W. HUGHES.

Apron for Stoves and Grates.

No. 38,227. Patented April 21, 1863.

Fig. 1.

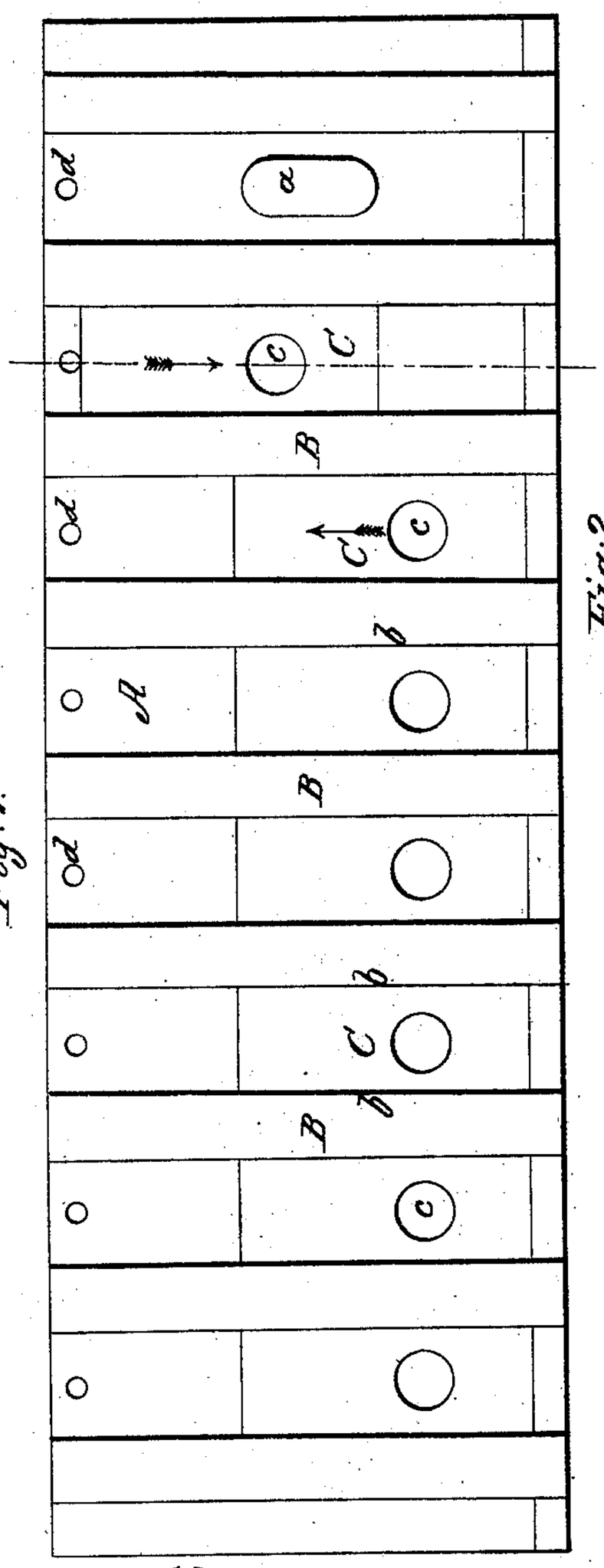

Fig. 2.

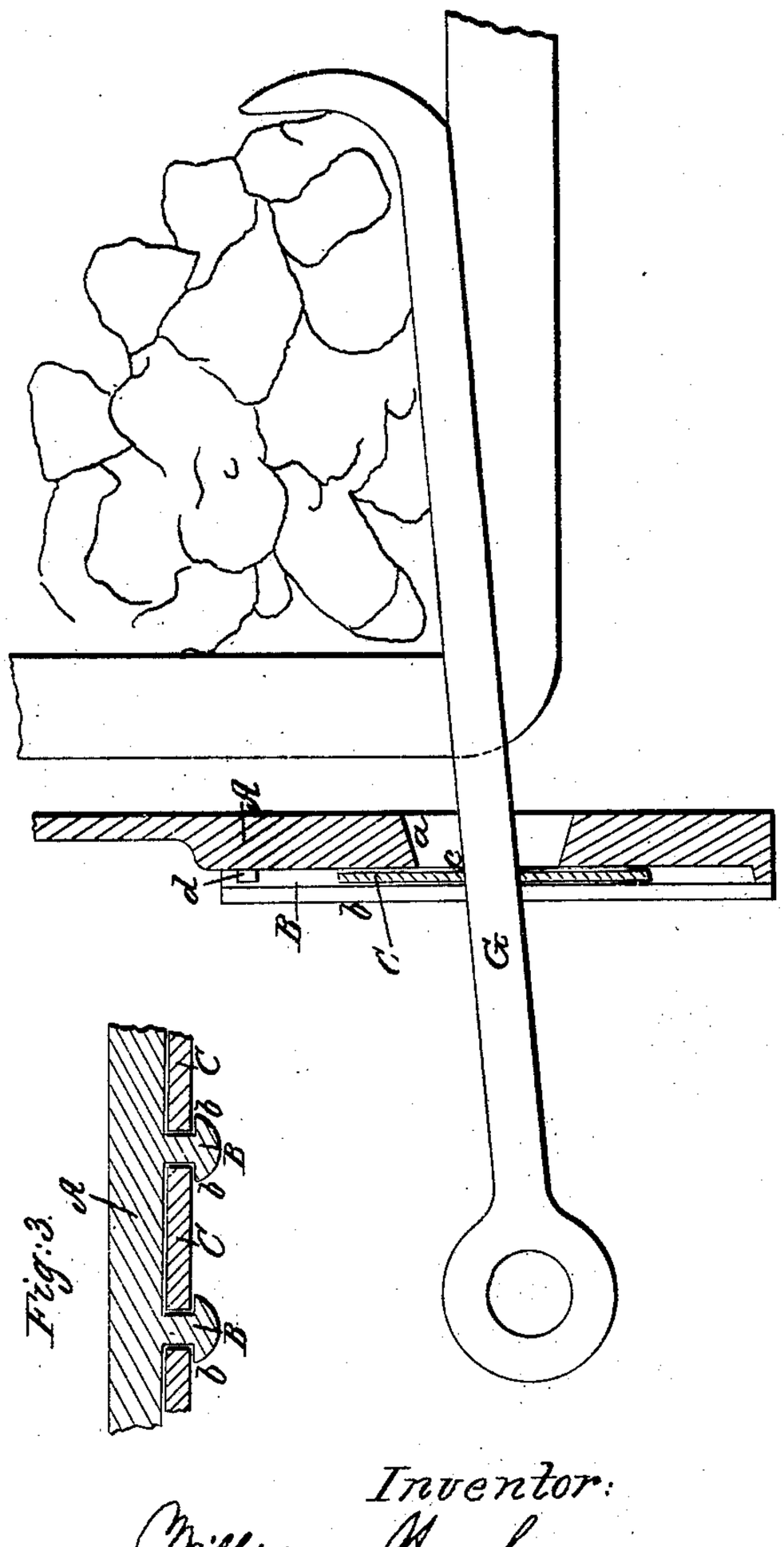

Fig. 3.

Witnesses:
R. L. Osgood
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by J. Fraser Neo. Attys.

UNITED STATES PATENT OFFICE.

WILLIAM HUGHES, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN APRONS FOR STOVES AND GRATES.

Specification forming part of Letters Patent No. **38,227**, dated April 21, 1863.

To all whom it may concern:

Be it known that I, WILLIAM HUGHES, of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Aprons for Insulating Dust in Raking the Grates of Stoves, Furnaces, &c.; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a front elevation of my improved grate-apron; Fig. 2, a vertical section of the same in the plane of the red line, Fig. 1, and showing also a portion of the grate and the poker as applied for raking the ashes; Fig. 3, a transverse horizontal section of a portion of the grate-apron.

Like letters of reference indicate corresponding parts in all the figures.

My invention consists in the use of an apron or screen covering longitudinally the front of the grate, provided, opposite the grate-spaces, with vertical slots, covered by slides, having each a hole or passage of sufficient size to receive the poker, said slides falling so as to cut off the communication when the poker is removed, all substantially as hereinafter described.

The apron or screen A may be made of different sizes and forms, to suit the different conditions in which it is used. In the drawings it is represented as applied to an ordinary coal-burning cooking-stove, and is a thin rectangular plate, being of sufficient height to allow the desired motion of the slides in the proper action of the poker, and of a length covering the whole extent of the grate. It may be applied to the stove or furnace in any desirable manner—such as by riveting—or it may act as a slide, or be hinged at one end. It is preferaby entirely independent of the grate. Opposite each space between the grate-bars, or as near together as may be found necessary, at the proper position in the apron, are respectively made vertical oblong openings or slots *a a*, Figs. 1 and 2, of suitable length to allow the proper action of the poker, which passes through them. Centrally, between these openings, are situated vertical guides B B, having overlapping edges or shoulders *b b*, Fig. 3, which hold in place plane vertical slides C C, covering the whole space between the guides. In each slide is made a hole, *c*, of about the right size to receive the poker without allowing extra space. When the slide is raised to the proper position, as shown at the second space from the right in Fig. 1, its hole *c* and the opening *a* in the apron come in coincidence, allowing the poker to pass through to the grate; but when the poker is removed the slide falls by its own weight, bringing the hole *c* below the opening *a*, so as to entirely and effectually shut off all communication, as indicated at the left hand in Fig. 1.

To prevent the slides from becoming detached from the apron during transportation pins *d d*, or equivalent, project from between the guides, above them, as shown in Figs. 1 and 2.

To use the poker G it is only necessary to insert its point into the hole *c* of one of the slides and raise it until the two openings come in coincidence, when it passes through to the grate. In this position the poker fills the hole *c* so closely that no dust can escape while it is in action, being perfectly insulated. In this respect my device is most perfect, and accomplishes what could not be accomplished by a cover resting over a horizontal slot, for in that case there must be an open space near the poker. It also prevents the falling of the burning coal outward upon the carpet, which is a difficulty experienced in ordinary arrangements. In addition to this an especial and important effect secured by my arrangement is that perfect fulcra are produced for moving the poker in every direction—laterally as well as up and down—thus forming a lever of the poker and obviating the great strain upon the hands and arms of the operator, which is unavoidable in all other arrangements with which I am acquainted. For instance, it is frequently necessary to raise the poker vertically under the coal to loosen it and remove the ashes. This is easily done by resting the shank of the poker in the lower end of the opening *a* as a fulcrum. In like manner it is frequently necessary to move the poker laterally, in which case the sides of the hole *c* serve as the fulcrum. It is also desirable in moving the poker forth and back rapidly in the grate and in giving it a multiplicity of motions that some support or guide, laterally as well as vertically, should be used to sustain the same.

I am not aware that a universal support of

this kind has ever before been known, at the same time combining a device for insulating the dust. By this arrangement I avoid shaking the grate bodily, as is frequently done, thereby loosening the fire-bricks and displacing or rattling down the coal, so that it is necessary to replenish it with wood to start it again. This is a great source of trouble in ordinary arrangements. In addition to thus shutting off the dust it also, to a certain degree, insulates the heat, which effect is of importance in cook-stoves, where it is necessary to concentrate it around the oven. It is also of consequence in furnaces—for example, in steamships—where the direct radiation is so intense as to render it uncomfortable to rake the fire.

By the use of the slot *a* the poker can also be raised vertically therein, so as to stir the ashes and coal bodily and without using said slot as a fulcrum.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the slides C C and apron A, provided, respectively, with the holes *c c* and openings *a a*, which, when in coincidence, allow the entrance and perfect action of the poker, without escape of dust, substantially as herein set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM HUGHES.

Witnesses:
R. F. OSGOOD,
W. A. LODER.