

(No Model.)

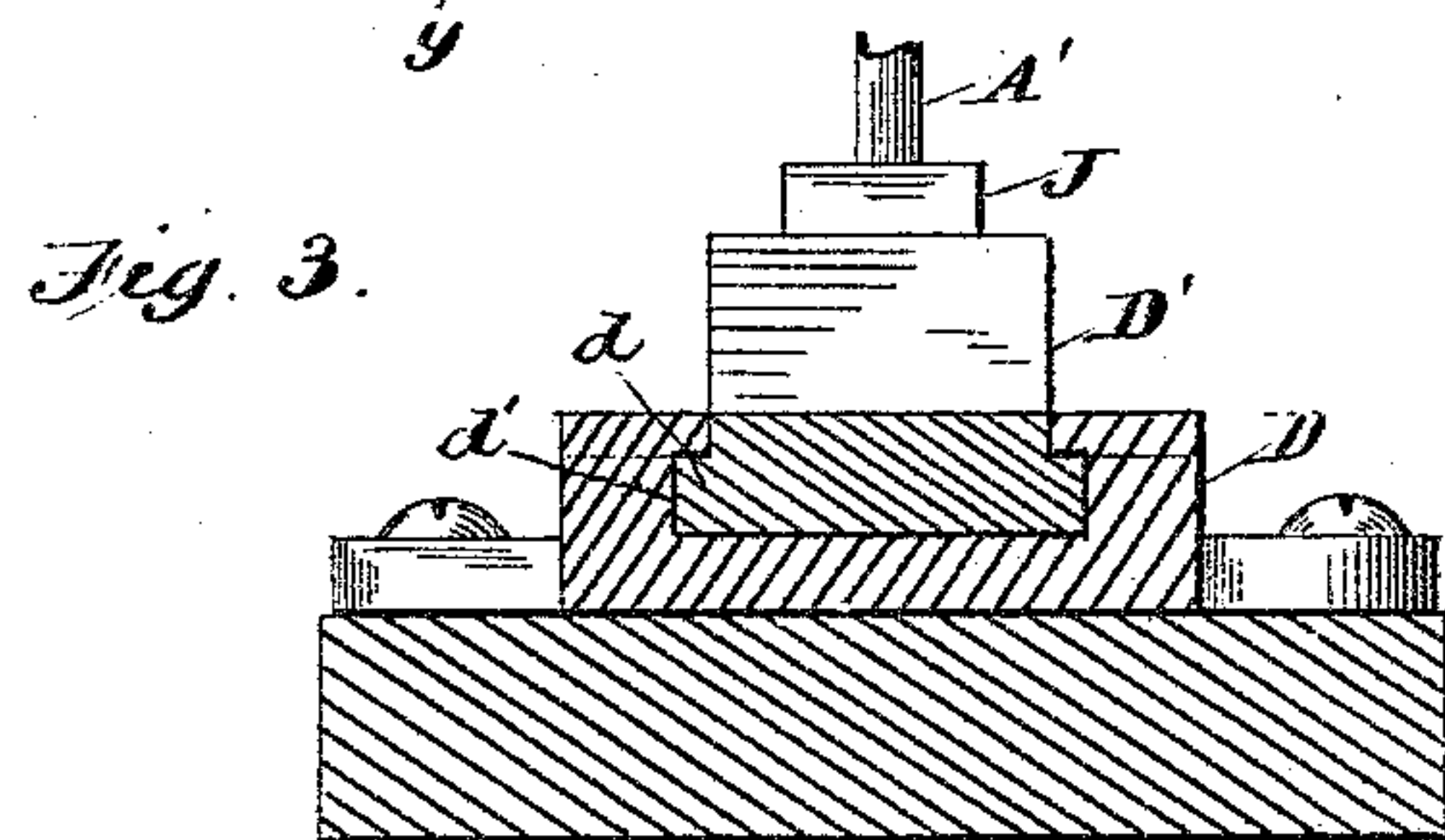
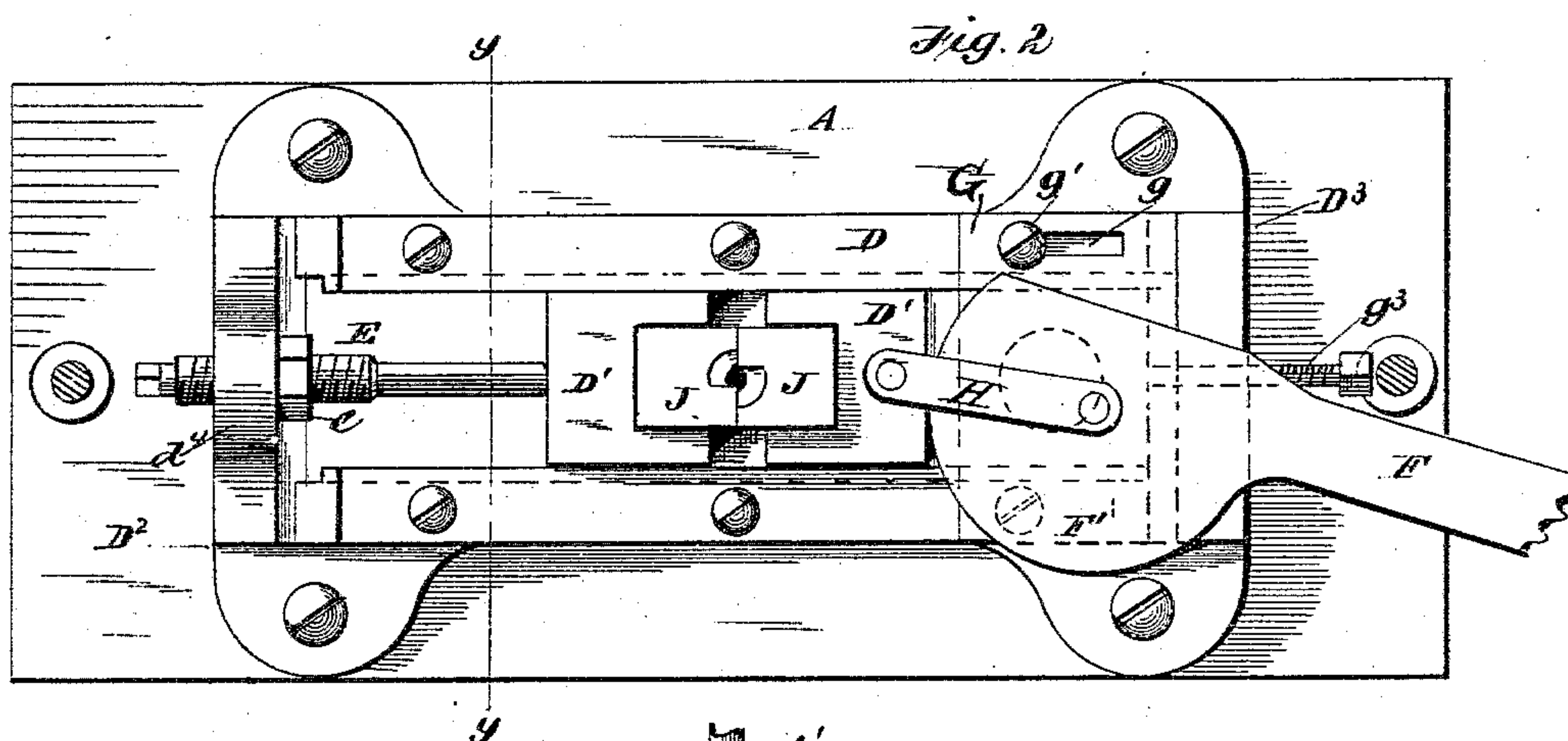
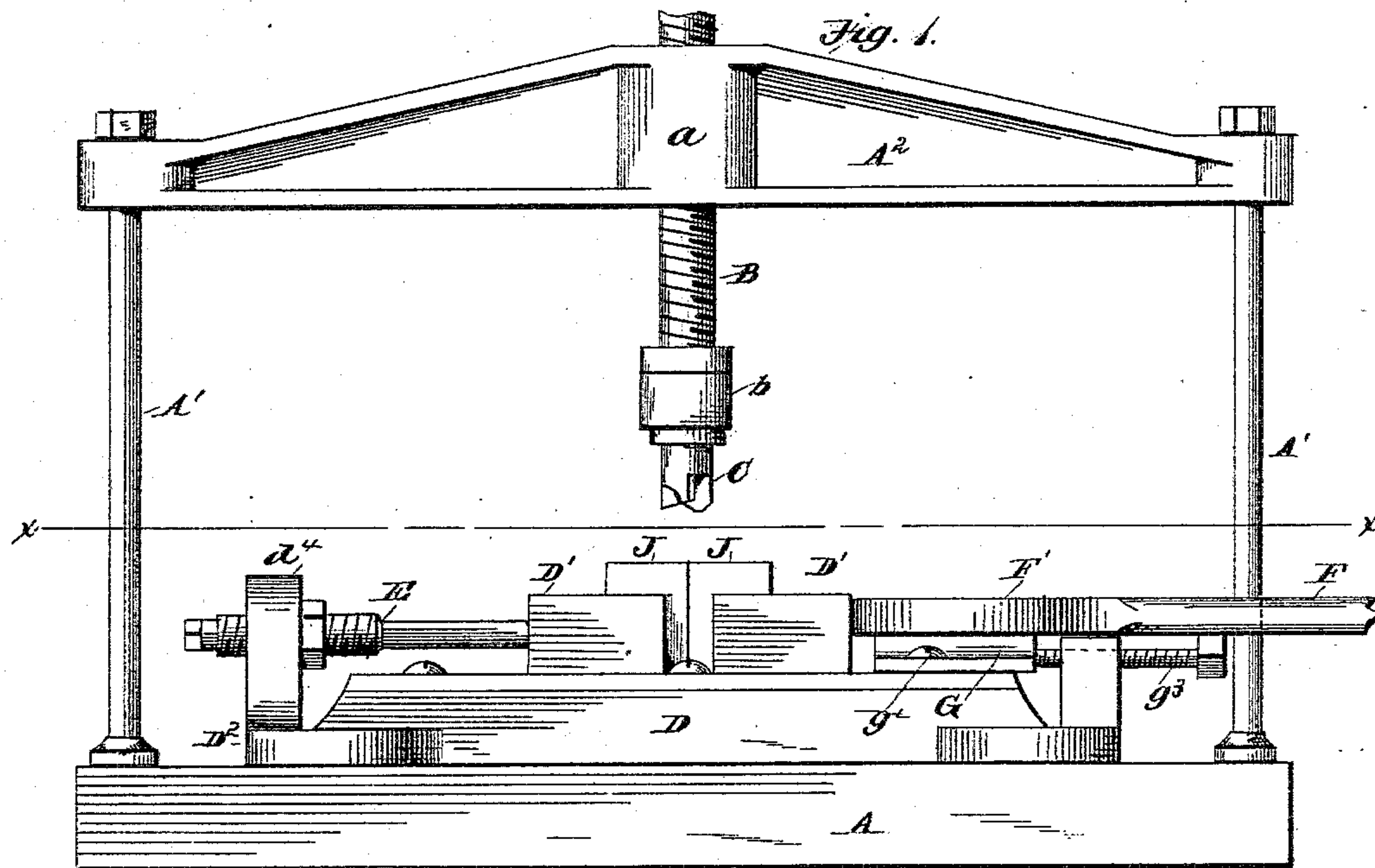
3 Sheets—Sheet 1.

W. L. PARMELEE.

MACHINE FOR FORMING AUGER BITS.

No. 286,554.

Patented Oct. 9, 1883.



WITNESSES

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INVENTOR

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Attorneys,

(No Model.)

3 Sheets—Sheet 2.

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Fig. 4.

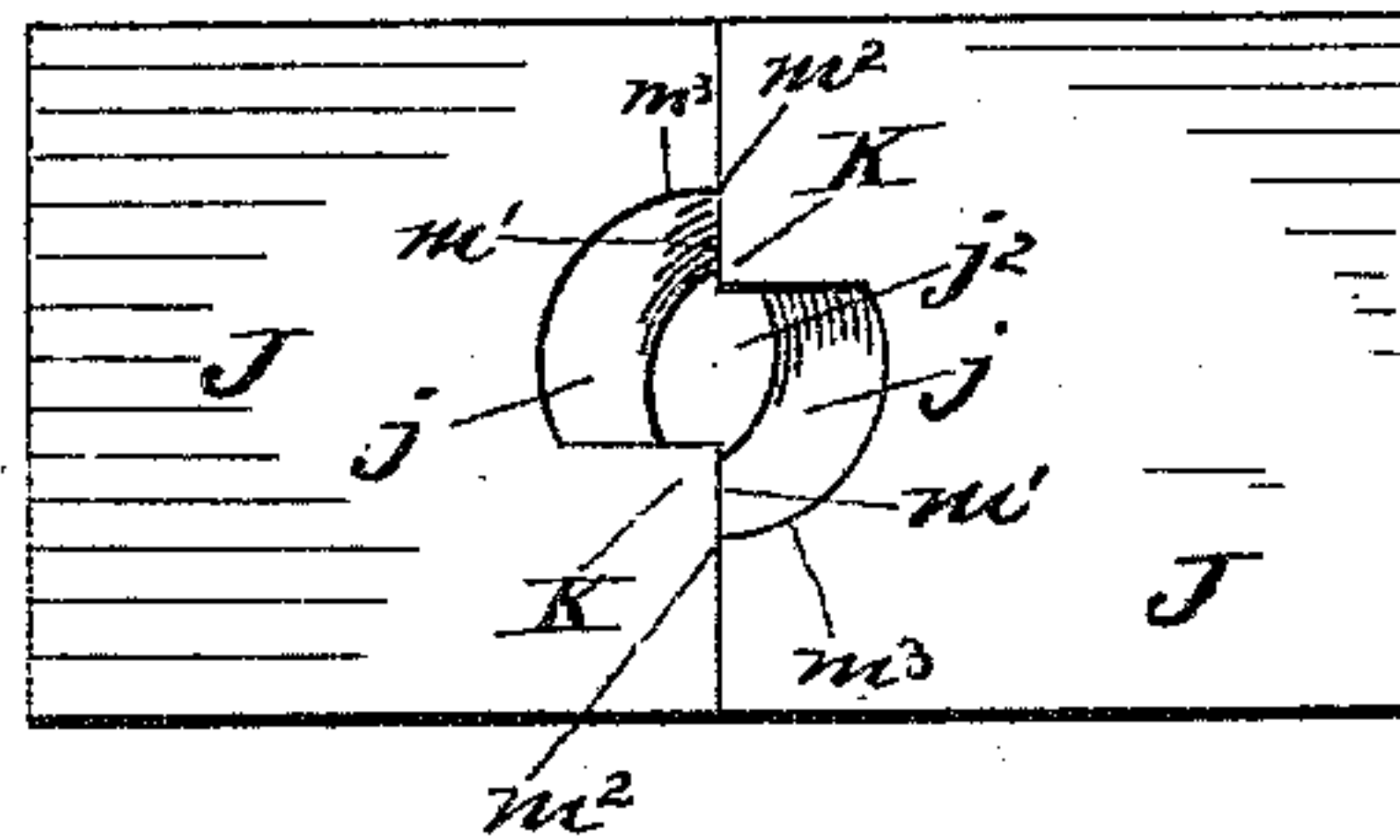


Fig. 5.

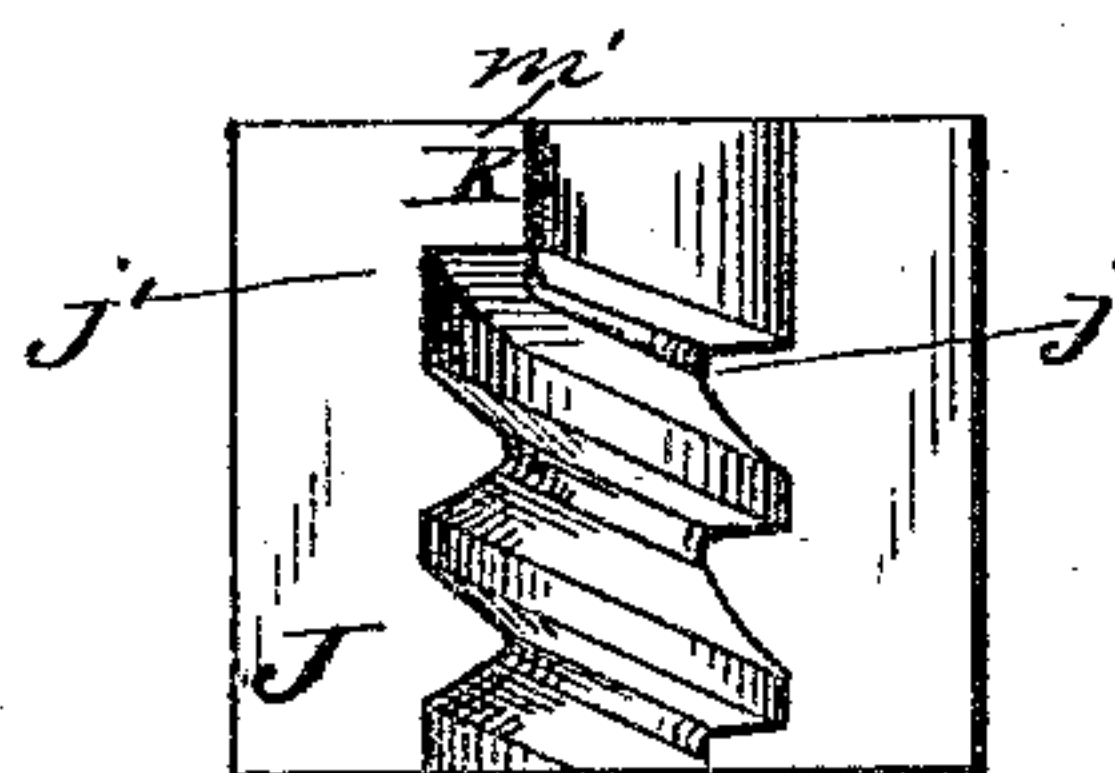


Fig. 6.

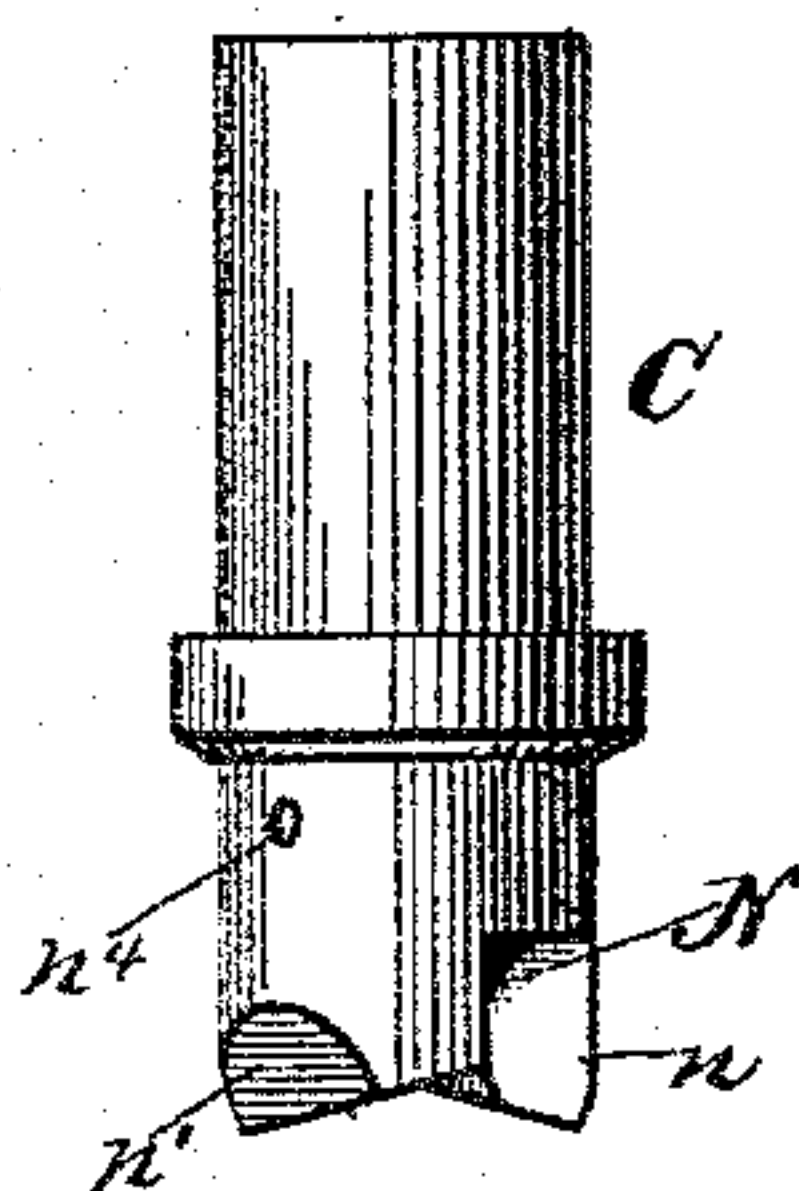


Fig. 7.

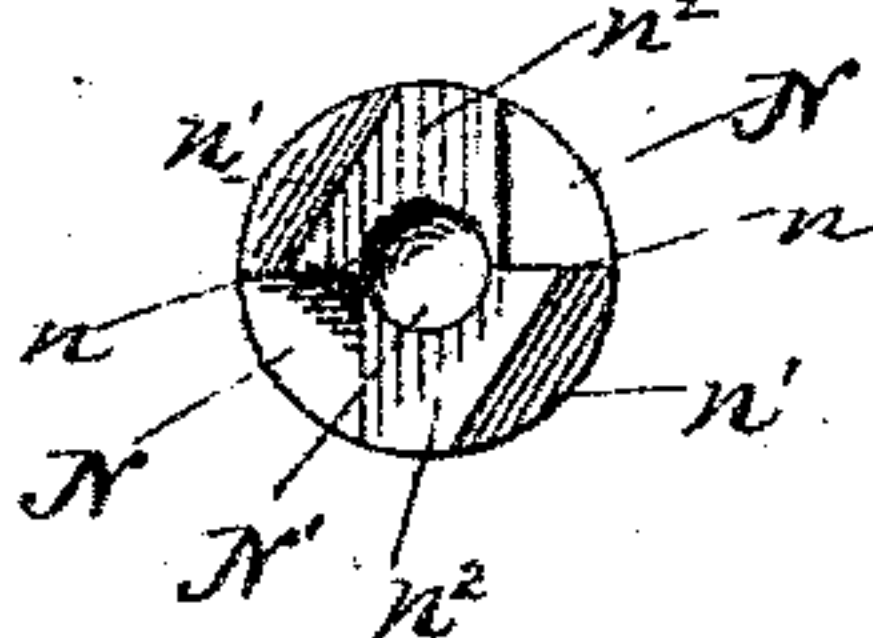


Fig. 8.

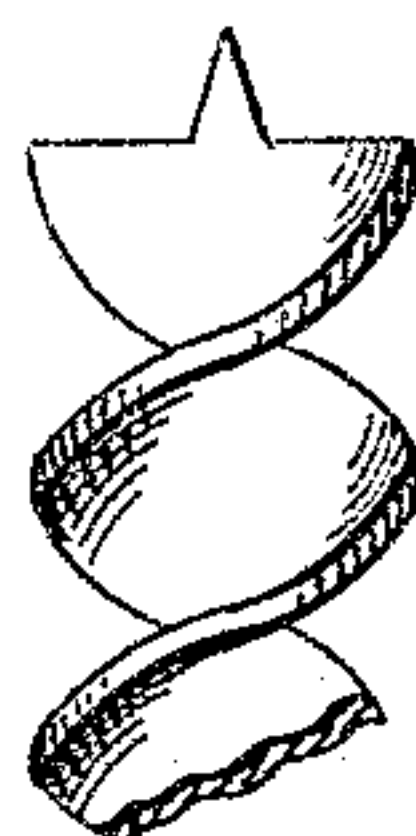


Fig. 10.

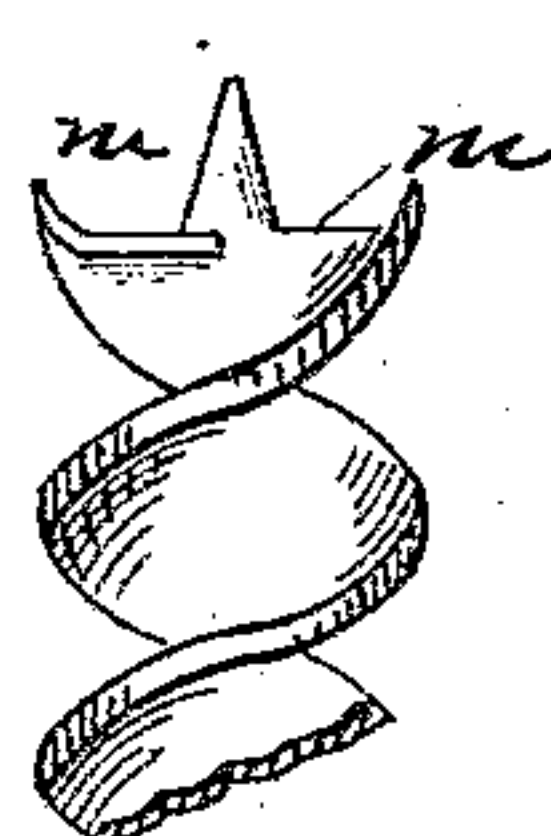


Fig. 9.

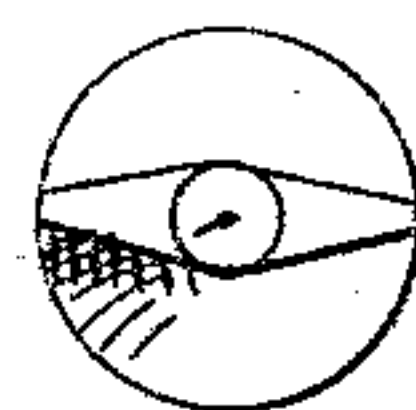
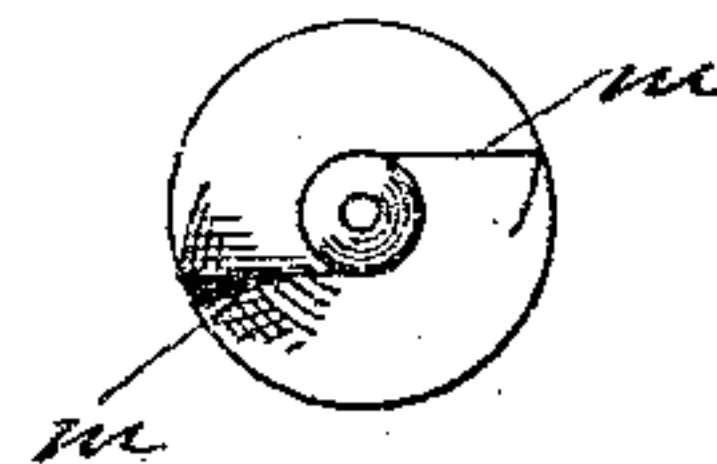


Fig. 11.



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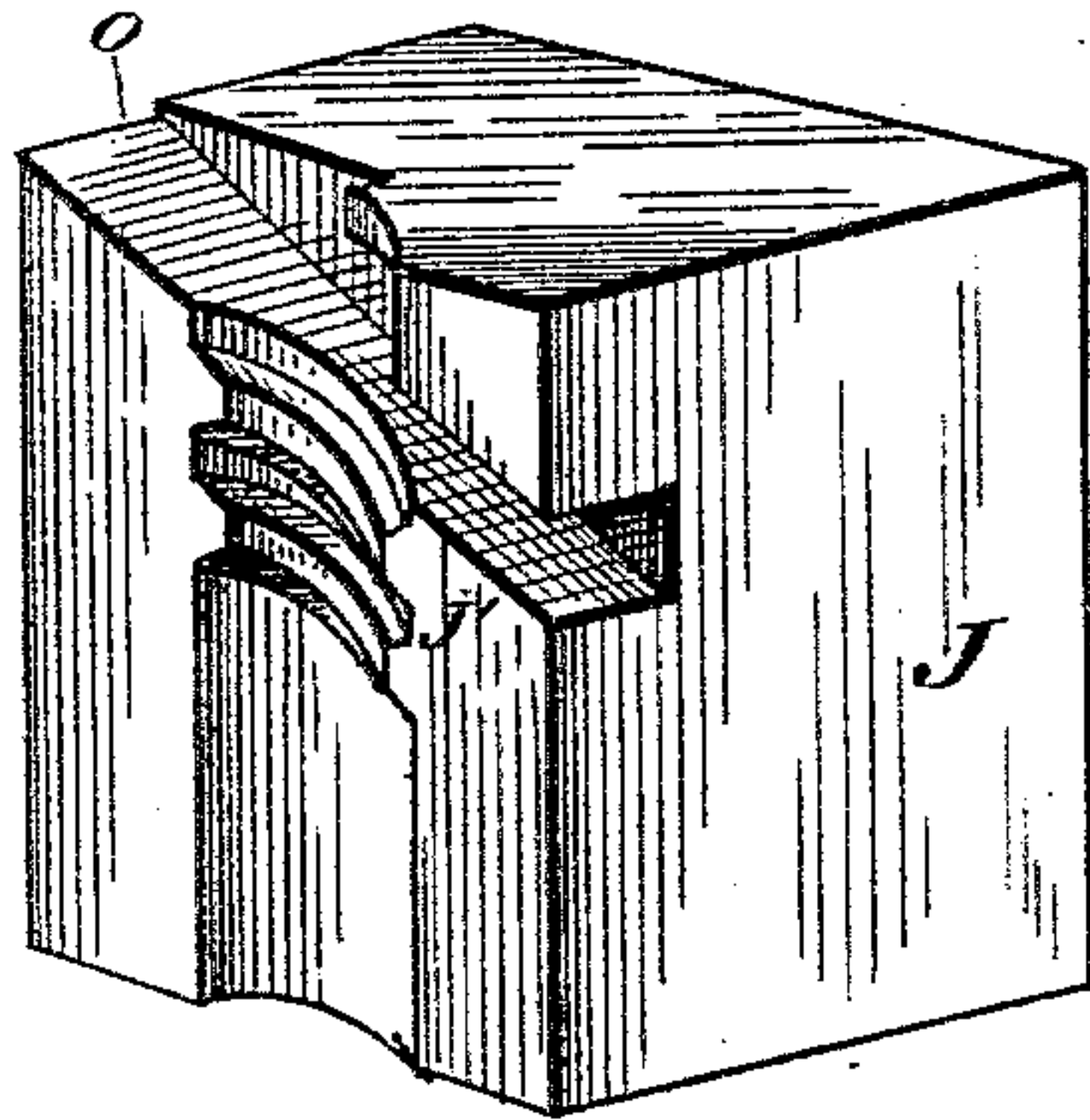


Fig. 12.

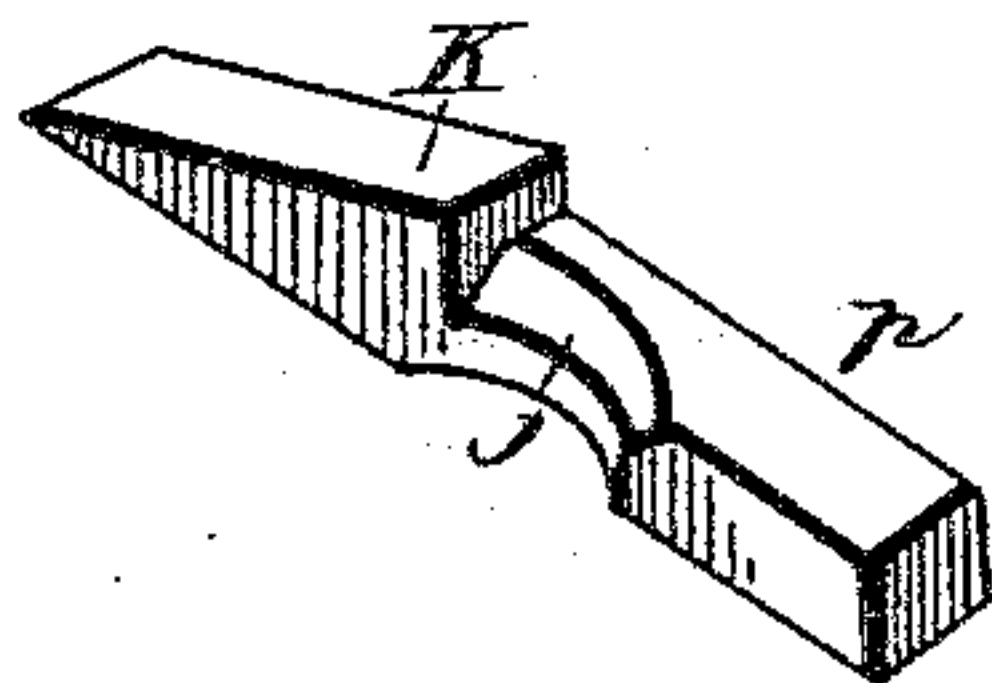


Fig. 13.

Witnesses:
Wm J. Durall
H. I. Brown

Inventor:
Wm. L. Parmelee
per Edson Bros,
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UNITED STATES PATENT OFFICE.

WILLIAM L. PARMELEE, OF ANSONIA, CONNECTICUT, ASSIGNOR TO THE
DERBY BIT COMPANY, OF SAME PLACE.

MACHINE FOR FORMING AUGER-BITS.

SPECIFICATION forming part of Letters Patent No. 286,554, dated October 9, 1883.

Application filed June 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. PARMELEE, a citizen of the United States, residing at Ansonia, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Machines for Forming Auger-Bits; 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 and figures of reference marked thereon, which form a part of this specification.

15 In the drawings, Figure 1 is a side elevation of my invention in position in a press. Fig. 2 represents a top plan view of the dies in position upon the press-bed. Fig. 3 is a transverse sectional view taken on the line *y y*, Fig. 2. Fig. 4 represents a top plan view of the stationary dies in which the lips are formed. Fig. 5 is a view of one of said stationary dies. Fig. 6 is a side view of one of the movable dies for forming the lips. Fig. 7 is a plan view of the lower end of the movable dies. Figs. 8 and 9 represent views of the bit-blank when ready to be applied to the die and before the lips are formed, and Figs. 10 and 11 are views of the finished bit. Fig. 12 is a perspective view of one of the dies *J*, made so that the shoulder *K* may be removable. Fig. 13 is a perspective view of a slide or piece bearing the shoulder *K*.

Similar letters of reference in the several drawings denote similar parts.

This invention relates to improvements in making or forming the cutting part or head of augers, and has for its object the provision of means whereby the lips and points are shaped and the spurs drawn up at one end at the same time; and to this end it consists in stationary female dies provided with a peculiarly-formed upper end, and adapted, in combination with a movable male die, to form and shape the lips and spurs of the bit, substantially as hereinafter set forth.

It further consists in the means employed to adjust the female dies, as hereinafter described; and it further consists in the arrangement and operation of the various parts taken as a whole,

substantially as hereinafter described and set forth.

Referring to the drawings. *A* represents a press-bed provided with uprights *A'* and a cross-beam, *A''*, said beam being provided at its middle with a female screw, *a*.

B represents a male screw extending downward through the female screw *a*, and provided at its lower end with a collar, *b*, to receive the shank of the male die *C*, hereinafter described.

D represents the bed or plate, to receive and hold the female or stationary die holding blocks *D'*, which are provided at their lower edges, and at each side thereof, with projecting ledges *d*, that fit into grooves *d'*, formed in the plate *D*, said construction preventing the lateral movement of the blocks *D'*, while allowing said blocks to freely move in a longitudinal direction. The blocks *D'* are longitudinally adjustable. One end, *D''*, of the plate *D* is provided with an upwardly-projecting lug, *d''*, having a female screw formed therein, through which passes a male screw, *E*, the inner end of which bears against the rear end of one of the die-holding blocks *D'*, the screw *E* being held from turning backward by a jam-nut, *e*. The remaining block *D'* can be adjusted by means of a lever, *F*, the end of which has an eccentric, *F'*, which bears against the block *D'*, and is pivoted to an adjustable block or plate, *G*, as shown by dotted lines in Fig. 2. The plate *G* is provided at each end with slots *g*, through which pass screws or bolts *g'*, that secure said plate to the plate *D*. The plate *G* is held in any desired position by a screw, *g''*, which passes through an upwardly-projecting lug formed upon the end *D'''* of the plate *D*. A link, *H*, is attached at one end to the block *D'* and at the other end to the true center of the circle forming the eccentric *F'*, whereby the block *D'* may be drawn away from its fellow when desired. The adjacent sides of the blocks *D'* are provided with recesses or cavities *f*, to receive and hold the stationary female dies *J*, as shown clearly in Fig. 2. The dies *J* are similar in construction, each being provided with spiral ribs *j'* upon their inner surfaces, the centers *j* of said ribs *j'* being hollowed out, as shown at *j''*, to allow room for the center of

the bit or auger blank. I provide each of the dies J at the upper end of its spiral bit-holding ridge j' with an inwardly-projecting block or shoulder, K.

5 The shoulder K may be made integral with the die J, or may be on a removable piece, p , which slides into a diagonal groove, O, in die J, as shown in Fig. 12. The piece p is formed, as shown, to fill said groove, and is shaped so
10 as to present the same working-faces to those on the solid die. By making the groove O diagonal, the piece p is pressed firmly into place when the die is in use, but may be readily removed and replaced when worn, or when
15 a slightly-different bit is to be operated on. When the dies J are in position to secure the auger-blank, the projections or shoulders K are in the relative position shown in Fig. 4.

20 The projection or shoulder K, above described, is for the purpose of forming the cutting-edges of the bit, and, under the downward pressure of the die C, to force the metal into the recesses of said die to form the spurs and point the bit. (See Figs. 4, 10, and 11.)

25 The cutting-edges m m (shown in Figs. 8 and 9) fit against the corresponding sides, m' m' , of the projection K in Fig. 4. Figs. 8 and 9 show the unfinished bit; but it will be understood that when the follower or male die C is
30 forced downward against the blank and into the female dies J, the result is as shown in Figs. 10 and 11. The die C is provided at its lower end, and at each side thereof, with recesses N, into which the projections K of the
35 dies J fit when said dies C and J are together, and when so together the sides n n of the recesses N bear against the sides m' m' of the projections K. The sides of the die C that are adjacent to the points m' when the dies are
40 together are beveled, as shown at n' , for the purpose of forming the spurs of the bit. The lower end or surface of the follower or male die C is beveled in opposite directions, as shown at n^2 n^2 , Figs. 6 and 7, said bevels cor-
45 responding to the bevel of the spiral ribs j' of the dies J. The follower or male die C is further provided with a conical recess, N', to receive and shape the point of the bit, a lateral opening, n^4 , extending from the outside
50 surface of the die to the point of the recess N', whereby the air is allowed to escape from the said recess.

I attach importance to the vent n^4 , which is essential to the practical working of my de-
55 vice, since the die C, as it is forced home, completely fills the external openings in the dies J, except the spaces into which the metal is forced to form the bit.

The operation of my invention is as follows: The blank, after being twisted, as shown in 60 Figs. 8 and 9, and properly heated, is placed in the die J, the upper end of said blank being about flush with the upper surface of the dies J. Said dies J are closed on the blank, and the follower or male die C is forced downward 65 against the end of the blank, thus forming the lips and spurs of the bit.

I do not limit myself to the exact form and proportion of parts composing my invention herein shown and described, but hold myself 70 at liberty to make such changes and alterations as fairly fall within the scope of the same.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. In a machine for forming auger-bits, the 75 female dies J, having spiral ridges j , terminating at their upper ends in blocks or shoulders K, which limit the flow of the metal in the direction of the continuation of the thread, substantially as described. 80

2. In a machine for forming auger-bits, the male die C, having recesses N N', vent n^4 , connecting with the central recess, and beveled portions n' n^2 , substantially as described.

3. In a machine for forming auger-bits, the 85 female dies J, having spiral ridges j , and further provided with inwardly-projecting blocks or shoulders K, in combination with the follower or male die C, having recesses N, to receive said projection K when the dies are brought 90 together, beveled portions n' n^2 , and conical recess N', whereby the cutting-edges and spurs of the auger are formed, substantially as described.

4. In a machine for forming auger-bits, the 95 combination of the dies C and J J, each constructed, substantially as described, with the die-holding blocks D', plate D, and a press bed and frame, substantially as described.

5. The combination, with the die J, of the 100 removable piece p , bearing the shoulder K, substantially as shown.

6. The combination, with the die J, having the diagonal groove, as described, of the piece p , having working-faces to complete the die, 105 and adapted to fill the diagonal groove, substantially as described.

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

WILLIAM L. PARMELEE.

Witnesses:

GEORGE R. REYNOLDS,
JOHN HARRIS.