

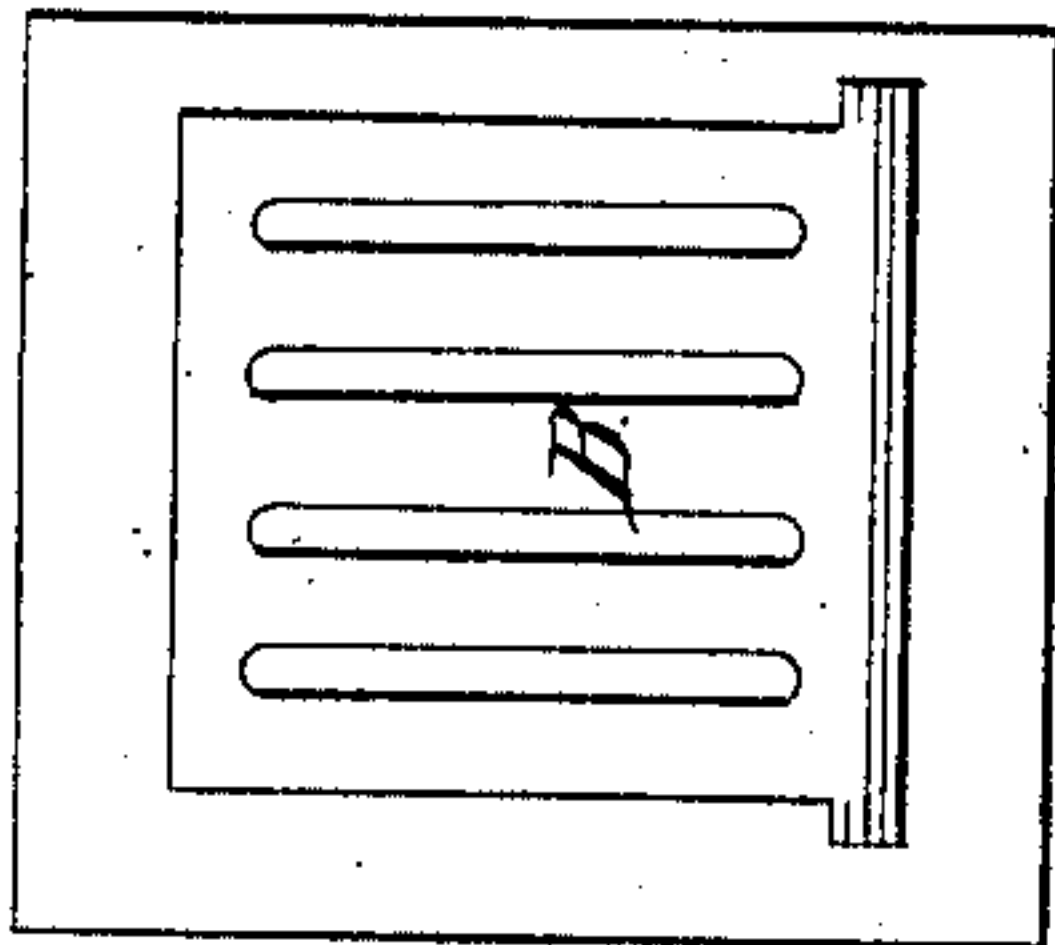
*E. Allen,*

*Soldering Gun-Barrels.*

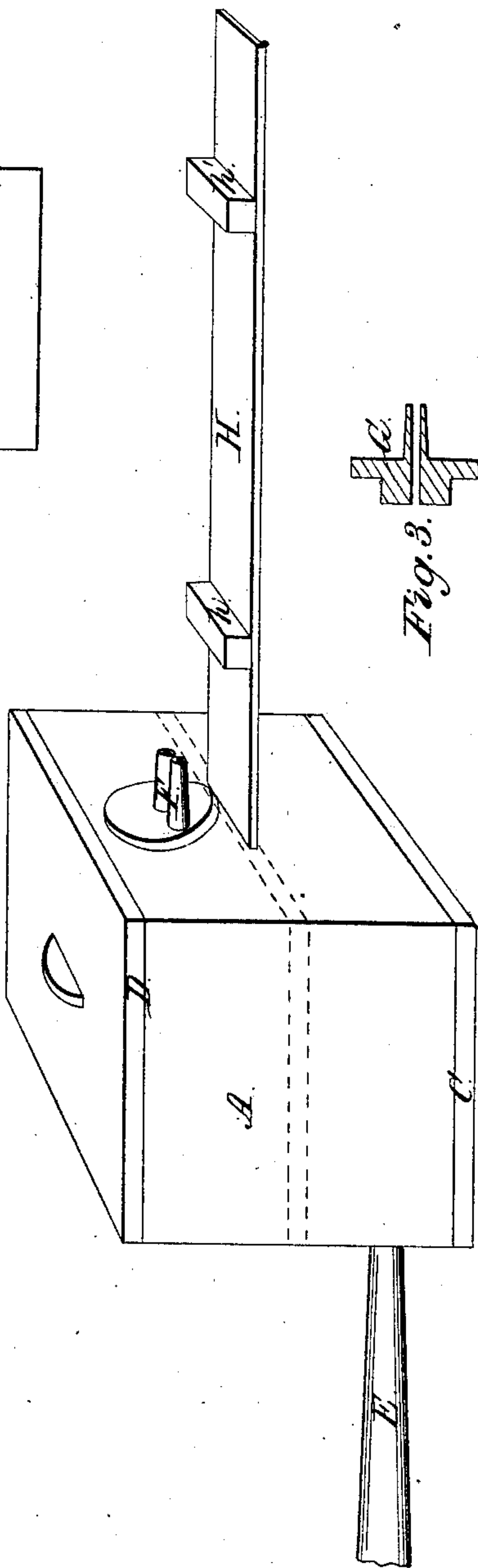
*N<sup>o</sup> 55,596.*

*Patented June 19, 1866.*

*Fig. 2.*

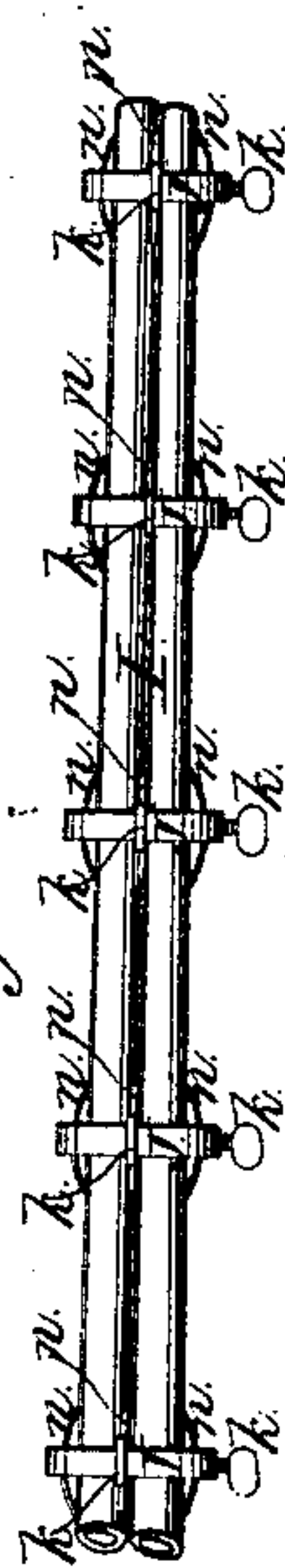


*Fig. 1.*

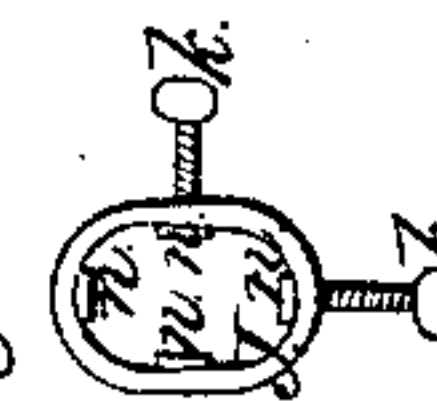


*Fig. 3.*

*Fig. 4.*



*Fig. 5.*



*Witnesses.*

*Sullivan Forehand*  
*Geo. W. Fairfield*

*Inventor.*

*Ethan Allen*

# UNITED STATES PATENT OFFICE.

ETHAN ALLEN, OF WORCESTER, MASSACHUSETTS.

## IMPROVEMENT IN HEATING AND SOLDERING GUN-BARRELS.

Specification forming part of Letters Patent No. 55,596, dated June 19, 1866.

*To all whom it may concern:*

Be it known that I, ETHAN ALLEN, of Worcester, in the county of Worcester, State of Massachusetts, have invented a new and Improved Mode of Heating and Soldering Gun-Barrels; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and letters of reference marked thereon.

Figure 1 is a perspective view of the fire-box and bench or table; Fig. 2 is top view of the grate; Fig. 3 is a sectional view of a single nozzle; Fig. 4 is a top view of a pair of barrels clamped ready for soldering, and Fig. 5 is a side view of a clamp.

The nature of my invention consists in so arranging a fire-box in connection with one or more gun-barrels that the blaze is blown entirely through them, heating sufficiently for tinning and soldering; also, the mode in confining the barrels together.

That others skilled in the art may make and use my invention, I will proceed to describe its construction and operation.

A is the fire-box; B, the grate; C, the lower door or opening; D, the upper cover to the box; E, the wind or blow pipe; F, the double nozzle; G, the single nozzle; H, the table; I, the gun-barrels, and J the clamps.

The fire-box A is divided near the center, as shown by the dotted lines, Fig. 1, and is provided with a grate, B, as seen in Fig. 2. The grate B is connected to the door C by a link in such a manner that when the door C (which is hinged to the front side of box A) is fastened in place the grate B is also secured in the right position for use, and when the lower door, C, is let down to discharge the ashes the grate B is also let down, discharging the contents of the upper part of fire-box A. The fire-box A and table H are supported on suitable legs, (not seen in the drawings.)

The operation is as follows: Fire being built in the upper part of the metallic fire-box A upon the grate B, and the single nozzle G being inserted into the box A in place of the double one, F, which is removed for the time being, a single barrel is placed upon the blocks *h* and *h'* of the table H and slid over the tube

or nozzle G. Wind is now communicated through the pipe E from the bellows, and is forced through the grate B to the fire, and the blaze and heat of the fire are blown through the nozzle G the whole length of the barrel through the inside, heating it sufficiently to tin the side. Having tinned the sides of two of these barrels, they are put together and the ribs placed in the right position, when they are securely fastened together by clamps J, which are provided with set-screws *k* and springs *n*. The nozzle G is now taken out of the fire-box A and the double nozzle F is put in its place, when the two barrels I are put upon the blocks *h* and *h'* of table H and connected with the nozzles, as before, when the blaze is forced through both of these barrels at the same time, heating them sufficiently to solder. The solder is now applied and the whole is secured firmly together, the degrees of heat being regulated by letting more or less blast through the pipe E by a suitable slide made for that purpose. The clamps are now removed and the operation is repeated as before.

The great advantage of this mode of putting barrels together over the old plan of confining them with wires and heating over a fire or by heated plugs will be apparent to any one skilled in the art, for the barrels are heated regularly and very quick through their entire length, and are in a position for the workman to handle conveniently, and the clamps can be used an almost endless number of times, thereby saving no small expense for wire, as well as time, where barrels are manufactured largely.

Having fully described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

1. The mechanism, substantially as described, for heating and soldering gun-barrels by blowing the heated blast through them.

2. The clamps J, composed of set-screws and springs, substantially as described, for holding gun-barrels while being soldered.

ETHAN ALLEN.

Witnesses:

SULLIVAN FOREHAND,  
GEORGE W. FAIRFIELD.