

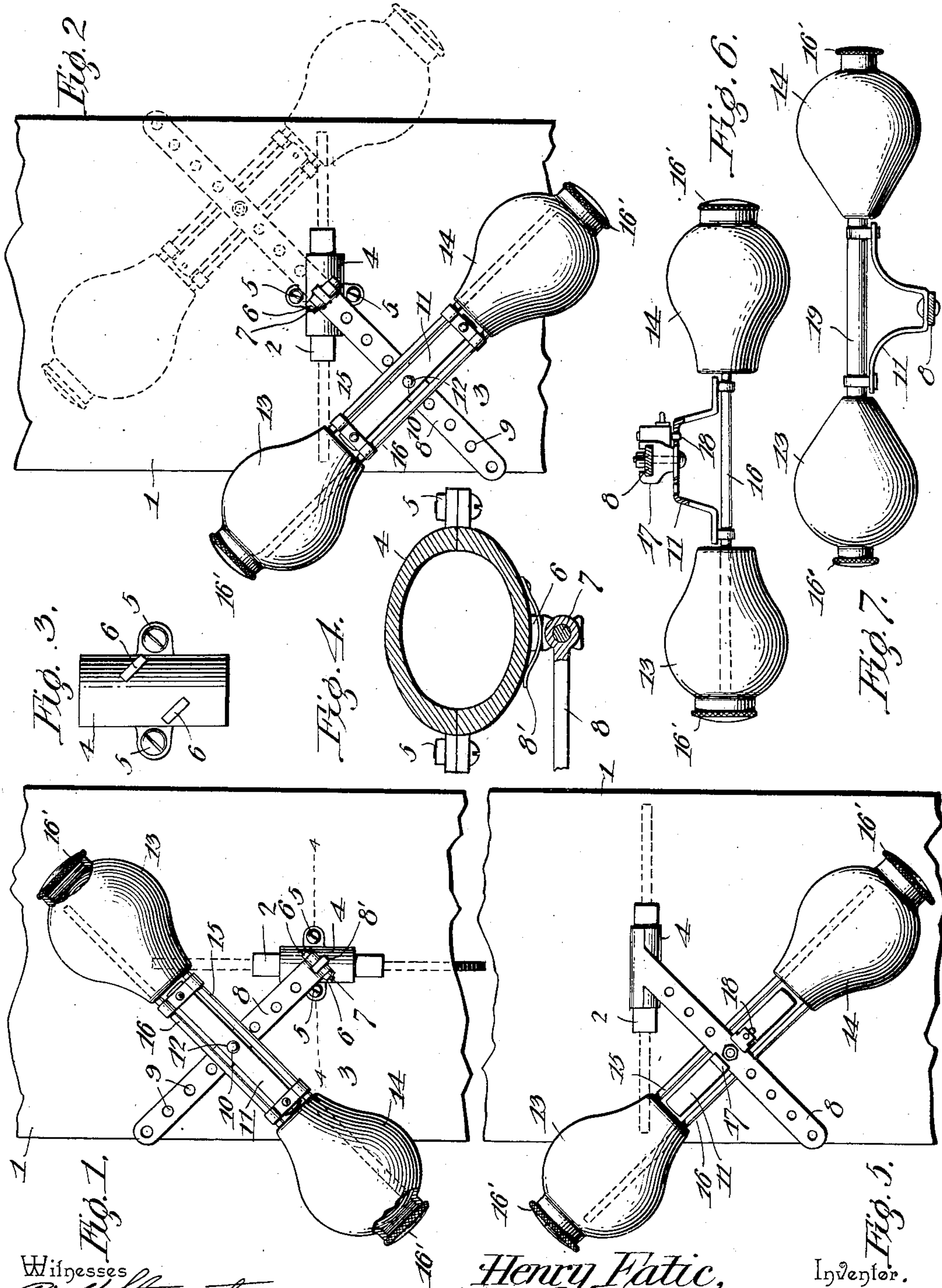
No. 734,052.

PATENTED JULY 21, 1903.

H. FATIC.
AUTOMATIC DAMPER REGULATOR.

APPLICATION FILED MAR. 9, 1903.

NO MODEL



Witnesses
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HENRY FATIC, OF MIDDLETOWN, INDIANA.

AUTOMATIC DAMPER-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 734,052, dated July 21, 1903.

Application filed March 9, 1903. Serial No. 146,919. (No model.)

To all whom it may concern:

Be it known that I, HENRY FATIC, a citizen of the United States, residing at Middletown, in the county of Henry and State of Indiana, have invented a new and useful Automatic Damper-Regulator, of which the following is a specification.

This invention relates to certain improvements in damper-operating devices adapted for use in connection with stoves, furnaces, and other heating apparatus, and has for its object to provide a simple, inexpensive, and efficient device of this character which will automatically open or close a damper or similar draft-regulating device.

A further object of the invention is to provide a damper-operating device in which an oscillating arm provided at each end with a receptacle or reservoir containing liquid, sand, or similar material which will freely flow by gravity is adjustably mounted on a swinging bar, which is in turn pivotally connected to the damper of the stove, the liquid-containing receptacles communicating with each other by means of one or more pipes, so that when the oscillating arm is overbalanced by reason of the liquid flowing from the upper to the lower receptacle it will automatically turn the damper and cut off the draft-supply.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

In the drawings, Figure 1 is a side elevation of a damper-operating device constructed in accordance with my invention, showing the damper open. Fig. 2 is a similar view showing the damper closed and illustrating in dotted lines the position of the liquid-containing vessels after the same have been thrown upwardly preparatory to returning the vessels to their normal position. Fig. 3 is a side elevation of the sleeve or collar. Fig. 4 is a longitudinal sectional view taken on the line 4 4 of Fig. 1. Fig. 5 is a side elevation of a modified form of regulator. Fig. 6 is a front

elevation, partly in section, of the form of regulator shown in Fig. 5; and Fig. 7 is a front elevation of a further modification.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a section of stovepipe, 2 the damper-handle, and 3 my improved operating device, which is supported by a sleeve or collar 4, fitting over the handle 2 and securely clamped thereto by means of bolts and nuts 5. The collar or sleeve 4 is provided with a pair of diagonally-disposed ears or lugs 6, between which is pivoted in any suitable manner, as by a pin 7, the lower end of a diagonally-disposed arm or bar 8, forming a hinged connection between the arm and the sleeve and permitting said arm to be swung upwardly when it is desired to reset the regulator, as will be more fully explained hereinafter. Between the pivot-ears is placed a small spring 8' to engage against the side of the bar 8 and assist in holding the bar in adjusted position. The bar 8 is provided with a series of openings 9, and adjustably secured to said bar, by means of a bolt, screw, or similar fastening device 10, is an arm 11, the bolt 10 passing through one of the openings 9 and through an opening 12 in arm 11, and by means of which said arm is adjusted to regulate the throw of the damper. Secured to the opposite ends of the bar are substantially pear-shaped reservoirs or vessels 13 and 14, adapted to contain water or other fluid or sand or equivalent material which will flow by gravity, and communicating with the interior of said vessels are two hollow tubes or pipes 15 and 16, through which the water flows from one vessel to the other, according to the position of the arm 11. The lower pipe 15 is threaded or otherwise secured in the front end of the vessel 13, the opposite end of said pipe passing through the front wall of the vessel 14, terminating at a point adjacent the rear wall thereof, the upper pipe 16 being threaded in the front wall of the vessel 14, its opposite end passing through the front wall of the vessel 13 and terminating at a point adjacent the rear wall of said vessel. When the arm 11, carrying the liquid-containing vessel, is in the position shown in Fig. 1 of the drawings, the fluid will flow from the upper ves-

sel through the pipe 15 into the lower vessel, the air in said lower vessel passing through the pipe 16 into the upper vessel.

The vessels 13 and 14 are each provided with removable caps or plugs 16', through which the water or other fluid is introduced, and the plugs are preferably located opposite the extended ends of the pipes 15 and 16, so as to permit said pipes to be readily cleaned.

The construction of my device will be readily understood, and the operation thereof is as follows: The collar 4 is first clamped in position on the damper-handle and the arm 11, carrying the vessels, adjusted by passing the bolt through any one of the series of openings in the bar 8, according to the time at which the damper is to be closed. Water or other fluid is then introduced through the plug 16' into the vessel 13 and the cap screwed to its seat. The water will now flow through the pipe 15 into the lower vessel 14, the air in said vessel passing through the pipe 16 into the upper vessel, and when sufficient water has been deposited in the lower vessel it will overbalance the arm 8, causing said arm and the vessels to drop to a position (shown in Fig. 2 of the drawings) closing the damper and cutting off the draft. When it is desired to reset the regulator, the arm 8 is swung upwardly on its hinge to the position shown by dotted lines in Fig. 2, and by turning the damper so as to admit the draft to the fire-box said regulator will be swung to its first position, (shown in Fig. 1,) with the filled vessel uppermost, being now ready for another cycle of operation.

In Fig. 5 I have shown a slightly-different manner of resetting the regulator after the same has automatically shut off the supply of draft. In this case the end of the arm 8 is bent to form the collar or sleeve which fits over the damper-handle, the arm 11 being carried by a small slide or clamp 17, mounted on the bar 8, so as to permit the vessels being reversed to bring the filled vessel uppermost, and a catch 18 being provided to lock the parts in the desired position.

In Fig. 7 I have shown a still further modification embodying the same principle, in which the vessels are filled with sand or similar finely-divided material and connected by a pipe 19, which permits the sand to flow from one vessel to the other.

Having thus described the invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a damper, a bar pivotally connected to the damper, an arm carrying a pair of vessels adapted to contain a fluent material adjustably secured to the bar, and means for directing the flow of material from one vessel to the other to overbal-

ance the bar and close the damper, said bar being adjustable to normal position when the valve is open.

2. The combination with a damper, of a sleeve or collar secured to the damper, a bar or lever pivotally secured to the sleeve, an arm adjustably connected to the bar, a pair of vessels adapted to contain a fluent material carried by the bar and means for directing the flow of material from one vessel to the other to overbalance the bar and move the damper.

3. The combination with a damper, of a bar connected to the damper, an arm secured to the bar and carrying a pair of vessels adapted to contain a fluent material, and a plurality of tubes between the vessels, one for the flow of the fluent material, and the other for the escape of air.

4. The combination with a damper, of a bar pivotally connected to the damper, an arm adjustably secured to the bar and carrying a pair of vessels adapted to contain a fluent material, and a pair of pipes or tubes connecting said vessels, one of said pipes being adapted to direct the flow of fluent material from one vessel to the other and the other pipe to permit the escape of air.

5. The combination with a damper, of a bar pivotally secured to the damper, an arm adjustably connected to the bar, a pair of vessels adapted to contain a fluent material carried by the arm, pipes or tubes connecting said vessels and extending in opposite directions from the front wall of one vessel to a point adjacent the rear wall of the other, one of said pipes being adapted to direct the flow of material from one vessel to the other so as to overbalance the bar and turn the damper and the other pipe to permit the passage of air in the reverse direction.

6. The combination with a damper of a sleeve or collar provided with outwardly-extending diagonally-disposed ears or lugs, a bar provided with a series of openings pivoted between the ears or lugs, an arm secured to said bar, a bolt passing through said arm and one of the openings in the bar, vessels adapted to contain a fluent material carried by the arm, pipes or tubes connecting said vessels and forming a source of communication between the same, said pipes extending in opposite directions from the front wall of one vessel to a point adjacent the rear wall of the other.

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

HENRY FATIC.

Witnesses:

VIVIAN FATIC,
PAUL FATIC.