

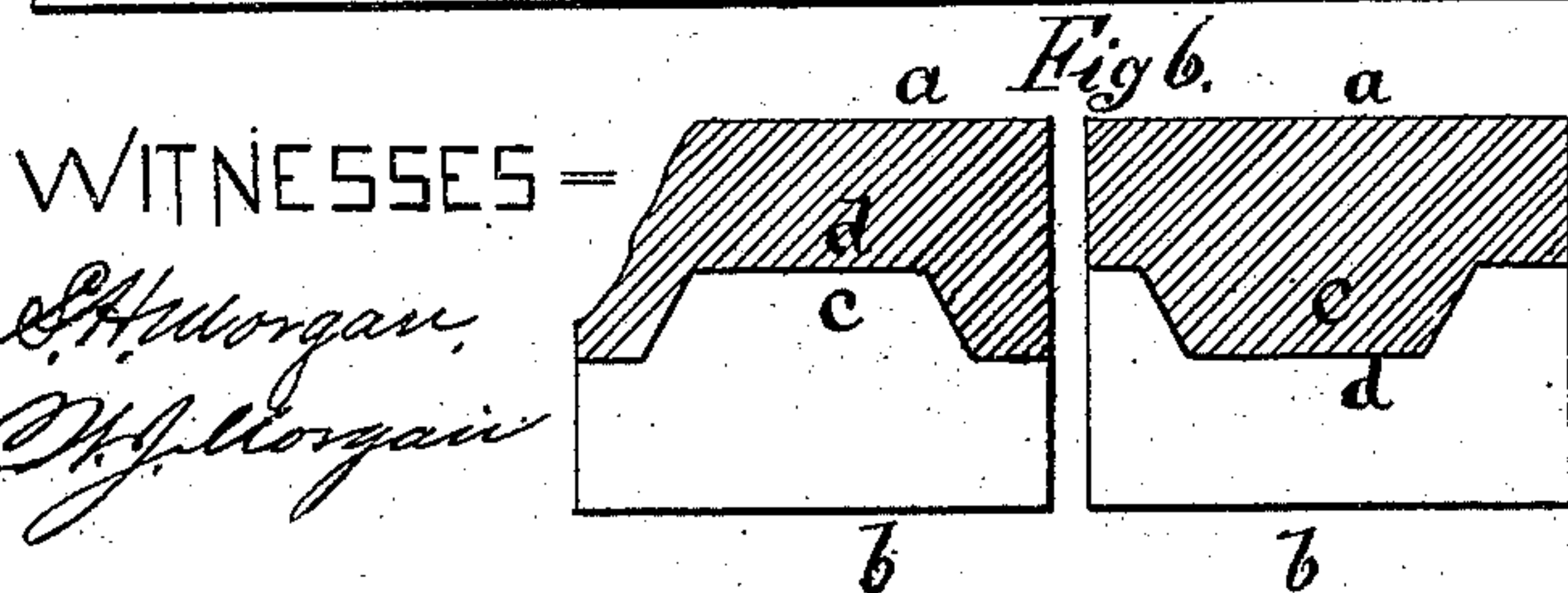
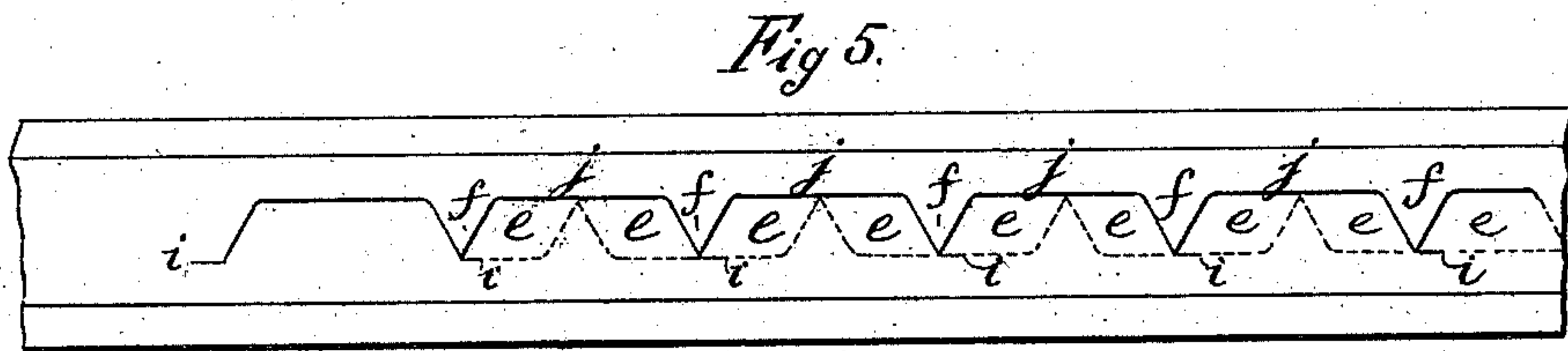
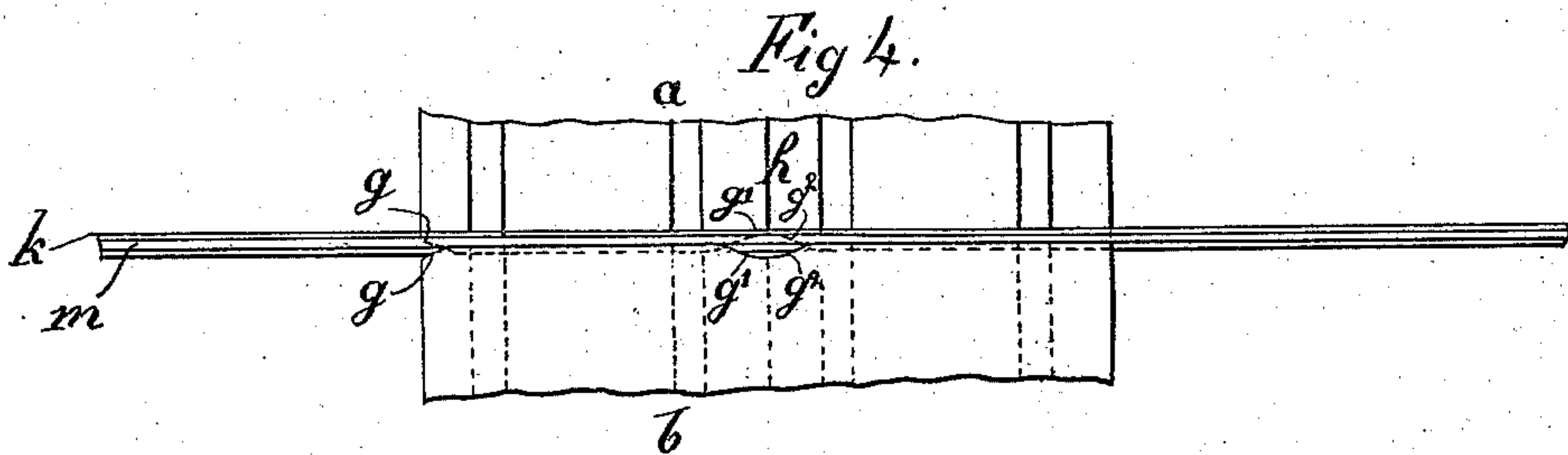
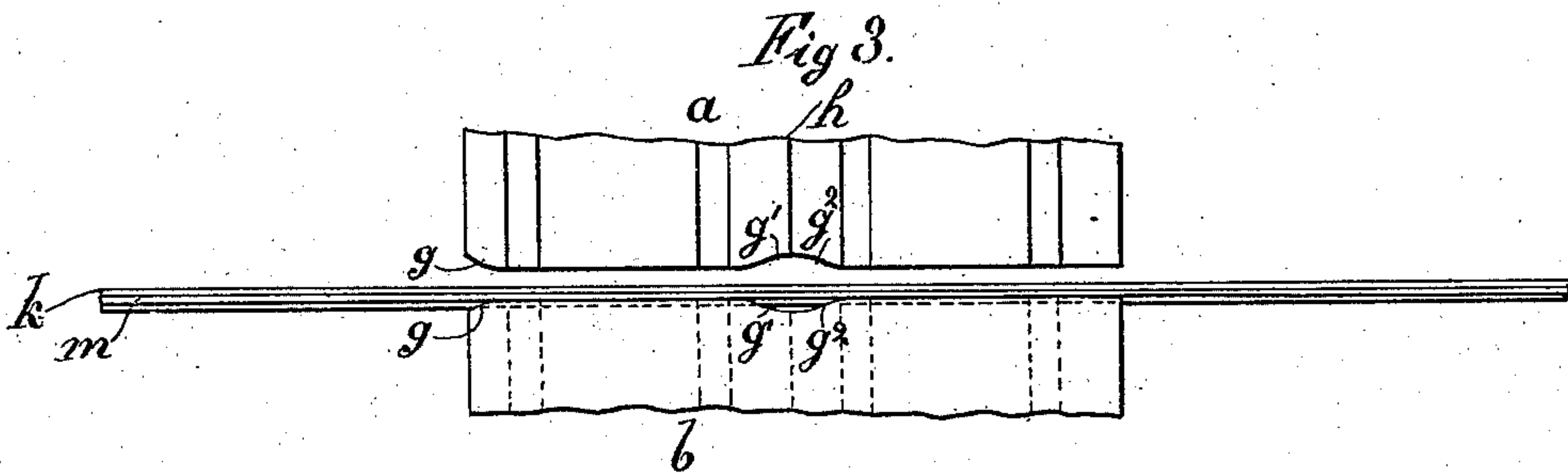
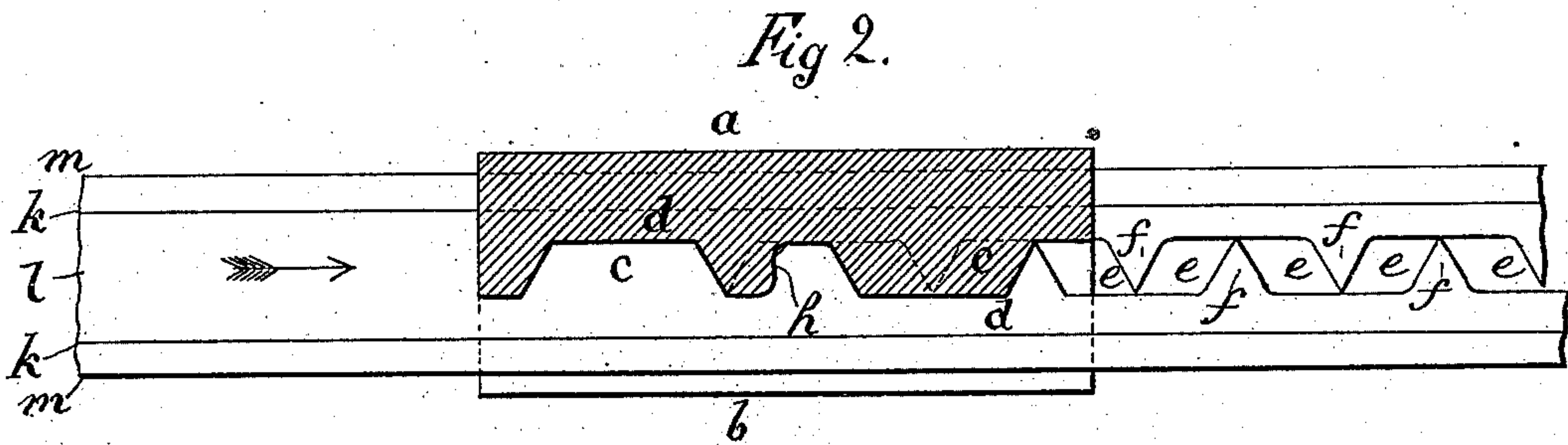
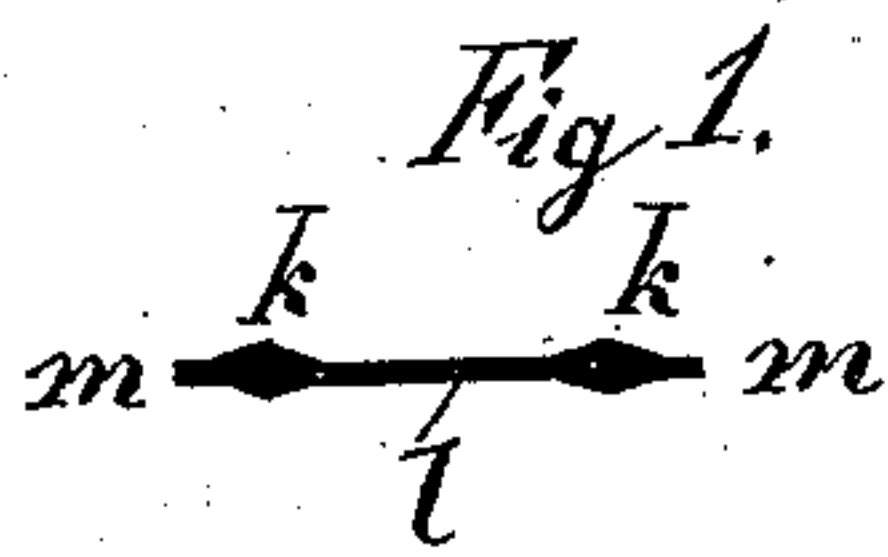
(No Model.)

A. P. THAYER.

DIE FOR MAKING BARBED FENCING.

No. 311,150.

Patented Jan. 20, 1885.



WITNESSES =

S. H. Morgan,
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INVENTOR

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UNITED STATES PATENT OFFICE.

ANSON P. THAYER, OF BROOKLYN, NEW YORK, ASSIGNOR TO THOMAS W. HALL, OF SAME PLACE.

DIE FOR MAKING BARBED FENCING.

SPECIFICATION forming part of Letters Patent No. 311,150, dated January 20, 1885.

Application filed November 30, 1883. (No model.)

To all whom it may concern:

Be it known that I, ANSON P. THAYER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Dies for Making Barbed Metallic Fencing, of which the following is a specification.

This invention consists of an improved construction of dies for separating double blank strips and forming barbs on the rods produced from the strip, said dies consisting of a pair of shearing-dies, each having a rib and a groove in the cutting-edge as wide and also as deep as the spaces between the barbs to be formed on the rods, and located so that the rib of one die works in the groove of the other die, said ribs and grooves being made with bevel sides corresponding to the bevel edges of the barbs to be formed, and they are placed as far apart as the width of one barb and the waste piece to be cut out when the barbs of one rod are cut midway between the barbs of the other rod, so that the cut of the second rib and groove overlaps the cut of the first rib and groove and cuts out the waste pieces partly cut by the first rib and groove. The dies may be separated at the middle of the space between the two ribs and grooves to be made independently, and in that case they may be located the distance of one or more feed movements apart, if preferred, all as hereinafter fully described, reference being made to the accompanying drawings, in which—

Figure 1 is a cross-section of the blank strip to be separated and barbed. Fig. 2 is a plan of the bed-die and horizontal section of the movable die with a portion of a blank strip between them, showing the action of the dies. Fig. 3 is a side elevation of the dies with a portion of the strip between them, the movable die being raised above the strip and ready to descend thereon. Fig. 4 is a side elevation of the dies and a portion of the strip, the movable die being down as having made the cut. Fig. 5 is a plan of a portion of the strip, with lines illustrating the operation of the dies. Fig. 6 is a plan of the bed-die and section of the movable die, showing them divided in the middle, as they may be used.

I make a pair of dies, *a b*, each having a

rib, *c*, and a groove, *d*, in the side of the cutting-edge, so arranged that the rib of one die fits in the groove of the other, and said ribs and grooves are as wide and deep as the notches to be between the barbs to be formed on the rods; also, the sides are beveled to correspond with the bevel edges of the barbs, and are the reverse of each other in respect to their taper. They are located as wide apart along the dies as the width of two barbs and a piece of waste such as is cut out between the barbs of the respective rods when the barbs of one rod are cut from the middle of the space between the barbs of the other rod, thus causing the cut of the second rib and groove to overlap half the cut of the first rib and groove suitably for cutting away the waste pieces at *e* between the barbs *f*, and completing the work partly done by the first rib and groove, the blank strip being fed the width of one rib and groove at each operation of the dies.

The full lines in Fig. 5 represent the cuts of the first rib and groove, and the dotted lines represent the cuts of the second rib and groove.

On each side of the first rib and groove to which the strips are fed the cutting-edges are curved upward and downward, respectively, at *g* and *g'*—that is to say, convex to the rest of the edges—to enable these edges to cut through solid metal—that is, to make slits terminating in solid metal at both ends *i*, Fig. 5—without tearing or cracking the metal laterally from the ends of the slits. The second rib and groove are correspondingly curved at *g²*; but this is mainly to shape this part of the dies to match best with the part having the first rib and groove, between which and this second part there is an offset, *h*, crossing from the base-line of the barbs of one rod to the base-line of the barbs of the other rod; but the curves *g²* are not necessary to the second rib and groove, as the cut made by them terminates in the cut made by the first rib and groove at *j*. The faces of the dies are grooved across them at the center in conformity with the curves *g' g²*, and these grooves span the portions of the web of the metal strip left uncut between the cuts of the two ribs and grooves when the dies close, as in Fig. 4.

The dies may be divided at the offset *h*, to be made in parts, if preferred, and when so

divided they may either be located close together, as in the drawings, or they may be placed the distance of one or more feed movements farther apart in the same machine, and they may be mounted separately in separate machines for separate and independent action on the strips; but it is preferred to mount them together for conjoint action.

The blank strip consists of two parallel cores, *k*, middle web, *l*, and the outer flanges, *m*.

The dies *a b* may be made and used in two separate parts, as represented in Fig. 6, which represents them divided at the offset *h*, and slightly reduced thereat in dimensions.

The convex faces of the dies are to enable the dies to cut short slits ending in the solid metal without cracking and tearing the metal at the ends of the slits, as dies having flat faces would. The cutting-edges of the dies must approach each other close enough to cut through the metal, and being so broad on the face that they cannot enter the metal like a sharp cutting-edge, it follows that the respective parts of the strip have to be pushed and bent past each other by the faces of the dies to an extent that will slit the metal apart. This makes it necessary to curve the dies at the sides and make the faces convex, so that from the sides

of the dies the cutting-edges will gradually enter and bend the metal, and thus the metal will not be torn and damaged at the ends of the slits as it would if the dies were flat on the face and entered the metal as much thereat as elsewhere.

What I claim, and desire to secure by Letters Patent, is--

Dies for simultaneously slitting a double blank strip apart and forming two barbed rods therefrom, consisting of two dies, *a b*, each having a conversely-arranged taper or bevel-sided rib, *c*, and groove *d* as wide as the distance between the barbs to be made, on the separate rods, and located the width of two barbs, *f*, and one waste piece, *e*, apart in the double blank strip, with an offset, *h*, between the ribs and grooves, and the curved edges *g g'*, forming convex faces of the first ribbed and grooved portion of the dies to which the blank strips are fed, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ANSON P. THAYER.

Witnesses:

F. A. THAYER,
S. H. MORGAN.