

(No Model.)

2 Sheets—Sheet 1.

A. PEDERSON.
TUYERE IRON.

No. 536,317.

Patented Mar. 26, 1895.

Fig. 1.

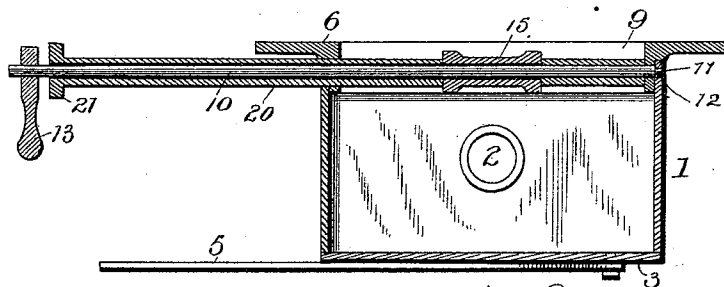


Fig. 2.

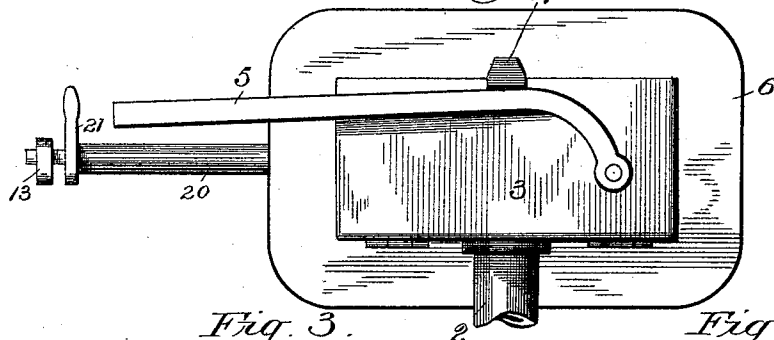


Fig. 3.

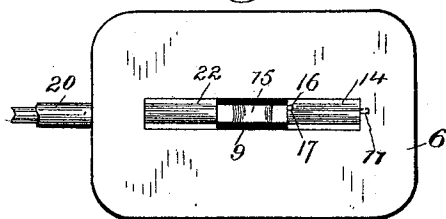


Fig. 5.

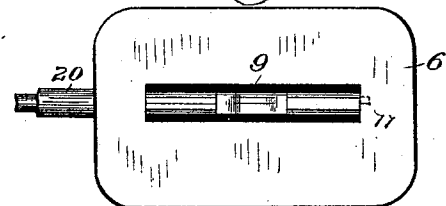


Fig. 4.

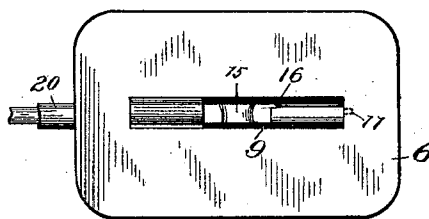
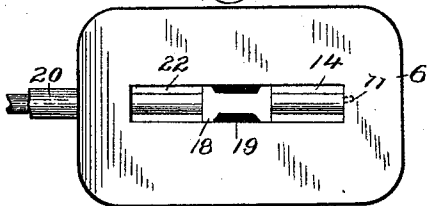


Fig. 6.



Witnesses
J. R. Reynolds
L. G. Randall.

Inventor
Andrew Pederson
By John Medduburn
his Attorney

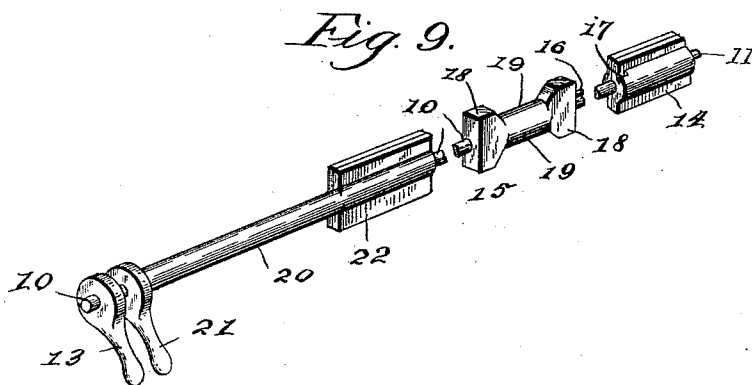
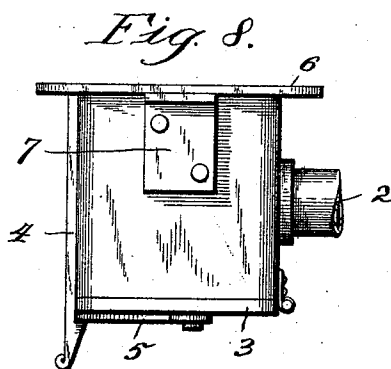
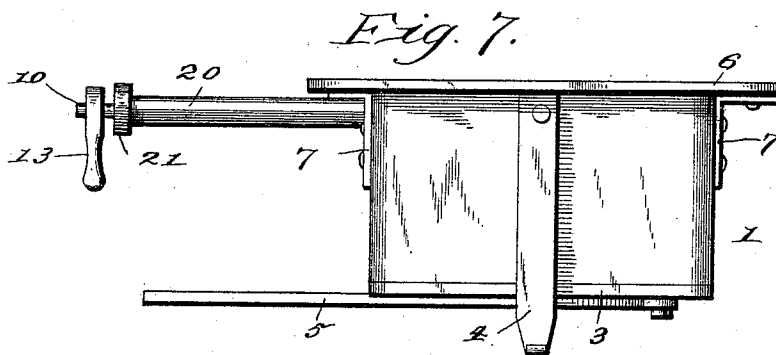
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2 Sheets—Sheet 2.

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Witnesses

Theo. L. Gatchel.
J. W. ...

Inventor
Andrus Pederson,
by *John W. ...*
his Attorney.

UNITED STATES PATENT OFFICE.

ANDREW PEDERSON, OF SPENCER, IOWA.

TUYERE-IRON.

SPECIFICATION forming part of Letters Patent No. 536,317, dated March 26, 1895.

Application filed November 2, 1894. Serial No. 527,726. (No model.)

To all whom it may concern:

Be it known that I, ANDREW PEDERSON, a citizen of the United States, residing at Spencer, in the county of Clay and State of Iowa, have invented certain new and useful Improvements in Tuyere-Irons; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in tuyere irons, the same having for its object to provide a device of this character adapted to regulate the quantity of air admitted or the blast applied to a fire used for blacksmithing or other similar purposes.

The invention consists of a casing having a hinged bottom adapted to be fastened in place by means of a spring clasp and having pivoted thereto a lever adapted to bear against said clasp for releasing the same. The casing is provided further with an inlet opening for the blast and has its upper face provided with an elongated slot in which moves a three-part valve by means of which the whole of the blast may be passed therethrough, or one-third or two-thirds of this quantity admitted.

The invention is clearly illustrated in the accompanying drawings, in which—

Figure 1 represents a vertical, central, longitudinal section of my device. Fig. 2 is a bottom plan thereof. Fig. 3 is a top plan showing the valve one-third open. Fig. 4 is a similar view showing the same two-thirds open, and Fig. 5 is a similar view, showing the valve entirely open. Fig. 6 is a similar view showing the valve in its closed position. Fig. 7 is a side elevation of the device complete. Fig. 8 is an end view of the same. Fig. 9 is a detached perspective view of the valve rod.

Similar numerals of reference indicate corresponding parts in the various views.

1 is a casing made of any suitable material, preferably iron, provided in one side thereof with an inlet pipe 2 for the admission of the blast thereto. Hinged to the casing is the bottom 3 thereof, which engages with a spring clasp 4 secured to the side of the casing 1, whereby the same is held in its closed position. Pivoted to the bottom 3 is a curved arm or lever 5 which is adapted to bear against the inside of the spring clasp 4, for the pur-

pose of releasing the bottom 3 from engagement with said clasp.

6 represents the top of the casing which is shown as made of a piece of metal securely fastened thereto by means of brackets 7. This casing has in its upper face an elongated slot 9 in which works my three-part valve to be described. This valve consists of a rod 10 having a pintle 11 at the end thereof moving in a slot 12 in the top of said casing. The rod extends centrally through said slot 9 and is formed into a handle 13. At one end thereof is a flat portion 14 extending over one-third of its length and engaging therein with a collar 15 extending over one-third of its length but located at the middle of said rod. The collar 15 is provided with a pin or projection 16 which engages a slot 17 in the flat part 14, whereby the two parts are adapted to move together. The collar 15 is further provided with shoulders 18 at each end forming a recess 19 between the same.

Surrounding the rod 10 is a hollow rod 20 formed with an outer handle 21 and at its inner end with a flat part 22, which bears against one of the shoulders 18 of the collar 15. By this construction, it will be seen that I can admit a blast through the slot 9, either one-third or two-thirds, or of the entire capacity of said slot and thereby regulate the blast of air to the furnace. For example, if I wish a blast of one-third capacity, I turn both the rods 10 and 20 so that the flat portions 14 and 22 close that portion of the opening 9 in which they are adapted to work. The blast then passes up through the central portion around the outside of the collar 15. If I desire two-thirds capacity, I turn the rod 10, one-fourth of a revolution, thereby allowing the blast to pass through the central opening and one end opening, and if I desire the full blast, I turn both the rods 10 and 20 allowing it to pass freely through the entire space 9.

From the foregoing description, taken in connection with the accompanying drawings, it will be observed that I have devised an apparatus for this purpose which is very simple in construction, convenient of operation and one which is an improvement upon anything that has preceded it.

It is, of course, obvious that many minor changes may be made without departing from

the nature or spirit of the invention or sacrificing any of its advantages. All such modifications and obvious changes are clearly within the scope of this invention and are intended to be covered by this patent.

Having thus described the invention, what is claimed as new is—

1. A tuyere iron having an opening therein for the passing of a blast therethrough, and a valve made in three parts for regulating the quantity of the blast, each part being flat, so that when it is turned across the passage it will cut off the blast, one of said parts rigidly attached to one of the other parts, and the third independent of the other two, whereby one, two or all of said parts may be turned across the said passage for the purpose of cutting off one-third, two-thirds, or the entire amount of a blast, substantially as and for the purpose described.

2. In a tuyere iron having an opening therein for the passage of a blast therethrough, a valve for said opening consisting of a rod adapted to rotate in said opening and having a flattened portion, a collar rigidly connected with said rod and a hollow rod surrounding one portion of the first rod, also having a flat-

tened portion whereby upon the movement of one or the other of said rods, the flattened portion thereof may be turned to admit air to the said opening in regulated quantities, substantially as and for the purposes set forth.

3. The combination of a casing having a hinged bottom, a spring clasp attached to the side of said casing and adapted to hold said bottom in its closed position, a lever pivoted to said bottom and adapted to disengage said clasp therefrom, said casing being further provided with blast openings in one side and an elongated slot in its upper face, a valve moving in said slot made in three parts, means for operating one of said parts independently and means for operating the other two parts together, whereby by moving one, two or all of said parts the quantity of air admitted in the said slot may be accurately regulated, substantially as and for the purpose set forth.

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

ANDREW PEDERSON.

Witnesses:

JOHN M. HANSEN,
PETER L. CHRISTENSEN.