(No Model.)

A. P. THAYER.

DIE FOR MAKING BARBED FENCING.

No. 313,031. Patented Feb. 24, 1885.

Fig. 1.

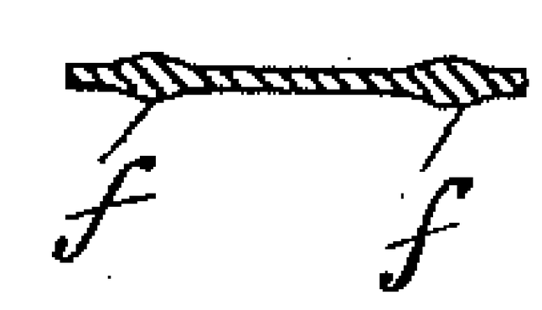


Fig. 2.

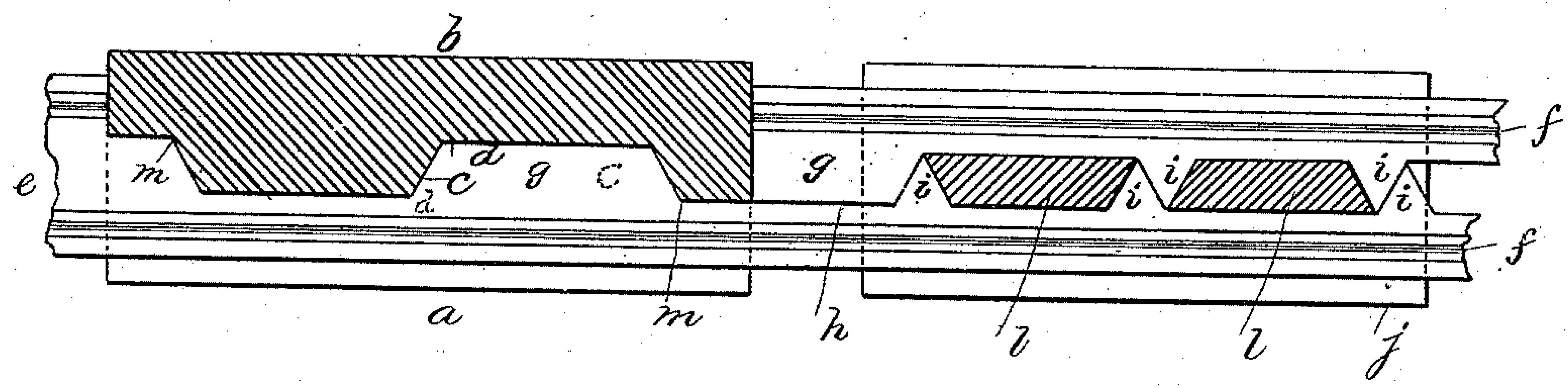


Fig. 3.

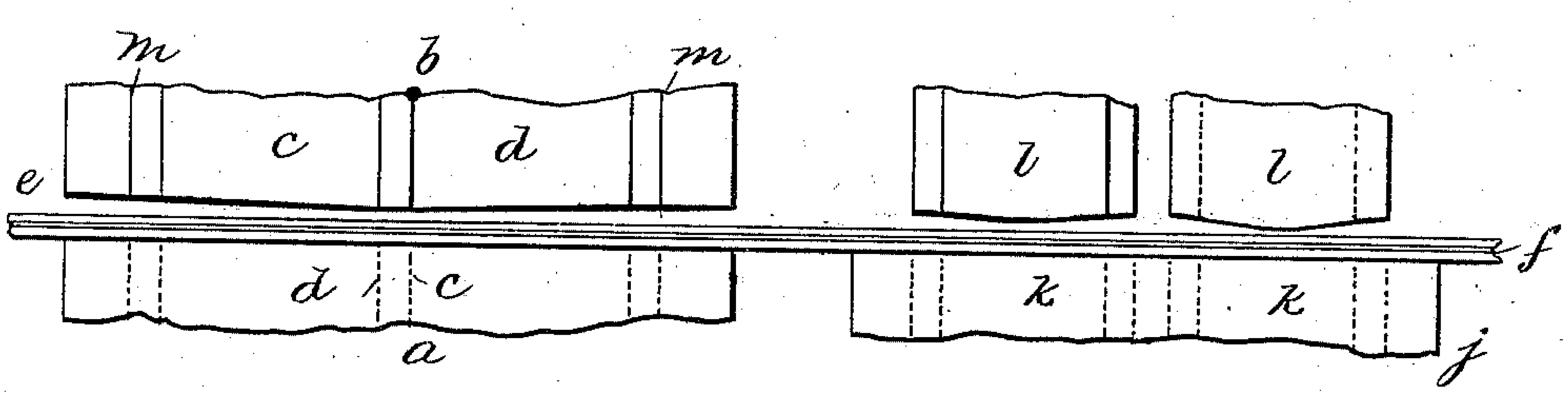
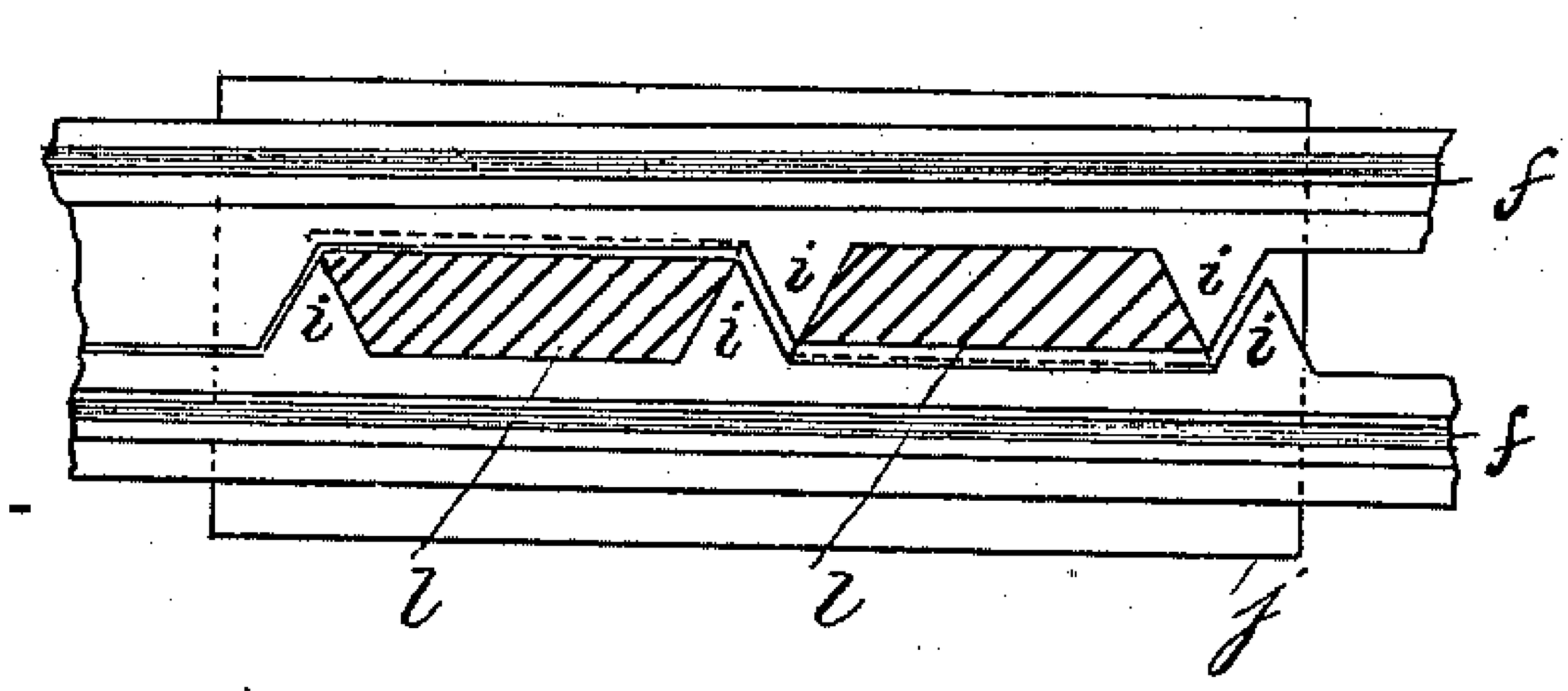


Fig. 4.



WITNESSES.

W. J. Morgan,
C. H. Morgan,

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. 313,031, dated February 24, 1885.

Application filed December 20, 1884. (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, Kings county, New York, have invented new and useful Improvements in Dies for Making Barbed Fencing, of which the following is a specification.

This invention relates to dies for shearing a double blank strip apart and forming two barbed rods therefrom; and it consists of shearing-dies for separating the blank strip along the middle web into two rods, each having projections containing the material for two barbs and the intermediate waste to be removed, alternating with corresponding notches, in combination with punches and dies for removing said waste, adapted for use in the same machine, together with the shearing-dies, to work successively to them and cut away said waste material, together with the slitting of the blank, and thus avoid the expense of handling and of the greater number of machines consequent to the use of separate machines for cutting the waste material from these projections of the dimensions stated, said dies being constructed and arranged as hereinafter fully described, reference being made to the accompanying drawings, in which—

Figure 1 is a transverse section of the double blank strip to be sheared and barbed. Fig. 2 is a horizontal section of the movable die and punches, and top view of the bed-dies of my invention with a strip thereon, illustrating the operation of the dies. Fig. 3 is a side elevation of said dies and the strip thereon; and Fig. 4 is a horizontal view of the punches and plan view of the punching-die, showing a modification of the arrangement of them.

I make a pair of shearing-dies, *a b*, each having a rib, *c*, and a groove, *d*, in one side, arranged for the rib of one die to work in the groove of the other, said ribs and grooves having conversely-oblique sides, and being as deep as the required length of the barbs and as wide as the required length of the projections for two barbs, and arrange said dies in any suitable press adapted to operate them, for shearing the blank strip *e* apart along the middle web, so as to form two separate rods, *f*, each having projections *g*, alternating with notches *h*, equal in length to the breadth of said ribs and grooves, the projections of one rod being cut out of the notches of the other and containing the material for two barbs, *i*, and the waste to be cut from between them. In line with these dies, and at a suitable distance from them and apart from each other, I arrange punches consisting of the bed-die *j*, having as many die-sockets *k* as the combined ribs and grooves of the shearing-dies and corresponding punch-dies, *l*, said punch dies and sockets having conversely-oblique sides corresponding to the oblique sides of the ribs and grooves of dies *a b*, and being as wide as the waste pieces to be cut from between the barbs. They are also arranged the reverse of each other in respect to their oblique sides and in the due relation to the ribs and grooves of dies *a b*, whereby they, working in unison with the dies *a b*, cut away the waste from between the barbs of two projections, *g*, one on each rod, successively to the forming of them by the dies *a b*, the distance of the punches from and their relation to the dies *a b* and to each other being such that when the blank strip is fed along to present new material to the dies *a b* the projections *g*, previously made by them, will be presented to the punching-dies properly for the cutting away of the waste by them. In this case the punches are arranged a distance equal to the length of one notch and projection of the blank strip, or the breadth of one rib and groove of dies *a b* from said dies, and the first punch cuts the waste from the projection made by the last rib and groove, referring to the direction in which the blank strip is fed, the oblique sides of said punch being converse to the sides of said rib and groove; and the last punch cuts the waste from the projection made by the first rib and groove, whose oblique sides are converse to those of said last punch. The first punch may be placed on the other side of the last one, if desired, making the distance between dies *a b* and the punches equal to the length of two ribs and grooves, but the results will be the same. The blank strip is to be fed the length of the dies *a b* from *m* to *m*—that is, from outside to outside of the ribs and grooves—at each movement. Suitable guides will be provided for enabling the strips to be conducted properly to the dies, and to prevent the separated rods from spreading too much

under the punches; but I prefer to allow them to spread to some extent, and to arrange the punches *l* a little out of line, as represented in Fig. 4, so that the punches will escape the edges of the rods along the bottom of the notches *h;* and I also prefer to make the die-sockets *k* a little wider than the punches for clearance on the longest sides of the waste, to facilitate the escape of the same from the said sockets in which the waste pieces will thus not bind.

The blank strip to be cut apart and barbed consists of a narrow strip of thin metal with ribs of thicker dimensions near the margins, constituting the cores of the separated rods *f*, as represented in Fig. 1.

It will be seen that this simple contrivance of dies *a b*, for slitting the strips the length of two projections at one operation, each of which makes two barbs, and punches adapted to complete the same length of material at once, affords practicable means of rapidly making these barbed rods. The ends of the die *b* and punches *l* are to be beveled, as represented in Fig. 2, for graduating their operation, so as to shear-cut the metal for easier action.

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

The combination of shearing-dies *a b*, each having a conversely-oblique-sided rib, *c*, and groove *d*, adapted to slit the blank strip apart and form two rods, each having projections *g*, containing the material for two barbs, and the waste to be cut away between them, with punching-die *j*, having two die-sockets, *k*, and two punches, *l*, said die sockets and punches having conversely-oblique sides, and being adapted for and arranged and organized with and in relation to dies *a b*, to slit the strip apart and form said projections *g*, and cut away the waste from said projections *g* successively, substantially as described.

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

ANSON P. THAYER.

Witnesses:
W. J. MORGAN,
S. H. MORGAN.