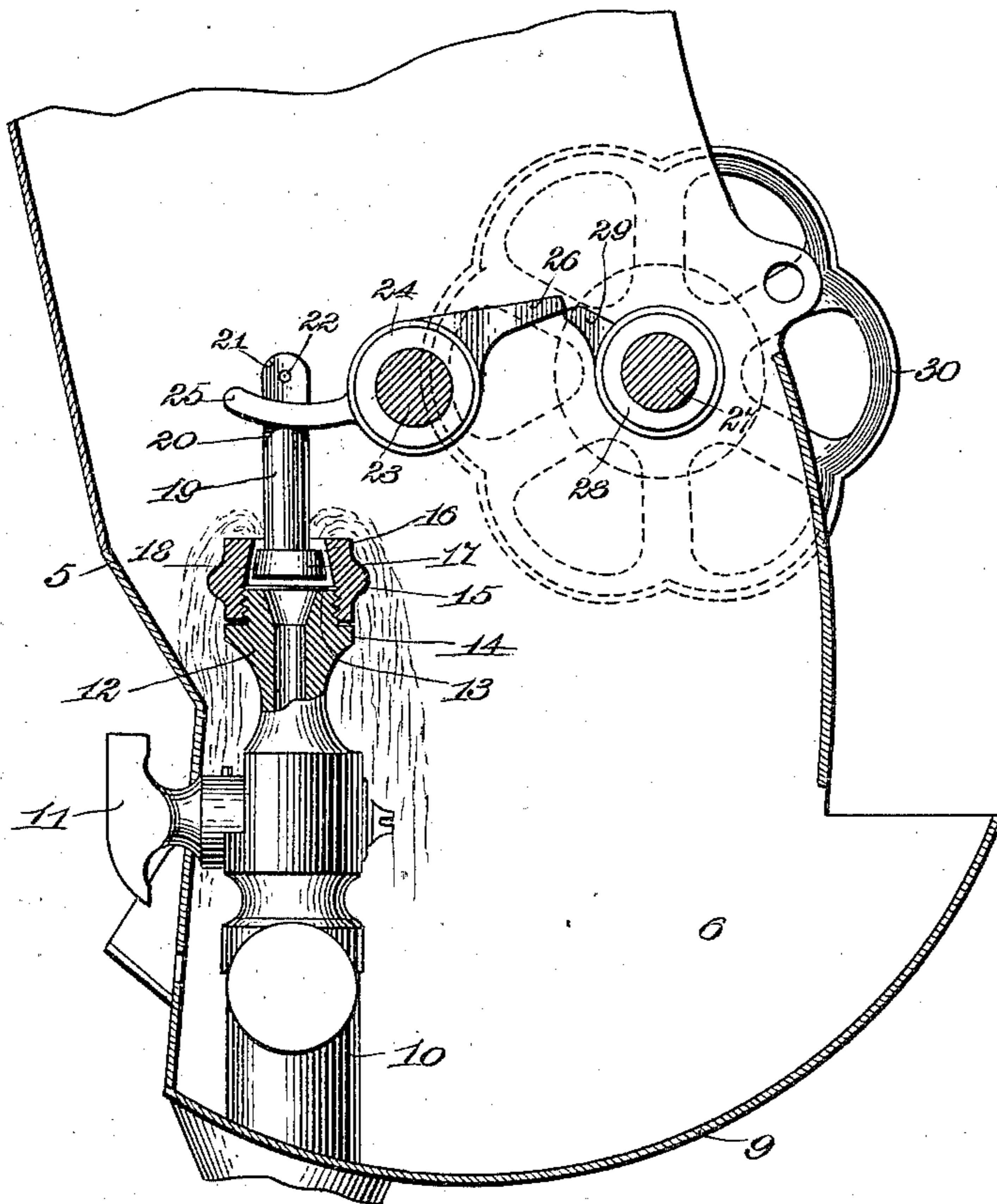


Fig. 2.

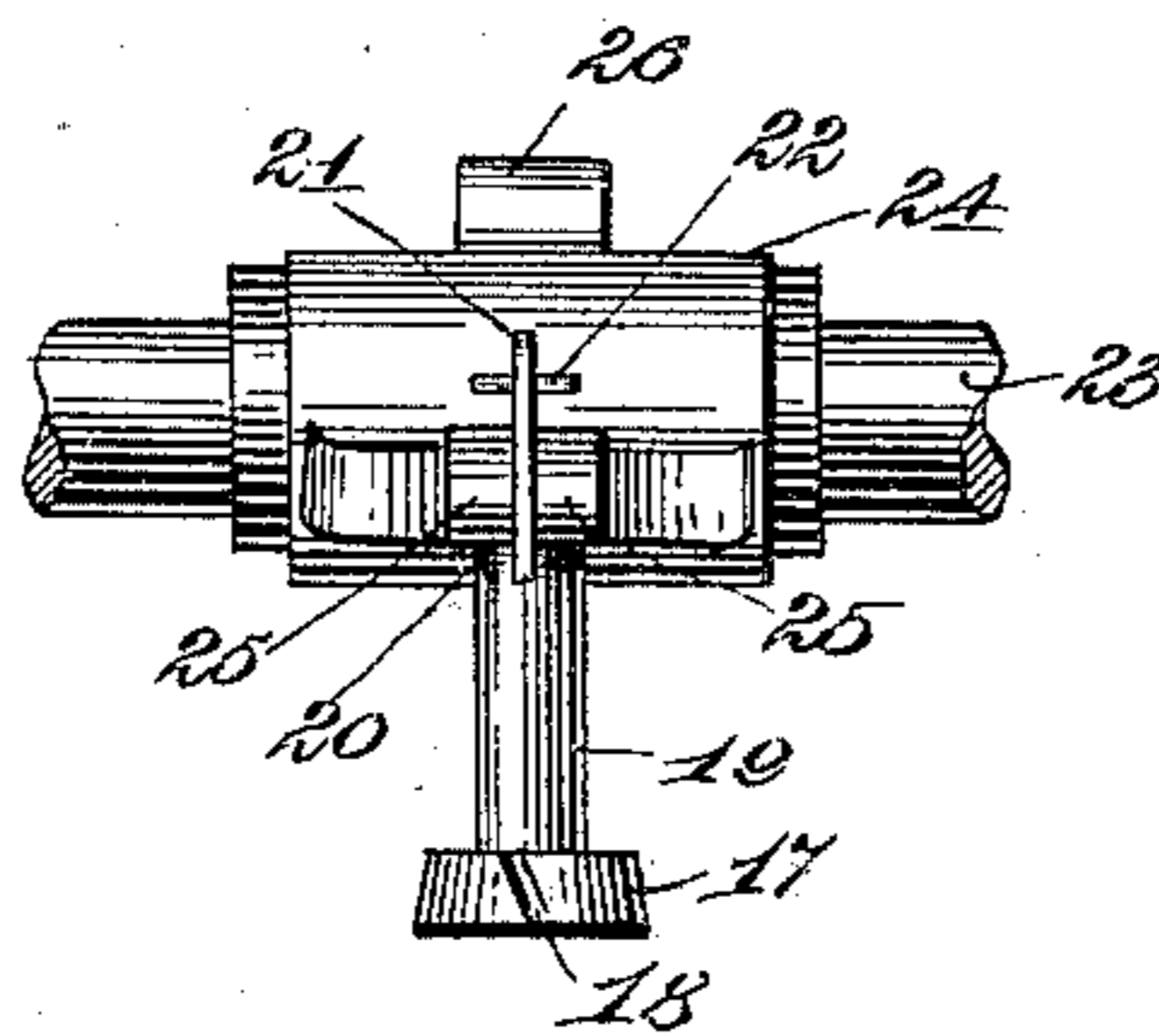


Fig. 3.

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UNITED STATES PATENT OFFICE.

FRANK B. COMINS, OF SHARON, MASSACHUSETTS, ASSIGNOR TO AMERICAN MOISTENING COMPANY, A CORPORATION OF MAINE.

DAMPENING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 684,676, dated October 15, 1901.

Application filed February 14, 1901. Serial No. 47,300. (No model.)

To all whom it may concern:

Be it known that I, FRANK B. COMINS, a citizen of the United States, residing at Sharon, in the county of Norfolk and State of Massachusetts, have invented a certain new and useful Improvement in Dampening-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention has reference to improvements in devices for dampening textile, fibrous, or other fabrics.

The invention relates particularly to improvements in those parts of dampening mechanism whereby the dampening fluid is supplied.

20 One object of the invention is to so construct a nozzle for dampening-machines of this nature that the fluid passing therefrom in jets may be more readily broken into a mist-like spray as it strikes the deflector.

25 Another object of the invention is to so construct a nozzle of this nature whereby minute jets are delivered that the tendency of the orifices to clog will be overcome to a large extent.

Another object of the invention is to so construct a nozzle of this nature that the same may be readily flushed from time to time.

30 Another object of the invention is to so construct a nozzle for a dampening-machine and mechanism cooperating therewith that where a series of such nozzles are mounted within a chamber they may be operated for flushing from a mechanism outside the chamber.

35 The invention consists in a dampening-chamber having a deflector and in a nozzle mounted therein and having a series of inclined orifices whereby the fluid is directed in converging jets meeting a common line of impingement at the deflector.

40 The invention also consists in the construction of the nozzle and in its combination with the deflector.

45 The invention also consists in the means for flushing the valve and its seat.

The invention also consists in the valve having the exterior stem and in the mechanism for moving the same.

50 The invention also consists in such other novel features of construction and combination of parts as shall hereinafter be more fully described, and pointed out in the claims.

Figure 1 represents a vertical sectional view of a dampener-chamber of this nature with the improved nozzle and its valve-operating mechanism mounted therein, parts of the mechanism being broken away to more clearly show the construction. Fig. 2 represents a similar view of portions of the same, showing the operating mechanism in position for depressing the valve to increase the area of opening for the flushing flowage of fluid. Fig. 3 represents a view in elevation, at right angles with the positions shown in Figs. 1 and 2, of the valve and its depressor-cam and the cam-shaft.

Similar numbers of reference designate corresponding parts throughout.

70 In the manufacture of fabrics of a fibrous or textile nature it is sometimes necessary to moisten the same or to maintain the same in moistened condition between some of the steps of manufacture. For this purpose, as well as for other more general moistening purposes, it is essential that the moistening fluid be supplied in a mist-like condition in the nature of disintegrated spray, whereby the moistening effect of the fluid is most evenly distributed throughout the fabric. To accomplish this result, minute jets of water have heretofore been directed against a deflector, the impingement against which causing the distribution of the jets in drops of a size depending upon the cross-sectional area of the jets and the force with which they are impelled against the deflector and somewhat upon the shape of the deflector. Owing to the necessarily extremely small area of the jets the orifices of the nozzles, through which the water is directed toward the deflector, soon become clogged by the impurities and foreign matter in the water, thus causing annoyance and delay by the constant attention required and the cleaning of the nozzles.

95 In carrying this invention into practice it has been found that the commingling of several jets of water at the time of impingement on the deflector more positively effects the disintegration of the jets into the desired mist-like spray, this being particularly the case when the jets converge from separated directions to the point of impingement. It has also been found that the flushing of the orifices, through which the water is directed, can best be accomplished by a sudden in-

crease in area of the outlet to permit of the flowing or flushing therethrough of a body of water.

In the drawings, 5 indicates a dampening-chamber, of any usual construction, having ends, as 6, the top 7, with its deflector 8, and the drip pan or bottom 9. Through the bottom 9 is formed an opening, through which a connection 10 for any number of stand-pipes, as 10, extends, these pipes being connected with any water-supply and being controlled by cocks, as 11, working through openings in the rear wall of the chamber. At the upper ends of the stand-pipes are axially-perforated fittings, as 12, having ends, as 13, and shoulders, as 14, and screwed onto the end portions of these fittings are collars, as 15, the bore of which is contracted toward its upper portion to form the truncated conical valve-seat 16. Movable in the valve-seat collars, as 15, are valves, as 17, of a shape and size to closely fit the upper portion of the valve-seat, as 16, and having in their peripheries the orifices or channels 18 18, inclined laterally to the vertical axis of the valve. For the purposes herein to be set forth this valve is furnished with the exterior valve-stem 19, having the curved shoulders 20 20, and the plate 21, carrying the cross-pin 22.

In the ends, as 6, of the dampener-chamber are secured the ends of the cam-shaft 23, on which at intervals corresponding to the location of the stand-pipes 10 are journaled collars, as 24, having the curved cam-fingers 25 25, which are engaged between the cross-pin 22 and the shoulders, as 20, of the valve-stems, as 19, the plate 21 working between these fingers, while from this collar 24 extends the cam-arm 26.

In suitable bearings in the ends, as 6, of the dampener-chamber is journaled the shaft 27, having at intervals corresponding to the disposition of the arms 26 collars, as 28, fixed thereon by means of set-screws, each of the collars having a radially-extending tripper 29, adapted when the shaft 27 is rotated to lift the free end of the associated arm 26, when the shaft 27 is rotated, as by means of the hand-wheel 30. In practice the collars 28 are so arranged and secured on the shaft 27 that the trippers, as 29, will successively actuate their associated arms, as 26, to successively depress the valves of the nozzle.

With the valve 17 in the position shown in Fig. 1 the water pressing against the larger diameter of the valve will hold the valve against its seat, the pressure forcing the water through the channels 18 18, whereby it is directed in small jets in the directions shown at A A, Fig. 1, which converge as they approach the deflector 8, and there being brought together from different angles are more completely dissipated in the form of spray.

When the channels become clogged or at times to prevent clogging, the hand-wheel 30 is rotated slowly to successively bring the trippers, as 29, into engagement with the re-

lated arms, as 26, to lift the same and depress the fingers 25 25, which, bearing on the rounded ends, as 20, of the valve-stems, as 19, force the valves downward against the pressure of the water, thus opening a large area to the flow of the water and effecting the flushing out of all foreign matter that has become lodged beneath the valve or in the channels 18 18, this being materially assisted by the location of the channels in the periphery of the valves.

It is evident that other means than those herein shown may be utilized to operate the valve and that the valve-seat may be otherwise shaped or constructed to hold the valve against the pressure of the water. So, also, channels similar to those marked 18 may be formed in the wall of the valve-seat instead of in the periphery of the valve without departing from the spirit of my invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A dampening-machine comprising a deflector, and a nozzle located opposite the deflector and having inclined outlets whereby converging jets of fluid may be directed toward the deflector.

2. A dampening-machine comprising an inclined deflector, and a nozzle located opposite the deflector and at a distance therefrom and having a series of inclined outlets adapted to direct jets of fluid in converging paths toward the deflector, and means for flushing the outlets.

3. A dampening-machine comprising a nozzle having a valve-seat at its end, a valve movable in the seat and having an exterior stem, a depressor mechanism in operative relation with the valve-stem, and a rotatable tripper for the depressor mechanism.

4. A dampening-machine comprising a casing, a shaft rotatably mounted in the casing and furnished with a tripper extension, a depressor pivotally mounted and having an arm adapted to be engaged by the tripper and oppositely-extending fingers, a nozzle, and a valve in said nozzle having an exterior member operatively connected with said fingers.

5. The combination with the fitting 12, the collar 15 secured thereto and having the valve-seat 16, and the valve 17 movable in the seat and having the channels 18 18 and the valve-stem 19 with the plate 21 and the pin 22, of the collar 23 rotatably mounted in the machine and having the fingers 25 25, engaged with the plate 21, and the oppositely-extending arm 26, the shaft 27 journaled in the machine the collar 28 fixed thereon and having the tripper 29, and the hand-wheel 30 secured to said shaft 27.

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

FRANK B. COMINS.

Witnesses:

W. STANLEY CAMPBELL,
HENRY J. MILLER.