

No. 627,765.

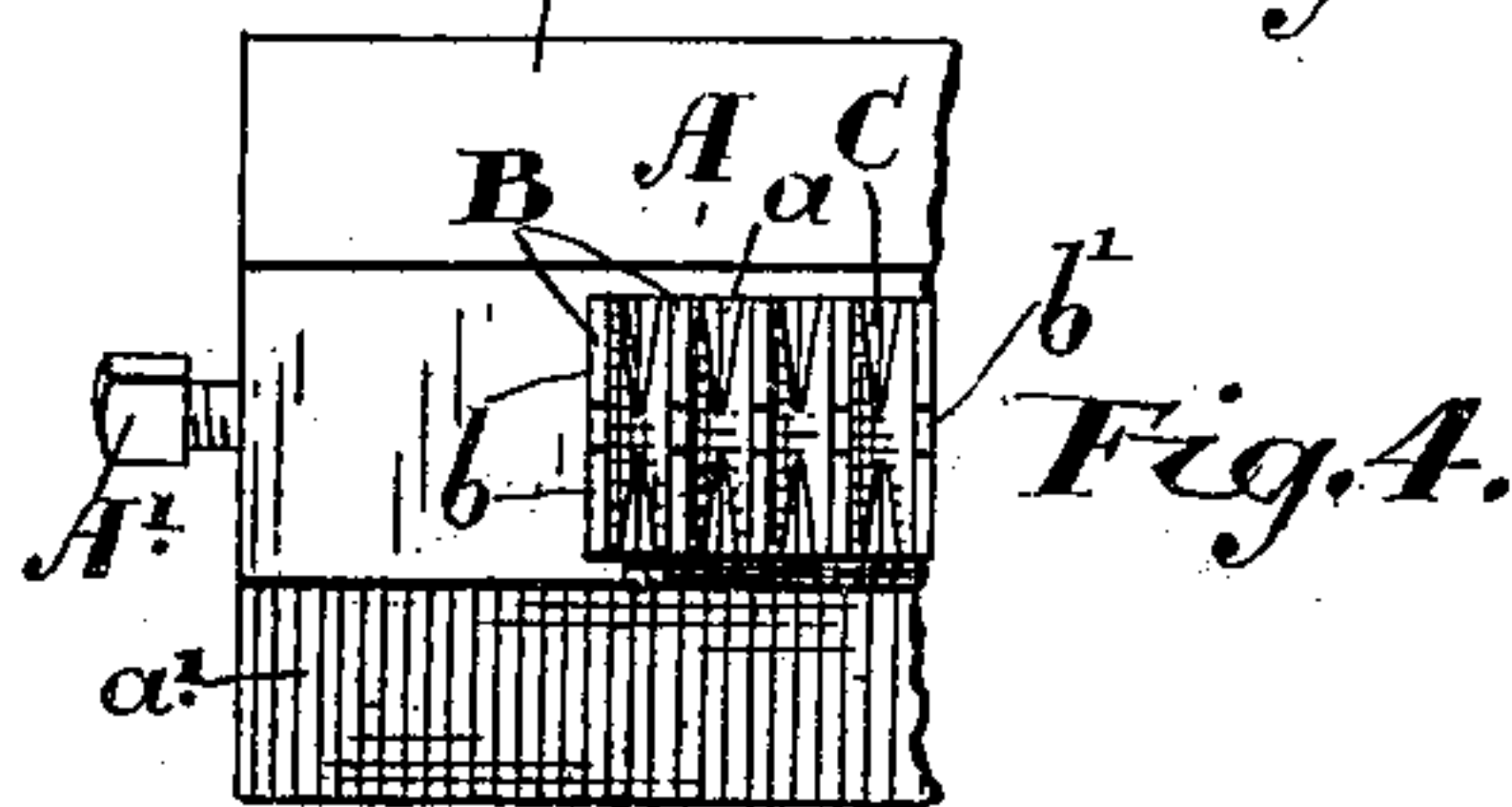
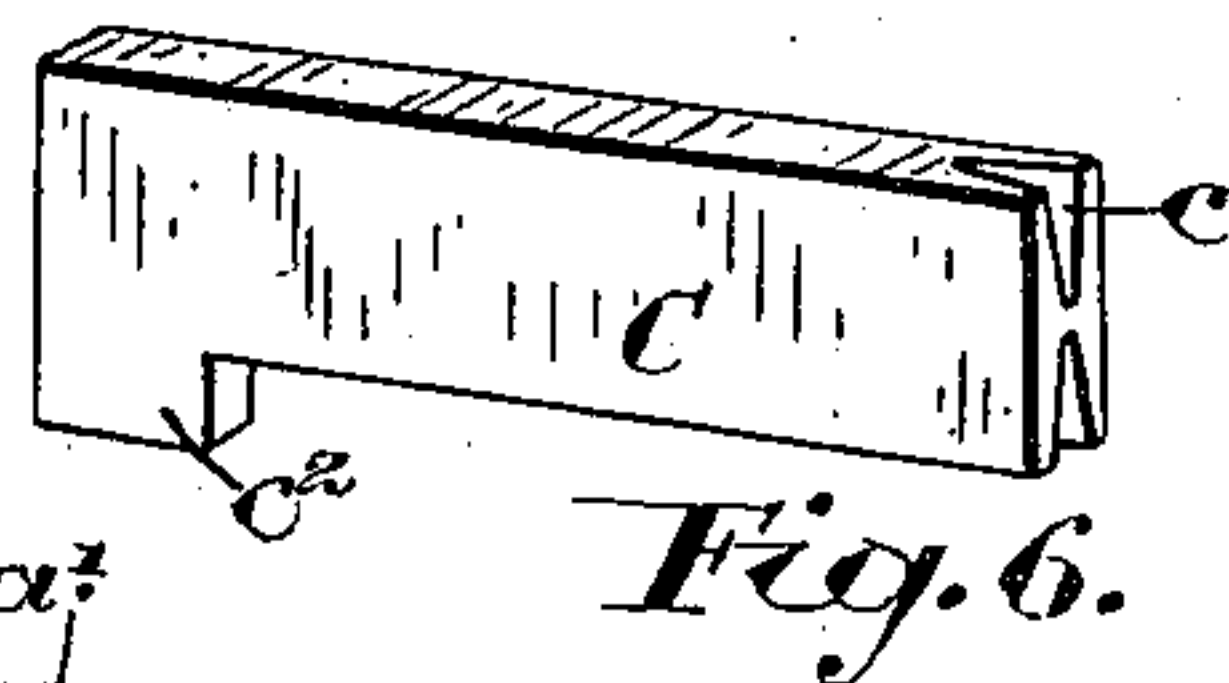
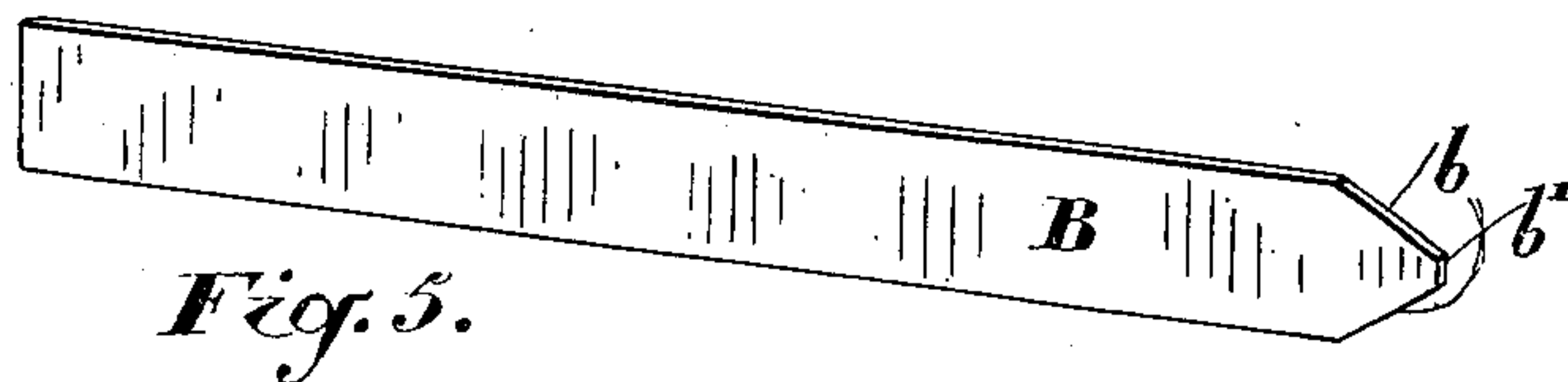
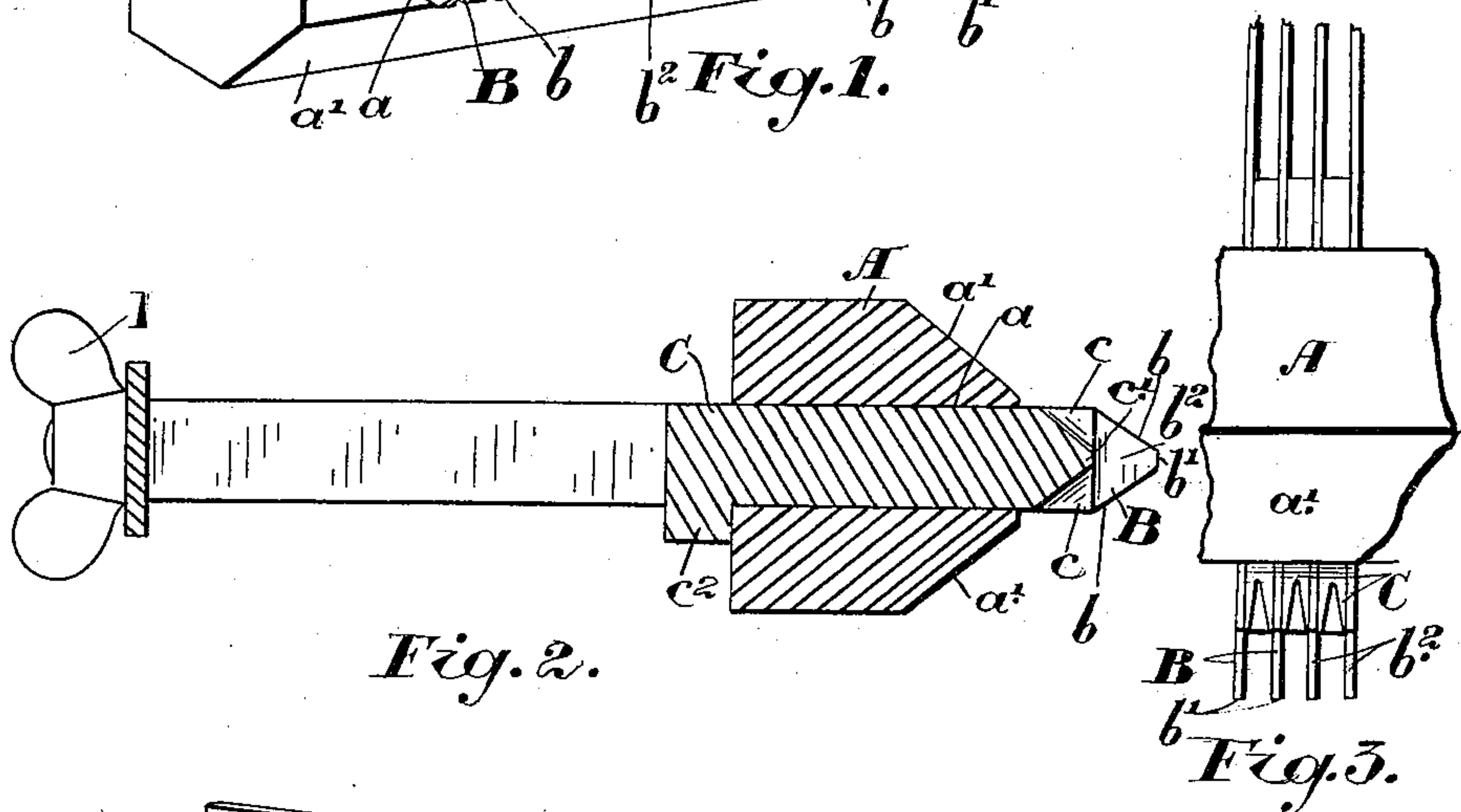
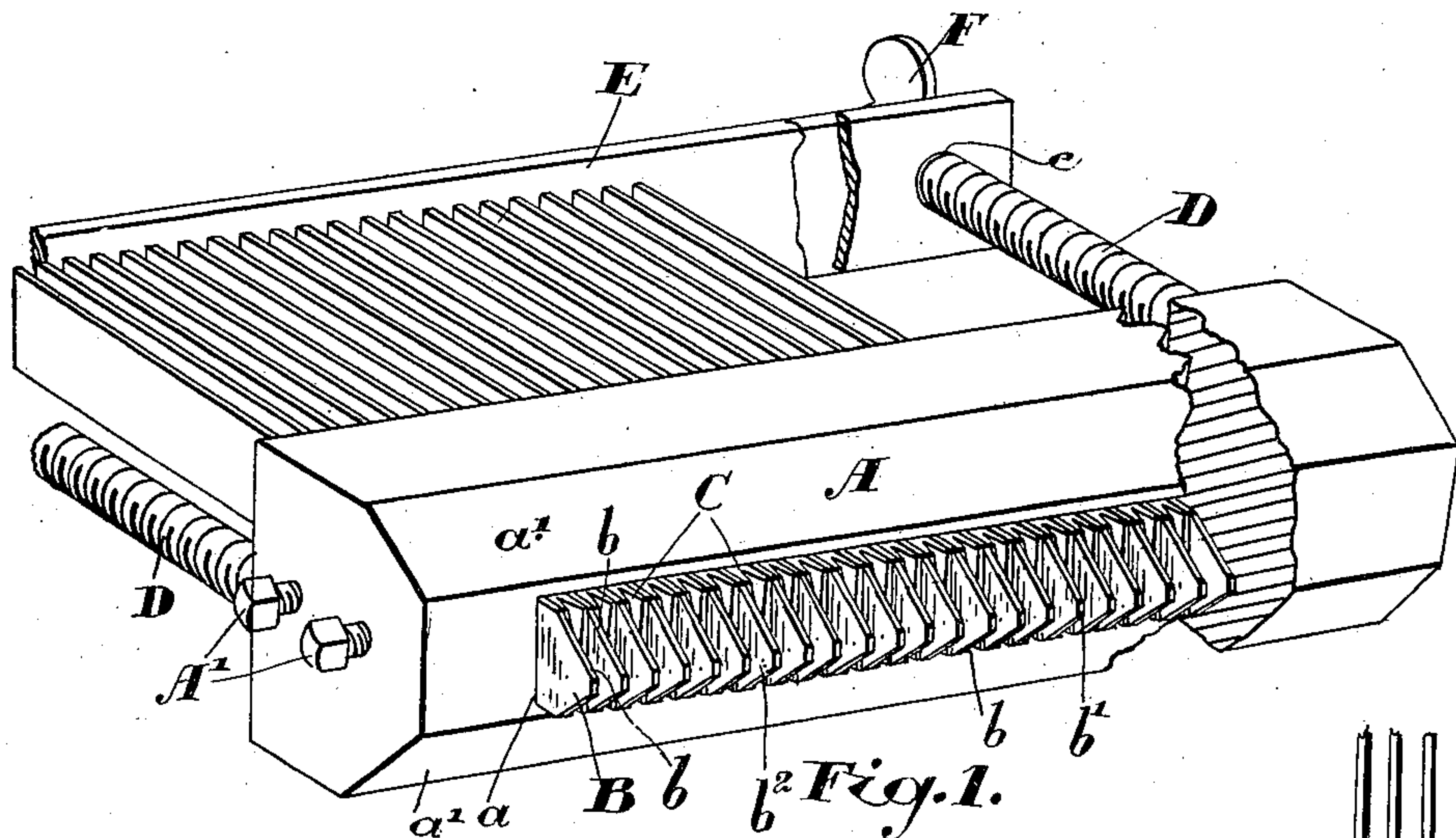
Patented June 27, 1899.

W. J. D. THOMPSON.

SLITTING KNIFE FOR EXCELSIOR CUTTING MACHINES.

(Application filed Feb. 9, 1898.)

(No Model.)



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UNITED STATES PATENT OFFICE.

WILLIAM JOHN D. THOMPSON, OF TORONTO, CANADA.

SLITTING-KNIFE FOR EXCELSIOR-CUTTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 627,765, dated June 27, 1899.

Application filed February 9, 1898. Serial No. 669,693. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JOHN D. THOMPSON, inventor, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Slitting-Knives for Excelsior-Cutting Machines, of which the following is a specification.

My invention relates to improvements in what are known in the art as "slitting" knives or spurs for excelsior-cutting machines; and the object of the invention is to devise a form of knife to be used in plurality and holders therefor, whereby all classes of timber, whether green or wet or not, may be expeditiously slit or scored suitable for excelsior with less power and less waste than by the knives heretofore used and in which the knives need not be sharpened, but only jointed and set when worn, and thus effect a saving of time and labor in this respect also; and it consists, essentially, of slitting knives or blades made of uniform thickness from end to end and held apart by spacing and reinforcing bars of peculiar construction, such knives or blades and bars being held in a suitable slot in a holding-block and constructed and adjusted in the manner hereinafter more particularly explained.

Figure 1 is a perspective view, intermediately broken away, showing portion of the knives of the set and holder therefor. Fig. 2 is a cross-section. Fig. 3 is a plan view showing portion of the knives and ends of the reinforcing-bars. Fig. 4 is an end view showing portion of the knives and reinforcing-bars and holder. Fig. 5 is a detail of an individual knife or blade. Fig. 6 is a detail of the spacing and reinforcing bars.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is the holding-block, which is provided with a central longitudinal slot *a*, extending through it from nearly one end to nearly the opposite end. The slot extends from the face to the rear of the holding-block. The holding-block has two front beveled edges *a'* *a'*.

B are a series of blades or knives made, preferably, of thin steel of about thirty-gage. The thickness and size of the knives are exag-

gerated in the drawings for the purpose of clearness. The knives B have double beveled end edges *b b*, ending at the center in a flat edge point *b'*. It is to be particularly noted that I do not sharpen the beveled ends of the knives whatever. When the knives are jointed so as to present a series of broad points *b'* flush with each other and are filed so as to present a series of double beveled end edges at each side of the broad point, slight burs would be formed on these beveled ends and on the broad point, and these of course can be removed by filing in between; but under no circumstances is it necessary to sharpen the knives. Each blade is separated from its adjacent blade by a spacing or reinforcing bar, of soft metal, C. The bars C are provided with V-shaped notches cut from the top and bottom corners inwardly, so as to form an apex *c'*. The outer ends of the metal of course brace or reinforce the knives B to the very edge of their beveled ends, leaving the portion *b²* of the knife perfectly free for cutting purposes.

In practice the knives sharpen themselves, and even the burred edge, hereinbefore referred to, may not be taken off, as within a very short time the knives, being so thin, are sufficiently sharp to perform this work very perfectly. The inner ends of the spacing-bars are provided with an offset *c²*, which projects against the edge of the holding-block below the slot, and thereby holds the forward ends of the spacing-bars perfectly flush with each other. The notches serve to allow of the stock passing freely from between the knives, and thus prevent choking, the V-shaped form of the notch serving to a great extent to this end. The knives and their spacing-bars held between them are securely held together by the end set-screws *A' A'*, which extend through the end of the block A and abut the end of the knives.

In order to provide for the adjustment of the knives forward evenly as they wear and their proper jointing and beveling, I preferably provide two screw-spindles D, which are securely held in the block A at the forward end, and a cross-bar E, with holes *e* in it, through which the screw-spindle D extends. I also

provide thumb-nuts F, only one of which is shown, on the end of the screw-spindles. By loosening the set-screws A' A' and turning on the screw-spindles D the bar E will of course push the cutting apexes of the knives all forward evenly.

It has been found in slitting timber that is green with knives having a beveled sharpened cutting edge and located close together, one abutting the other, that they would be frequently choked up, thereby seriously impairing their utility and also necessitating setting the wood aside to dry in order to successfully slit it. In fact, the knives would become choked up even were the wood not green. The power required was very great in this beveled form of abutting knives, as the wood would become bridged in between them; but this was not all, as a still greater objection was incident to this form of knife—viz., the difficulty and expense of sharpening a set of them. Ordinarily it took a mechanic fully half a day to sharpen and set the old knives, as they had to be completely removed from the holder and each sharpened separately.

By my structure all of the knives can be jointed without removing them from the holder.

What I claim as my invention is—

1. In combination in a slitting device, a plurality of thin knives having their upper and lower front corners cut off to present beveled ends, the side faces of the knives being flat the entire length of the same, space-blocks interposed between the faces of the knives, a holder for the same having a slot within which the knives fit and are held in alinement, said holder having upper and lower beveled sides converging at the front to the slot at an angle precisely corresponding to the angle of the bevel of the knives as and for the purpose specified.

2. In combination, in a slitting device, a

holder, a plurality of thin knives held therein having their upper and lower front corners cut off to present beveled ends, the side faces of said knives being flat through the entire length of same, space-blocks interposed between the faces of the knives and having V-shaped notches cut in the top and bottom corners at a corresponding angle to the angles of the bevel of the knives whereby the center of the knives opposite the end of the block is supported rigidly and the top and bottom edges of the knives at the points of bevel are flexibly supported as and for the purpose specified.

3. A slitting device for excelsior-cutting machines and the like comprising a suitable holder and regulating-slot therein, a plurality of knives set in alinement in the slot and provided with double beveled ends, set even and having broad points jointed and the knife of the same thickness from end to end, suitable reinforcing and spacing bars placed between the knives from end to end of the set so arranged as to leave a minimum amount of steel at the point of the knife and the reserved length of the steel of each blade to the rear of the holding-block, substantially as described.

4. A slitting device for excelsior-cutting machines and the like comprising a suitable holder and longitudinal slot therein, a plurality of knives set in alinement in the slot and provided with double beveled ends set even and having the broad points jointed and the knife of the same thickness from end to end, and suitable reinforcing and spacing bars placed between the knives from end to end of the set and having V-shaped notches formed in the upper and lower corners of the bars as and for the purpose specified.

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Witnesses:

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