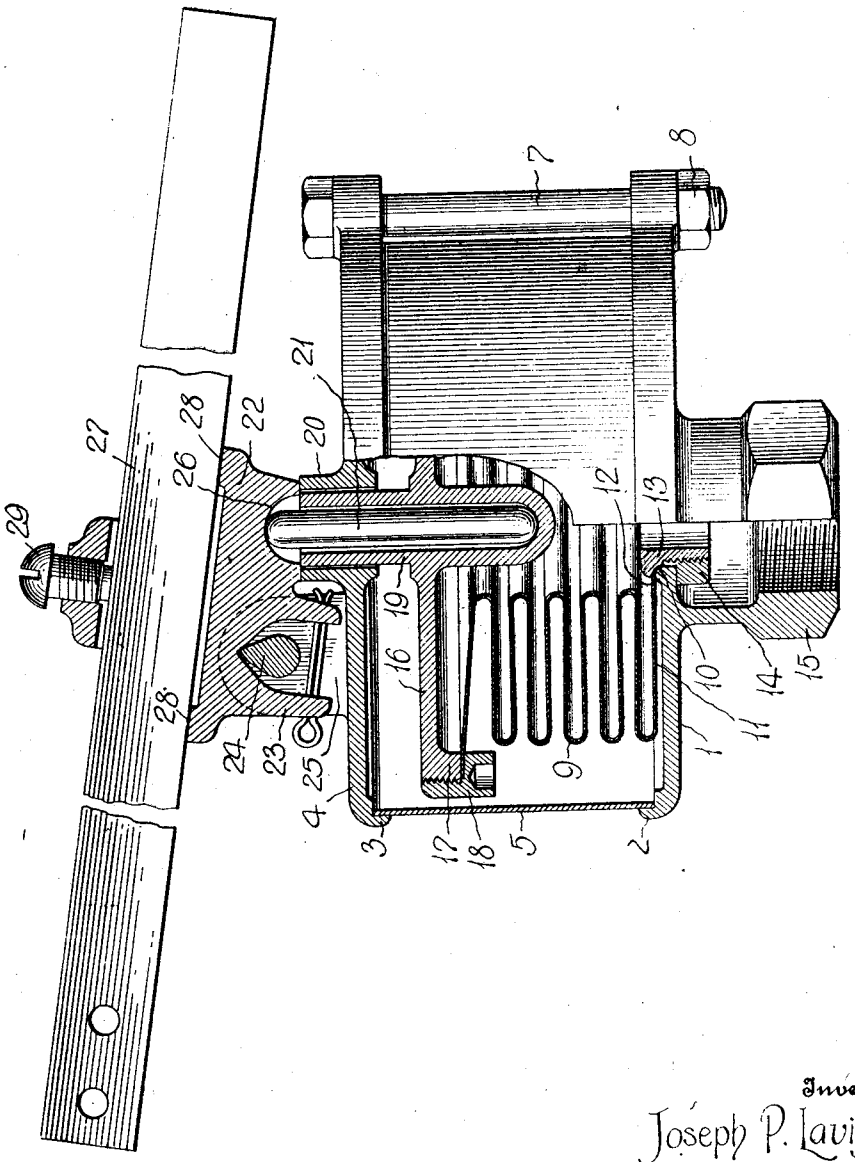
J. P. LAVIGNE.

DAMPER REGULATOR.

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1,183,085.

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Witnesses

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JOSEPH P. LAVIGNE, OF DETROIT, MICHIGAN, ASSIGNOR TO UNITED STATES [illegible]
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DAMPER-REGULATOR.

1,183,085. Specification of Letters Patent. [illegible]

Application filed August 25, 1915. Serial No. 47,267.

To all whom it may concern:

Be it known that I, JOSEPH P. LAVIGNE, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Damper-Regulators, of which the following is a specification, reference being had therein to the accompanying drawings.

In the construction of damper regulators of the type that depends on pressure of fluid, such as steam or the like for operation, it is desirable that the parts be so arranged that the outer connections do not become readily clogged with dirt or the like and that the other parts be readily adjustable for inspection, replacement and cleansing.

This invention relates to a damper regulator of fluid pressure operated type in which the parts are so connected as to be readily inspected and placed if necessary, while the outer connections not only admit of comparatively fine adjustment but also operate without particular attention as they are comparatively immune from being clogged by dirt or dust.

The invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

The drawing is a view partially in side elevation and partially in section, of a damper regulator that embodies features of the invention.

Referring to the drawing, a base plate 1 which is preferably circular, has an annular rim flange 2 corresponding to the downturned rim flange 3 of a cover plate 4 that conforms in contour and dimensions to the base plate. A casing 5, preferably of sheet metal or similar material is clamped between the base and cover or head by suitably disposed bolts 7 with applied nuts 8. A longitudinally expansible chamber having a deeply corrugated wall 9 that may be formed integrally or built up of suitably connected and flanged diaphragms, is mounted in the casing so as to expand longitudinally thereof freely, preferably by means of a marginal flange portion 10 formed around a central opening in the bottom wall 11 of the chamber and clamped over a marginal bead 12 formed around a corresponding opening in the base plate 1. Preferably a suitably flanged and screw-threaded bushing 13 with clamping collar 14 secures the flange 10 on the bead 12, the collar 14 being accessible through the bore of a depending boss 15 formed on or secured to the base plate and fitted for a pipe connection.

A head 16 with depending rim flange 17 is clamped on the extended upper wall of the expansion chamber by means of a suitably arranged collar 18 that is fitted for the application of a spanner wrench or the like. A central hollow boss 19 is formed on the head 16 with a depending portion extending well into the chamber and a projecting sleeve loosely engaging with the opening of a boss 20 formed on the cover 4. A pivot block 22 has a depending forked projection 23 engaging over a knife edge pivot bar 24 mounted across bearing lugs 25 on the cover 4. A strut 21 whose lower rounded end rests on the correspondingly concaved bottom of the boss 19, bears with its rounded upper end against the concave face of a recess indicated at 26 in the lower face of the pivot block. The latter is longitudinally slotted to receive a damper lever or damper operating member indicated at 27 and has outer bearing spots 28 with clamping screw 29 bearing against the upper face of the lever or operating member between the spots. By this construction a damper regulator is obtained in which the entire surface of the corrugated side wall of the expansion chamber is left free so that the chamber is extremely pliant and expands and contracts readily, the support of the lower end being confined to the marginal flange of the central opening, and the rigid head being attached to the extended flange of the upper or top convolution of the side wall. Furthermore the connections between the corrugated wall and the contiguous portions are such that the parts can be readily assembled or taken down without the use of special tools. The peculiar lever pivot support and the ready adjustment thereof facilitates the operation of the device as dirt cannot get into the bearings. The depending boss of the chamber head with the free movable post or strut extending from the bottom thereof up to the pivot block, permits the thrust of the chamber to be transmitted to the lever without any possibility of binding in the connections as there are no pivot joints or like means to clog. The

length of the strut that is permissible because of this arrangement lessens the degree of angular movement between the pivot block, chamber head and strut, and this in turn lessens the liability to bind or clamp in any way.

Obviously, changes in the details of construction may be made without departing from the spirit of my invention and I do not care to limit myself to any particular form or arrangement of parts.

What I claim is:—

1. In a fluid pressure operated damper regulator, a casing having an inlet in the fixed base thereof, an expansible chamber in the casing having an inlet coincident with the casing inlet and resting at the lower end on the casing base, an oscillatory damper operating member adjustably pivoted on the upper end of the casing, and a strut loosely stepped at the upper end in a recess of the damper operating member at a point not coincident with the fulcrum bearing thereof and at the lower end in a recess the head of the collapsible chamber.

2. In a fluid operated damper regulator, a longitudinally expansible chamber having a closed upper head with deep bearing boss therein, an adjustably fulcrumed damper operating member pivoted above the expansible chamber, and a strut interposed between the damper operating member and the head of the expansible chamber and loosely mounted in the deeply recessed boss of said head.

3. A damper regulator comprising a collapsible chamber having a deeply recessed boss in the upper closed head thereof, a valve operating member mounted to oscillate above the head of the chamber, and a strut loosely seated in the recessed boss with the upper end portion bearing against the damper regulating member.

4. In a fluid pressure operated damper regulator, a longitudinally expansible chamber, a head therefor having a deeply recessed boss extending well into the chamber, a strut loosely seated in the boss with the lower end thereof in rocking contact with the end face of the boss recess, a pivot block oscillatory above the chamber having a recess in its lower face against which the upper end portion of the stud bears, and a damper operating member adjustably mounted on the pivot block.

5. A fluid pressure operated damper regulator comprising a casing having an inlet through the lower end wall thereof a longitudinally expansible chamber having the lower end wall thereof mounted on the base of the casing with an inlet opening therethrough in conjunction with a corresponding opening in the casing base, a head for the collapsible chamber having a boss extending above and below the head with a deep axial recess therein, a pivot block oscillatory on the head of the casing, a strut extending loosely into the recess boss with the upper end portion bearing against a recess in the lower face of the pivot block, and a damper operating member adjustably mounted in the pivot block.

6. A damper regulator comprising a casing having a base with an inlet nipple and opening therein, a longitudinally expansible chamber having a deeply corrugated side wall, the lower fold of which has a central opening and flange around the opening secured in the casing base inlet opening for supporting the chamber in the casing, a head on the chamber having a deeply recessed boss extending above and below the head and moving freely in a guide opening through the head of the casing, an oscillatory bearing block fulcrumed on the casing, a damper operating member adjustably mounted in the block, and a strut loosely seated in the deep recess of the chamber head boss with the upper end contacting with the lower face of the pivot block.

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

JOSEPH P. LAVIGNE.

Witnesses:

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