No. 639,118. Patented Dec. 12, 1899.

M. WEIXLER.

STOVE OR OVEN DOOR LIFTER.

(Application filed Mar. 22, 1899.)

(No Model.)

Fig. 1.

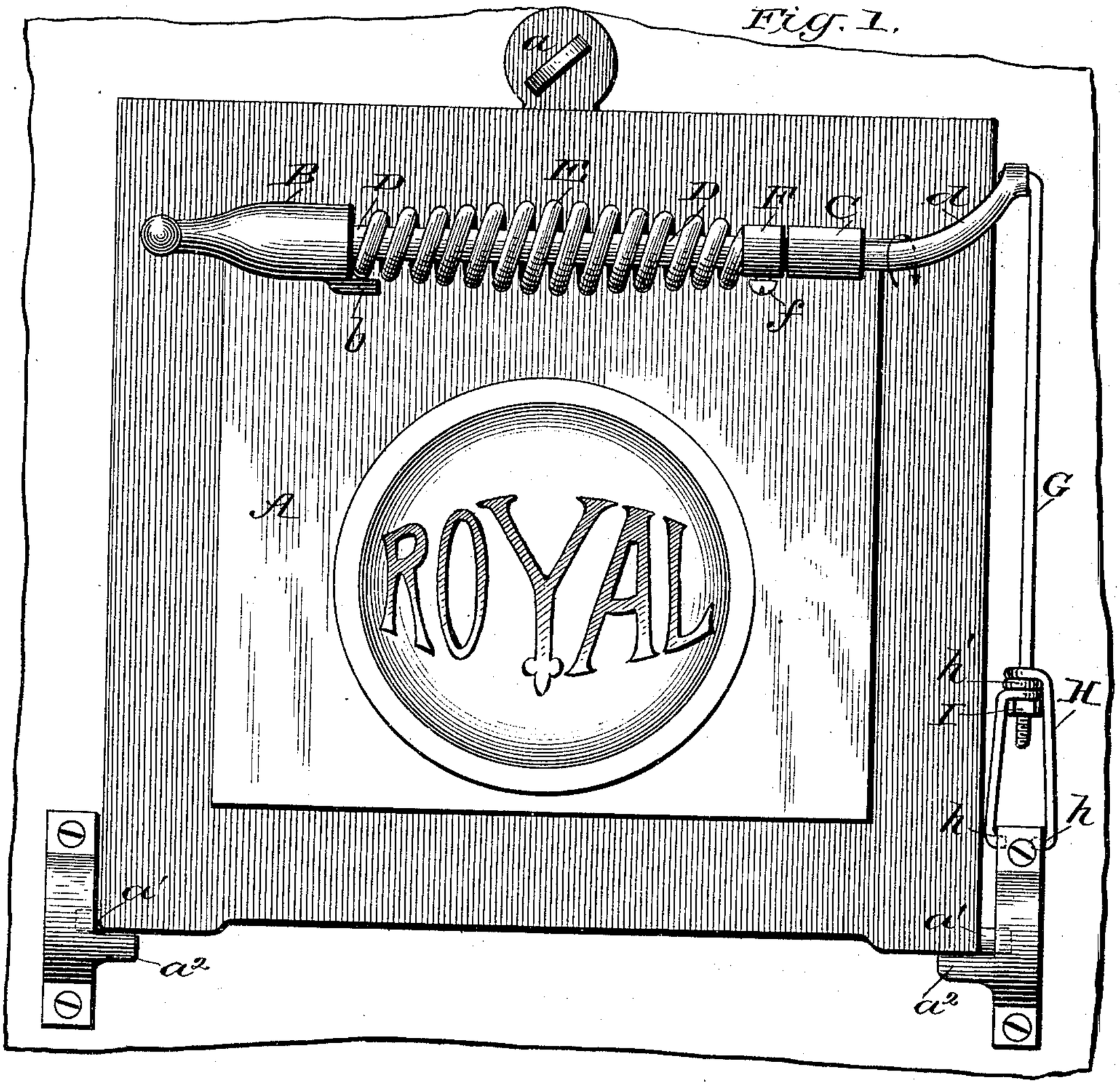
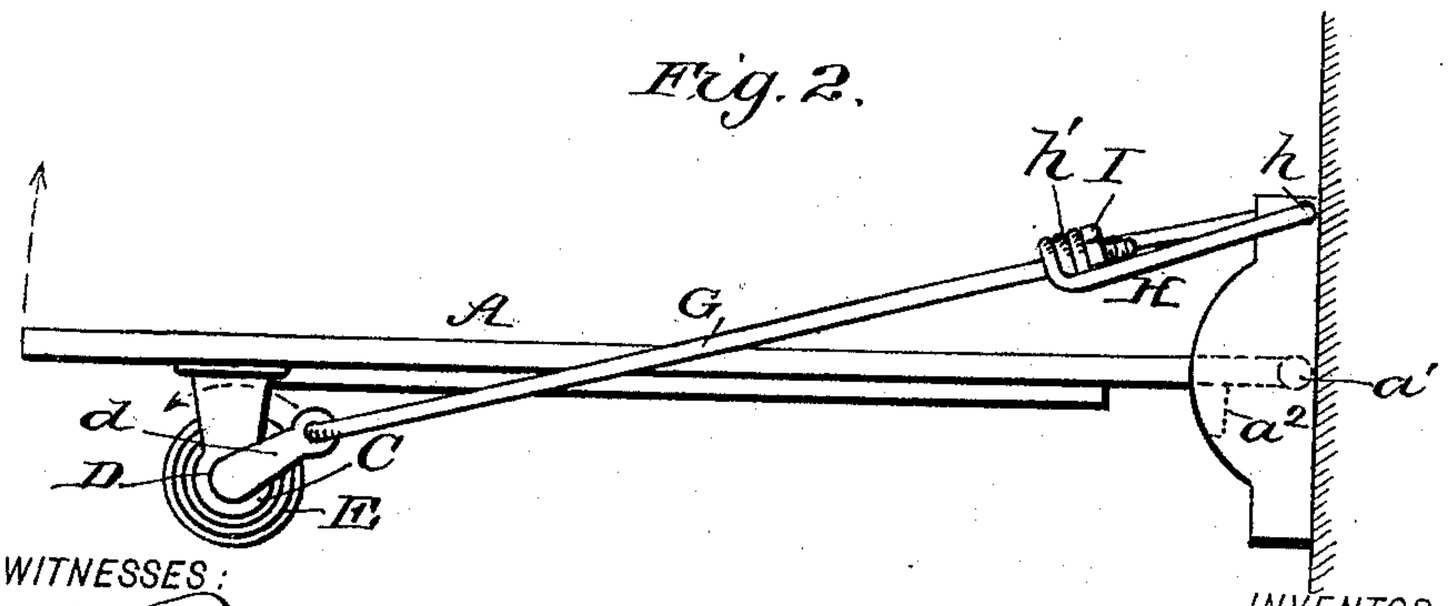


Fig. 2.



WITNESSES:
Jos. A. Ryan
Amos W. Hart

INVENTOR
Math Weixler.
BY Munn & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

MATHIAS WEIXLER, OF LOUISVILLE, KENTUCKY.

STOVE OR OVEN DOOR LIFTER.

SPECIFICATION forming part of Letters Patent No. 639,118, dated December 12, 1899.

Application filed March 22, 1899. Serial No. 710,089. (No model.)

To all whom it may concern:

Be it known that I, MATHIAS WEIXLER, residing at Louisville, in the county of Jefferson and State of Kentucky, have made certain new and useful Improvements in Stove or Oven Door Lifters, of which the following is a specification.

It is the object of my invention to provide the doors of stove-ovens and furnaces with an improved attachment for holding them closed and for assisting in closing them, the same being adapted to operate in such a manner as to prevent the door slamming in either the opening or closing movement.

One feature of my invention is a coil torsion-spring so arranged as to perform its natural function, as well as to serve for a handle in opening the door.

The details of construction and arrangement of parts are as hereinafter described, reference being had to accompanying drawings, in which—

Figure 1 is a face view of a stove-door provided with my improved attachment. Fig. 2 is a side view showing the door open in horizontal position.

The door A is provided with a catch *a* and hinged at *a'*, so that it is adapted to be supported in horizontal position on the lugs a^2 when open. A socket B and a sleeve C, Fig. 1, are permanently secured to the upper portion of the door A. A rod D, having its outer end curved upward, is journaled in such socket and sleeve and constitutes, in effect, a rotatable shaft, the curved portion *d* serving as a lever-arm. A torsion wire spring E is coiled about the portion of the shaft D between the socket B and sleeve C, as shown. One end of said spring engages a lug *b* on the socket B, and the other end of the same is connected with a cylindrical collar F, which is provided with a set-screw *f*, by which it is adapted to be secured in any adjustment on the shaft D. It is apparent that by rotating the said collar in one direction or the other and clamping it by means of the screw *f* the torsional tension of the spring E may be regulated at will. A rod G is pivoted to the free end of the lever-arm *d* and connected with a wire loop H, which is hinged at *h*. The upper portion of said loop H is formed in a coil *h'*, through which the rod G passes, and a nut I is applied to the threaded portion of said rod, which extends below the coil *h'*.

It is apparent that the torsional action of the spring E tends to rotate the lever-arm *d* in direction of the arrow, Fig. 1, and thereby tends to hold the door A closed. It is further apparent that if the door be opened such tension will be increased, since the shaft D will then be rotated a part of a revolution, and when the door is in horizontal position the said arm *d* will lie nearly in the same plane with the connecting-rod G, so that the spring cannot raise the door. So soon, however, as the door is raised manually the spring acts with a force proportionate to the weight of the door, and thus closes or assists in closing the same. Since the tension of the spring is greatest when the weight of the door to be lifted is greatest and since its tension gradually lessens as the door rises, it will be seen that the latter will not be closed with a slam. In brief, the spring so operates as to prevent slamming either in opening or closing, and thus avoids danger of breaking the same or the lugs a^2, as well as the unpleasant noise that ordinarily attends such operation.

It is a distinguishing feature of my invention that the torsion-spring E is so arranged as to conveniently serve as a handle or grip for use in opening and closing the door manually. For this purpose the shaft is set off or spaced apart from the door, so as to admit the hand between it and the latter, and the spring E is also swelled or enlarged in its middle portion to form a sleeve or grip, which, being separated or spaced from the shaft, will not become heated to the same degree as the latter.

By adjusting the nut I on the rod G the tension of the spring E may be regulated without shifting the collar F, as above described.

What I claim is—

1. The combination, with an oven-door, adapted to open downward, of a rotatable crank-shaft attached to the door and arranged near the top of the same, a spring applied to said shaft for acting upon the same and normally preventing its rotation, and means connecting the lever-arm of such shaft with the adjacent portion of the door-frame, substan-

tially as shown and described, whereby, when the door is open, the shaft is rotated and the tension of the spring increased, as specified.

2. The combination, with a hinged stove or oven door, of a rotatable shaft arranged in bearings thereon near the top, and spaced from the door as specified, a curved extension or lever-arm, a torsion-spring applied to said door and shaft, and a rod connected with the free end of said lever-arm and hinged to the adjacent door-frame, as shown and described, whereby the shaft and spring serve as a door-handle as well as means for acting upon the door, as specified.

3. The combination, with a stove or oven door, of a rotatable shaft having its bearings at the top of, and spaced apart from, the door, and a coil-spring applied to said shaft and having a central swell which is out of contact with the shaft, so as to serve as a handle, a rod G connected with the crank or lever arm of said shaft and the lower portion of the door-frame, substantially as shown and described.

4. The combination, with a stove or oven door having a socket and sleeve secured to its upper portion of a rotatable shaft, having its bearings in said socket and sleeve, and provided with a curved extension or lever-arm, a torsion-spring coiled about said shaft and engaging a fixed object at one end, a loose collar applied to the shaft and connected with the opposite end of said spring, means for clamping said collar in any adjustment on the shaft and a rod connected with the free end of said lever-arm and pivotally connected with the door-frame substantially as shown and described to operate as specified.

5. The combination with the door hinged as specified of a rotatable shaft arranged in bearings on the upper end of said door and having an upwardly-curved lever-arm, a rod pivoted to the extremity of the latter and also to the door-frame at a point near the door-hinge, and a torsion-spring applied to said shaft substantially in the manner specified, whereby when the door is opened the said lever-arm will rotate to a position nearly in the same plane with the aforesaid rod, and thus prevent the tension of the spring exerting itself to close the door prematurely as set forth.

MATHIAS WEIXLER.

Witnesses:
RICH. LANGERMAN,
THEO. A. EYNER.