

J. J. CURRIE.
DRAFT REGULATOR FOR FURNACES.
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1,049,343.

Patented Jan. 7, 1913.

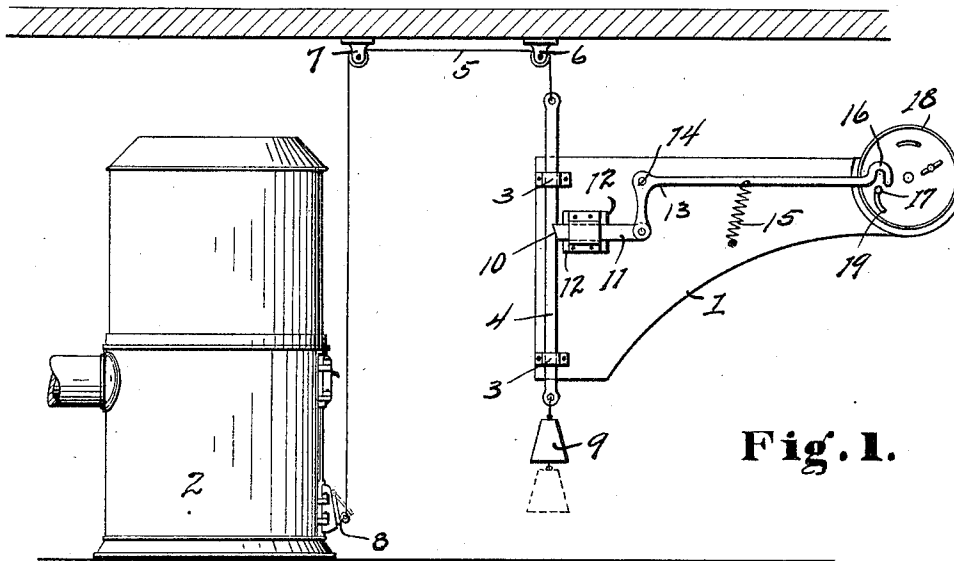


Fig. 1.

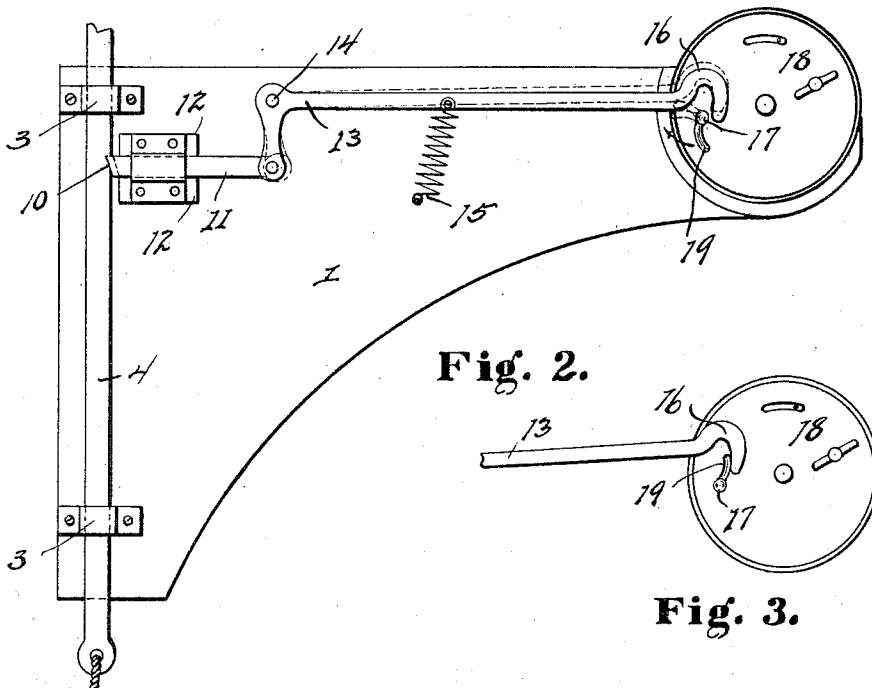


Fig. 2.

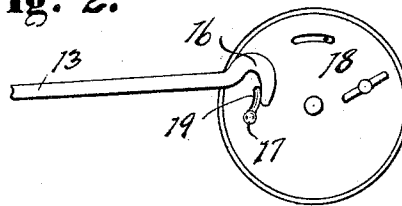


Fig. 3.

WITNESSES:

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DRAFT-REGULATOR FOR FURNACES.

1,049,343.

Specification of Letters Patent.

Patented Jan. 7, 1913.

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To all whom it may concern:

Be it known that I, JASPER J. CURRIE, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Draft-Regulators for Furnaces, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to draft regulators for furnaces or the like of that class in which a clock mechanism is connected with the draft or damper in such manner as to open the latter at a predetermined time and an object of the invention is a simple, efficient and inexpensive apparatus for the purpose stated in which an ordinary alarm clock mechanism may be utilized for the tripping or releasing of a weight carrying member connected by a cord or cable to the damper of a furnace in a manner to raise or open the damper when the said member is tripped and the weight allowed to fall.

The novelty of the invention is in the peculiar design and arrangement of the various parts whereby said object is accomplished as shown in the accompanying drawings in which—

Figure 1 is a general view of my improved device as applied to a furnace, the regulator mechanism being shown on a larger scale than the furnace. Fig. 2 is an enlarged elevation of the device. Fig. 3 is a detail showing the means employed for preventing the unwinding of the alarm mechanism after having tripped the weight lever.

Similar characters refer to similar parts throughout the drawings and specification.

The regulator consists of a base or plate 1 which may be attached in any convenient place near the furnace 2. Slidably mounted in brackets 3, 3 on the plate 1 is a bar or member 4, the upper end of which is connected by a cord 5 running through the pulleys 6 and 7 to the damper 8 of the furnace 2. Attached to the lower end of the bar 4 is a weight 9. The bar 4 is notched at 10 and with one end normally engaging in the

notch is a latch 11 slidably mounted on the plate 1 between the guide blocks 12, 12. The opposite end of the latch 11 is pivotally connected to the short arm of the trip lever 13 which is pivoted at 14 to the plate 1. A spring 15, in the normal position of the parts, retains the latch 11 in the notch in the bar 4. The lever has a comparatively long free end provided with a hook 16, the open part of which is vertically above the winding stem 17 of a clock 18. The stem is provided with a curved extension or wing 19, which, when the alarm is set, extends downwardly as shown in Figs. 1 and 2.

When the alarm mechanism of the clock is released at the predetermined interval in the manner well known with such devices, the stem 17 unwinds in the direction shown by the arrow in Fig. 2 and in unwinding the wing 19 attached to the stem contacts the long arm of the lever 13 which raises it, as indicated in dotted lines in the figure, withdrawing the latch 11 from the notch in the bar 4, thus allowing the bar to drop and open the damper of the furnace as indicated in dotted lines in Fig. 1. The wing 19 is made curved as shown in order that the initial strain of operating the lever 13 is transmitted to the alarm mechanism at a point as near the stem 17 as possible and accomplishing the desired result without the necessity of enlarging or otherwise altering the alarm mechanism. Should the initial contact of the wing with the lever be at the extreme end of the wing, greater power would be required to raise the lever, but with a curved wing as shown the action thereof is practically that of a cam and the strain of starting the lever and raising it to the required height is gradually thrown on to the mechanism thus obviating any sudden and excessive strain.

When released, the mechanism unwinds until the wing 19 engages in the hook 16, as shown in Fig. 3, which prevents further unwinding thereof and avoids the necessity of entirely re-winding the mechanism each time it is re-set. To re-set the mechanism, the lever 13 is raised to allow the wing 19 to be turned to the left to its original position shown in Fig. 2. The bar 4 is then raised until the latch 11 engages the notch 10 and the device is again ready to operate

at any desired time determined by the setting of the alarm mechanism of the clock in the usual well known manner.

The utility of the device is in the opening of the damper at an early hour in the morning and thus insuring warm rooms at the time of rising. The device may also be utilized in the operation of a check draft jointly with the described damper or in the opening of a hot air register in a particular room without departing from the spirit of this invention.

Having thus briefly described my invention and its mode of operation, what I claim as new and desire to secure by Letters Patent of the United States is—

1. The combination with an alarm clock having a rotatable winding stem for the alarm mechanism, of a pivoted, spring restrained, trip lever located above the winding stem and unsupported thereby, a notched weight carrying member, and a latch pivotally connected to the trip lever and normally engaging said notch; said trip lever being formed with a hook end so positioned relative to the winding stem as to engage an arm of said stem and prevent a rotation thereof subsequent to the actuation of the trip lever thereby.

2. The combination with an alarm clock having a rotatable winding stem for the alarm mechanism, of a pivoted, spring restrained, trip lever having a hook end located above the winding stem, said winding stem having an arm or lever on one side thereof, a notched, weight carrying member, a cord or the like connecting said member with the device to be operated, and a latch pivotally connected to the trip lever and normally engaging the notch in the weight carrying member; said hook end be-

ing so formed as to catch and hold the arm on the winding stem after the lever has been tripped.

3. The combination with an alarm clock having a rotatable winding stem for the alarm mechanism, of a pivoted, spring restrained, trip lever having a downwardly extending portion at the extreme end thereof, said winding stem having a curved arm or lever on one side thereof into the path of movement of which said downwardly extending portion projects, a notched, weight carrying member, a cord or the like connecting said member with the damper or like device, and a latch pivotally connected to the trip lever and normally engaging the notch in the weight carrying member whereby the tripping of said lever releases the weight carrying member.

4. The combination with an alarm clock having a rotatable winding stem for the alarm mechanism, of an extension or wing on one side of said stem, a pivoted, spring restrained, trip lever, the long arm of which is normally in the path of movement of said wing whereby the lever may be actuated, said lever having a projecting portion adapted to form a stop for said wing after the actuation of the lever, a latch connected with the short arm of the trip lever, a notched weight carrying member, said latch normally engaging said notch, and a cord or cable connecting the weight carrying member with the device to be operated.

In testimony whereof, I sign this specification in the presence of two witnesses.

JASPER J. CURRIE.

Witnesses:

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CHARLES E. WISNER.