

No. 815,559.

PATENTED MAR. 20, 1906.

O. SAUGSTAD.  
DAMPER OPERATING MOTOR.  
APPLICATION FILED MAY 27, 1905.

Fig. 2,

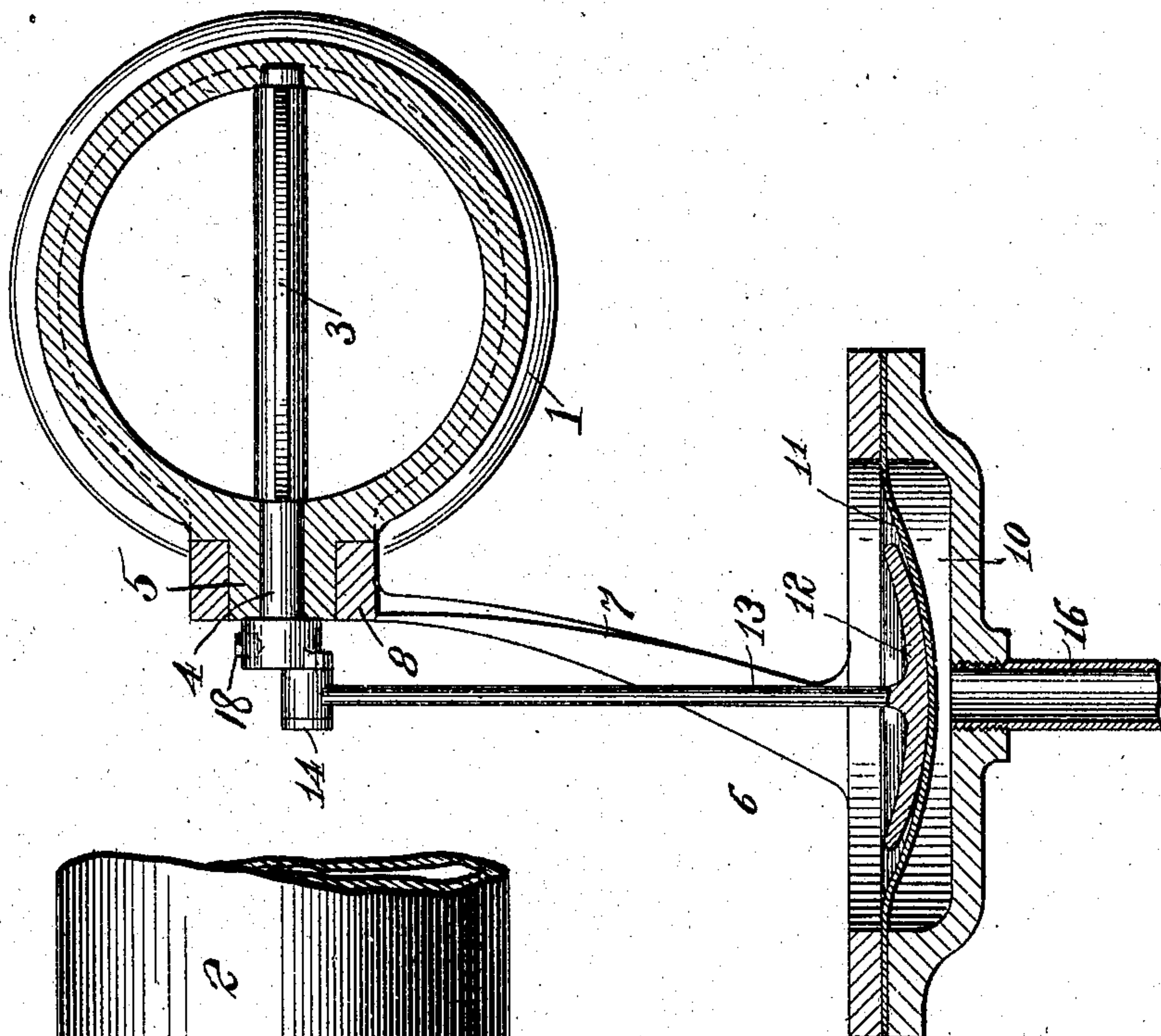
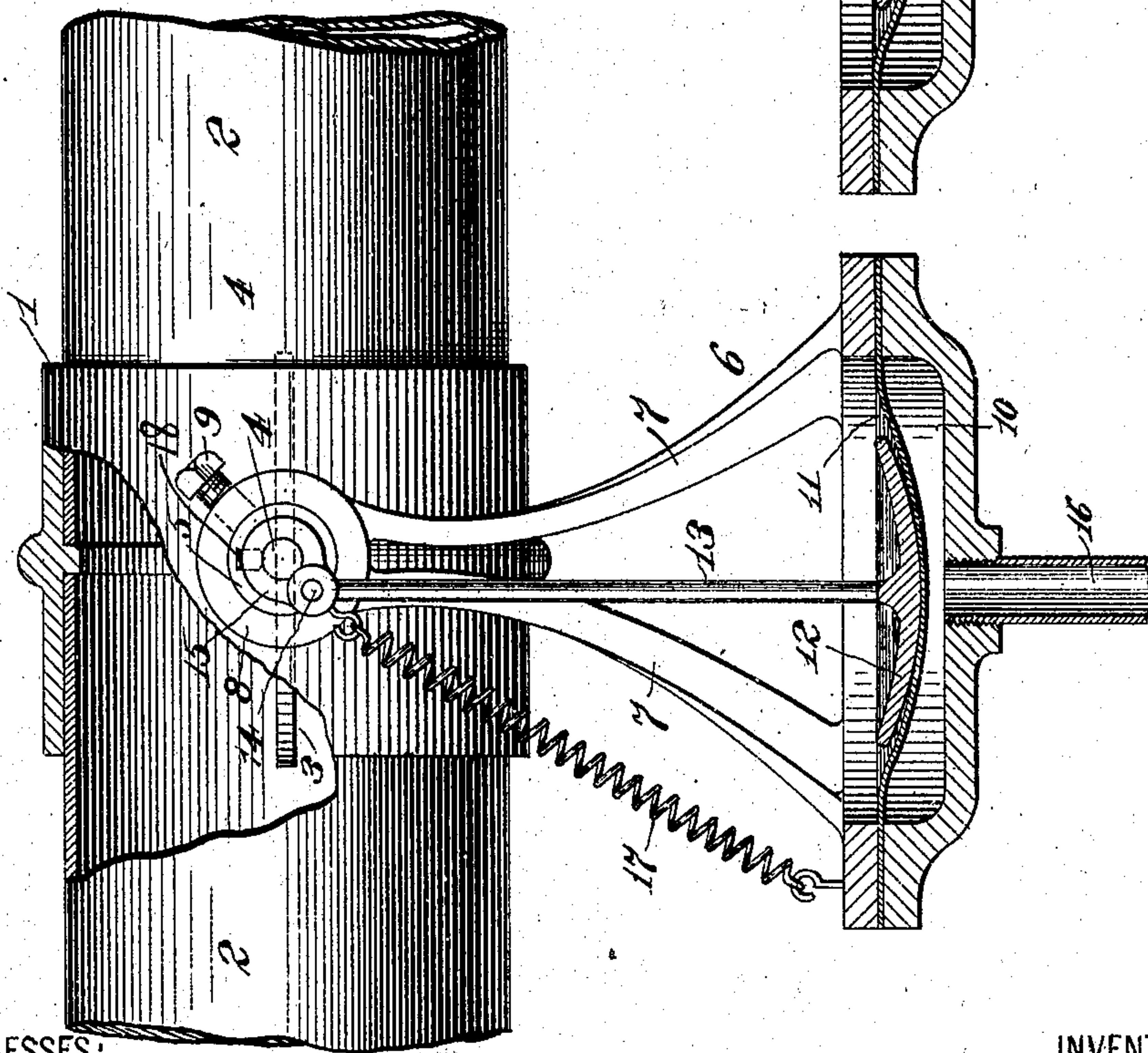


Fig. 1,



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## DAMPER-OPERATING MOTOR.

No. 815,559.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed May 27, 1905. Serial No. 262,611.

*To all whom it may concern:*

Be it known that I, OLAF SAUGSTAD, a citizen of the United States of America, and a resident of Plainfield, county of Union, State of New Jersey, have invented certain new and useful Improvements in Damper-Operating Motors, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to damper-operating motors of the type known as "fluid-pressure" motors.

My invention comprises a motor of this type suspended from a point concentric with the pivotal axis of the damper and a direct connection between the movable wall of the motor and a portion fast with the damper.

The objects of my invention are to provide convenient means for supporting the motor and to provide means whereby the motor may be adjusted in varying positions while employing the same connections, and, further, to do away with the usual intermediate connections employed between the movable wall and the damper.

My invention also consists in certain details of construction and combination of parts, as will hereinafter be more fully set forth.

I will now proceed to describe a device embodying my invention and will then point out the novel features in claims.

In the drawings, Figure 1 is a view in central vertical section of a damper-operating motor embodying my invention, showing the same suspended from a pipe-collar, the pipe-collar and certain parts connected therewith being shown in side elevation. Fig. 2 is a view in central transverse vertical section through the same.

1 designates a pipe-collar forming a coupling for pipe-sections 2 2. The pipe-collar forms a support for a damper 3, mounted upon a pivoted spindle 4. The spindle 4 extends to the exterior of the collar through a hub 5, formed with an outer surface concentric with the axis of the said pivot. Suspended from this collar is a fluid-pressure motor 6, the suspension-arms 7 of which terminate in a collar 8, which surrounds the said hub 5. A set-screw 9 is preferably provided, whereby the motor may be held against movement upon the hub after it has been properly

adjusted in position. The motor includes a diaphragm-chamber 10, a diaphragm 11, and a follower 12. The follower 12 has an arm 13, rigidly secured thereto or formed as a part thereof, said rod being pivoted at its outer end to a wrist-pin 14, carried by a crank-arm 15, secured upon the spindle 4 of the damper. A pipe 16 admits fluid under pressure to the chamber 10 to force the movable wall comprised in the diaphragm 11 and follower 12 outward, and so to rotate the damper upon its axis to close same. A spring 17 returns the parts to their normal positions upon exhaust of fluid under pressure from the chamber 10. The crank-arm 15 is secured in position upon the spindle 4, preferably by means of a set-screw 18, whereby the said arm may be initially adjusted to its proper relative position with respect to the damper and afterward secured in the position to which it is adjusted.

By the foregoing it will be seen that I have provided a means for supporting the damper-operating motor directly from the damper-collar and that by such means, comprising a suspension device axially concentric with the axis of the damper, it is possible to initially adjust the motor to any position around the said axis—that is to say, vertical, oblique, horizontal, inverted, or the like—without providing any special connections or any intermediate parts. In order to change the positions, it is only necessary to loosen the set-screws 9 and 18 and again tighten them after the parts are properly adjusted. It will also be seen that I have entirely done away with the usual intermediate connections between the movable wall of the damper and the damper itself. The flexibility of the diaphragm 11 permits the slight movement necessary for the end of the rod 13 to follow the arc described by the crank-arm 15, so that there will be no straining of the parts or lost motion required. It will also be seen that the collar, damper, and motor become a self-contained device which may be fitted in position upon any pipe without the necessity of connections with other parts, as has been usual heretofore.

What I claim is—

1. In a device of the character described, the combination with a pivoted damper and means for supporting same, of a motor for op-



erating said damper suspended from said supporting means concentrically with the axis of said damper.

2. In a device of the character described, the combination with a pivoted damper and a crank-arm secured thereto, of means for supporting said damper, and a motor for operating said damper suspended from said supporting means concentrically with the axis of said damper, said motor directly connected with the said crank-arm.

3. In a device of the character described, the combination with a pipe-collar and a damper pivoted thereto, said pipe-collar having a hub concentric with the pivot of said damper, of a fluid-pressure motor provided with a movable wall, suspended from said hub, a crank-arm connected with the damper, and a

direct connection between said crank-arm and the movable wall of said fluid-pressure motor. 20

4. In a device of the character described, the combination with a pipe-collar 1, a damper 3, a spindle 4 therefor and a crank-arm 15 secured to said spindle, said collar having a hub 5 concentric with said spindle 4, of a motor suspended from said hub 5, said motor including a diaphragm-chamber 10, a diaphragm 11, a follower 12, and a follower-arm 13, said follower-arm directly connected to said crank-arm 15 by a pivot 14, substantially as specified. 25 30

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Witnesses:

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