

GEORGE W. FISHER.

Improvement in Furnaces for Soldering Tin-Cans.

No. 126,685.

Patented May 14, 1872.

Fig. 1.

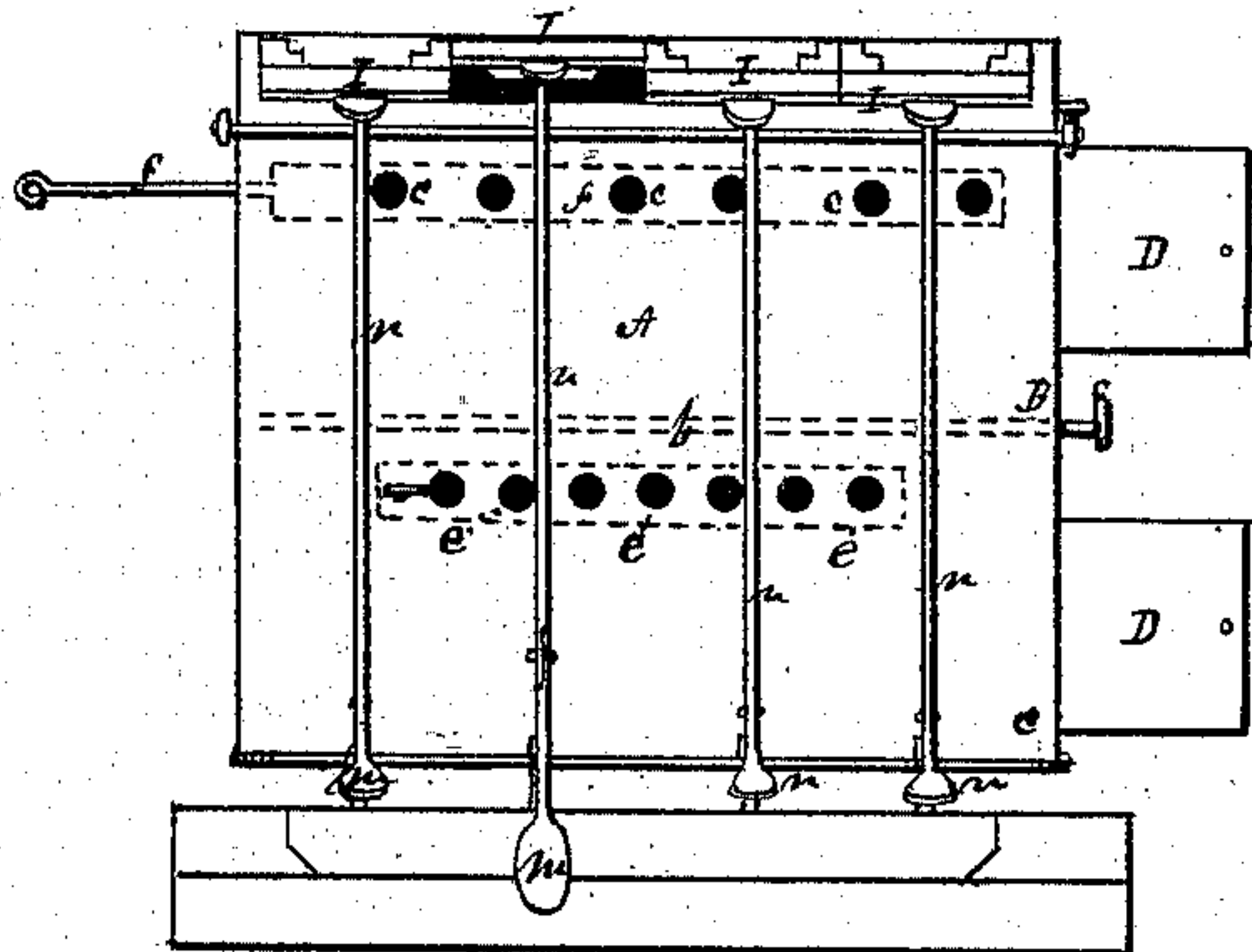


Fig. 2.

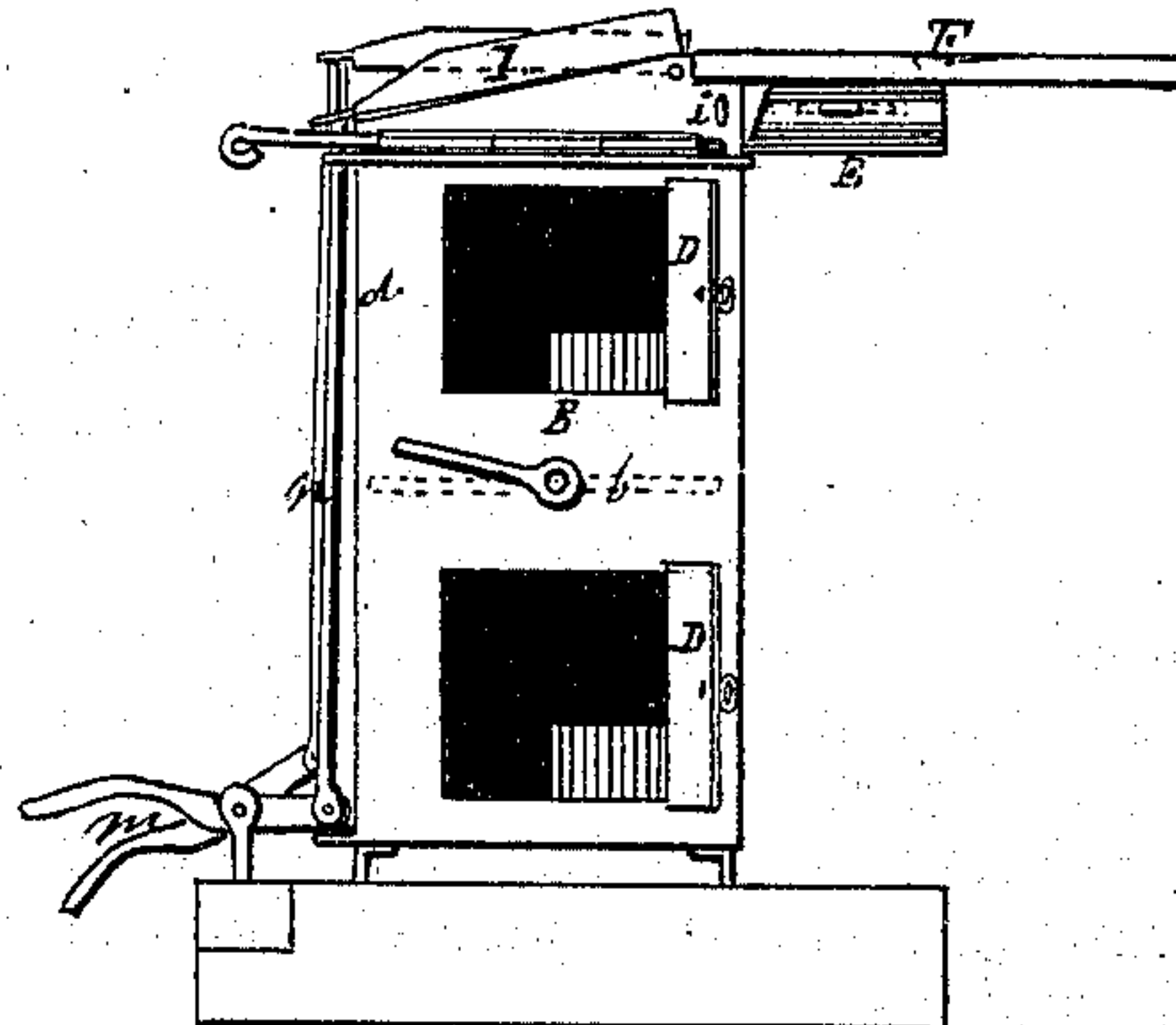


Fig. 3.

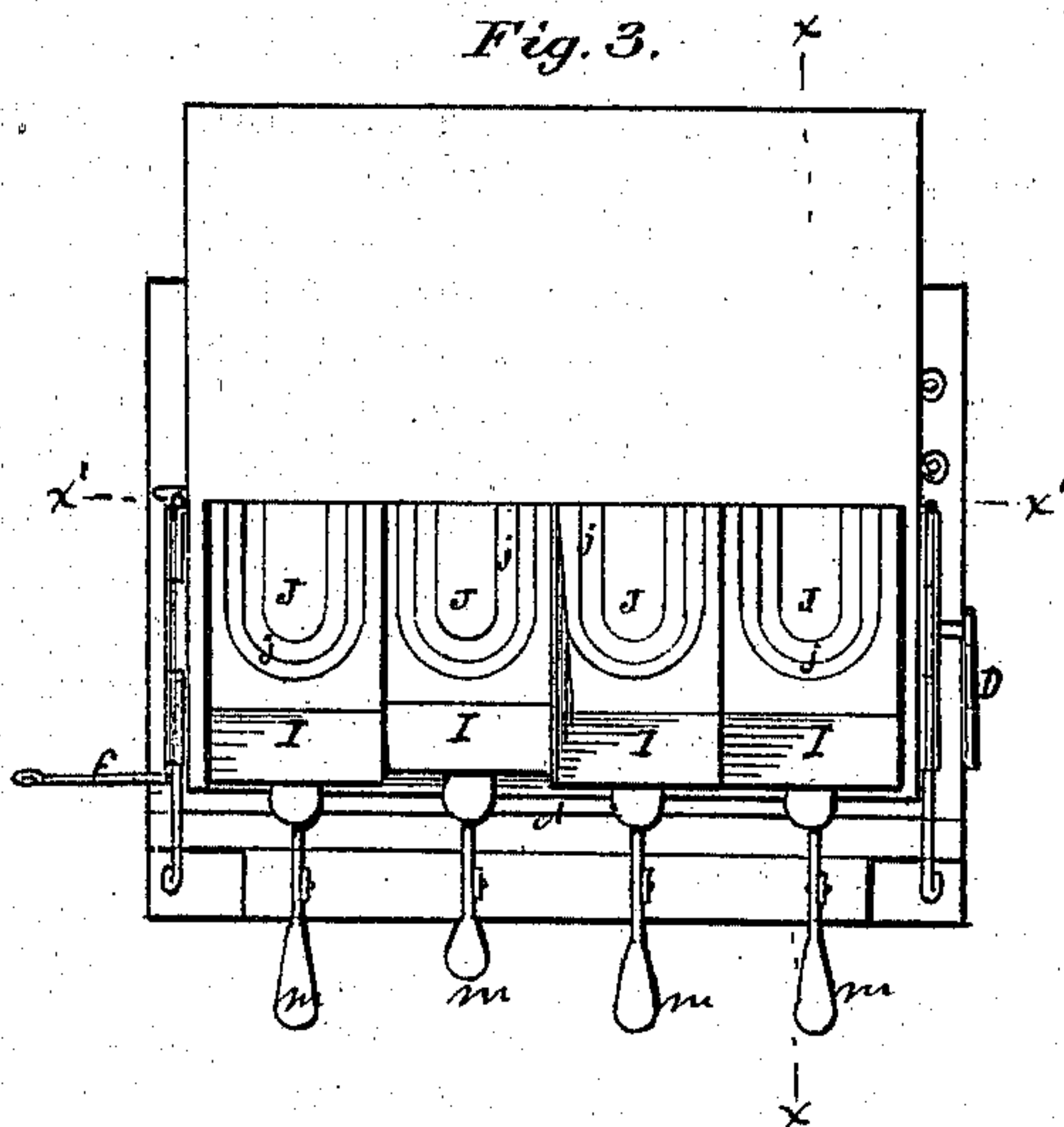


Fig. 4.

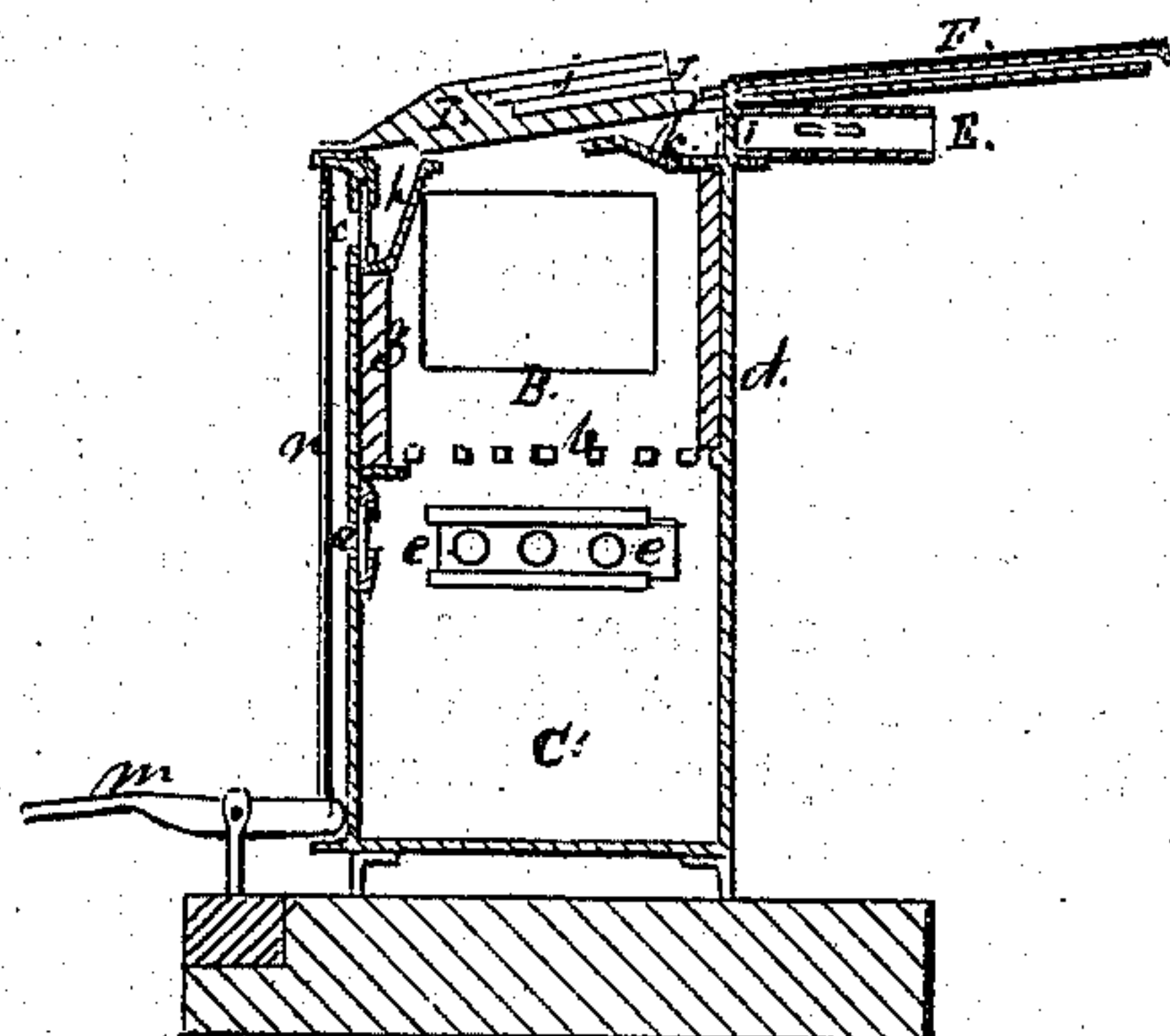


Fig. 5.



Fig. 6.



Witnesses.

A. Poole.
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UNITED STATES PATENT OFFICE.

GEORGE W. FISHER, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN FURNACES FOR SOLDERING TIN CANS.

Specification forming part of Letters Patent No. 126,685, dated May 14, 1872.

To all whom it may concern:

Be it known that I, GEORGE W. FISHER, of Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in a Heating-Furnace for Floating Tin Cans and other articles and vessels of tin manufacture; and the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 represents a front view of the furnace, showing draught-holes and regulating damper—end doors open—the heating-irons, rods, and pedals for operating the same. Fig. 2 is an end view of the same, showing the cooling-table in the rear of the soldering or heating-irons. Fig. 3 shows a plan or top view of the floating-irons and pedals for operating them and the cooling-table. Fig. 4 shows a sectional end view through the furnace at *x x*. Fig. 5 shows the draught damper and heat regulator in the rear of the floating-irons, as it is arranged to operate at *x' x'*. Fig. 6 shows a broken off rear view of the adjustable cooling-table, above the smoke or draught-pipe and closing damper.

The object of my invention is to facilitate the manufacture of tin cans, cups, &c.; and it consists in the construction of the furnace for heating and floating the solder to secure the tops and bottoms of tin cans air-tight, and the apparatus for regulating the heat on the series of movable floating-irons, and the cooling-table and fixtures for operating and manipulating the cans during the process, as will be hereinafter more fully described.

Referring to the drawings, the main portion or body of the furnace *A*, may be made of sheet or cast-iron, in the form of a box-stove of such dimensions as to be convenient in height to perform the process of floating the fire-box *B*, being in the upper portion separated by a grate, *b*, from the ash-pit *C*, which is provided with doors *D* at one or both ends, as desired, as also the fire-box above it, for the purpose of supplying it with necessary fuel. On one or more of the sides of the box, just below the grate *b*, are series of holes *e e*, having sliding dampers to open or close them to admit air for draught. Above the front

fire-brick *g* is another series of holes, *e e*, provided with a sliding damper, *f*, to close them or admit a current of cold air, which is thrown up by a plate, *h*, directly onto the under side of the front ends of the floating-iron *I I* so that the heat in them can be regulated to a nicety to flow the solder, as fast and no faster than is required, the heat being confined or acting immediately under the central portion of the floating-irons *I I*, there being another plate, *k*, on the rear side over the fire-box, and also partitions in the flue leading therefrom to the smoke-pipe *E*, with sliding dampers *i i* to draw the heat around under the end floating-irons when necessary to make the heat uniform on the whole series, four or more in number, as desired. The floating-irons *II* are made with recesses *J* in the top with ledges or offsets *j*, to fit the different size cans or vessels to be soldered, with blocks cast to fit into them to make the bottoms flush with the ledges *j* for the larger size cans so that they bear on their whole surface while heating. The irons *I* are hinged at their rear ends, and are inclined forward while at rest on the furnace, and are provided, each one, with a pedal, *m*, and vertical rod *n*, so as to be lifted by the action of the foot to a level with the cooling-table *F* placed in their rear, so that the cans can be moved off the floating-irons onto the cooling-table without danger of slipping, or the bottoms being moved from their position. The cooling-table *F* may be made of any substance—cast or sheet metal—with a space underneath for the free circulation of air, or of a non-conductor of heat, there being means provided whereby it can be adjusted to a level with the ledges *j* on the floating-irons *I*, as the different-sized cans are being manipulated, so that there is no jar or danger of unsoldering the can.

The operation of soldering the tops and bottoms onto tin cans, &c., technically termed "floating," is as follows: The cylindrical part of the can being soldered, the ends having a flange struck up to fit over, are charged with muriate of zinc and a piece of solder, and are placed on the cylinder and then placed on the cooling-table *F*; the furnace being heated they are slid onto the floating-irons *I*, and stand until the solder melts, when it is turned around by the hand until it has flowed up through the joint

all round, and is kept turning while the iron I is brought up to a level, when it is moved off on the cooling-table to set, and then removed.

What I claim as my invention is—

1. A floating-furnace having a series of hinged or movable floating-irons, II, the same being provided with ledges *jj* to receive various size cans, in combination with the pedal fixtures *m* and *n*, and the cooling-table F, all constructed to operate substantially in the manner as and for purposes set forth.

2. The arrangement of the dampers *f* and *i*, with the plates *h* and *k* to form flues for regulating the heat of the floating-irons I I uniformly, substantially as herein shown and described.

In testimony whereof I hereunto subscribe my name.

GEO. W. FISHER.

Witnesses:

J. B. WOODRUFF,
A. L. YOUNGS.