

E. CARD.
Stove Grate.

No. 97,477.

Patented Dec. 7, 1869.

Fig: 1.

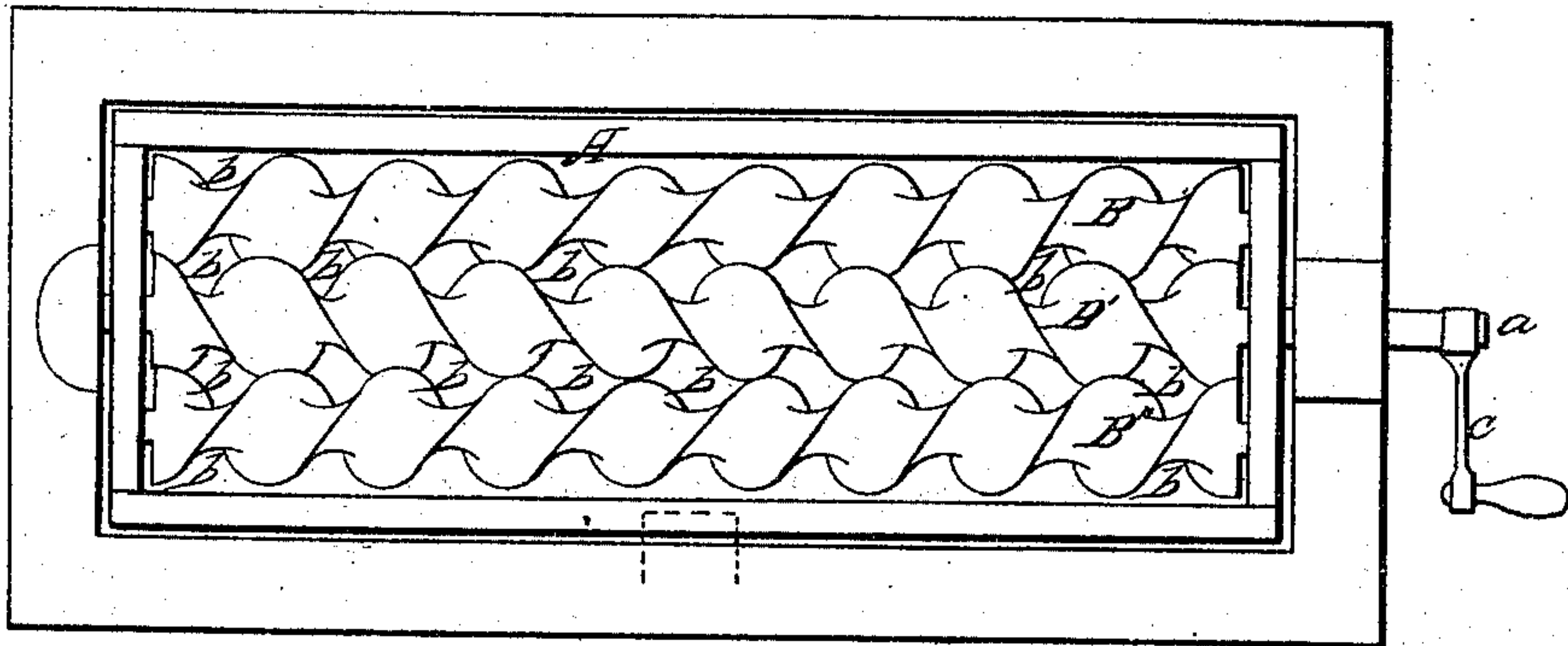


Fig: 3.

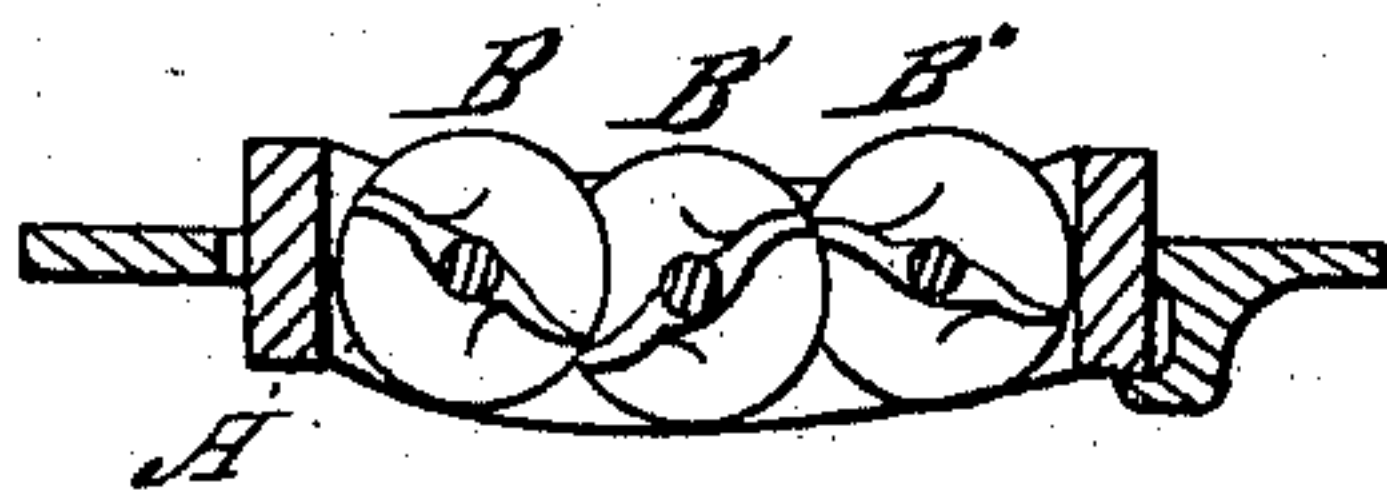
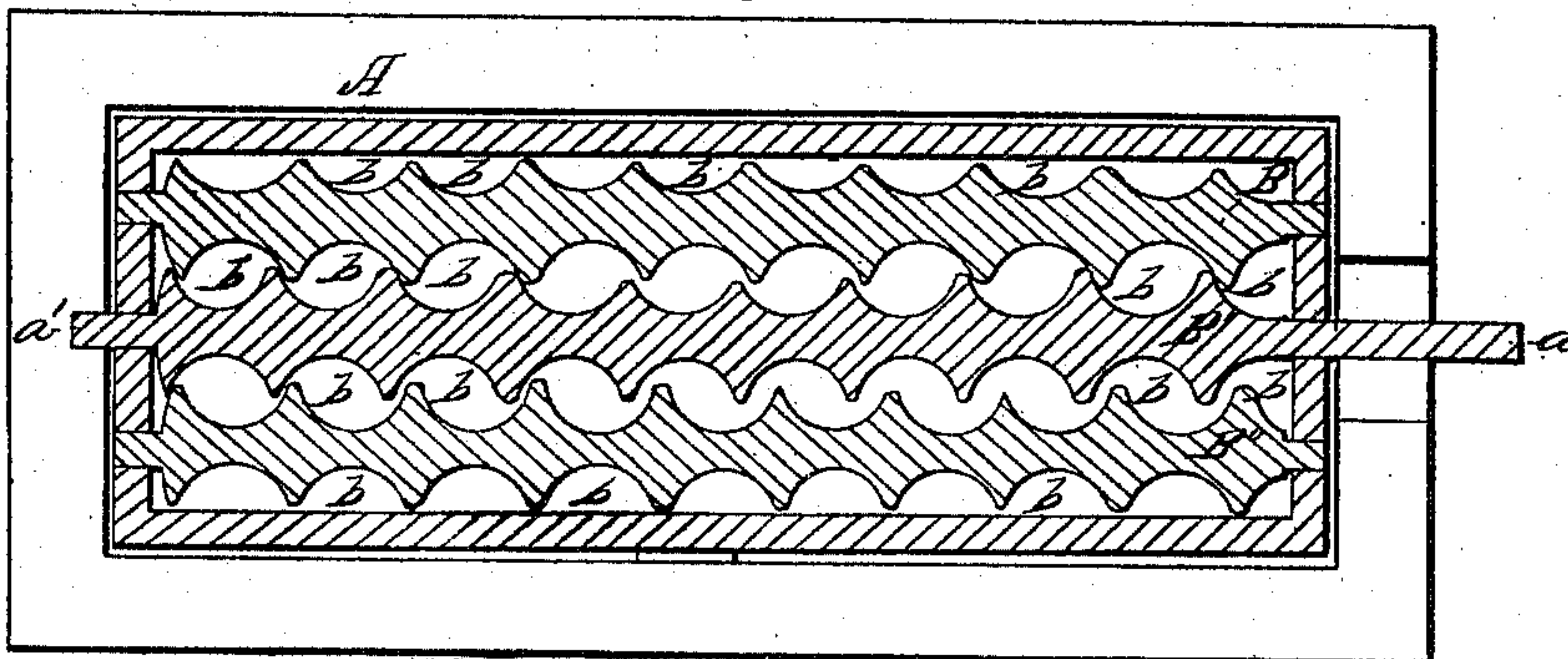


Fig: 2.



Witnesses:

Geo. M. Carpenter
Henry Marsh

Inventor:

Edward Card

United States Patent Office.

EDWARD CARD, OF PAWTUCKET, RHODE ISLAND.

Letters Patent No. 97,477, dated December 7, 1869.

STOVE-GRATE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, EDWARD CARD, of Pawtucket, county of Providence, and State of Rhode Island, have invented a new and improved Mode of Constructing Fire-Grates; and the following is a full and clear description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, in which—

Figure 1 is a top plan.

Figure 2 is a longitudinal central section of plan.

Figure 3 is an end section.

Similar letters of reference, when they occur in the several separate figures, denote like parts in all the drawings.

My invention relates to a fire-grate for wood or coal, in which there are three or more parallel spiral or auger-shaped bars, so placed, with reference to each other, that by turning or revolving one of the bars upon its journals, by means of a crank or key attached to one end, the grate may be turned or the bars revolved independent of the grate-frame, thus performing the double office of raking and sifting the ashes and dumping the cinders.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same, with reference to the drawings.

A represents a fire-grate, constructed with three or more parallel spiral or auger-shaped bars B B' B", one of the bars, as B', being a "right-and-left hand" bar, so as to turn all the bars on either side of it.

a and *a'* represent the journals of the bar, on which the bar may revolve or the whole grate be turned.

By applying a crank or key, *c*, to the journal *a*, a rotary motion is imparted to the other bars by means

of a "right-and-left hand" bar, as B', so as to remove all ashes from the fire surface of the grate, and at the same time serve to "liven up" the fire, and, if required, to move the fuel from one end of the grate to the other. The bars B B' B" being made of this spiral or auger-shape, less iron is used in making them, and corresponding spiral air-draught spaces are formed, which give increased draught, and this spiral draught keeps all sides and faces of the bars equally heated, thus preventing them from warping, and there being less "dead" surface, less fuel is required to produce a given heat.

Another advantage which I claim for this form of grate-bar is, that two or more bars may be put together to form a section of a furnace-grate, the bars to be either movable or stationary, and when one side or face of the bars is burned out or warped, the section may be turned over, and the bars used until they are entirely burned out on both faces, thus saving the expense of new grates or sections.

Having thus fully described my invention,

What I claim therein as new, and desire to secure by Letters Patent, is—

1. A spiral or auger-shaped bar, either movable or stationary.
2. A "right-and-left hand" spiral bar, which turns or revolves the other bars on either side.
3. A grate, formed of spiral or auger-shaped parallel bars, all as shown, and operating substantially as described.

EDWARD CARD.

Witnesses:

GEO. M. CARPENTER,
HENRY MARSH, Jr.