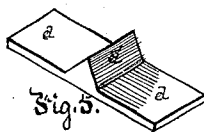
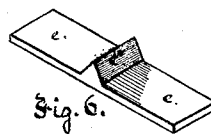
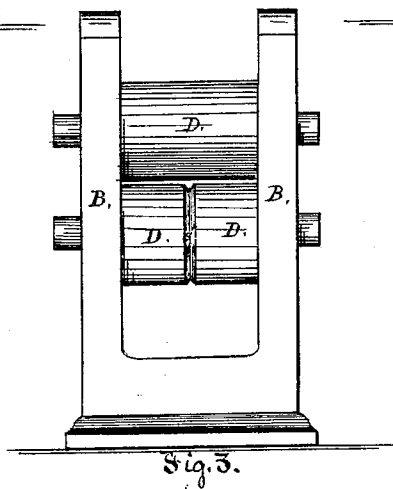
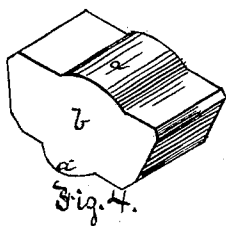
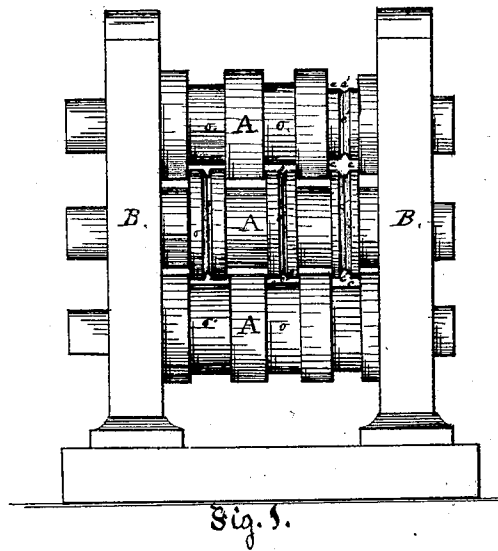
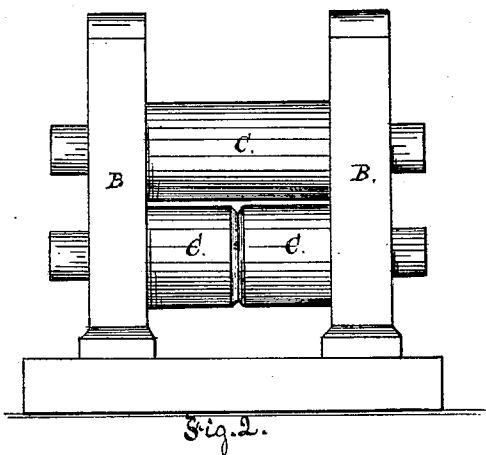


J. REESE.
METALLIC LATH AND BILLETS FROM WHICH THE SAME MAY BE
PRODUCED.

No. 104,997.

Patented July 5, 1870.



Witnesses:

Thos. H. H. H.
R. C. Wrenschaff

Inventor:
Jacob Reese,
by Bakewell & Christy,
his Atty's

United States Patent Office.

JACOB REESE, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 104,997, dated July 5, 1870.

IMPROVEMENT IN METALLIC LATH, AND IN BILLETS FROM WHICH THE SAME MAY BE PRODUCED.

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, JACOB REESE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Metallic Lath, and in a Billet from which the same may be produced; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1, 2, and 3 are side elevations of metal rolls, having grooves of different forms, suited to the production of my improved lath;

Figure 4 is a perspective view of the billet from which the lath, shown in perspective in Figure 6, is to be rolled; and

Figure 5 illustrates the work at an intermediate stage.

Like letters of reference indicate like parts in each.

My invention consists in the manufacture of rolled-iron lath.

The great demand for fire-proof buildings has given rise to a demand for metallic lath, but in manufacturing such lath, numerous difficulties have been encountered. Hoop-iron is not sufficiently rigid. If the lath were made thick enough to secure rigidity, the cost would be too great. The end in view could only be secured by a lath which consisted of a thin narrow bar or strip, with a solid rib rolled along the middle of one face. To roll such lath, and deliver it from the rolls straight, without warp, bend, or twist, is exceedingly difficult. If it be rolled directly from a flat bar, the thinnest part of the lath will be reduced and drawn the most, and it will then be impossible to deliver it from the rolls in a useable condition. The reducing and drawing action of the rolls on the lath must be uniform in all its parts, or, in other words, and more generally stated, in reducing a bar of iron of irregular cross-section, by means of the rolls, the reduction and elongation of the bar must, in some way, be so regulated as to be greatest where the bar is thickest, and least where the bar is thinnest. If the thin or strap part, say one-eighth of an inch thick, be reduced a sixteenth, and not widened, its length will, of course, be doubled. And, then, to secure a corresponding elongation of the rib, it must also be reduced one-half. The comparative amount of reduction must be the same in both; and the actual reduction must be the greatest in the thickest part; and in explaining the operations by which the billet is converted into the lath, I will use the words "reduction" and "reducing" in the latter sense. In virtue of the peculiar shape of the billet, and the manner of rolling the same, I secure an equal working of the iron in all parts, and also a uniform elongation.

To enable others skilled in the art to make and

use my improvement, I will proceed to describe its construction and mode of operation.

Preparatory to rolling the lath, I make, in any of the ways known to the art, a billet, *b*, of the form shown in fig. 4, a fillet or bead, *a a'*, being formed on the opposite faces thereof.

This billet, when heated, I pass through one or more pairs of grooves, or tongue and groove, *c c*, in the rolls *A*, each such groove *c* having a sub-groove, *c'*, and all the grooves *c c'* being so shaped that they shall reduce and draw the billet *b* and beads *a a'*, when passed through.

The breadth of the billet *b* is a little less than the breadth of the lath to be made, and the amount of metal in the beads *a a'* is, as near as practicable, such that, when such beads are worked down into the rib *c'* of the finished lath, such metal will have received about the same amount of elongation as the edges or flat part *e* of the lath.

As the rolls herein described are mounted in housings, *B*, and operated in the usual or any known way, they differ from ordinary rolls only in the form and arrangement of their grooves.

After the billet *b* has been sufficiently reduced in the grooves *c c'*, it is passed through another set of grooves, *o*, or tongue and groove, in the same or in another pair of rolls.

One of these grooves has a sub-groove, *o'*, for one of the beads *a*, but the other groove has a bottom face, flat or nearly so, by which the other bead, *a'*, on the billet *b*, is forced into the body of the billet, so as the better to fill out and perfect, as well as elongate the opposite rib. The groove *o'* should be made deeper than the bead *a* to be passed through therein, so that, by rolling in the opposite bead *a'*, the rib or body part may be elongated equally as much as the remainder of the bar. The rolling down of one bead thus may be done at one pass, or at two or more passes, as may be preferred.

The billet, then of the form shown in fig. 5, consisting of a central rib, *d'*, and body or strap *d*, is then passed onto the rolls *C C*, one of which has a groove, *s*, through which to pass the rib *d'*, whereby it is drawn and reduced, the strap part *d*, at the same time, being drawn and reduced between the cylindrical faces of the rolls. The strap part *d* has now become so thin that grooves for it are no longer necessary, though they may be used, if so desired.

One or more passes through the same or a similar pair of rolls, *D D*, having a groove, *s'*, for bringing the rib *d'* down to the form desired, is sufficient to complete the lath, the cylindrical faces of the rolls being set so close together that they shall reduce the strap part, as desired.

In this way the lath *e e'* is produced with all parts

uniformly worked, drawn, and reduced, with plain smooth edges, without warp, bend, or twist, and is ready for immediate use. Such lath are attached by being dovetailed into the girders or joists, or in other desirable way.

The billet *b*, beaded on two of its opposite faces for the production of a rib on one face only, is applicable not only to the manufacture of lath, but also to the manufacture of ribbed articles of rolled iron generally. The excess of iron on the face opposite to that on which the rib is desired, has a tendency, when rolled in, not only to work and draw the iron of the center of the billet and supply the iron needed in the rib, but also to force out and make a more perfect and well-defined rib, where the same is desired.

The rib thus made need not necessarily be on the middle of the face of the lath, but, if so desired, may

be on either side of the middle, or, if preferred, two or more ribs may be made on the lath, in the same way.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. As an improved article of manufacture, a rolled-iron lath, consisting of a thin strap, *e*, strengthened by one or more ribs, *e'*, made substantially as described.

2. The billet *b a a'*, of the form shown and described, as and for the purposes set forth.

In testimony whereof, I, the said JACOB REESE, have hereunto set my hand.

JACOB REESE.

Witnesses:

JOHN GLENN,
G. H. CHRISTY.