(No Model.) 2 Sheets—Sheet 1.

W. A. J. BEAUCHAMP.

AUTOMATIC DAMPER.

No. 377,136. Patented Jan. 31, 1888.

Fig. 1.

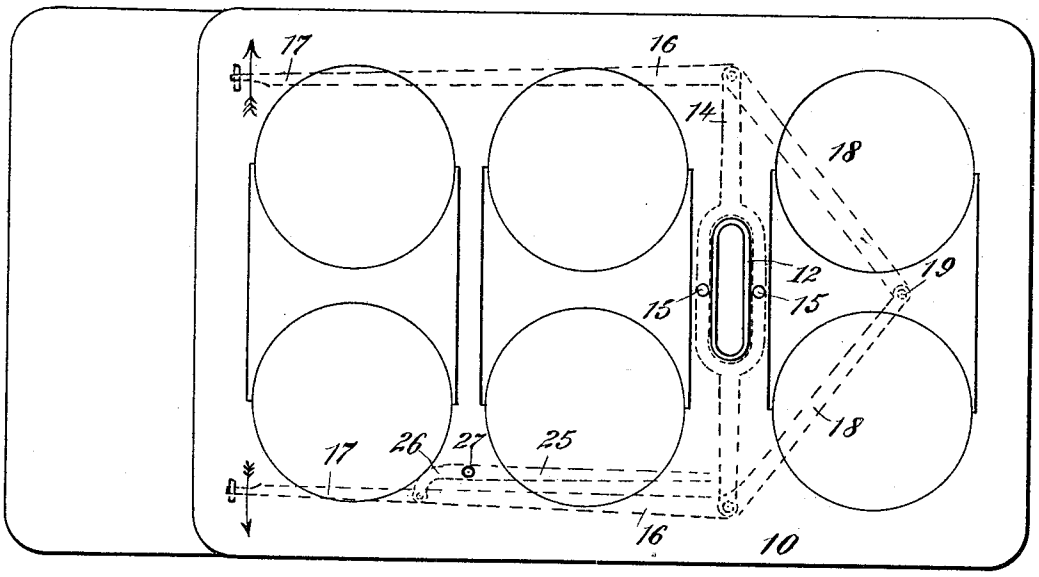


Fig. 2.

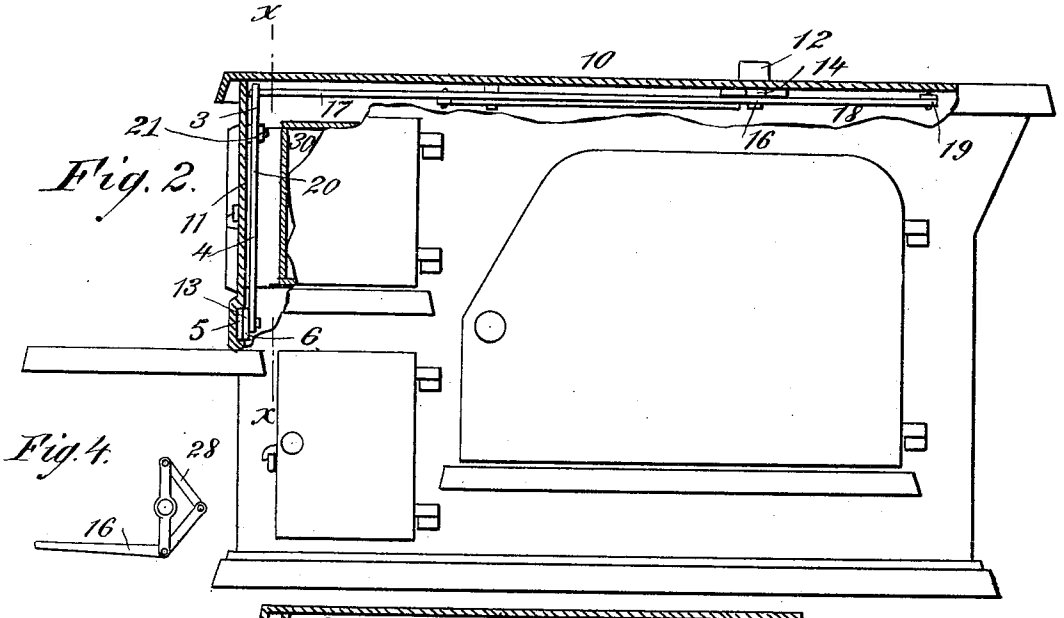
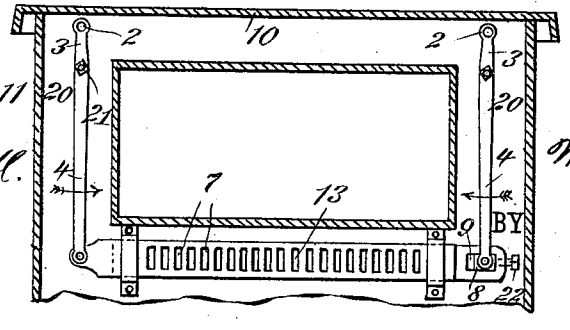


Fig. 4.

Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

W. A. J. BEAUCHAMP.

AUTOMATIC DAMPER.

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Fig. 5.

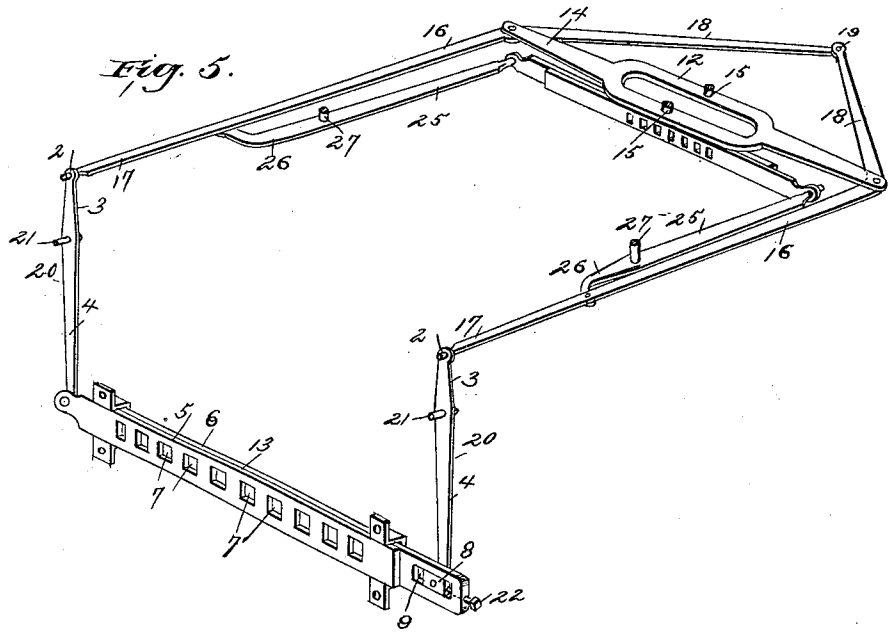
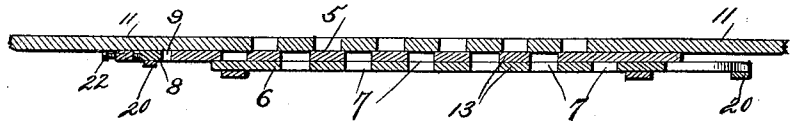


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM A. J. BEAUCHAMP, OF ORANGE, TEXAS.

AUTOMATIC DAMPER.

SPECIFICATION forming part of Letters Patent No. 377,136, dated January 31, 1888.

Application filed November 8, 1886. Serial No. 218,324. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. J. BEAUCHAMP, of Orange, in the county of Orange and State of Texas, have invented a new and Improved Automatic Damper, of which the following is a full, clear, and exact description.

This invention relates to the construction of a novel form of damper-operating mechanism, the object of the invention being to provide an attachment for stove-dampers whereby said dampers will be automatically moved, in order that the fire may be maintained at a predetermined heat—that is, may be maintained so that the heat generated shall be practically constant. This object I accomplish by means of an expansion-bar arranged in connection with the system or series of levers that are connected to the damper, as will be hereinafter explained, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of an ordinary form of cook-stove that is provided with my improved form of damper-regulating attachment, said attachment being shown in dotted lines. Fig. 2 is a side view of the stove, a portion of the side and front being broken away to disclose the arrangement of my damper-regulating attachment. Fig. 3 is a cross sectional elevation taken on line *x x* of Fig. 2. Fig. 4 is a view of a modified arrangement. Fig. 5 is a perspective view of my improvement, and Fig. 6 is a detail sectional view of the front plate of the stove and damper.

In the drawings above referred to, 10 represents the top plate, 11 the front plate, and 12 the pipe-curb, of an ordinary form of cook-stove, of which the damper, which is shown at 13, will be hereinafter more specifically described.

An expansion-bar, 14, is arranged in any convenient position to receive the full effect of the heat generated in the fire-box, this bar being preferably formed so as to fit over the pipe-curb 12, as indicated in Fig. 1, the bar being riveted or otherwise secured to the top plate, 10, by rivets or screws 15. To each end of the bar 14 there is pivotally connected a lever, 16, the long arms 17 of said levers 16 extending forward to a position just on the inner side of the front plate, 11, while the short arms 18 extend to the rear and toward each other, to be united by a bolt or pivot-pin, 19. The forward ends of the long arm 17 of the lever 16 fit within apertures 2, that are formed in the short arms 3 of levers 20, that are pivotally mounted upon studs 21, which extend inward from the front plate, 11; or the levers could be supported upon bolts that are passed through and held by said front plate. The extending ends of the long arms 4 of the levers 20 are pivotally connected to the damper 13, which damper consists of two plates, 5 and 6, said plates being formed with correspondingly-arranged slots or apertures 7, as best shown in Fig. 3, the end of one of the levers being preferably connected to a block, 8, which rides within a slot, 9, that is formed in the end of one of the sections of the damper, the block 8 being engaged by an adjusting-screw, 22, the idea being to provide for the relative adjustment of the two sections of the damper.

From the construction described it will be seen that as the heat generated in the fire-chamber 30 acts upon the bar 14 said bar will expand or elongate, and the point of the connection of the arms 18 of the levers 16 will be drawn forward toward the bar 14, which movement will throw the forward ends of the arms 17 in the direction of the arrows shown in connection therewith in Fig. 1, thereby moving the levers 20 in the direction of the arrows shown in connection therewith in Fig. 3, which movement of the levers 20 will carry the two sections of the damper 13 to positions so that the apertures or slots 7 of one section will register with the solid intervening portion of the other section; but as the heat decreases the bar 14 will contract and the levers will move in an opposite direction, so as to bring the opening 7 of the two sections of the damper in partial or full register, thereby admitting a quantity of air and permitting of an increased combustion in the fire-chamber.

In case my improved damper-regulating mechanism is to be employed in connection with stoves or ranges having two sets of dampers, I provide a system of return-levers, as indicated at 25 in Fig. 1, the short arms 26 of said levers being pivotally connected to the arms 17 of the lever 16, while the levers them-

selves are fulcrumed upon studs or bolts 27, that extend downward from the top plate, 10, of the stove, the ends of the long arms of the levers 25 being connected to a sectional damper, such as the one shown at 13.

Now, although I have illustrated and described the parts of my automatic damper as being arranged within the casing of the stove, it will of course be understood that the parts, with the exception of the bar 14, could be arranged upon the outside of the stove-casing, and it will also be understood that levers formed otherwise than as illustrated could be employed without departing from the spirit of my invention. In certain instances one of the levers 16 might be dispensed with, in which case the end of the short arm of the remaining lever 16 would be connected with the bar 14 by a link, 28, this arrangement being shown in diagram in Fig. 4.

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

1. The combination, with a stove and a sliding damper therein, of an expansion-bar, a lever pivoted to the front of the stove and having its lower end connected to the damper, and a lever connected to the lever on the front of the stove and to the expansion-bar, substantially as herein shown and described.

2. The combination, with a stove and sliding damper-plates, of an expansion-bar, levers pivoted to the front of the stove and having their lower ends connected to the damper-plates, and levers pivoted to the expansion-bar, and having their rear ends pivoted together and their forward ends connected to the levers pivoted to the front of the stove, substantially as herein shown and described.

3. The combination, with a stove and sliding damper-plates, of levers pivoted to the front of the stove and having their lower ends adjustably connected to the damper-plates, an expansion-bar, and bent levers pivoted to the ends of the expansion-bar, and having their rear bent ends pivoted together and their forward ends loosely connected to the levers pivoted to the front of the stove, substantially as herein shown and described.

4. The combination, with a stove and sliding damper-plates at the front of the stove, pivoted levers 20, having their lower ends connected to the damper-plates, an expansion-bar, 14, and levers 16, pivoted to the expansion-bar, and having their rear ends pivoted together and their forward ends connected to the levers 20, of an auxiliary damper at the rear of the stove, and levers 25, pivoted to the top of the stove and to the levers 16, and having their rear ends connected to said auxiliary damper, substantially as herein shown and described.

5. The combination, with a damper made up of sections 5 and 6, that are formed with apertures 7, of levers 20 and 16, one of the levers 20 being connected to a block, 8, that rides within an aperture, 9, formed in one of the damper-sections, the block 8 being arranged in connection with an adjusting-screw, 22, substantially as and for the purpose stated.

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