

O. K. LANDIS.
DAMPER CONTROLLING AND OPERATING MECHANISM.
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1,006,487.

Patented Oct. 24, 1911.

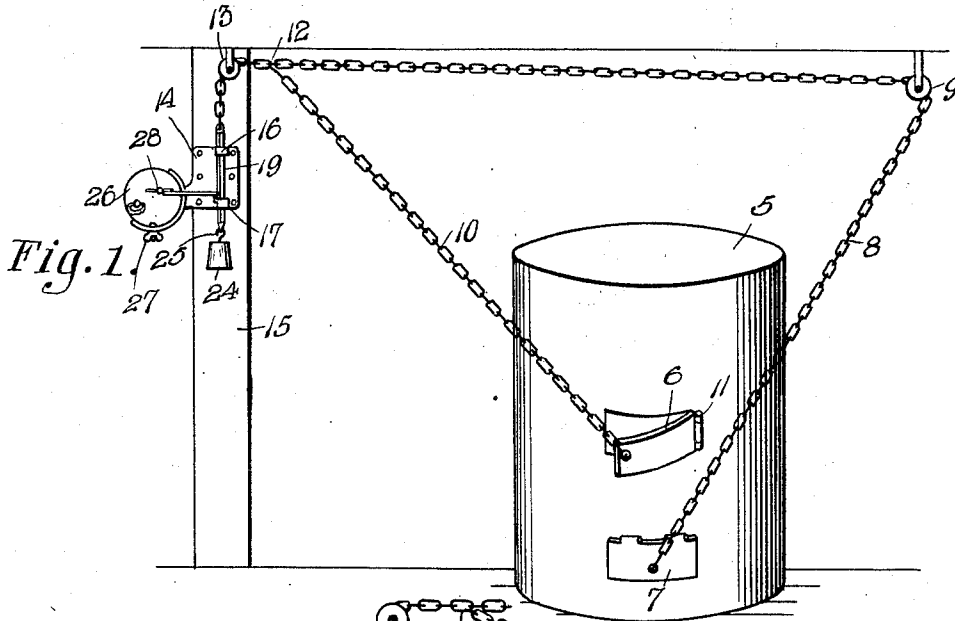


Fig. 2.

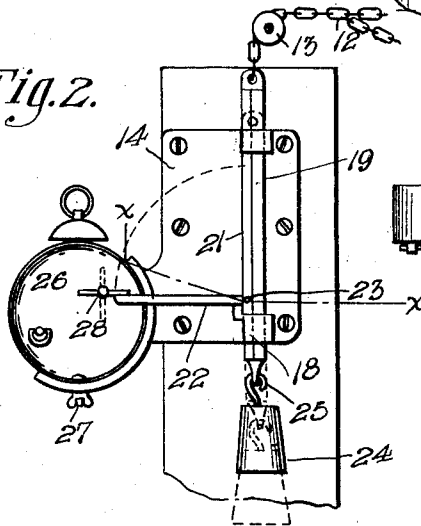


Fig. 3.

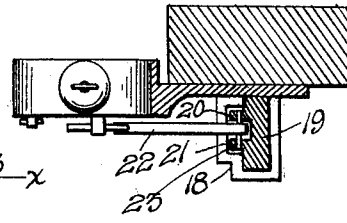
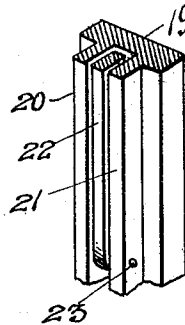


Fig. 4.



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DAMPER CONTROLLING AND OPERATING MECHANISM.

1,006,487.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, OMAR K. LANDIS, a citizen of the United States of America, and resident of Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Damper Controlling and Operating Mechanism, of which the following is a specification.

This invention relates to damper controlling and operating mechanism and it has for its objects as follows: First, to provide novel means for permitting the doors of a furnace to remain in such a position as to minimize draft through the fire, novel means being also provided for actuating the doors in order to cause one of the said doors to close and the other of the said doors to open, thereby augmenting or increasing the draft at a predetermined time. Second, an object of this invention is to provide novel means controlled by a clock or other timing mechanism and released thereby at a predetermined time and for actuating the draft or other doors of a furnace or the like whereby the position of the said doors may be shifted to change the draft thereby enabling the use of the apparatus for creating a draft or for diminishing the same according to the arrangement of the operating connections.

With the foregoing and other objects in view, the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings forming part of this specification wherein like characters denote corresponding parts in the several views, and in which—

Figure 1 illustrates a view in elevation of the operating mechanism applied to a portion of a furnace shown in perspective; Fig. 2 illustrates an enlarged detail view of the controlling apparatus for actuating the parts; Fig. 3 illustrates a sectional view on the line 3—3 of Fig. 2; and Fig. 4 illustrates a perspective view of a fragment of a sliding member associated with the clock controlled mechanism.

In these drawings I have shown a furnace casing 5 having a fuel door 6 and a draft door 7, the latter of which has a flexi-

ble connection 8 extending over the guide pulley 9 and the former of which has a flexible connection 10 attached to it for the purpose of swinging it on its hinge 11. The flexible connections 8 and 10 form a junction at the point 12 and extend over a guide pulley 13. A bracket 14 is attached to a post 15 or other suitable supporting device, the said bracket having guides 16 and 17 integral therewith.

A slidable member 19 is mounted in the guides 16 and 17 and is free to move vertically therein, the said member 19 having ribs 20 and 21 separated to form a space for the latch bar 22 which is mounted on a pivotal pin 23 held by the ribs. The latch bar 22 is free to swing into parallel relation with the ribs 20 and 21 so that it will be inside of the plane of the edges of the ribs. The lower guide 17 acts as a support for the latch bar 22 when the said latch is set to be released by the timing mechanism (to be presently explained) and longitudinal movement of the slidable member 19 is prevented so long as the latch bar is held against movement by the said timing mechanism. The slidable member 19 has a weight 24 suspended from its lower end by the hook 25 and the said weight is intended to draw the slidable member downward when the latch bar is released thereby communicating motion to the flexible connections 8 and 10 and swinging the doors 6 and 7 in opposite directions, that is to say closing the door 6 and opening the door 7. The weight of the sliding member 19 is so proportioned in relation to the average work it has to do in closing and opening furnace doors, that in many cases the extra weight 27 is not required, but to meet the varying conditions of all styles and weights of furnace doors, said weight is adapted to operative connection to said sliding member 19 substantially as shown. As stated heretofore, it is the purpose of the inventor to effect this operation at a predetermined time as for instance in the morning to create a draft for the purpose of starting the fire or for making more intense one that has already been made or started and to that end the bracket 14 is provided with a seat 26 to which an ordinary alarm clock is fastened by the thumb screw 27. The alarm clock 26 is here shown as having a swinging

key 28 which is designed to rotate while the alarm is sounding and which in clocks now ordinarily sold remain stationary after the winding operation has been effected and until the release of the alarm mechanism. It is my purpose, therefore, to employ the winding key 28 as a detent or hold for the latch bar 22 for by holding the latch bar against movement on its pivotal pin and in engagement with the shoulder 18 which is formed on the lower guide 17, movement of the slidable member is prevented and movement of the slidable member can only take place upon release of the latch bar.

It follows from the foregoing description that upon the alarm mechanism being released the key 28 will turn to disengage the latch bar and permit it to swing to the ordinary position shown in Fig. 4 thereby releasing the slidable member 19 and permitting its movement under the influence of the weight 24 and communicating to the flexible members 8 and 10 motion sufficient to cause the actuation of the doors 6 and 7 for the purposes heretofore described.

I claim—

In combination with a furnace and the doors thereof, means for operating the doors, said means comprising a bracket, an integral arm projecting from said bracket, said arm adapted to support a clock provided with a winding key, integral guides projecting from said bracket, a slidable member slidably mounted within said brackets, flexible members connecting the doors of a furnace with said slidable member, spaced integral ribs provided on said slidable member, a latch bar, said latch bar having one of its ends pivoted between said ribs, the free end of said latch bar adapted to engage the under side of the said winding key, and a weight fastened to one end of said slidable member.

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

OMAR K. LANDIS.

Witnesses:

CHAS. E. LONG,
C. H. FROST.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."