No. 681,971. Patented Sept. 3, 1901.

R. A. PENROSE.

TIME DAMPER REGULATOR.

(Application filed Nov. 20, 1900.)

(No Model.)

Fig. 1.

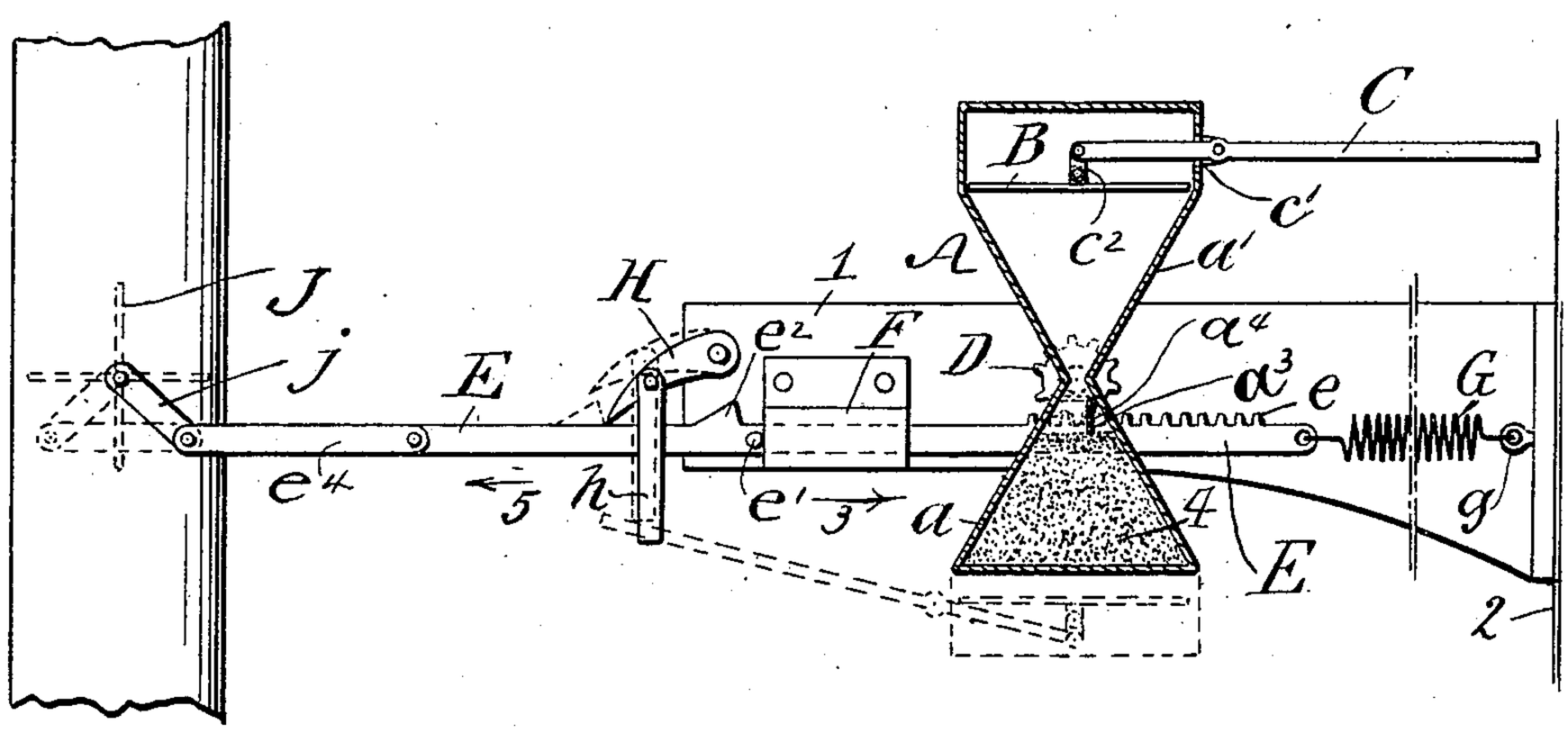
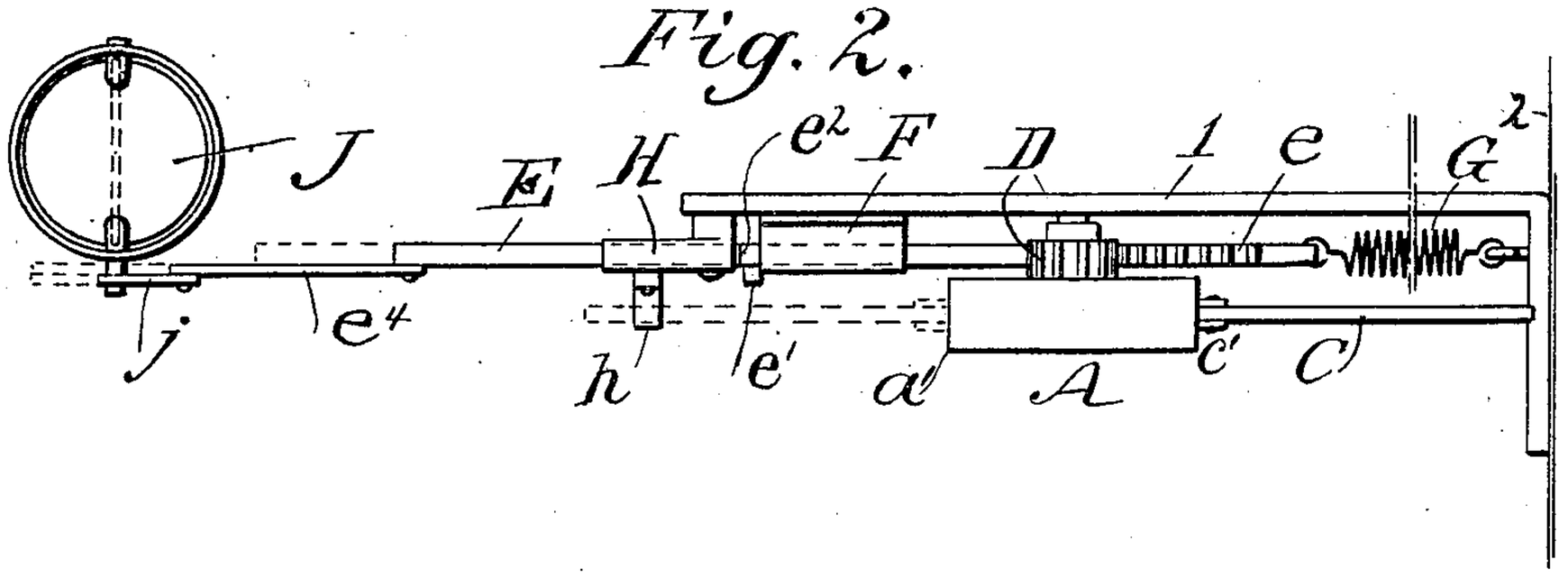


Fig. 2.



WITNESSES

Belle Paterson.

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INVENTOR

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ATTY'S

UNITED STATES PATENT OFFICE.

RICHARD A. PENROSE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-TENTH TO DANIEL LOONEY, OF SAME PLACE.

TIME DAMPER-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 681,971, dated September 3, 1901.

Application filed November 20, 1900. Serial No. 37,103. (No model.)

To all whom it may concern:

Be it known that I, RICHARD A. PENROSE, a citizen of the United States, and a resident of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Stove-Damper Regulators, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar characters of reference indicate corresponding parts.

This invention relates to an improved stove-damper regulator, the object thereof being to supply an efficient means for automatically closing the damper within a predetermined period of time.

The device is simple in construction, durable and inexpensive, and it is adaptable for use in connection with any style of stove-damper.

The invention will be hereinafter fully described, and specifically set forth in the annexed claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a longitudinal elevation of my improved damper-regulator, showing a part thereof in sectional elevation; and Fig. 2 is a plan view.

In the practice of my invention I employ, primarily a receptacle A, which embodies the two hoppers *a* and *a'*, which communicate with each other at their discharge or outlet ends, whereby they may alternately contain sand, as will be hereinafter described. Extended from the hopper *a'* is a compartment a^2, and within this said compartment is a plate B, which is balanced by means of a lever C, whereby it can move vertically within the said compartment a^2. The lever C is fulcrumed at *c* by means of the lugs *c'*, and it is connected at its inner end to the plate B by means of the short arm c^2, thus allowing the said plate B to move freely within the compartment a^2. The receptacle A is pivotally mounted upon a bracket 1, which may be secured to the wall adjacent to the stove-damper, as 2. As a means for turning the receptacle A, whereby its two hoppers may be alternately inverted, I employ a pinion D, which is secured to the receptacle A, and a rack *e*, forming part of a sliding rod E, which moves horizontally within a box or bearing F, connected to the bracket 1. This rod E is maintained in its normal position, as shown by full lines in the drawings, by means of a spiral spring G, which connects with an eye *g* on the bracket 1, and movement of said rod in the direction of the arrow 3, Fig. 1, of the drawings is limited by means of the stop *e'*, whereby the receptacle A is normally maintained in an upright position. Formed on the upper surface of the rod E is a tooth e^2, which engages a pawl H, when the rod is moved into position illustrated by dotted lines of the drawings, whereby the receptacle A can be maintained in an inverted position, which is also illustrated by dotted lines. Depending from the pawl H is an arm *h*, adapted to engage the free end of the lever C, whereby said lever may move the pawl H out of contact with the tooth e^2, as will be hereinafter described. The rod E is provided with a handle for moving it, and it is connected with the crank *j* of a damper J by means of the short arm e^4.

In the drawings I have illustrated my invention in connection with the revoluble damper of a stovepipe; but it is obvious that it may be used in connection with a sliding or any other style of stove-damper.

In the operation and use of the invention the receptacle A is supplied with sand 4 of a sufficient quantity to approximately fill the hopper *a*, and said sand is normally contained within said hopper when the device is in position illustrated by full lines in the drawings, the damper being closed. When it is desired to open the damper, the rod E is moved in the direction of the arrow 5 until the pawl H engages the tooth e^2, which operation inverts the receptacle A, bringing the hopper *a* on top, thus permitting the sand to drop slowly within the hopper *a'* and upon the plate B, which plate is so balanced that when the entire quantity of sand is contained thereon the weight will tilt the lever C and release the pawl, when the spring G will carry the rod E back to its normal position. Then the sand will be gradually discharged into the hopper *a* to place the device in condition ready to repeat the operation.

In order to control the sand as it is dis-

charged from one hopper to the other, a swinging gate a^3 is mounted within the hopper a. This gate swings open by gravity to allow the sand to freely and quickly empty into the hopper a, and said gate closes by gravity when the device is in position to empty sand into the hopper a'. The sand then discharges slowly through the small opening a^4 in the gate a^3.

I do not confine myself to the specific details of mere mechanical construction as herein shown and described, as it is obvious that I am entitled to slight structural variations.

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

1. As a device for automatically opening a stove-damper, the combination with a pivoted receptacle embodying two hoppers emptying into each other, sand therein and a pinion thereon, and a balanced plate within an extension of one of said compartments and a lever attached to said plate, with a sliding spring-actuated rod having a rack thereon engaging the said pinion, and a ratchet-and-pawl mechanism for holding the rod against the action of its spring, and means connecting said rod with a stove-damper, substantially as shown and described.

2. As a stove-damper regulator, the combination of the pivoted receptacle embodying the two hoppers, the pinion on said receptacle, sand within said receptacle, a plate in one of the said hoppers and the lever connected with said plate, with the sliding rod, the rack thereon for turning the said receptacle, the tooth on said rod and the pawl for engagement therewith and the depending arm of said pawl, and the spring for operating the said rod, substantially as shown and described.

3. As a device for automatically opening a stove-damper, the combination with a pivoted receptacle embodying two hoppers emptying into each other, sand therein and a pinion thereon, and a balanced plate within an extension of one of said compartments and a lever attached to said plate, and a swinging gate within one of said hoppers; with a sliding spring-actuated rod having a rack thereon engaging the said pinion, and a ratchet-and-pawl mechanism for holding the rod against the action of its spring, and means connecting said rod with a stove-damper, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 9th day of November, 1900.

RICHARD A. PENROSE.

Witnesses:

JOHN MANSFEILD,

JOHN PENROSE, Jr.