

(No Model.)

J. F. GILLILAND.
CUTTING DIE FOR BOX MAKING MACHINES.

No. 455,015.

Patented June 30, 1891.

FIG. 1.

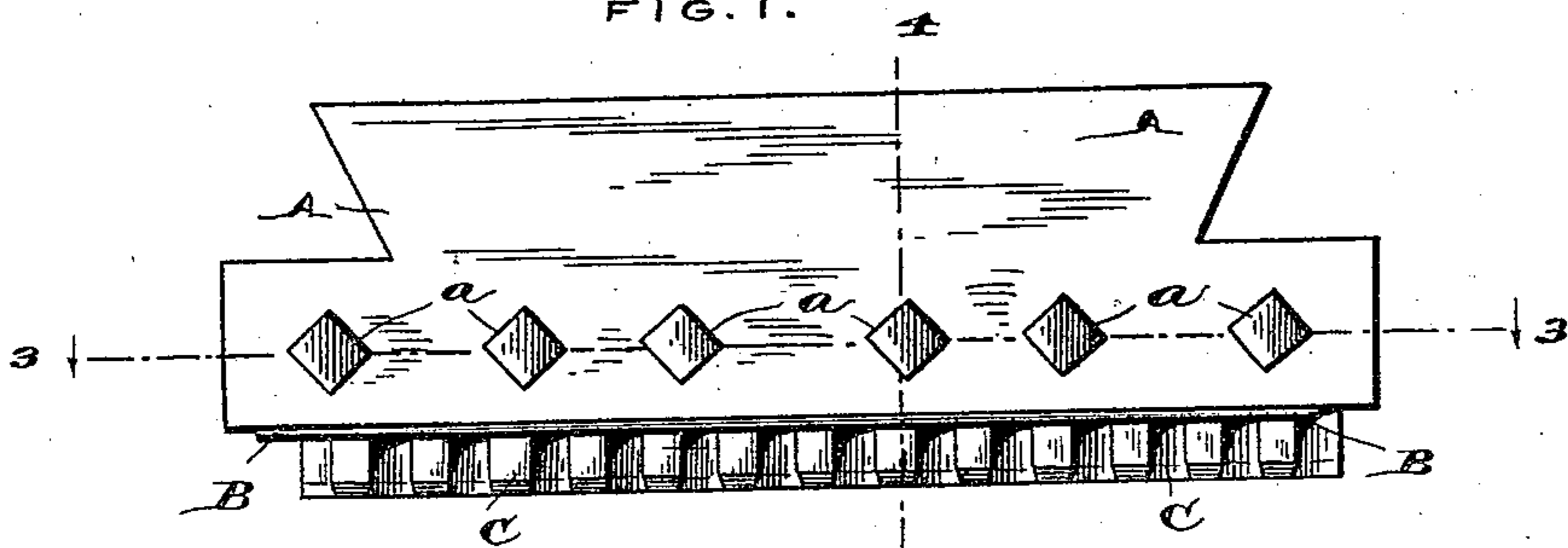


FIG. 2.

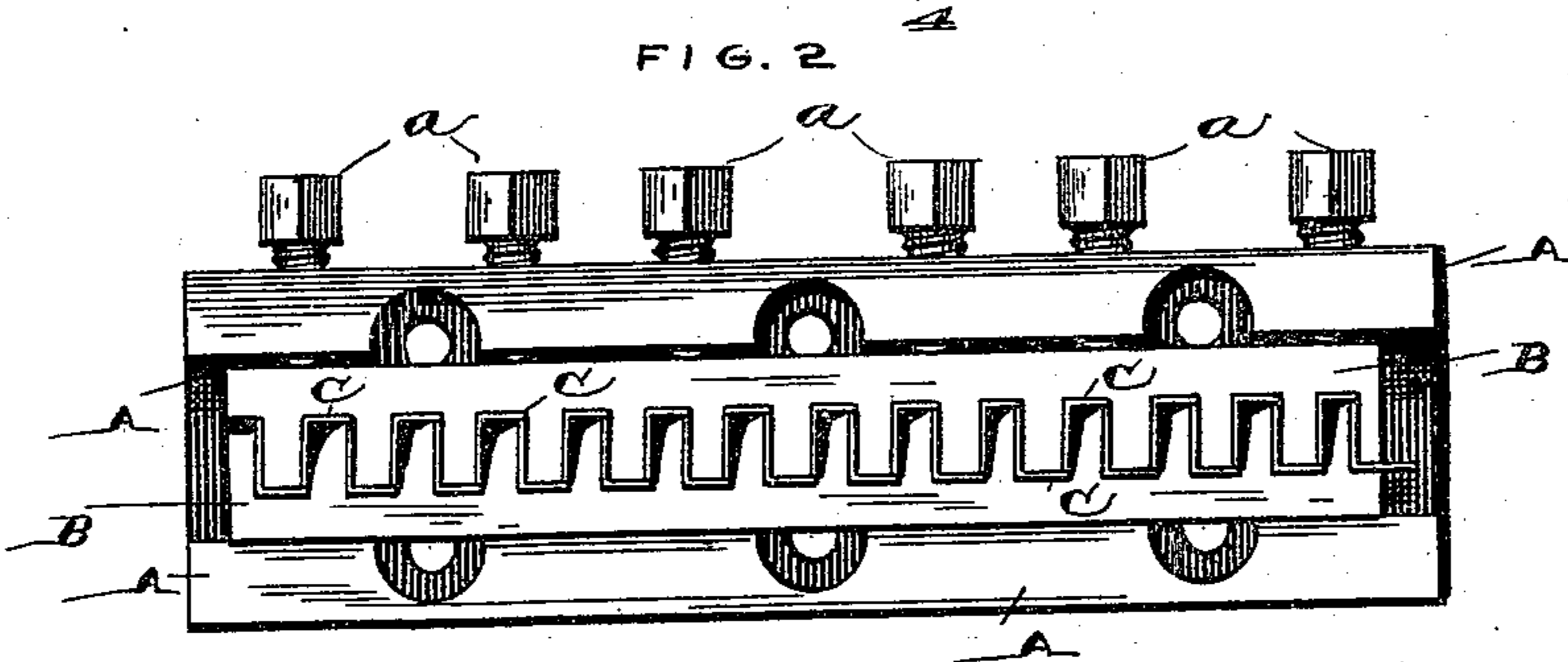


FIG. 3.

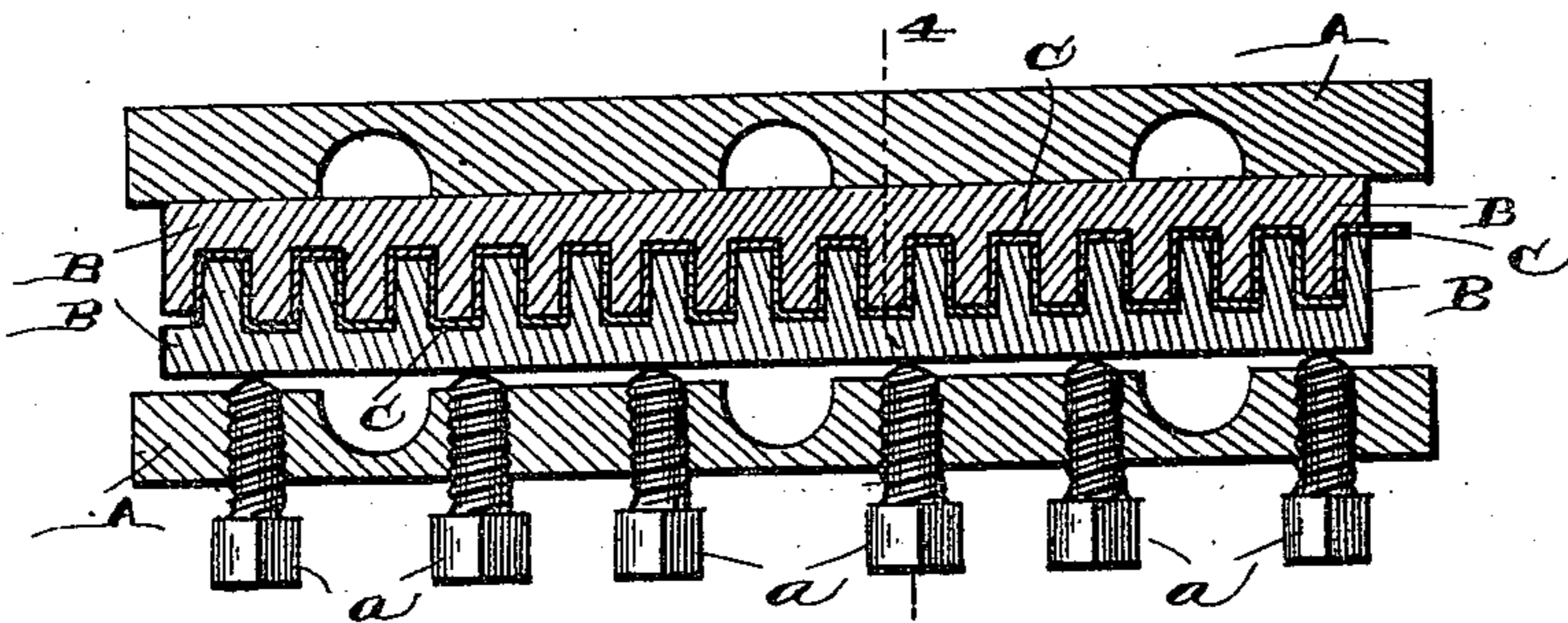
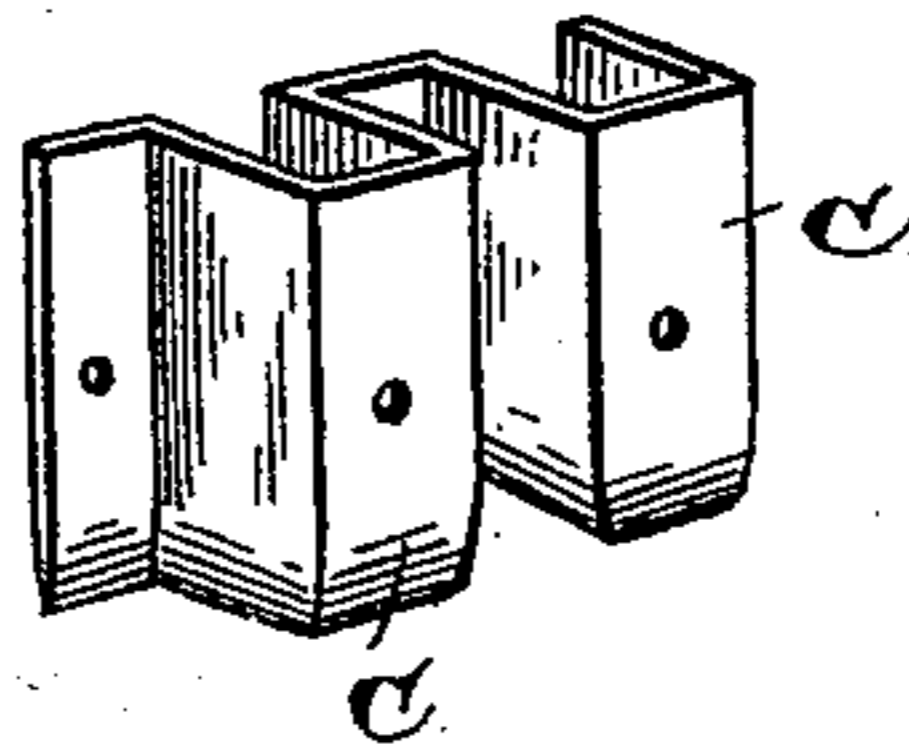
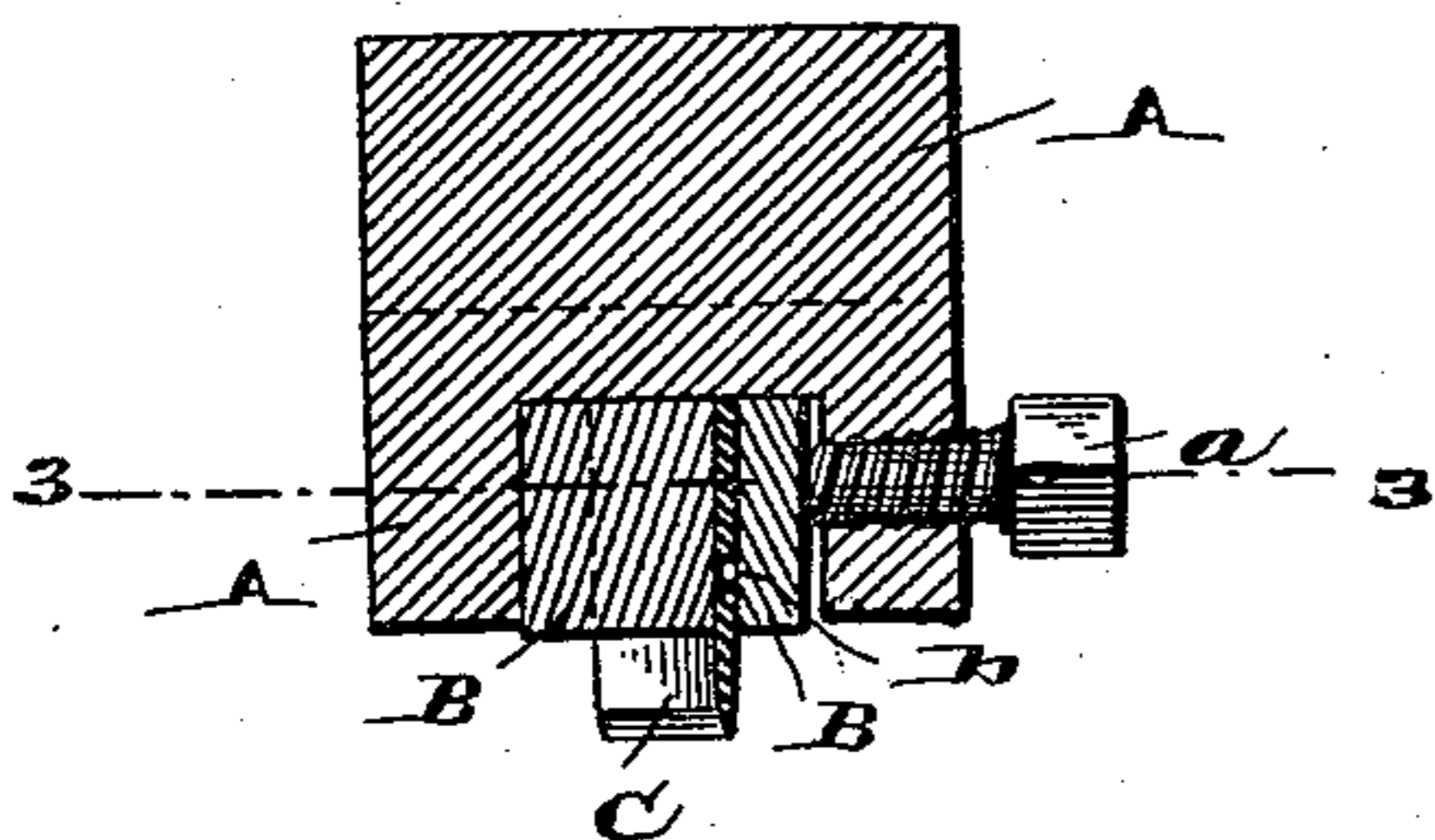


FIG. 4.

FIG. 5.

FIG. 6.



WITNESSES:

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JAMES F. GILLILAND, OF ADRIAN, MICHIGAN.

CUTTING-DIE FOR BOX-MAKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 455,015, dated June 30, 1891.

Application filed January 7, 1891. Serial No. 376,984. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. GILLILAND, a citizen of the United States, residing at Adrian, in the county of Lenawee and State of Michigan, have invented certain new and useful Improvements in Cutting-Dies for Box-Making Machines, of which the following is a specification.

My present invention consists in the construction and arrangement of the dies for use in the box-making machine for which I have made a separate application, Serial No. 376,983, for Letters Patent of even date herewith. Said die consists, generally speaking, in a set of toothed clamps, the teeth on each of which are arranged to project in between the teeth on the other, and a series of cutting blades or edges, preferably formed of sheet metal, adapted to be held between the various surfaces of said clamps, or any modification of this arrangement whereby the surface of the die as a whole is made to consist of a series of spaces, each of the shape and size of one of the matching projections which it is desired to form upon the ends of the portions or sections of lumber which are thereby fitted for use in building the boxes to be made.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a side elevation of a die embodying my said invention; Fig. 2, an under side plan thereof, showing the operating-face of the die; Fig. 3, a horizontal sectional view on the dotted line 3 3 in Fig. 1; Fig. 4, a transverse sectional view on the dotted line 4 4 in Fig. 1; Fig. 5, a perspective view of a cutter portion in the form I prefer to construct it, (with two sections in one piece;) and Fig. 6, a similar view showing a cutter portion formed with a greater number of sections in one piece than are commonly used, although such a construction is practicable. By "section," as above used, I mean that portion of the cutter the cutting-edge whereof extends from one point to another in a straight line.

In said drawings, the portions marked A represent the head or block of the die, B B the cutter-clamps, and C the cutter or cutting-sections.

The block A is of a form to be secured to

the plunger of a press. In its lower side is formed a channel or groove in which the cutter-clamps are secured, and wherein said cutter-clamps are secured by means of set-screws *a*, which are provided in sufficient number to insure that said clamps shall be held firmly against said cutters at all points throughout their length. This is best shown in Fig. 4.

The clamps B B are toothed on their adjacent faces, the spaces between the teeth being equal to the thickness of the teeth plus the thickness of two of the cutter-sections, so that when brought together the cutter can be slipped between them, as shown most plainly in Fig. 3, and there held securely in position to operate. Small projections *b* (see Fig. 4) are preferably formed on the faces of the teeth, which pass into corresponding holes or depressions in the cutter-sections when the clamps are brought together, thus insuring that said cutter shall be held in place. As above stated, the clamps are held into the head or block of the die by the set-screws *a*, which are adapted to be turned up tightly against one of them, and thus clamp them securely in the channel or groove in which they are placed.

The cutter or cutting-edge is preferably composed of several sheet-metal parts, which are placed between the clamps B and there held in the arrangement shown. As shown in Fig. 5, two sections of the cutter are preferably made in one piece, although each section may be made separately, if desired. A greater number of sections may also be made in a single piece, if desired, as shown in Fig. 6. Those sections which face the front edges of the teeth on the clamps have holes or depressions therein, as shown most plainly in Fig. 4, into which the projections *b* on said clamps enter, whereby a reliable union of the parts is secured. These projections and holes or depressions might of course be reversed, if desired, although I find it more convenient to make them as shown. By the arrangement shown, in which one piece includes two cutting-sections, one of which runs in a direction at an angle with the other, each piece may have one of these interlocking devices, otherwise those sections of cutter which extend transversely of the die could not be thus secured. By this arrangement the

breaking of one section does not destroy the whole cutter.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a die, of toothed clamps, the toothed surfaces whereof face each other and the teeth whereon are arranged to pass between each other, and a sheet-metal cutter bent to fit between and around said teeth and arranged to be held by said clamps, substantially as set forth.

2. The combination, in a die, of two clamps having toothed faces, projections on the faces of the teeth, a cutter placed between said teeth, and holes or depressions in said cutter, into which the projections on the clamps enter, substantially as set forth.

3. The combination, in a die, of the head or block, clamps secured in said head or block, and a cutter consisting of pieces of sheet metal bent so that the sections are arranged in angular relation, whereby when

the several parts of the die are assembled the cutting-face consists of a series of cutting-sections arranged in a regular relation, substantially as shown and described.

4. The combination, in a die, of a head or block thereto having a channel or groove in its lower face, clamps, the adjacent faces of which are toothed, arranged in said groove or channel, set-screws in said head or block, whereby said clamps are secured in position, and a cutter consisting of pieces of sheet metal placed between the teeth of the clamps and there held, whereby a series cutting-face is formed, substantially as shown and described.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 3d day of January, A. D. 1891.

JAMES F. GILLILAND. [L. S.]

Witnesses:

CHESTER BRADFORD,
GEORGE S. SHIRES.