

No. 623,031.

Patented Apr. 11, 1899.

J. OLDHAM.
MACHINE KNIFE.

(Application filed Aug. 23, 1898.)

(No Model.)

2 Sheets—Sheet 1.

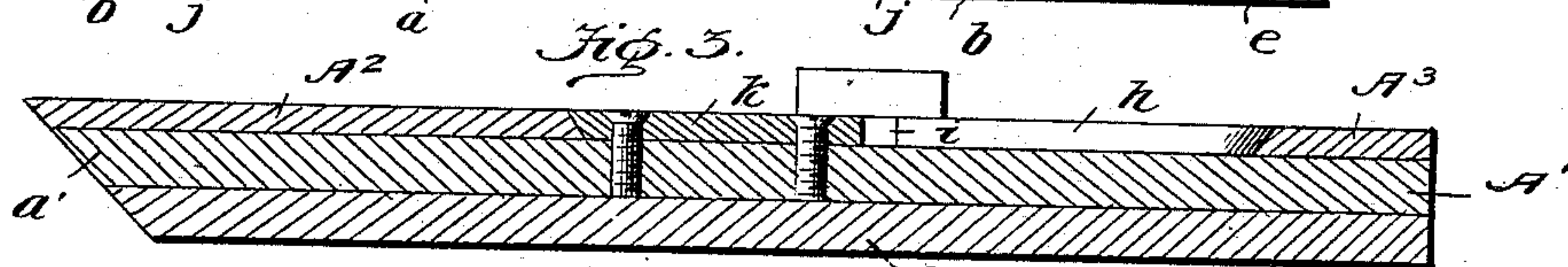
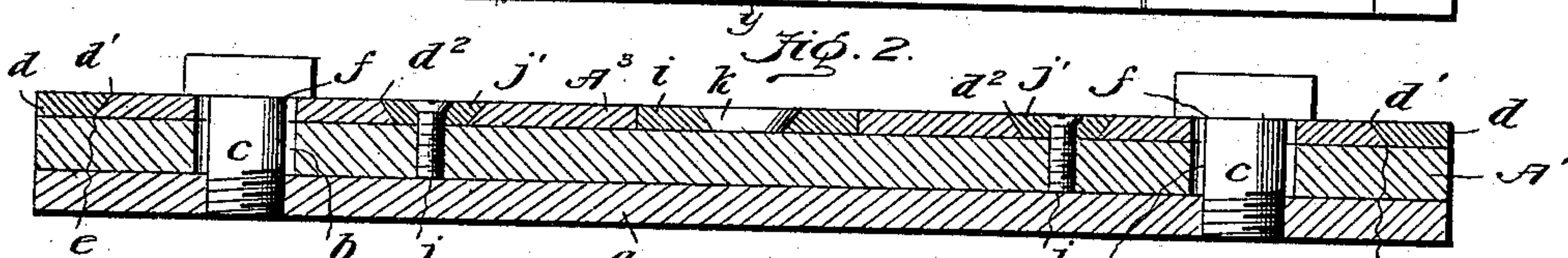
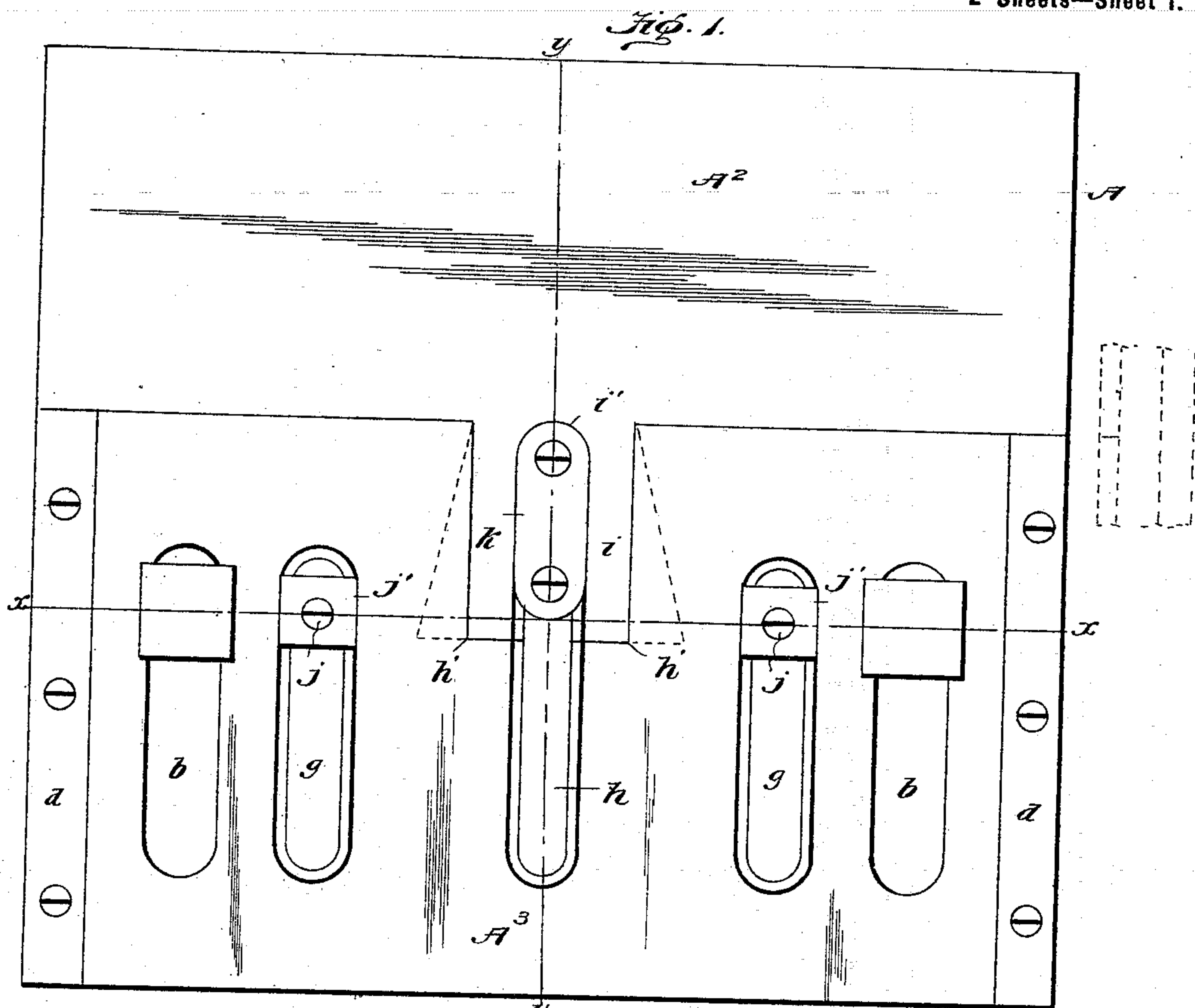
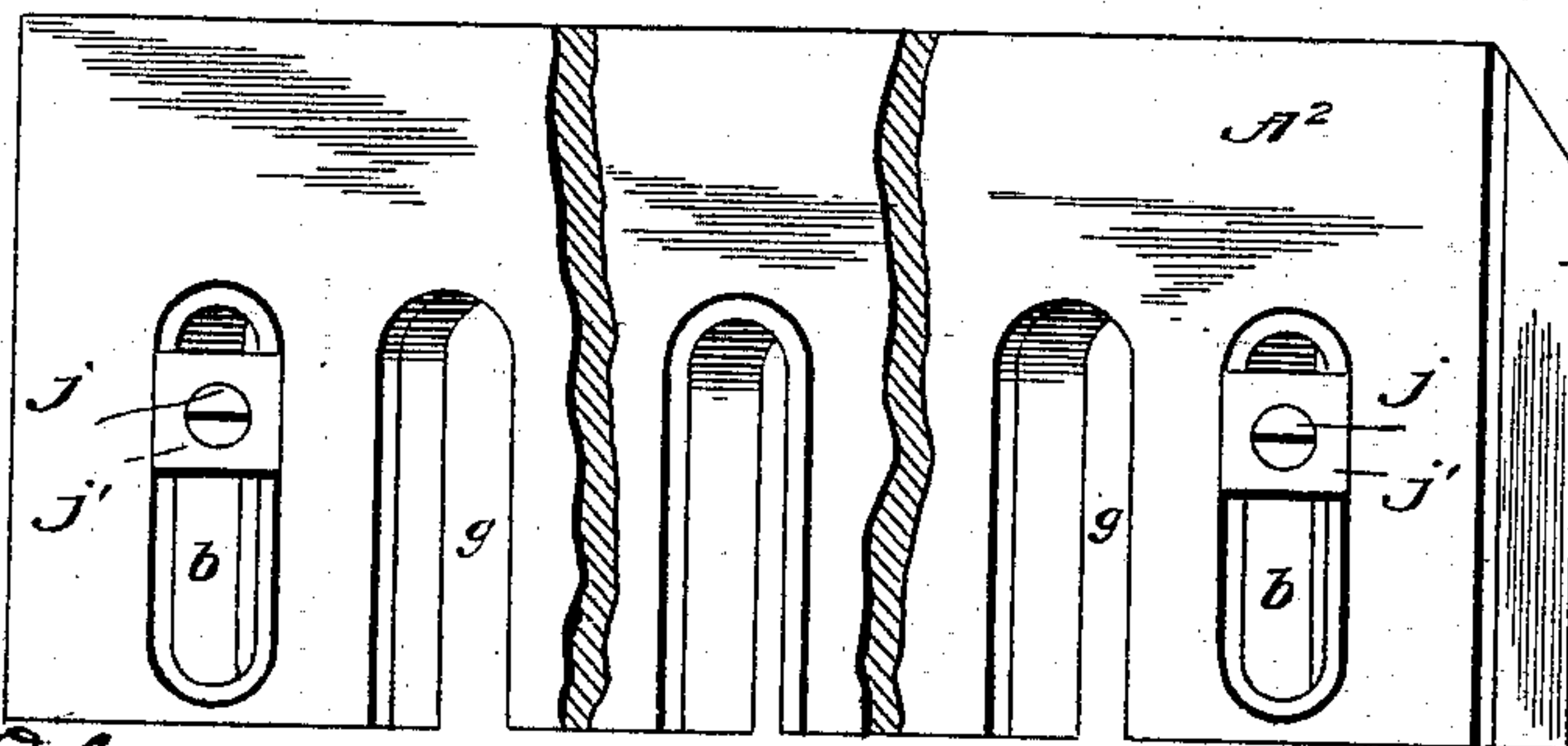


Fig. 4.



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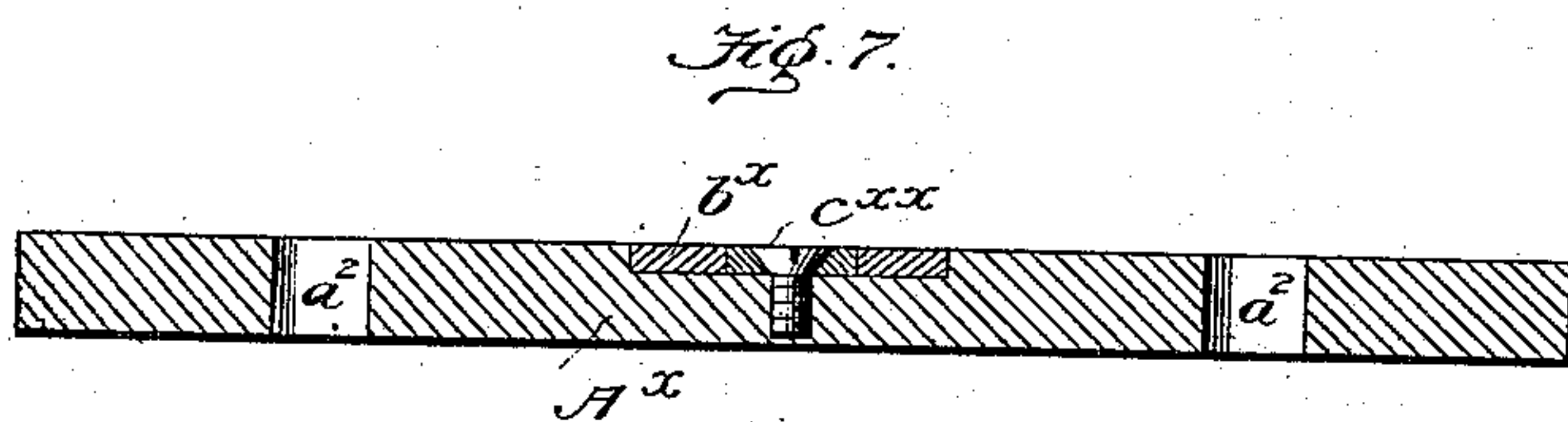
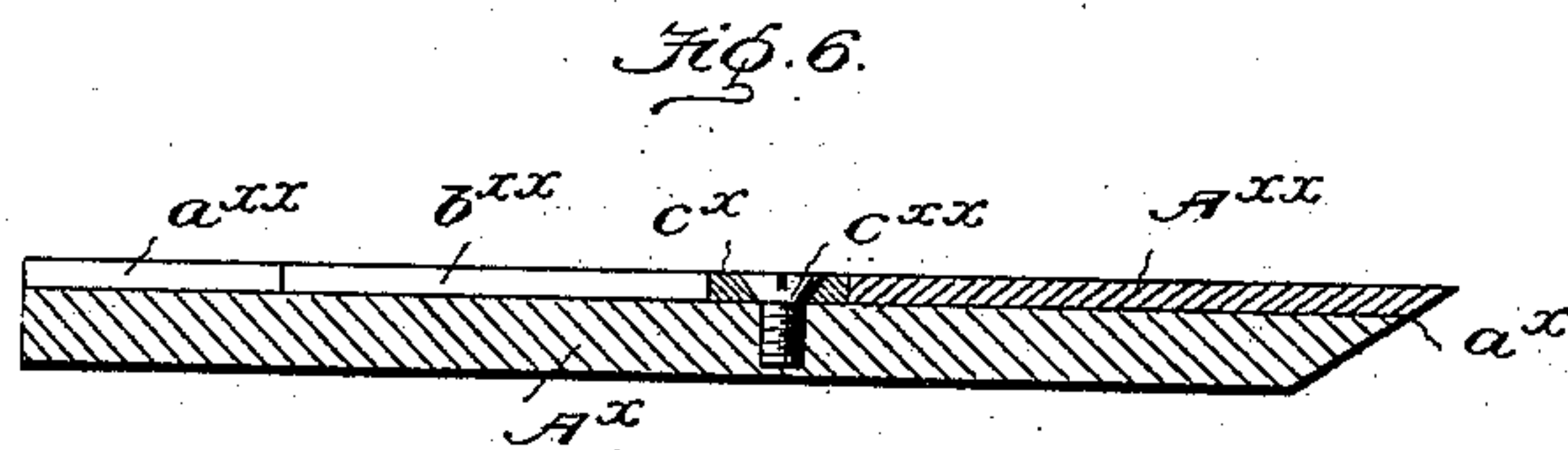
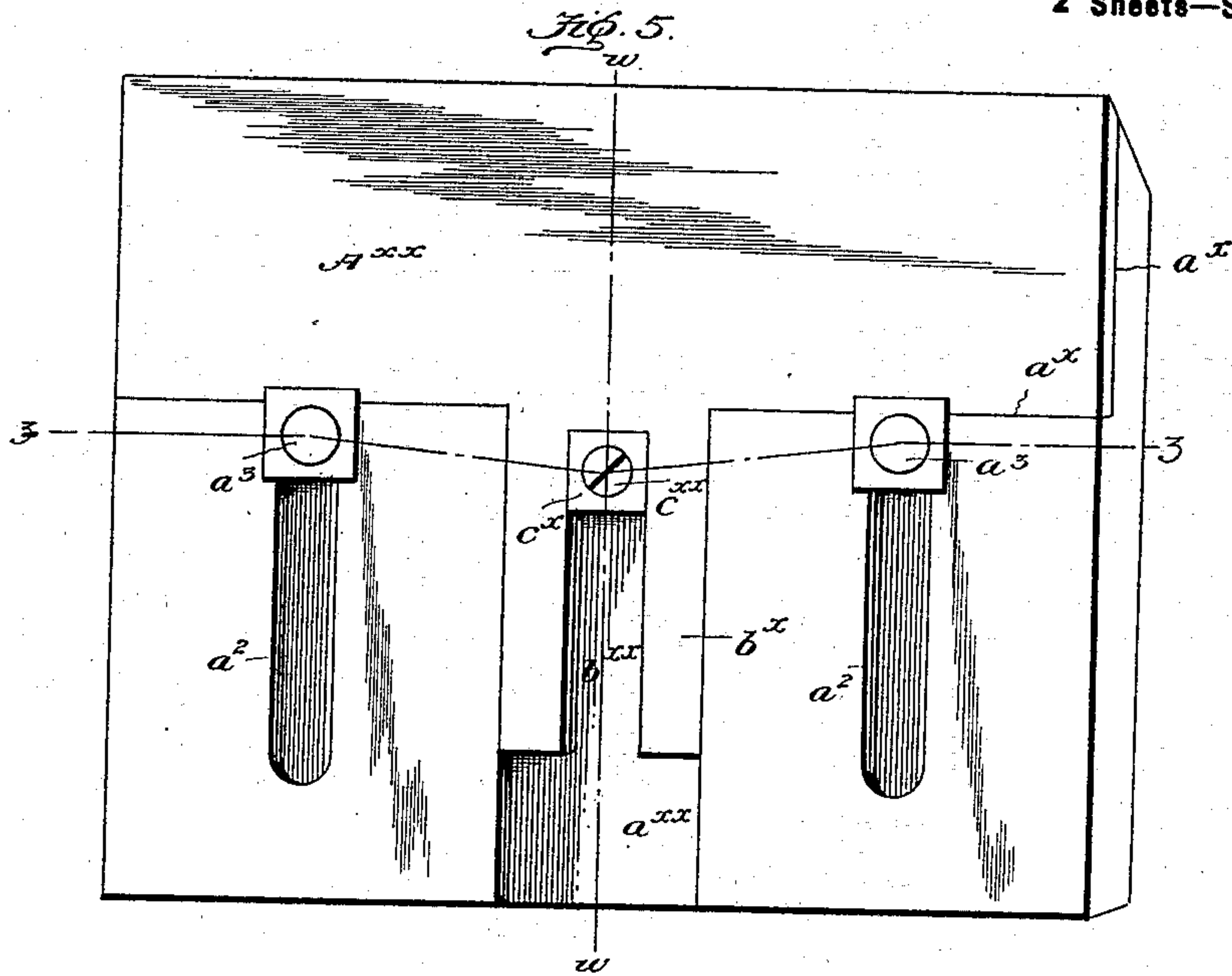
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

JOSHUA OLDHAM, OF NEW YORK, N. Y.

MACHINE-KNIFE.

SPECIFICATION forming part of Letters Patent No. 623,031, dated April 11, 1899.

Application filed August 23, 1898. Serial No. 689,310. (No model.)

To all whom it may concern:

Be it known that I, JOSHUA OLDHAM, a citizen of the United States, residing at New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Machine Knives or Cutters; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates generally to improvements in planing-machines, and analogous use, more especially, however, to the knives or cutters used thereon, among which may be enumerated, as relates to their local significance, pulp, hog, tobacco, and paper knives.

It has for its object principally to economize expense in the use of this class of knives or cutters, to facilitate and expedite the sharpening thereof, and to provide for their ready removal or adjustment for that purpose and for renewal when necessary.

It consists of the combination and arrangement of parts, substantially as hereinafter more fully disclosed, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of my improved knife or cutter, the dotted lines indicating a dovetail connection between the parts as a modification thereof. Figs. 2 and 3 are sectional views at right angles to each other, taken therethrough on the lines *x x* and *y y*, respectively. Fig. 4 is a modification showing the invention as applied for narrow knives. Fig. 5 is a plan view of another form of the embodiment of my invention. Figs. 6 and 7 are sections taken through Fig. 5 on the lines *w w* and *z z*, respectively.

In the embodiment of my invention I employ a knife or cutter A, consisting of several sections, in this instance three, A' A² A³, being employed, constituting the back A' and the two-part knife or cutter A² A³, A³ being the sliding or adjusting part or section and A² being the cutter proper or bit.

The back A', in its general dimensions about

the same as that of the base or head *a* of the ordinary rotary cutter-head generally used, is provided with opposite elongated slots *b*, ranging parallel with the lateral edges of said back to receive the ordinary securing and adjusting screw-bolts *c*, threaded in openings of the cutter-head *a*, as usual. This back is beveled at its forward edge, as at *a'*, as is also the corresponding edge of the base or head *a*, as with the ordinary cutter. Upon the upper side of said back are lateral guides or cleats *d*, having inner undercut or beveled edges, as at *d'*, the forward ends or edges of said cleats or guides being similarly beveled or undercut, as at *d''*, the purpose of which will appear presently.

The inner adjusting or sliding section or part A³ has its lateral edges adapted or beveled, as at *e*, to rest under the beveled lateral edges *d'* of the guides or cleats *d* to permit its sliding thereunder and prevent displacement and has slots *f f* registering with the slots *b* of the back A' to also receive the adjusting screw-bolts *c* passing through the said slots *b* of said back to provide for the suitable adjustment of said sliding or adjusting section of the knife or cutter according as the cutter proper is worn away by sharpening. The section or part A³ has also two other parallel slots *g g* and a central open-ended slot *h*, opening into lateral enlargements *h' h'*, adapted to receive a central tongue *i* at the inner or rear edge of the knife proper or bit A², said tongue also having an open-ended slot *i'*, aligning with the slot *h* of said part A³.

The slots *g*, having outward-flared lateral edges, are adapted to receive correspondingly beveled or flared cleats or guides *j' j'*, inserted loosely upon screws or studs *j j*, screwing into the back A', said screws having their slotted heads countersunk in said cleats or guides to hold the section or part A³ firmly to the back A'. Yet by loosening the cleats *j' j'* the part A³ may be slid upon the part A', the beveled or flared edges of said slots and cleats or guides preventing their displacement, the nuts of the holding screw-bolts *c* also being loosened at the same time, as obviously necessary.

After the adjustment of the parts A² A³ and the tightening of their individual holding-cleats the bolts *c* are tightened by suitably

screwing up their nuts, thus holding these parts, with the part A', rigidly clamped upon the base.

The slot i' of the tongue i of the bit or cutter proper, A², also having outward-flared lateral edges, is adapted to receive an elongated guide or cleat k , secured to the back A' and having correspondingly-flared lateral edges to engage the aforesaid flared edges of the tongue-slot i' to permit movement of the parts and yet guard against displacement. While at the outset the guide or cleat k will be confined to the tongue-slot i' , still as the cutter proper or bit, A², wears away from sharpening, requiring the forward or outward movement of the adjusting section or part A³, as also said bit, it will be received into the open-ended slot h of said part or section A³.

It will be seen that with the parts A' A² A³ all assembled and held together by the cleats or guides and their screws or studs, as above described, the same constitute substantially a single knife or cutter and can be handled or inserted and removed with equal ease or facility as if in one piece and put on the market for sale as a single article of manufacture. It will be also observed that the screw-bolts effect the holding or clamping of all the parts to the cutter-head, the other means of connection between said parts being solely for the purpose of retaining them relatively in position when moved or adjusted and to the back; also, that the back and adjusting-section will last indefinitely in use, the only part subjected to the grinding or sharpening action being the bit or cutter proper, A², thus reducing cost to the minimum, it being required to replenish or renew only the latter part instead of making the cutter or bit a great thickness and grinding or sharpening the same its entire depth, which when unduly worn or worn down in proximity to the adjusting-slots thereof is of no further use and has to be discarded. In my cutter or knife, however, the part to be ground or sharpened is confined to only the thickness of the bit or part A², which may be only about an eighth of an inch, it being given a bevel to correspond with that of the forward edges of the back and base.

Instead of fitting or abutting the inner or meeting edges of the cutter or bit and the adjusting section by beveling the same, as shown, to keep or retain them in a relatively-true position this may be effected by dovetailing the tongue of the bit into the adjusting-section, as disclosed in dotted lines in Fig. 1, and making said edges abut squarely against each other.

In the modification as shown in Fig. 4 it will be seen that a narrow bit or cutter can be provided for without the use of the part or section A³, as disclosed in the other form or embodiment of my invention.

As disclosed in Figs. 5, 6, and 7, I provide a back A^x, having the forward beveled edge and itself stepped or reduced in depth entirely across it from side to side, as at a^x , and

from this reduction further reduce or groove said back at right angles to said reduction, forming a tongue a^{xx} thereto, as it were, extending centrally therefrom, this reduction a^x and groove or guideway a^{xx} having perpendicular or straight walls. This back has through its thicker or unreduced portion parallel longitudinal slots a^2 , through which extend the bolts a^3 , screwing into the base or cutter-head for securing and adjusting the back or cutter thereon.

A^{xx} is the cutter or knife, (a thin steel plate, as the cutter or knife aforesaid,) having its forward edge beveled on a corresponding incline with the forward beveled edge of the back A^x and seated in the reduced portion or seat a^x of said back, with its rear edges made straight or perpendicular, and thus adapted to abut squarely against the straight or perpendicular rear edge of said reduced or seated portion a^x to hold the knife true during the initial cutting operation—i. e., until the knife is worn away by sharpening, it thereafter requiring moving away from the abutting edges of the knife-seat, provision for holding the knife true then being described later on.

The knife or cutter A^{xx} has a rearward extension or tongue b^x projecting centrally from the rear of said cutter or knife and fitting into the groove or guideway a^{xx} of the back A^x, with straight or perpendicular lateral edges or sides fitting closely the corresponding walls of said groove or guideway to hold or keep the cutter or knife true when it is moved away from the rear abutment or edges of the seat a^x due to the wearing away of the knife from sharpening.

The tongue or extension b^x , fitting into the groove or guideway a^{xx} , has a central longitudinal slot b^{xx} , adapted to receive and has fitting into it a nut c^x , into which is countersunk the grooved flared end or head of a screw c^{xx} , screwed or threaded into the back A^x to hold the tongue, together with the knife, to the back.

I claim and desire to secure by Letters Patent—

1. The cutter or knife of the character described, combining the back adjustable upon its support, the bit or cutter, proper, having a slotted tongue and an adjusting or sliding part or section adapted to receive said tongue of said bit and having a slot alining the slot of said tongue, cleats or guides let into slots of said adjusting part and said tongue, and connected to said back, and clamping or holding bolts securing said parts to said support, substantially as specified.

2. The cutter or knife of the character described, combining the back having the slots therein and beveled lateral cleats or guides, the adjusting section or part having slots, two registering with the aforesaid slots of said back and the others having flared lateral edges, the bit or cutter, proper, having a tongue let into an enlargement of the central

one of the slots of said adjusting-section, and itself having a flared slot registering with said central slot, cleats or guides having flared lateral edges, let into the flared slots of said tongue and adjusting-section, and nutted clamp-bolts connecting all of said parts to a support or cutter-head, substantially as described.

3. The cutter or knife of the character described, combining the back having the reduced or stepped portion at its forward edge and the groove forming an extension of said reduced or stepped portion and the knife or cutter, proper, seated in the reduced portion having the rear central extension or tongue fitting in said groove and having a longitudinal slot, and means to adjustably connect said back to its support and means to hold the cutter, with its tongue, slidingly upon said back, substantially as set forth.

4. The cutter or knife of the character de-

scribed combining the back having the reduced forward edge or seat and the central groove forming an extension of said seat, said seat having straight or perpendicular rear edges and said groove having corresponding lateral walls or sides, the knife seated in the reduced portion having a central rear extension or tongue fitting in said groove and having a longitudinal slot and the nut let into said slot and screw countersunk in said nut and screwing into said back, said back having slots, and screw-bolts passing through said slots and entering the support for said back, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOSHUA OLDHAM.

Witnesses:

WILLIAM HOEPFNER,
GEORGE J. MANNY.