

F. H. MÜLLER.
 AUTOMATIC DAMPER OPERATING DEVICE.
 APPLICATION FILED FEB. 11, 1908.

944,808.

Patented Dec. 28, 1909.

2 SHEETS—SHEET 1.

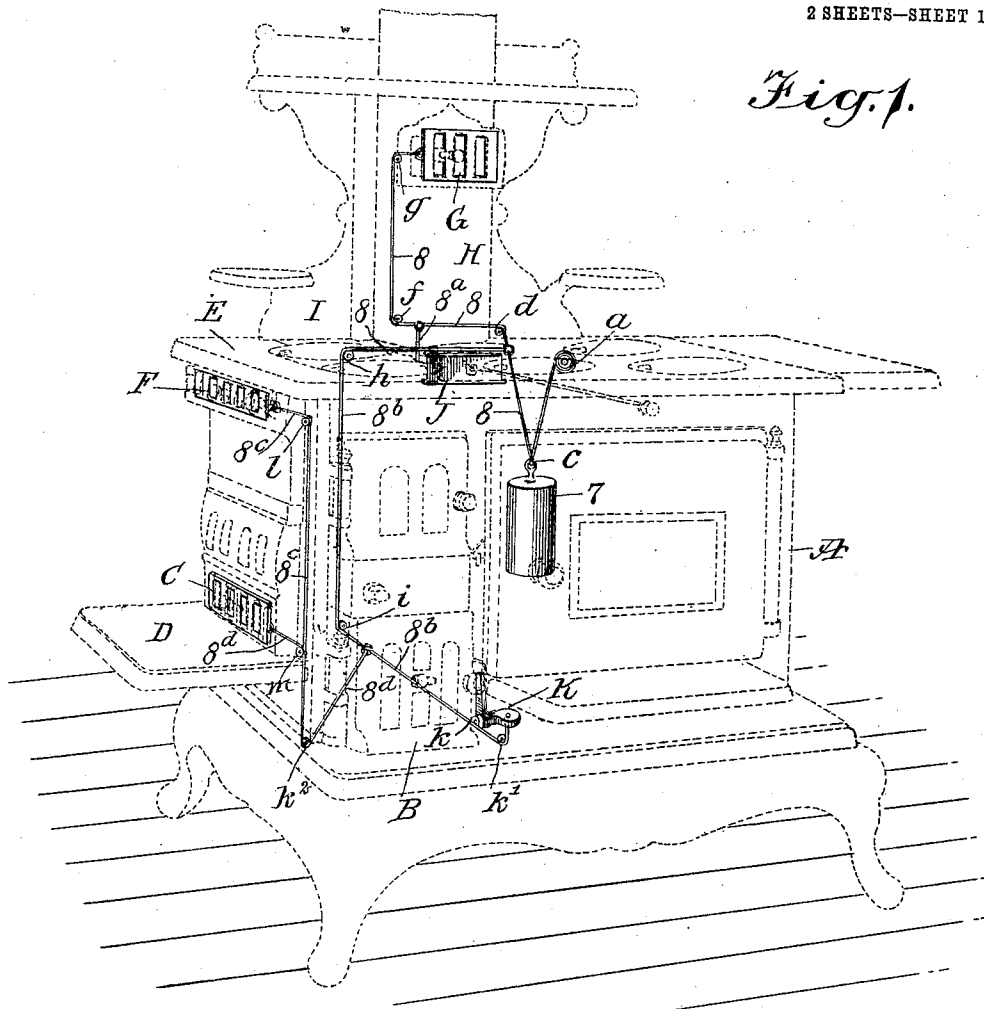


Fig. 1.

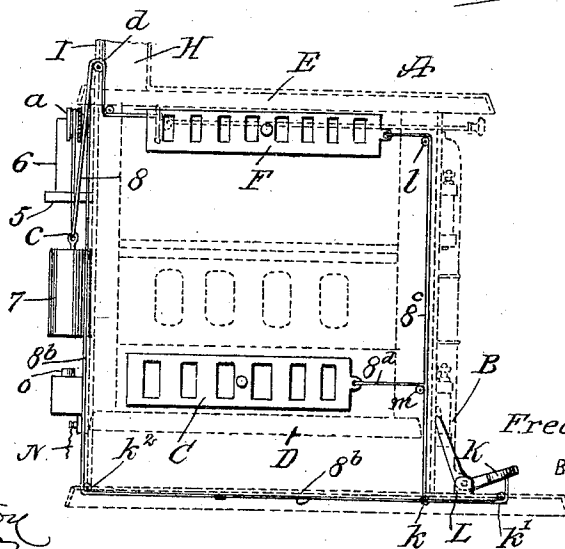


Fig. 2.

WITNESSES
Geo. W. Taylor
Wm. L. Patton

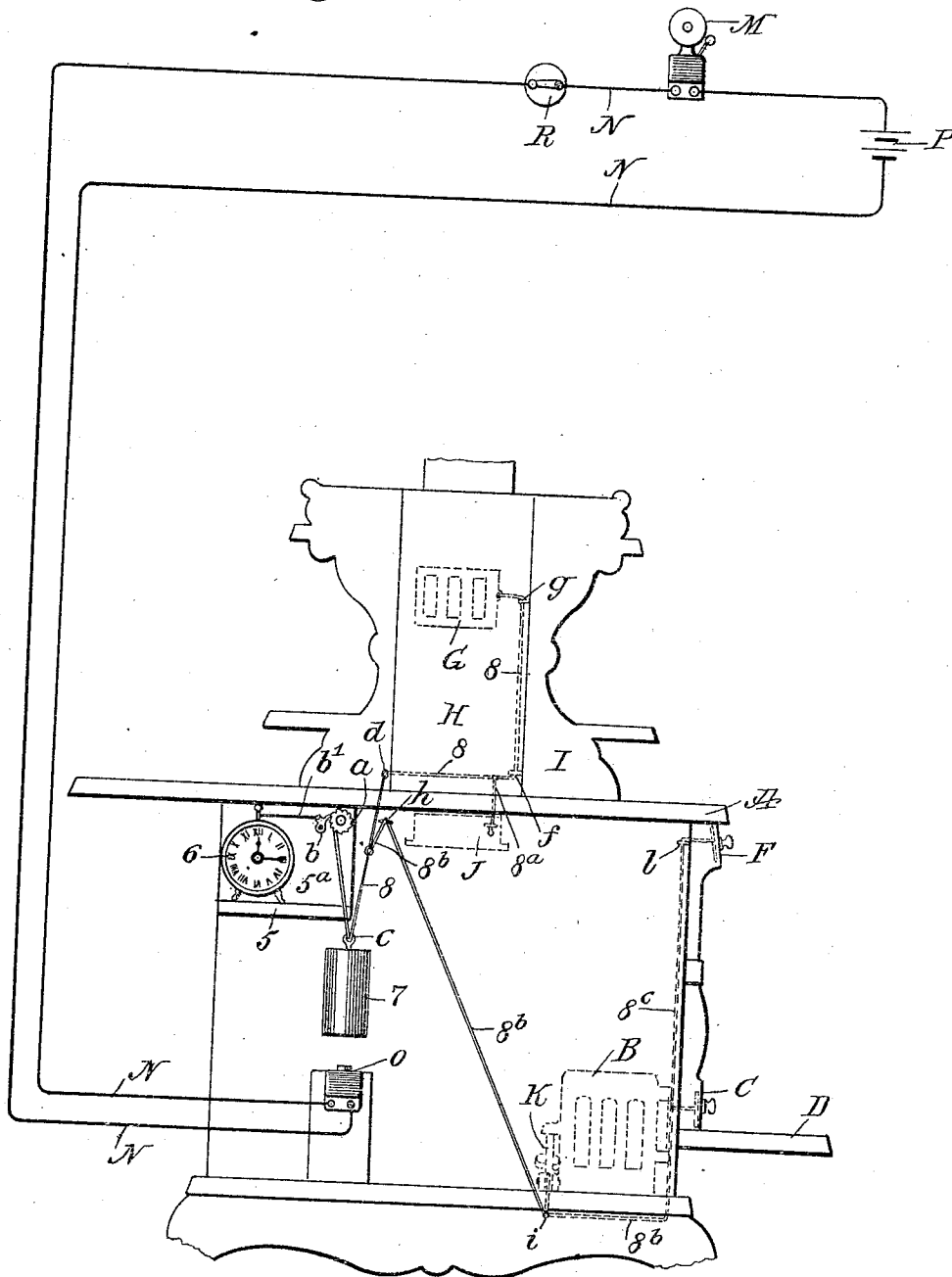
INVENTOR
Frederick H. Müller
 BY *Mumford*
 ATTORNEYS

F. H. MÜLLER.
 AUTOMATIC DAMPER OPERATING DEVICE.
 APPLICATION FILED FEB. 11, 1909.

944,808.

Patented Dec. 28, 1909.
 2 SHEETS—SHEET 2.

Fig. 3.



WITNESSES

Geo. W. Naylor
Wm. J. Patton

INVENTOR

Frederick H. Müller
 BY *Mum & Co.*

ATTORNEYS

UNITED STATES PATENT OFFICE.

FREDERICK H. MÜLLER, OF LANSDALE, PENNSYLVANIA.

AUTOMATIC DAMPER-OPERATING DEVICE.

944,808.

Specification of Letters Patent.

Patented Dec. 28, 1909.

Application filed February 11, 1909. Serial No. 477,276.

To all whom it may concern:

Be it known that I, FREDERICK H. MÜLLER, a citizen of the United States, and a resident of Lansdale, in the county of Montgomery and State of Pennsylvania, have invented a new and Improved Automatic Damper-Operating Device, of which the following is a full, clear, and exact description.

The purpose of this invention is to provide novel means for simultaneously operating the dampers of a cooking stove or range at a predetermined time, so as to start a smoldering fire therein into free burning condition; a further object being to provide means for sounding an alarm at the same time the dampers in the range are adjusted to produce free draft therein.

The invention consists in the novel construction and combination of parts, as is hereinafter described and defined in the appended claims.

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

Figure 1 presents a perspective view of the improved damper operating device in position on a range, shown in perspective by dotted lines and viewed from the front; Fig. 2 is an end view of the range shown in dotted lines, and a side view of the improvement shown by full lines in operative position on the range; and Fig. 3 is a rear view of the range and a front view of the damper-operating mechanism, parts of the range that are on the opposite face of the range appearing in dotted lines.

The improvement may be applied to cooking stoves and ranges that vary somewhat in structure; as an example of the application, it is represented in operative position on a modern cooking range, that will be briefly described to render clear the relative position of parts of said range that are actuated by details of the invention.

A indicates the body of a range of well known construction, having an ash-pit door B on its front, that is closed except when it is opened to quicken the draft. A lower draft damper C is slidably mounted above a hearth plate D at one end of the range, and just below the top plate E another damper F is slidably secured in the usual manner, an open adjustment of the damper F being

made when the fire in the range is damped, but an opened condition of the damper C causes the fire to burn briskly. Another damper G is slidably held in the draft pipe H of the range, which damper is opened when draft in said pipe is to be reduced, or when the fire in the range is damped to keep it alive during the night.

The invention, briefly described, consists in the employment of a pendent weight, connected with a plurality of flexible wires that extend to and are attached upon the dampers that are to be opened or closed, the weight being supported in the bight of one of the wires, that is wrapped upon a grooved pulley controlled by a ratchet wheel and pawl, whereby the wire is prevented from unwrapping until the pawl is detached from the teeth of the ratchet wheel.

An ordinary alarm clock is so connected with the pawl engaged with the ratchet wheel, that when said alarm is released at a predetermined time, as indicated on the clock, the pawl will be detached from the ratchet wheel and the weight will descend and pull upon the wires, so as to adjust the dampers for producing a strong draft.

Referring to the drawings, 5 indicates a bracket-shelf, preferably secured on the rear wall of the range body, and on which an alarm clock 6 is seated and secured. On the back wall 5^a of said shelf a grooved pulley *a* is pivoted, having one of its flanges peripherally toothed, as is best shown in Fig. 2. On the back wall 5^a of the bracket-shelf 5, adjacent to the grooved pulley *a*, a pawl *b* is pivoted, and normally engages between the teeth on the toothed flange of said pulley.

From the pawl *b* a wire *b'* is extended toward and connected with the usual trip in the alarm clock that sets it to striking, the wire receiving a sufficient pull therefrom to detach the toe of the pawl from the ratchet teeth.

A flexible wire 8 is secured by one end on the pulley *a* and wrapped one or more turns thereon, and depends from the pulley in a bight *c*. A weight 7 of proper intensity is loosely engaged with the bight of the wire 8, and from the bight of the wire the latter is extended upward and passed through a perforation in the upright portion I of a shelf that is extended from the back wall of the range and rests on a small pulley *d*.

From the pulley *d* the wire 8 is laterally extended to a ring-eye or grooved pulley *f*, and thence upward to another ring-eye or grooved pulley *g*, and thence to the end of the slidable damper G, that is normally closed to insure draft in the pipe H, but when the fire in the range is damped said damper is opened so as to check the combustion of fuel.

From the horizontal portion of the wire 8 that extends between the pulleys *d* and *f*, a short wire 8^a is downwardly extended and attached at its lower end upon a hinged damper J, which is within the upper portion of the stove or range, and controls the flow of products of combustion from fuel to the draft pipe H, and it will be seen that a pull on the wire 8 will relax the branch wire 8^a, which will permit the hinged damper J to fall and open the draft passage into the pipe H.

The ash pit door B, at the front side of the range, is so hinged that if the catch thereon is raised slightly, said door will swing open due to its gravity, and the usual means for releasing the catch of said door is in the form of an angle lever K, that is pivoted at its angle on a bracket stand L, so that by foot pressure one limb of the angle lever may be depressed and thus rock the other limb thereof into engagement with the door catch, thereby releasing the door and affording free draft to the fire that is above the ash-pit.

From the wire 8 at a point between the bight *c* and pulley *d*, a wire 8^b is extended through a ring eye *h* on the rear wall of the range body, and thence downward into a loose engagement with a small pulley *i* or the like at the bottom of said rear wall, and from said pulley the wire 8^b is extended forwardly over two small pulleys *k*, *k'*. From the pulley *k'* there is a short end portion of the wire 8^b extended upward and attached to the lower member of the angle lever K. It will be seen that the descent of the weight 7 will pull on the branch wire 8^b and rock the lever K, which will trip the catch of the door B so that by its gravity it will swing open and afford draft to the range fire.

From the horizontal portion of the wire 8^b that extends across the range from the rear to the front, there is an upward extension 8^c which passes over a pulley *k*² and trends to the height of the damper F, and passing laterally over a small pulley *l* is attached by its end on an adjacent end of the top damper F, as is clearly shown in Fig. 2. Between the lower and upper pulleys *k* and *l*, a wire branch 8^a extends laterally from the upright wire 8^c over a pulley *m* and at the extended end thereof is secured upon the forward end of the lower damper C, so that the descent of the weight 7 which will

pull upon the flexible connections 8^c and 8^a will close the upper damper F and open the lower damper C.

It will be noted that the release of the weight 7 by the action of the alarm clock 6 will put such tension on the wires 8, 8^a, 8^b and 8^c, 8^a that the door B and dampers C, F, G and J will all be properly adjusted to give full draft for the fire in the range at an instant of time that the alarm mechanism of the clock 6 is released, and in turn releases the pawl *b* from the ratchet wheel on the grooved pulley *a*, so that the range will become hot in a short time.

To notify the person concerned that the range fire is under full draft, an alarm bell M is placed in the bedroom of said person, and wires N are thence extended to a switch O that is secured on the range directly below the weight 7, a battery P being introduced in the circuit wires N. When the weight is released for descent, as before explained, it will by its contact with the push button on the switch O close the circuit and ring the bell M. A switch R may also be placed in the circuit by connection with the wires N, so that upon awakening the person, it may be adjusted to open the circuit and stop the bell from ringing.

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

1. The combination with a stove or range, and dampers thereon, of a grooved pulley having a ratchet-toothed flange, a pawl engaging the teeth of said flange, a wire secured on said pulley, a weight hung from a bight on said wire, a plurality of wires connected to the first mentioned wire and to the dampers, an alarm clock having a trip, and a wire connecting the said pawl and the trip of the alarm clock to release the pawl and permit the weight to descend and pull on the wires at a predetermined time.

2. The combination with a stove or range and dampers thereon, of a bracket shelf secured on the rear wall of the range body, a grooved pulley pivoted on the back wall of the bracket shelf and having one of its flanges peripherally toothed, a pawl pivoted on the back wall of the bracket shelf adjacent to the pulley and normally engaging between the teeth of said flange, a flexible wire secured at one end on the pulley and depending from the pulley in a bight, a weight loosely engaged with the bight of the wire, a plurality of wires connected with the first mentioned wire and with the dampers, an alarm clock secured on said bracket shelf, a trip for said clock, and a flexible connection between the said pawl and the trip of said clock to release the pawl at a predetermined time to permit the weight to descend and pull on said wires.

3. A damper adjusting mechanism com-

prising a plurality of wires or the like respectively connected to the dampers, a weight connected with the wires for moving the same to actuate the dampers, means for supporting the weight, means for releasing said supporting means at a predetermined time to permit the weight to descend, an electric circuit including a bell, and a push button adapted to be engaged by the said weight to close the circuit.

4. A damper adjusting mechanism of the character described, comprising a plurality of wires or the like respectively connected to the dampers, a weight hung on one of the wires, a ratchet device that supports the weight, an alarm clock adapted for releasing the ratchet device so as to permit the weight to descend at a predetermined time, a push button and switch controlled thereby that may be pushed by the descending weight, a battery, a bell, and open circuit wires connecting the bell with the switch, the circuit being closed when the weight seats upon the push button.

5. A damper adjusting mechanism, comprising an alarm clock, a weight connected with the dampers and controlled by the alarm clock for actuating the dampers at a predetermined time, an electric circuit, an alarm, and a push button in said circuit, the said push button being located directly be-

low said weight and adapted to be engaged and actuated thereby.

6. In a damper adjusting mechanism, flexible means connected with the dampers, an alarm clock, a movable device controlled by said alarm clock for effecting a pull on said flexible means to actuate the dampers at a predetermined time, an electric circuit, an alarm in said circuit, and a circuit closer located in the path of said movable device and adapted to be directly engaged and actuated by said device.

7. The combination with a stove or range and dampers thereon, of a weight, flexible connections between the weight and said dampers, the said weight when free to descend being arranged to pull on said connections to actuate the dampers, means for releasing the said weight at a predetermined time, an electric circuit, an alarm in said circuit, and circuit closing means located beneath said weight, and actuated directly by said weight when the latter is released.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FREDERICK H. MÜLLER.

Witnesses:

J. URHUST HARVEY,
A. R. PLACE.