

A. REESE.

Machines for Making Toe-Calks.

No. 150,613.

Patented May 5, 1874.

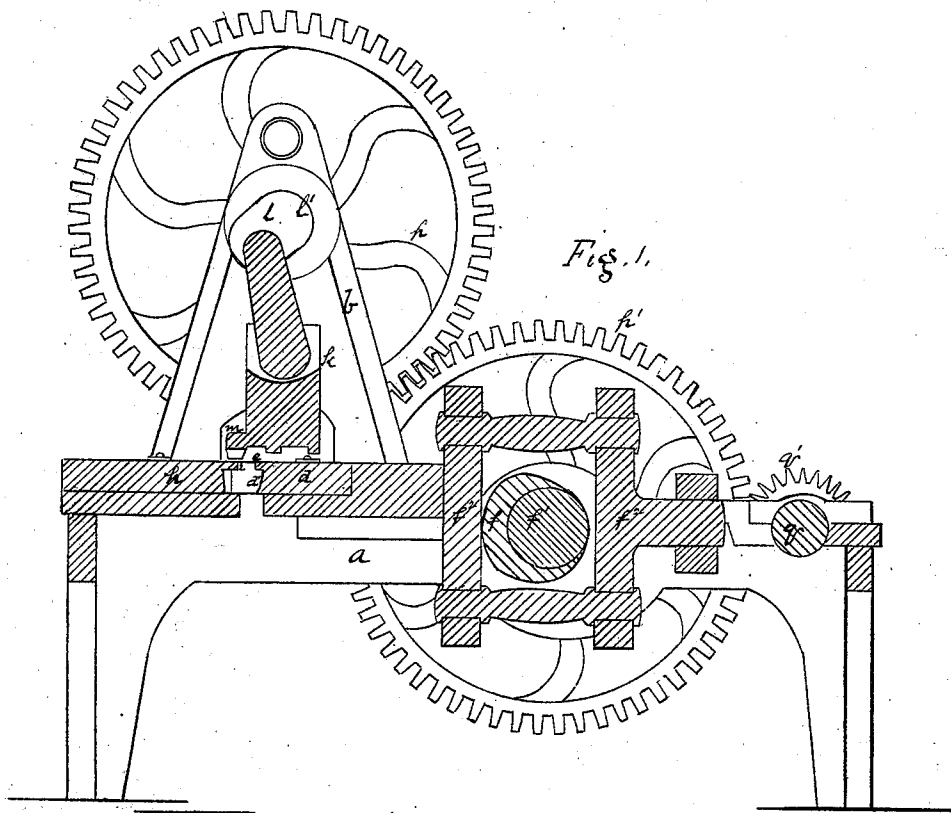
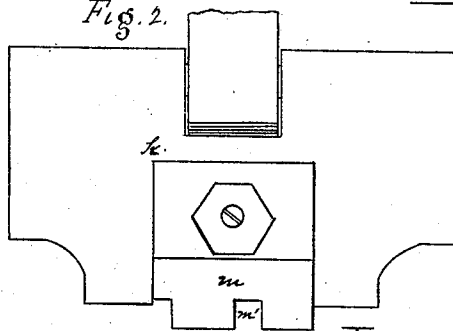


Fig. 2.



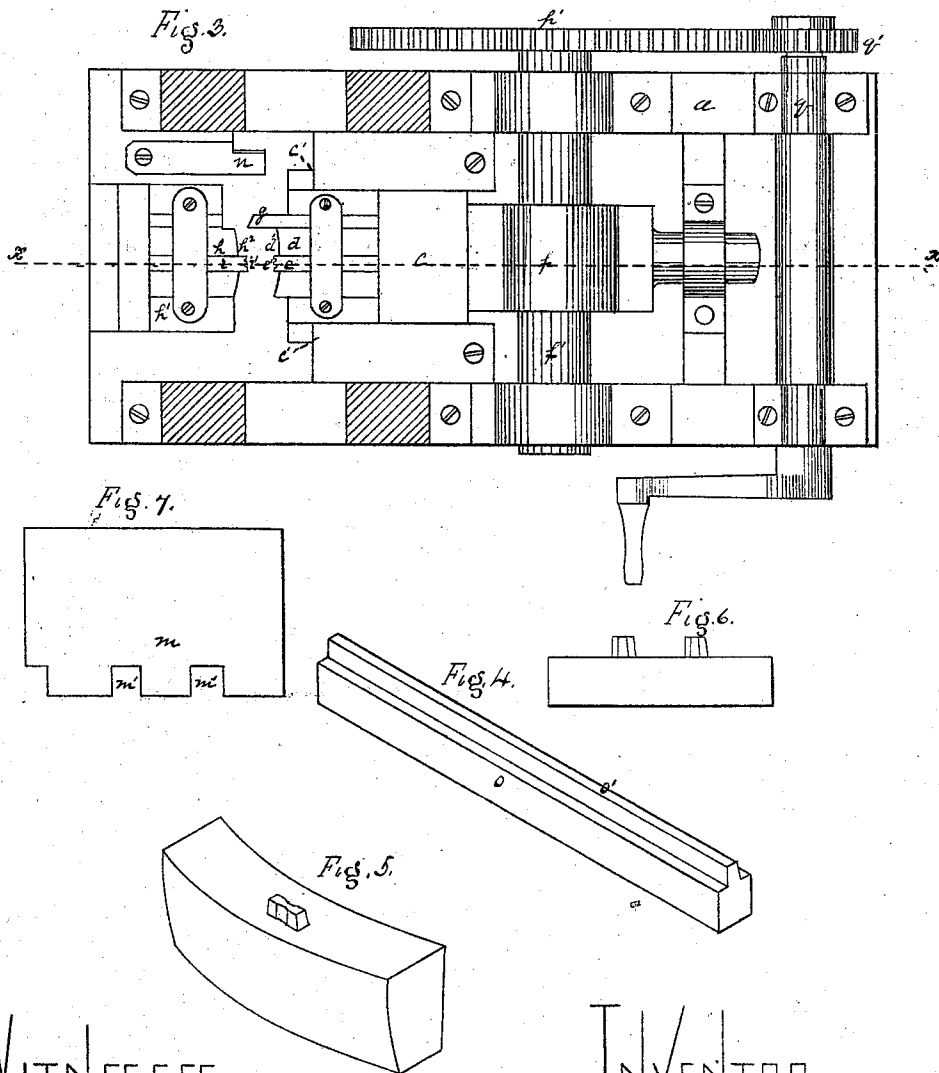
WITNESSES

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UNITED STATES PATENT OFFICE.

ABRAM REESE, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR MAKING TOE-CALKS.

Specification forming part of Letters Patent No. **150,613**, dated May 5, 1874; application filed March 23, 1874.

To all whom it may concern:

Be it known that I, ABRAM REESE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Machines for Manufacturing Toe-Calks; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a vertical section through *a a*, Fig. 3. Fig. 2 is a view of the vertical die. Fig. 3 is a plan view of the machine, the cross-head with the vertical die being removed. Figs. 4 and 5 are, respectively, views of the bar and of the finished calk. Fig. 7 is a view of a vertical die for producing the calks, shown in Fig. 6.

My invention consists in the construction of a machine for forming toe-calks from a continuous bar fed into it.

To enable others skilled in the art to make and use my invention, I will describe its construction and mode of operation.

I produce a bar of the shape shown in Fig. 4, by rolling in suitable rolls, having a rectangular body, in cross-section, with a bead extending along the center of the top. By the operation of my machine, the bar is formed into a series of toe-calks like such as is shown in Fig. 5, and each calk is cut off from the bar during the operation of forming the next succeeding one. The operative parts of my machine are mounted on a frame, *a*, upon which is also placed the standard or cross-head *b*. Upon the frame *a*, in grooves *c'*, I place a horizontally-moving head or slide, *c*, in which I insert a die, *d*, having a curved or concave inclined face, *d'*, the inclination being from the lower edge backward. In the center of the upper edge of the die *d*, I place a second and smaller die or finger, *e*, having a plane or corrugated face, *e'*. The slide *c* has its movement communicated to it by means of the cam *f* mounted on the shaft *f'*, and operating in a yoke, *f''*. Attached to the slide *c*, at the side of the die *d*, is a shear or knife, *g*, which projects considerably in advance of the die *d*. Directly in front of the die *d* is a stationary die, *h*, which is set in a suitable frame, *h'*, and is provided with a finger or small die, *i*, op-

posite to and corresponding with the finger or die *e*, having a plain or corrugated face, *i'*. The face *h''* of the die *h* is convex in form, and slightly beveled at its upper edge. The movement of the slide *c* causes the die *d* to advance until the space between the dies *d* and *h* is just equal to the thickness of the calk to be produced, and the space between the fingers or dies *e* and *i* is equal to or less than the thickness of the bead upon the upper face of the blank, shown in Fig. 4. The shear *g* projects sufficiently from the die *d* to extend past the corner or edge of the die *h*, when the slide is at the forward end of its movement, so that the corner of the die *h* shall operate, in connection with the shear *g*, in cutting off the finished calk. Moving vertically in guides formed in the sides of the standard or cross-head *b* is a head or frame, *k*, in which is mounted a die, *m*, which is tapered, so that it shall enter the space between the dies *e* and *h*; and is planed out in the center, so that it shall descend between the dies without encountering the small or finger dies *e* and *h*, such dies entering the cavities *m'*. The vertical movement is given to the head *k* by means of the crank *l'*, mounted on the shaft *l*, to which power is communicated from the shaft *q* by the gear-wheels *p*, *p'*, and *q'*. Beyond the forming-cavity of the dies is a stop or gage, *n*, against which the bar is fed to gage or give the proper length for forming the calk. The power-connections are so arranged that the die *d* shall advance and grasp the bar just before the die *m* descends to operate upon it.

The operation of this machine is as follows: The bar *o*, properly heated, is fed into the machine between the dies *d* and *h*. The die *d* advances and grasps it by its projecting lower edge, forcing it against the die *h*, and giving it the curved form shown in Fig. 5. At the same time, the fingers *e* and *i* grasp the central portion of the bead *o*, and, when corrugated, give it the shape shown in Fig. 5. The die *m* then descends and forces the remaining portion of the bead *o'* down into the tapering cavity formed by the dies *d* and *h*, and the metal thus displaced fills the vacant space and causes the hitherto rectangular body of the bar to assume the tapered form shown in the finished calk, Fig. 5. The dies *d* and *m* are,

by the further operation of the machine, withdrawn, and the bar is fed forward until the calk just finished encounters the stop *n*, when the next advance of the slide *c* causes it to be cut off by means of the shear *g*. The finished calk drops down into a proper receptacle, and the next calk is formed in the same way. All of the dies of this machine are removable for the purpose of inserting others of different sizes when required. If it is desired, two or more spurs may be formed on a calk by making a corresponding number of small or finger dies and an equal number of cavities or openings, *m'*. A two-spur calk and a corresponding vertical die are shown in Figs. 6 and 7. The faces of the dies *h* and *d* may be made straight, and the calk bent by a subsequent operation. The bar *o* may be made square, in cross-section, if such a calk is desired.

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

1. The dies *h* and *d*, which form the tapered cavity in which the calk is made, in combination with the dies *i* and *e*, for grasping and fitting that portion of the bead *o'* that is to constitute the spur, substantially as described.

2. The combination of the dies *d*, *h*, *e*, *i*, and *m*, substantially as and for the purposes described.

3. In a machine for making toe-calks, the dies *h* and *d*, forming the tapered curved cavity, having, respectively, concave and convex faces for bending the calk and sustaining it under the blow of the upsetting-die, substantially as specified.

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

ABRAM REESE.

Witnesses:

W. N. PAXTON,
JAMES I. KAY.