J. SHUGERT.

Tuyere.

No. 1,149. Patented May 9, 1839.

Fig 1.

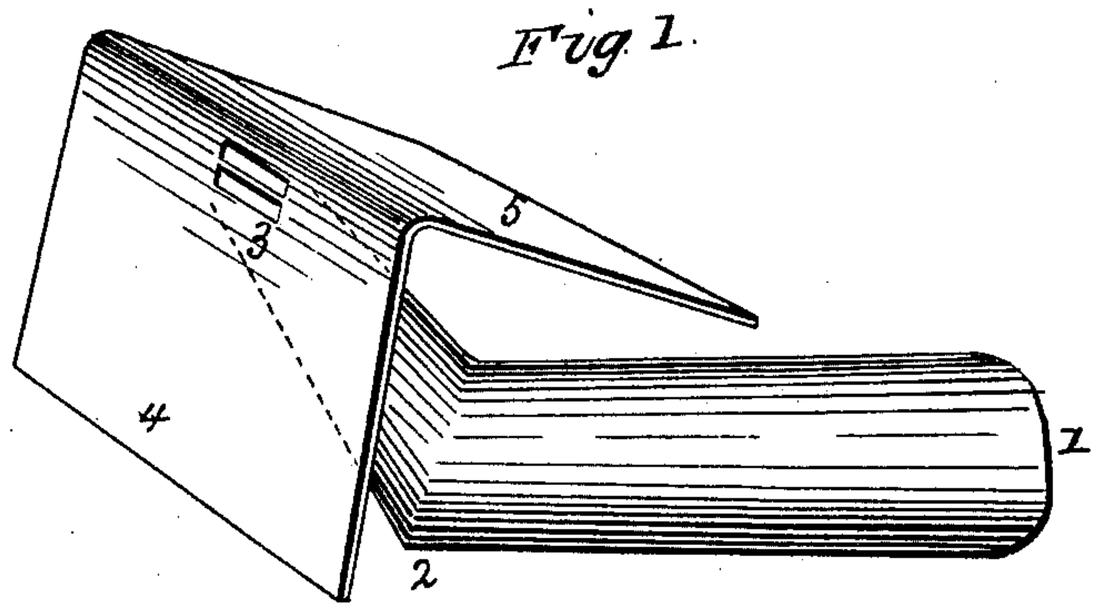
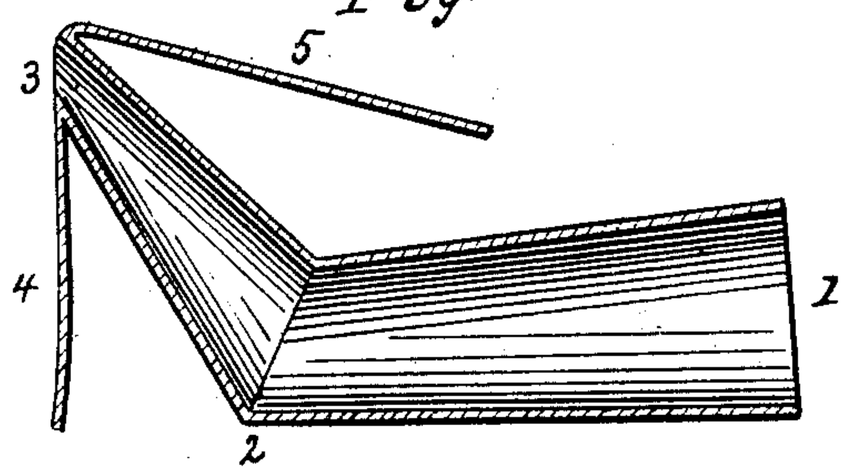


Fig 2.



UNITED STATES PATENT OFFICE.

JOHN SHUGERT, OF ELIZABETH, PENNSYLVANIA.

BLACKSMITH'S TWYER-IRON.

Specification of Letters Patent No. 1,149, dated December 21, 1838.

To all whom it may concern:

Be it known that I, JOHN SHUGERT, of the borough of Elizabeth, in the county of Allegheny, in the State of Pennsylvania, have invented an Improvement in the Mode of Making Twyer or Tew Irons Used in Blacksmiths' Forges; and I do hereby declare that the following is a full and exact description thereof.

The improvement which I am about to describe is on the tew-iron for which I obtained Letters Patent of the United States under date of the thirty-first day of March in the year 1836, in which the blast from the tew-iron entered the fire at an inclination, say of forty-five degrees. This elevation of the blast was found to produce beneficial results, but some inconvenience was experienced from the tendency of the coal to rise, or, fly up, when the blast was given with considerable force through a round nozzle; an inconvenience which is effectually removed by my present improvement, which is productive also of other advantages.

In the accompanying drawing Figure 1, is a perspective view of my tew-iron, and Fig. 2, a longitudinal section of it. From the back end 1, where the pipe of the bellows enters, to the point 2, may be a tube, either square or round, about sixteen inches long, and about two and a half inches in diameter; from the point 2, the tube rises on an angle of forty-five degrees, or more, to the opening through which the wind is discharged at 3. From the angle 2, to the opening 3, the tube changes its form, being flattened horizontally, and widened out laterally, so that the wind entering the fire shall do so in a long and thin sheet; this aperture may vary in size according to the size and design of the forge; it may, for example, be from two to four inches in length, and from three eighths of an inch to an inch in height. There may be one or more partitions along this opening to divide the blast into thin sheets, which will serve also to prevent the falling of coals into the tube.

The plate marked 4, 5, is a guard plate, against and upon which the fire is made; it is so made as that its upper part 5, shall form an angle of 90 degrees, or nearly so, with its front portion 4. This latter portion may be about ten inches long, and five wide; the part 5, may be an inch wider; the aperture 3 may be about one fourth of an inch below the bend, or angle. This guard, or fender plate effectually defends the tube from the action of the fire.

The iron being thus prepared is to be set in the forge with the mouth three or four inches below its surface. The bellows pipe is to be inserted in the back end of the tube. The wall is to rise from the back edge of the guard, or fender plate, and the whole forge finished in the usual manner.

By widening the blast and decreasing its depth, in the manner described, I have already remarked that the tendency of the coal to rise up by a strong blast is obviated; and besides this the fire spreads out to a less distance from the forge back, and is concentrated where it is most needed.

All that I claim as constituting my improvement is—The oblong form given to the aperture 3, in combination with the elevated blast, for the purpose, and in the manner set forth.

JOHN SHUGERT.

Witnesses:
THOS P. JONES,
FR. P. DIMPFEL.