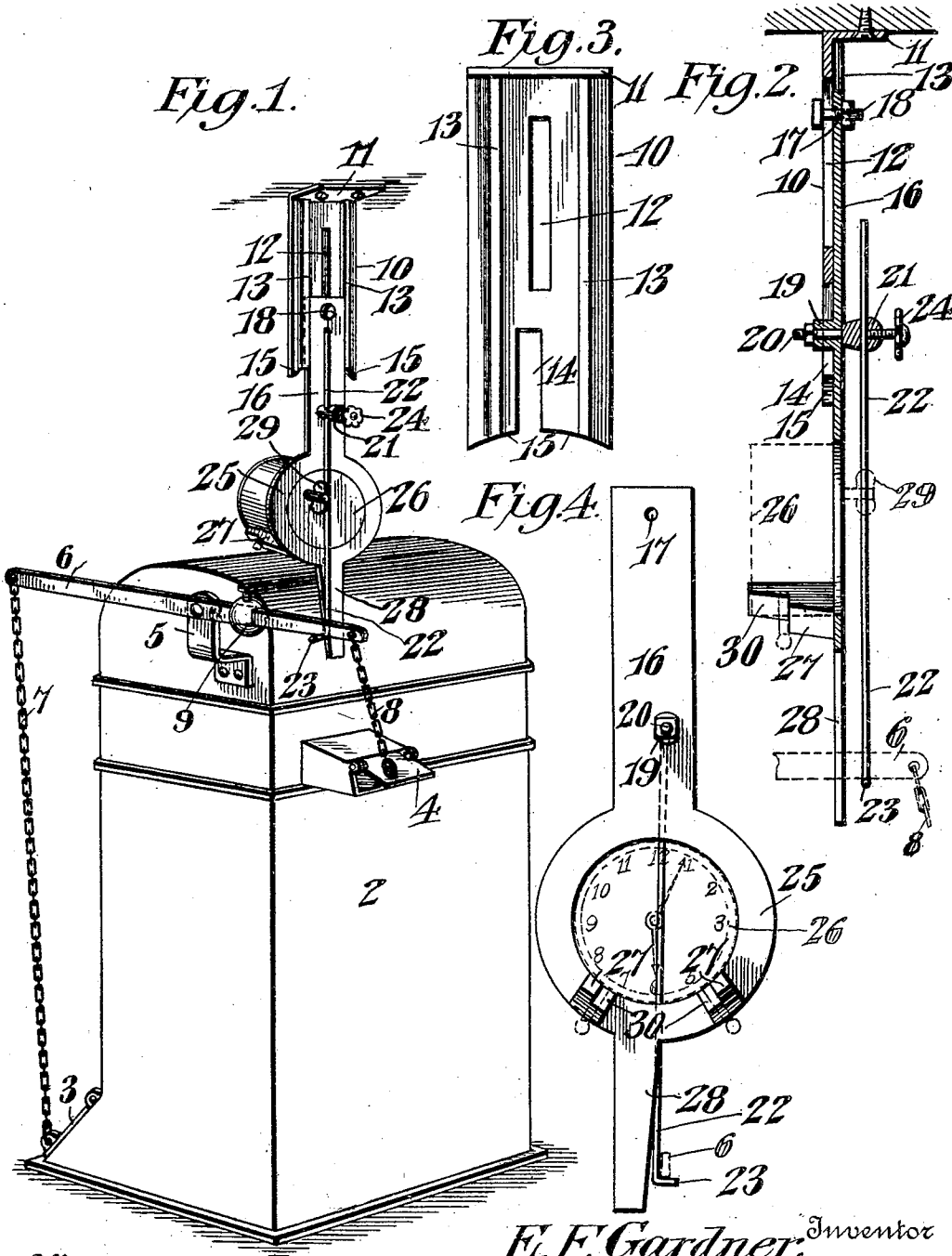


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 TIME CONTROLLED DAMPER ACTUATING MECHANISM.
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979,148.

Patented Dec. 20, 1910.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD FRANKLIN GARDNER, OF SCRANTON, PENNSYLVANIA.

TIME-CONTROLLED DAMPER-ACTUATING MECHANISM.

979,148.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWARD FRANKLIN GARDNER, a citizen of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented a new and useful Time-Controlled Damper-Actuating Mechanism, of which the following is a specification.

My invention relates to mechanism for automatically operating the dampers of stoves or furnaces, and particularly to a time-controlled mechanism which, upon the actuation of a clock alarm, will fall, opening one damper and closing another.

My invention consists in a construction for this purpose of extreme simplicity, which is adapted to support any ordinary alarm clock adjacent to the operative portion of my apparatus, and which is adjustable so that it may be adapted to various makes of furnaces or stoves and to varying distances between the support for the mechanism and the stove or furnace.

The invention also consists in the details of construction and arrangement of parts as described in the following specification and specifically set forth in the appended claims.

In the drawings, Figure 1 is a perspective view of a stove or furnace, with my attachment applied thereto; Fig. 2 is a longitudinal section of the clock-supporting frame, the clock, however, being detached; Fig. 3 is a face view of the uppermost supporting plate; Fig. 4 is a face view of the clock-supporting member.

In the drawings, 2 denotes a furnace or stove of any ordinary construction having the ash door or draft door, 3, located as usual below the fire-box or grate of the furnace; and 4 denotes a door or damper opening for the space above the fire-box or grate.

It is to be understood that I do not wish to limit myself to the exact construction set forth, or furnace shown, or to the peculiar construction or location of these draft or damper doors. The damper 4 might be located within the smoke flue of the furnace if desired, without in any way departing from my invention, which has not to do with the peculiar construction of the furnace, but with the attachment whereby the opposed dampers or draft doors are opened and closed.

5 designates a bracket or arm attached to

any convenient portion of the furnace structure and having pivoted thereon the lever 6, which, at one end, is connected by a chain or other flexible connection, 7, to the draft door, 3. The other end of the lever is connected to the draft door 4 by a flexible connection 8. An adjustable weight 9 is mounted on the end of the lever between the connection 8 and the pivotal support of the lever 6, so that the free and unimpeded action of the weight will act to depress one end of the lever 6, lifting the other end, drawing upon the flexible connection 7 and raising the door 3. Thus, under normal circumstances, the door 3, will be held open by the weight-lever 6, while the door 4 will be ordinarily closed of its own weight.

10 denotes a supporting plate having a projecting flange 11, at its upper end formed with screw holes or other means whereby the plate 10 may be attached to the ceiling or to any other supporting framework adjacent to the furnace. The plate at its upper end is provided with a slot 12, longitudinally extending, and on both sides of the plate on its inner face there is provided the guide, 13, the lower end of the plate being also slotted as at 14, the slot extending upward from the extreme lower edge of the plate. The lower edge of the plate is concavely curved as at 15.

16 denotes a shiftable clock-carrying member, preferably formed of an integral piece of metal, the upper end of the member being in the form of a longitudinally extended plate adapted to fit between the ribs, 1, and having at its upper end an opening 17, through which a bolt 18 may be passed. This bolt 18 passes also through the slot 12 and acts to clamp the member 16 to the plate 10, as shown in Fig. 2. Projecting from the inside face of the member 16 is the stud 19, which passes through the slot 14 in certain positions of adjustment of the plate 16, as shown in Fig. 2, wherein the plate 16 is raised to a higher position than that shown in Fig. 1. This stud is bored for the passage of a bolt 20, the outer end of this bolt being formed with a head 21 for the reception of a rod 22 which at its lower end is bent laterally as at 23 for engagement with the end of the lever 6. The bolt 20 has a pivotal movement in the stud 19 so that the rod 22 is supported in a freely swinging relation to the member 16. The rod is adjustably held within the opening

of the head 21 by means of the set screw 24 so that the rod may be adjusted up or down to any degree required. The middle portion of the member 16 is formed with the annular enlargement 25 of sufficient internal diameter to receive the rear end of an alarm clock, 26, of any ordinary construction, the body of the alarm clock being supported on outstanding lugs, 27, formed on the inner face of the ring 25. As shown in Fig. 1, these studs project outwardly and form brackets whose inner faces are curved to conform to the curve of the circumference of an alarm clock and support the same in position.

An extension 28 depends below the ring portion 25 of the member 16, and the clock supporting member is so arranged relatively to the lever 6 that this depending portion 28 acts as a guide for the end of the lever 6. The alarm clock, is, of course, to be provided with the usual alarm winding key, 29, whose wings when the clock is in position within the ring 25, are adjacent to the rod 22, these wings being under ordinary circumstances parallel with the rod 22.

The operation of my invention is obvious from this description.

The alarm is set in the ordinary manner to be actuated at any predetermined time. Upon the actuation of the alarm in the manner well known, the key 29 will be rotated. Upon this rotation one wing of the key will engage with the pivoted rod 22 and will swing the same outward so that its lower bent end 23 will escape the end of the lever 6, whereupon the weight 9 will depress the end of the lever, closing the damper or door 4 and opening the draft door 3.

In order to set the device it is only necessary to lift the lever 6 to the position shown in Fig. 1 and to turn the rod 22 until its laterally bent end 23 engages beneath the lever, the rod being swung so far inward that it is nearly in contact with the key 29 of the clock, this key, of course, having been wound previously to the shifting of the latching rod 22.

It will be seen that the rod 22 forms a time-actuated latch which normally supports the lever 6 in one position, but which, when swung out of the way allows the weight to move the lever 6 to its other position.

The brackets 27 are recessed as at 30 for the reception of the spreading feet of the clock, so that the clock is held firmly in place against rotation when the key is wound.

My device is extremely simple, compact and cheap of construction. There is no danger of its being accidentally operated, and it is quickly and easily adjusted.

While I have shown what I believe to be a preferable construction, I do not wish to be

limited to the exact details, as it is obvious that many changes might be made without departing from the essence of the invention.

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

1. The combination with a furnace including a draft door, and means for opening and closing the same, of a controlling mechanism for the said means comprising a support, a clock mounted on the support and including a winding key, a member releasably engaging the said means and arranged to be released by the said winding key, a bearing piece pivotally mounted on the support and having an aperture through which the said member extends for longitudinal adjustment, and a clamping device on the bearing piece for engaging the member for holding the same against longitudinal movement while permitting the member to swing on the bearing piece as a center.

2. A time-controlled draft regulator comprising a fixed bracket member, a clock-supporting member overlapping the first member, there being a slot in one of the members, a bolt on the other member passing through the slot for clamping the members together, guiding means on one of the members engaging the other to provide for relative longitudinal movement and for preventing the clock-supporting member from moving laterally on the bolt as a pivot, a clock mounted on the second member and provided with a winding key, a swinging damper-engaging element extending across the rear of the clock to be engaged by the said winding key, and means for pivoting the damper-engaging element to swing in a plane parallel with the rear of the clock to be released from the damper by the turning of the key.

3. A time controlled draft regulator comprising a fixed bracket member in the form of a vertical frame having parallel ribs, a clock-supporting member having its upper portion disposed flat against the bracket member and slidably engaged between the said ribs, one of the members having a slot, a fastening on the other member passing through the slot for adjustably connecting the members together, said supporting member having a ring, a clock disposed in the ring and provided with a winding key, a pivoted device secured to the second member at a point between its upper end and the ring and having an opening extending transversely to the pivot of the device, a damper-holding element slidable in the opening in the device and extending across the ring in proximity to the winding key of the clock to be actuated by the key, and means on the device for clamping the element in different positions of adjustment therein.

4. In a mechanism of the class described,

the combination with a furnace and opposed draft doors, of a lever pivotally mounted on the furnace and weighted at one end, connections between the opposite ends of the lever and the opposed draft doors whereby when one is closed, the other shall be opened, a longitudinally slotted supporting plate having opposed parallel ribs, a supporting member whose upper end is received between said ribs and having a bolt passing into the slot of the supporting plate, an annular portion formed in said member adapted to receive the rear end of a clock, brackets on the member for supporting said clock, a pivotally mounted head projecting from the face of the supporting member, a latch-

ing rod adjustably secured in said head and having a bent end portion adapted to engage beneath and support one end of the weighted lever, and a clock carried in the annular portion of the supporting member and having a winding key operable at any predetermined time, said winding key adapted in its rotation to engage with the latching rod to force it out of engagement with the lever.

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

EDWARD FRANKLIN GARDNER.

Witnesses:

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ROB. P. KOEHLER.