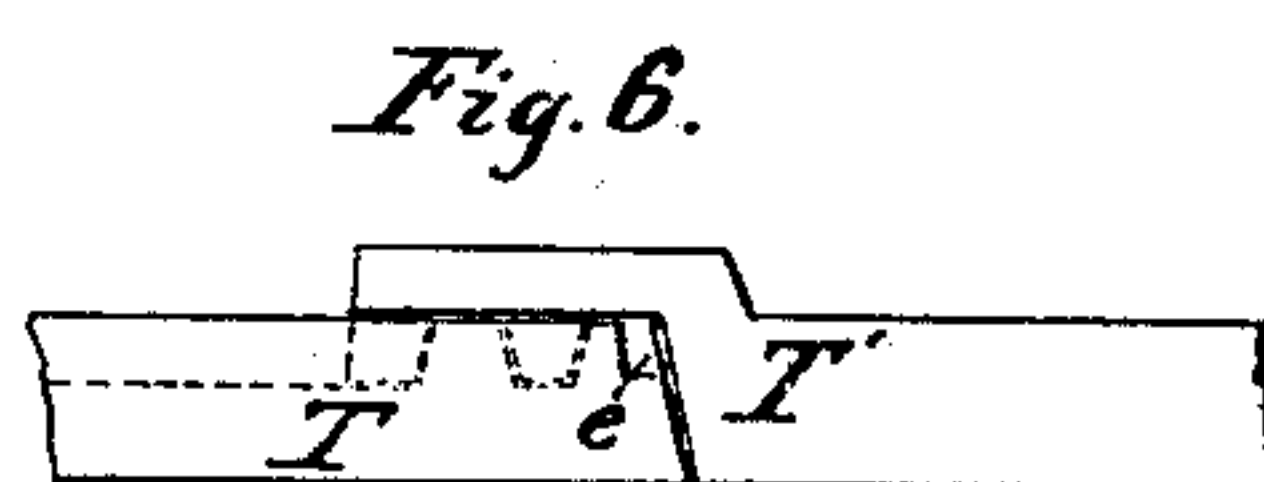
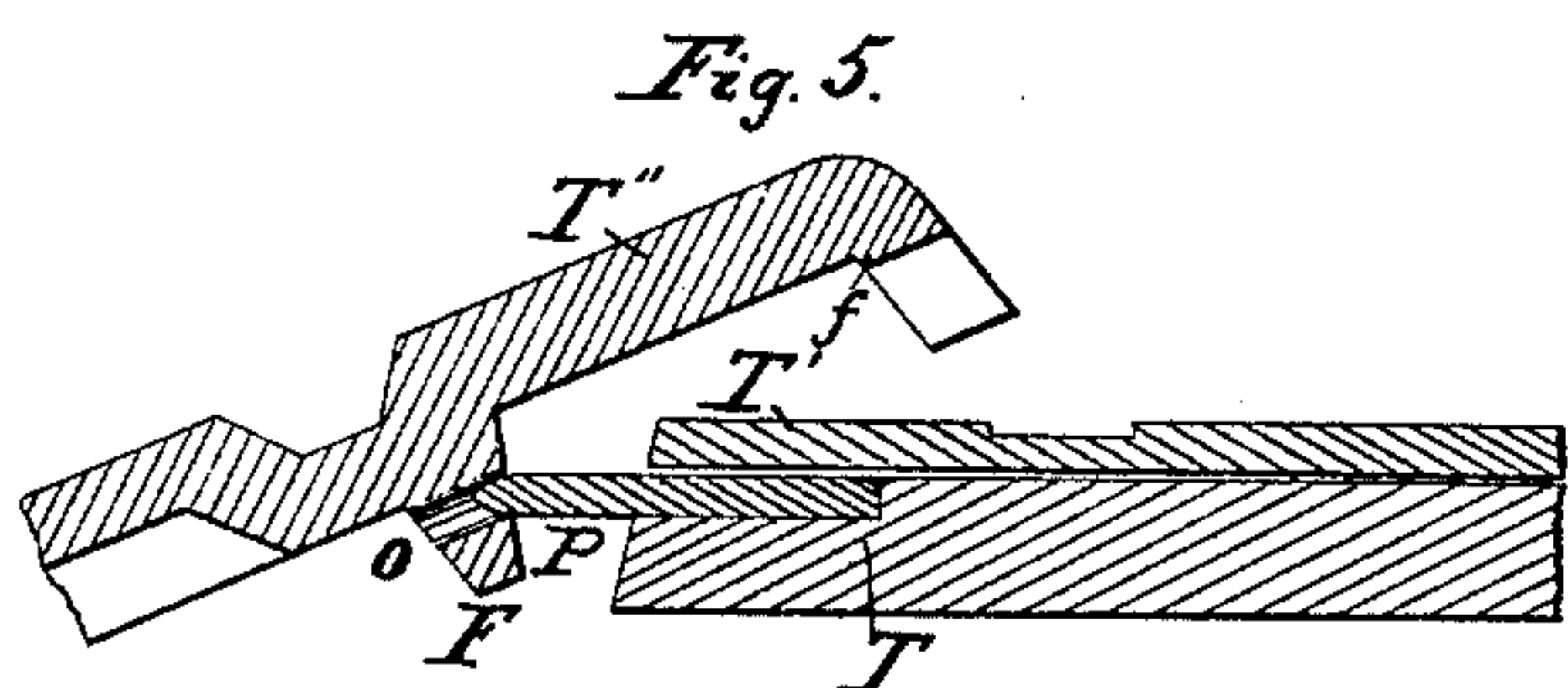
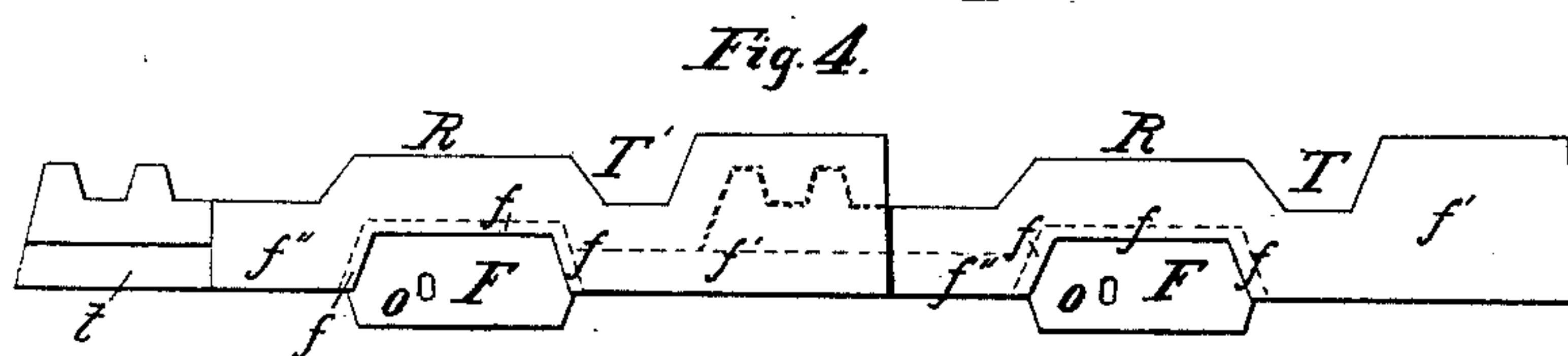
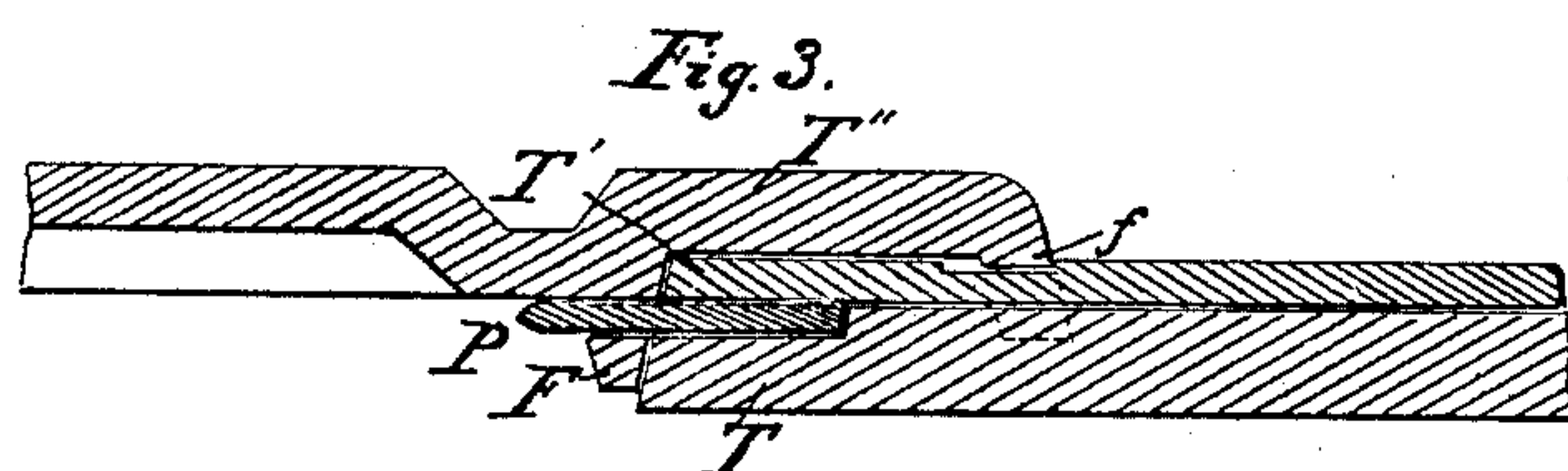
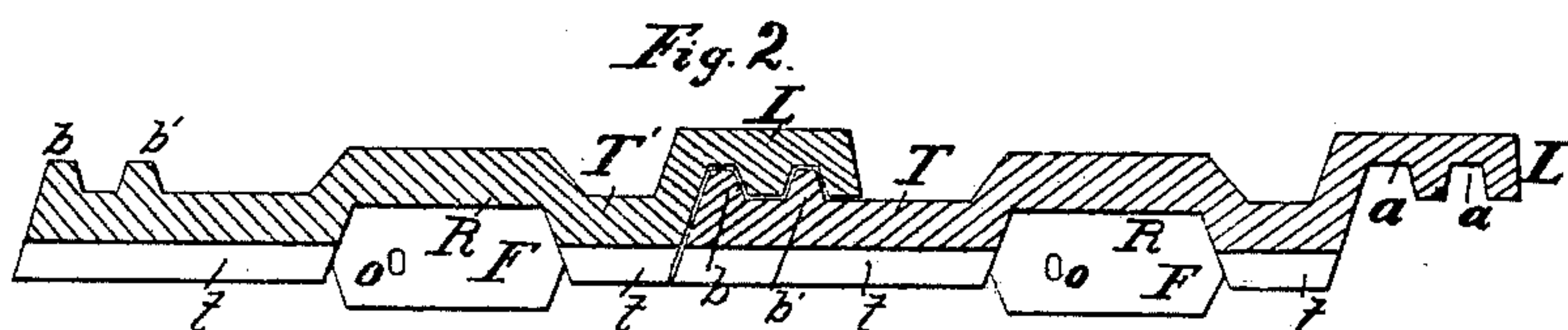
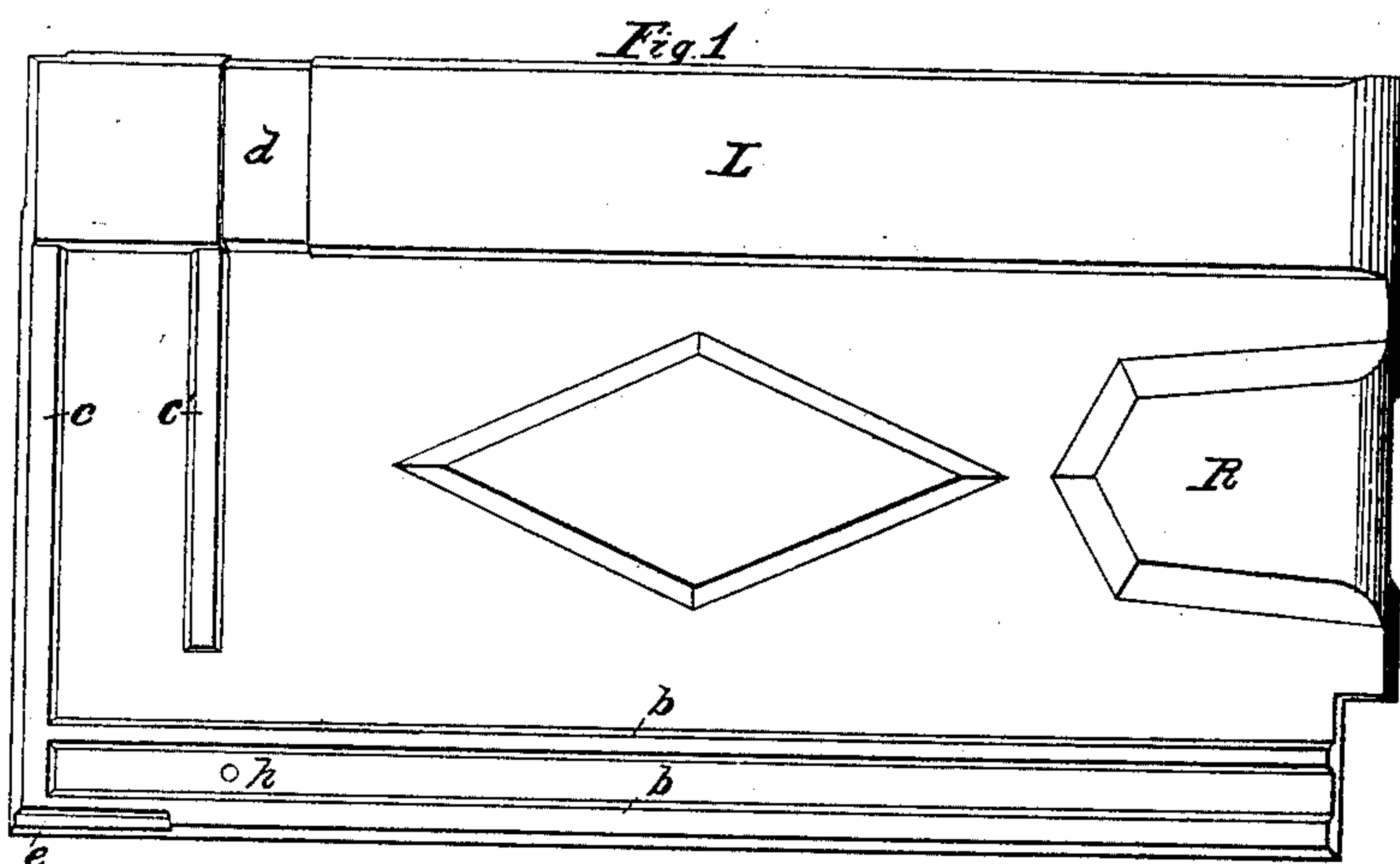


J. F. GRASSLE.  
ROOFING TILE.

No. 20,059.

Patented Apr. 27, 1858.



# UNITED STATES PATENT OFFICE.

J. F. GRASSLE, OF HAMILTON, OHIO.

## ROOFING-TILE.

Specification of Letters Patent No. 20,059, dated April 27, 1858.

*To all whom it may concern:*

Be it known that I, JOHN F. GRASSLE, of Hamilton, in the county of Butler and State of Ohio, have invented a new and useful Improvement in Roofing-Tiles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, forming part of this specification, in the several figures of which similar characters of reference denote the same part.

Figure 1 is a top view of the tile. Fig. 2 is a transverse section of two adjacent tiles; showing longitudinal grooves. Fig. 3 is a longitudinal section through securing pin of three tiles in adjacent courses; showing the manner of holding the upper course. Fig. 4 is a view of lower edge of two adjacent tiles. Fig. 5 is a sectional view showing the manner of connecting a tile with the course below. Fig. 6 is a view of upper edge of two adjacent tiles; showing cavity for the insertion of the securing pin.

The nature of my invention consists in a peculiar construction of tile, hereinafter to be described, whereby leakage is prevented, and the several courses readily secured together.

The lap edge of the tile is formed with two grooves  $a a'$ , in its under surface designed for the reception of the two tongues  $b b'$ , on the upper surface of the adjacent tile, as shown in Fig. 2.

At the head of the tile are two ribs  $c c'$ ; the lower one  $c'$ , at the upper edge of a shallow groove  $d$  in the upper surface and edge of the lap L.

In the lower end of the tile is a recess R, the upper surface of the tile being raised as shown at R to permit the formation of this recess. The recess has a flange  $f$  at its extremity, the opening left being just sufficient to receive the grooved portion  $d$  of the lap L. Connected with the flanges  $f$  are the flanges  $f' f''$ , the former at the end of the lap and the latter on the other side of the recess R. The depth of these flanges being such that they will reach to the upper surface of the tiles beneath, when in position.

The outer corner of the tongue  $b$  is grooved as shown at  $e$ , Figs. 1 and 6; so that when the tiles of a range are laid together, there will be a cavity  $e$  formed by the union of the tiles T T', as shown in Fig. 6, into which a pin P is inserted as shown in Fig. 5.

In covering a roof the lowest range of tiles is first laid, being secured by nails through holes  $h$ , between the tongues  $b b'$ . It is then desirable to securely attach the lower ends of the range next above, to the upper extremities of the already secured tiles. This is accomplished in the following manner. Behind the recess R is a flange F depending below the under surface of the tile. This flange has a perforation  $o$ , of sufficient size to receive pin P. The upper tile is placed so that its recess R will be above the lap of the tile below, and the point of pin P inserted in opening  $o$ . The lower end of tile T'' is then depressed, bringing flange  $f$  into the upper part of groove  $d$ . The upper tile is then forced downward until the several parts assume the positions shown in Fig. 3. The flange  $f$  passing to the lower side of groove  $d$ , and pin P passing through flange F, which rests against the heads of the tiles below. A nail driven through hole  $h$  of tile T'', effectually secures it in position, and prevents it from being blown off.

The cross tongue  $t$ , on the under surface of the lower part of the tile, occupies a position between the ribs  $c c'$ . And the flanges  $f' f''$  rest close to the upper surface of the tile below.

By this construction effectual barriers are provided to prevent the leakage of the roof, and a secure method of fastening the tiles of adjacent ranges together is furnished.

What I claim and desire to secure by Letters Patent is—

1. The groove  $e$  in the outer tongue  $b$ , the perforated flange F, shallow groove  $d$ , and flange  $f$  of recess R, in combination with the pin P and lap of the adjacent tile, substantially as, and for the purpose set forth.

2. I also claim the combination of the double grooves  $a a'$ , in the lap, tongues  $b b'$ , flanges  $f' f''$ , recess R and shallow groove  $d$ , operating together as and for the purposes set forth.

In testimony whereof, I have hereunto signed my name before two subscribing witnesses.

JOHN F. GRASSLE.

Witnesses:

EZRA POTTER,  
ISRAEL WILLIAMS.