

(No Model.)

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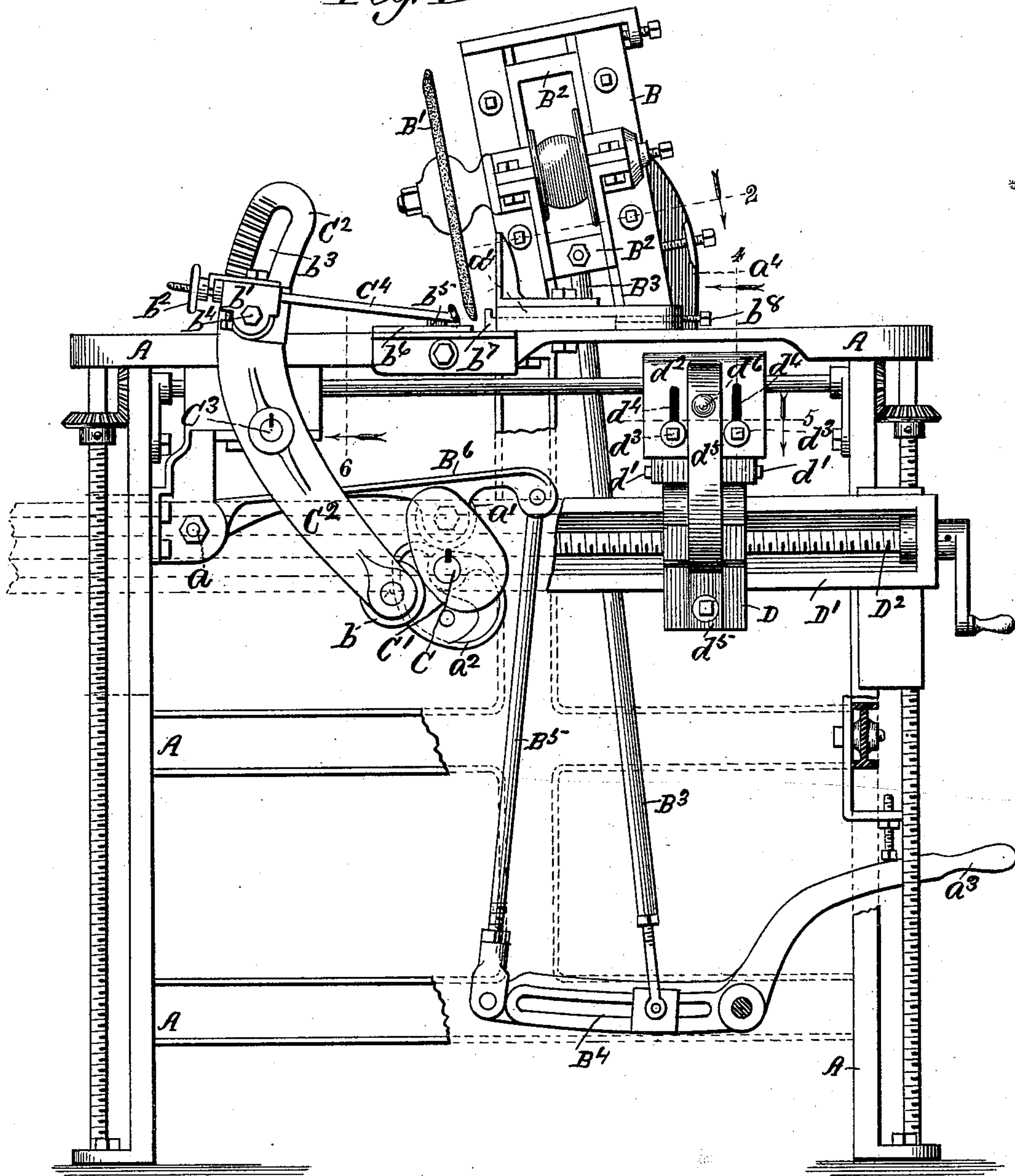
M. COVEL.

SAW SHARPENING MACHINE.

No. 398,030.

Patented Feb. 19, 1889.

*Fig. 1*



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Inventor:  
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(No Model.)

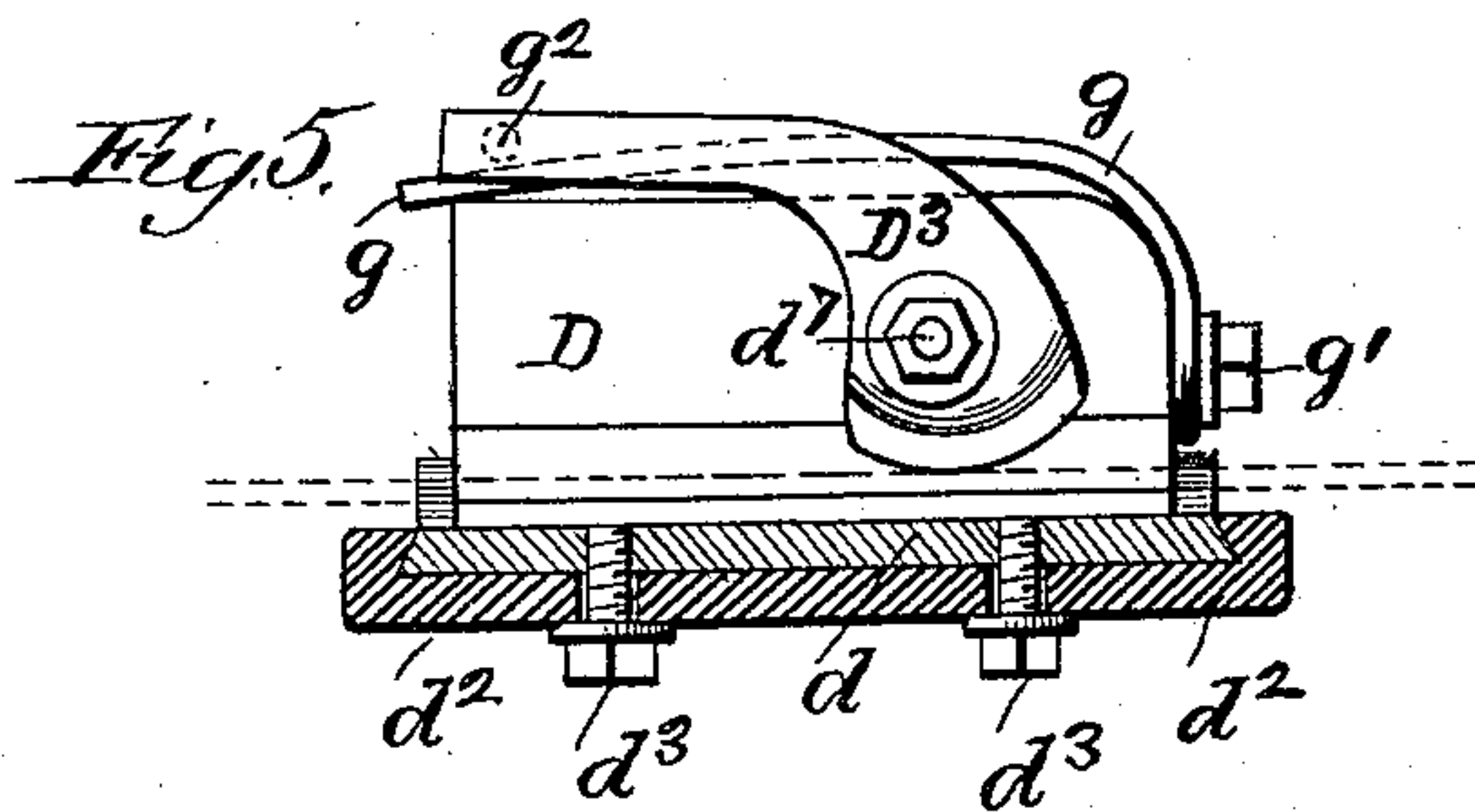
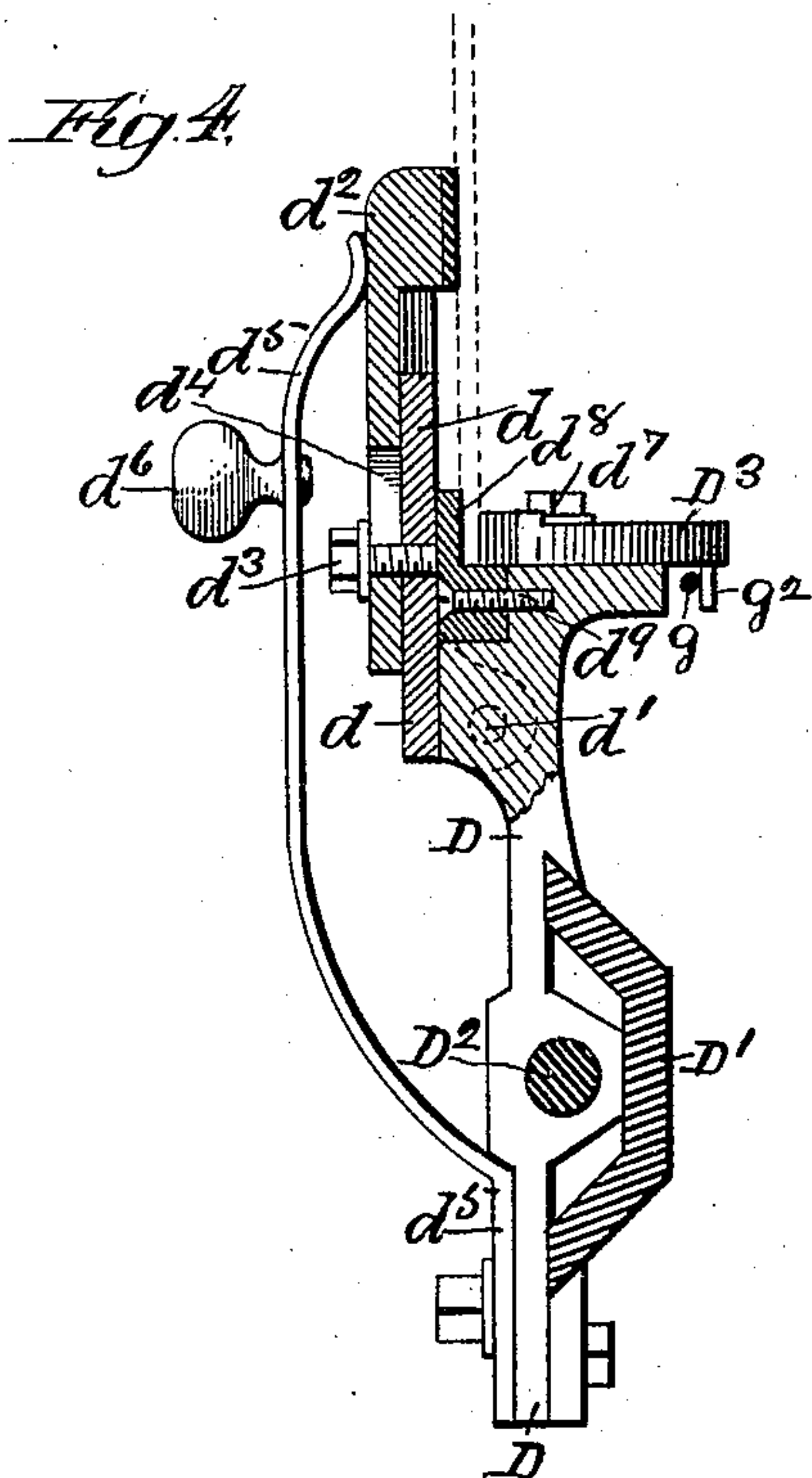
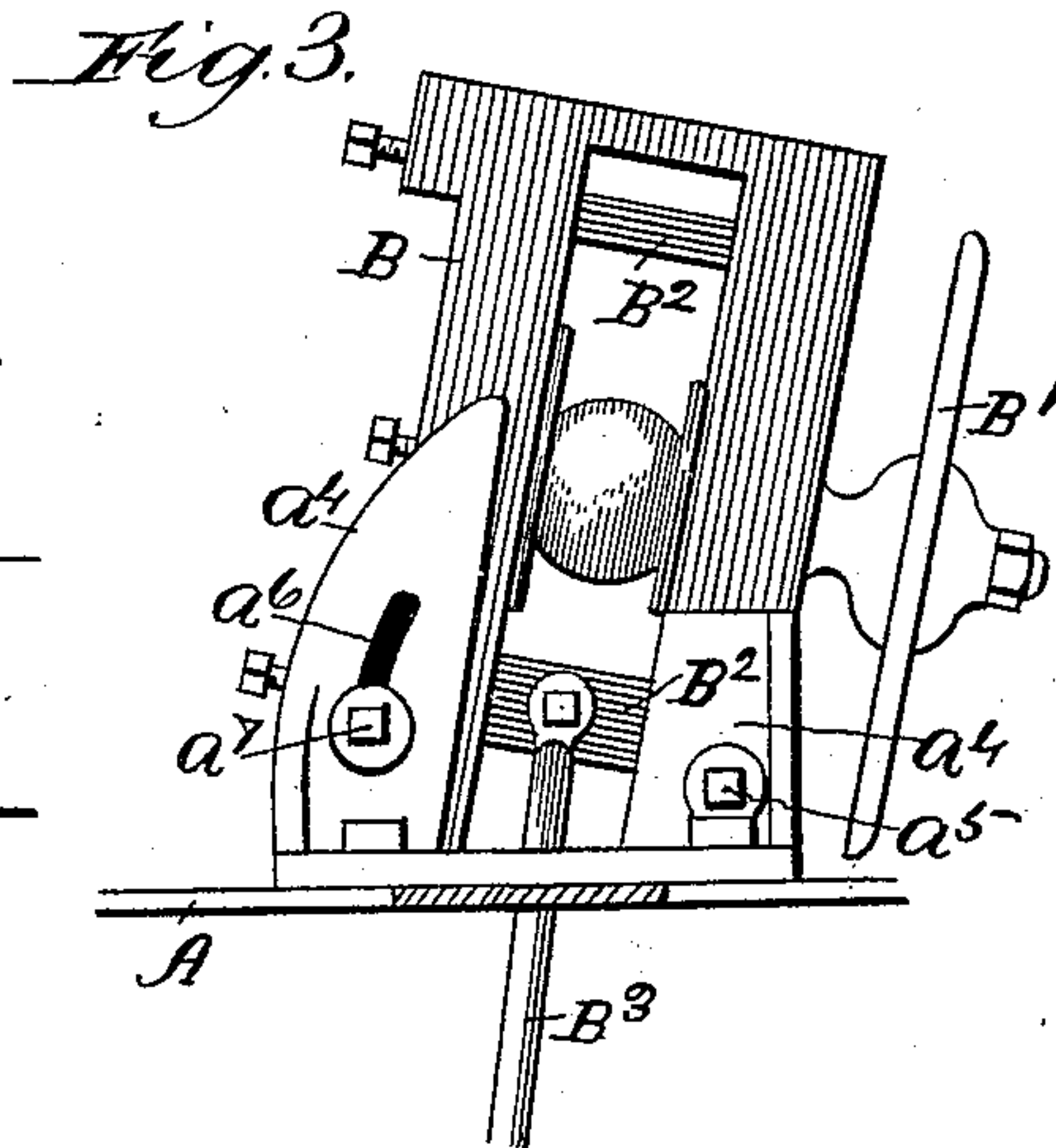
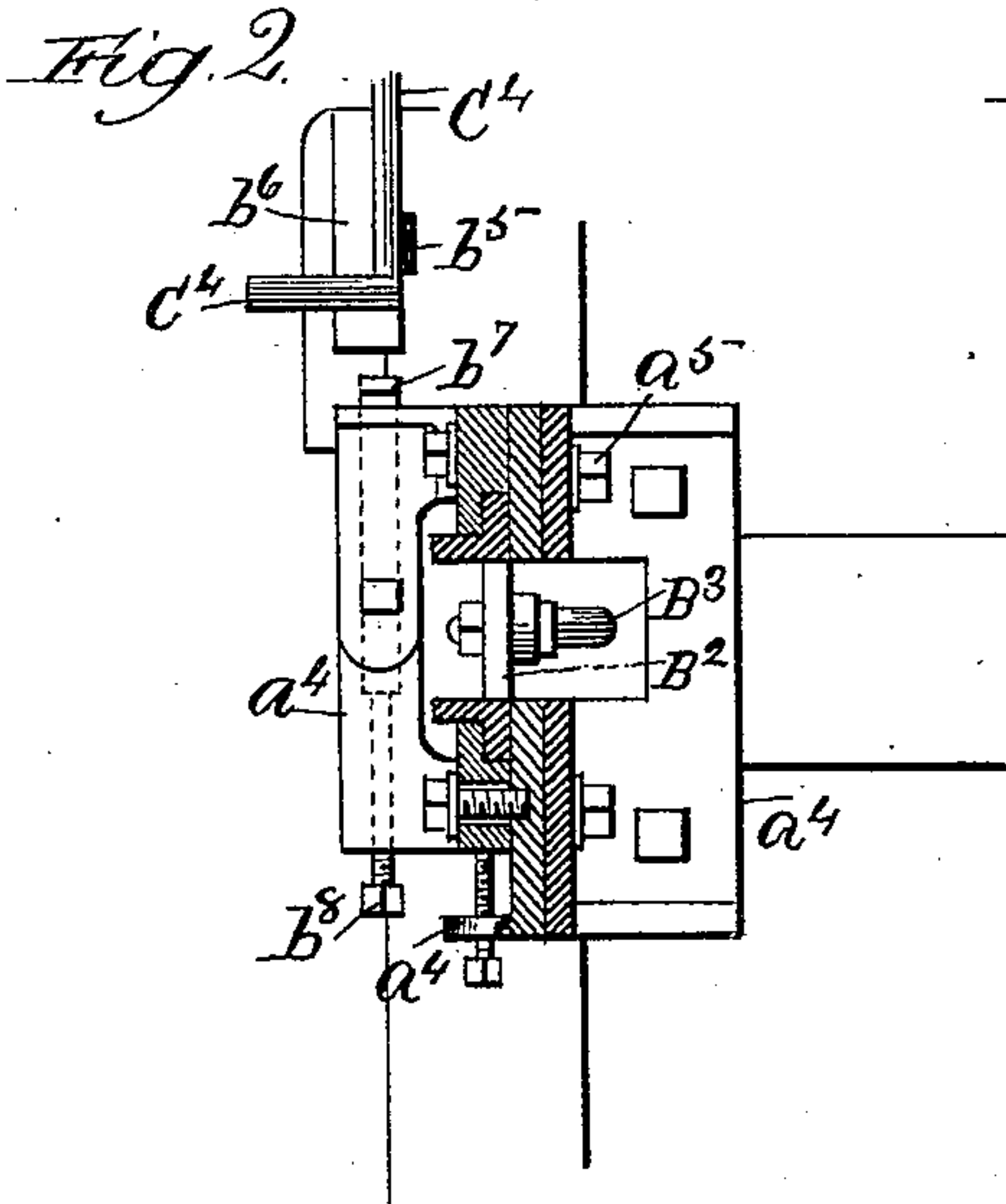
2 Sheets—Sheet 2.

M. COVEL.

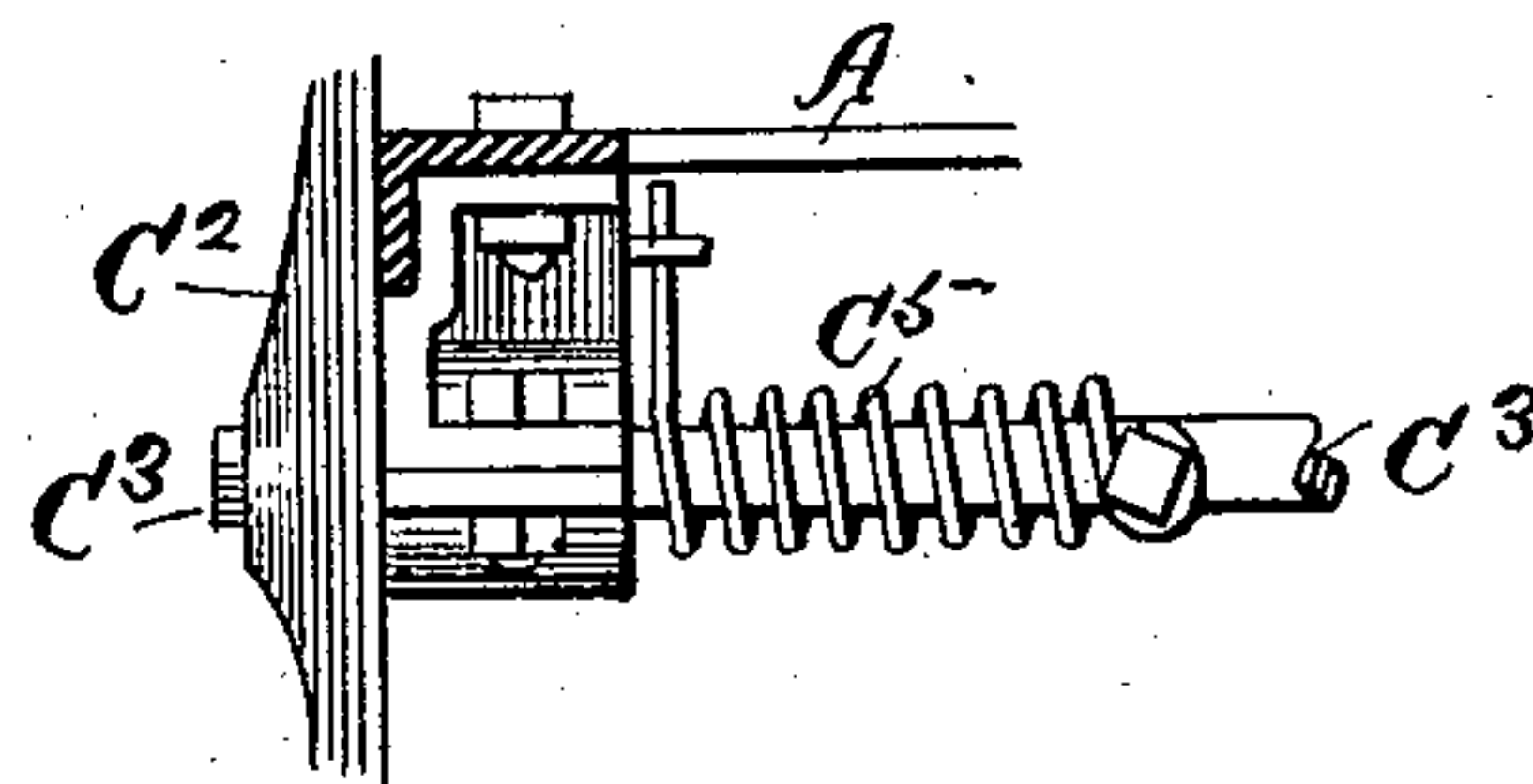
SAW SHARPENING MACHINE.

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*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

MILO COVEL, OF CHICAGO, ILLINOIS.

## SAW-SHARPENING MACHINE.

SPECIFICATION forming part of Letters Patent No. 398,030, dated February 19, 1889.

Application filed October 18, 1888. Serial No. 288,454. (No model.)

*To all whom it may concern:*

Be it known that I, MILO COVEL, of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Saw-Sharp-  
5 nings Machines, of which the following is a full, clear, and exact description, that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this  
10 specification.

This invention relates to improvements in that class of machines for which a number of patents have been granted me heretofore, the present improvement being more espe-  
15 cially intended for dressing band and straight saws, the same consisting of certain novel features in the construction, arrangement, and operation of the several parts, as will be hereinafter set forth.

20 Figure 1 is a front elevation of a machine embodying my improved features; Fig. 2, a horizontal section in plane 2, Fig. 1; Fig. 3, a rear elevation of the head-piece carrying the emery-wheel and gate; Fig. 4, a vertical sec-  
25 tion in plane 4, Fig. 1; Fig. 5, a horizontal section in plane 5, Fig. 1; and Fig. 6, a vertical section in plane 6, Fig. 1.

Referring to the drawings, A represents the different parts of the supporting-frame; B, the  
30 head-piece, and B' the emery or sharpening wheel, provided with suitable journal-bearings in the gate B<sup>2</sup>, which has the usual up-and-down movement. This reciprocating move-  
35 ment is imparted to the emery-wheel gate through the medium of the adjustable connecting-rod B<sup>3</sup>, the horizontal slotted arm B<sup>4</sup>, the connecting-rod B<sup>5</sup>, and the horizontal lever B<sup>6</sup>, the outer end of which is pivoted to  
40 the frame at a. The roller a' (see Fig. 1, dotted lines) is journaled in the under side of the lever B<sup>6</sup> near the inner end, and has a rolling contact with the cam a<sup>2</sup>, rigidly  
45 mounted on the driving-shaft C just back of the cam C', mounted on the front end of said shaft. The handle a<sup>3</sup>, connected to the slotted  
arm B<sup>4</sup>, provides a means for raising and lowering the emery-wheel by hand when it is  
necessary so to do.

The head-piece B is pivoted to the bracket  
50 a<sup>4</sup> by the bolt a<sup>5</sup> (see Fig. 3) on the side adjacent to the emery-wheel, the opposite side

of the bracket being provided with the seg-  
mental slot a<sup>6</sup>, through which passes the ad-  
justing-bolt a<sup>7</sup>, inserted in the head-piece. By this arrangement any degree of inclina-  
55 tion may be given to the head-piece and emery-wheel for the purpose of giving the saw-teeth more or less hook, as circumstances may require. The bracket a<sup>4</sup> is rigidly bolted to  
60 the top frame of the machine.

The irregular-shaped cam C' is rigidly  
mounted on the front end of the driving-shaft C, and serves the purpose of imparting the re-  
quired motion to the curved or radius feed-  
65 arm C<sup>2</sup>. This feed-arm is rigidly mounted near its longitudinal center on the rock-shaft C<sup>3</sup>, (see Figs. 1 and 6,) and has an oscillating  
or rocking movement therewith. A roller, b, is journaled in the lower end of the feed-arm  
70 and has a rolling contact with the cam C', which as it rotates rocks the feed-arm. The  
feed-finger C<sup>4</sup> has a longitudinal adjustment in the slide b' by means of the hand-nut b<sup>2</sup>  
engaging with the outer threaded end of the  
75 feed-finger, as shown in Fig. 1. The elongated slot b<sup>3</sup> in the upper end of the feed-arm pro-  
vides a means for changing the angle of the feed-finger with relation to the saw and the  
shape of the teeth, as the slide b' may be  
80 raised or lowered and secured at any point by clamping-bolt b<sup>4</sup>. The opposite end and in-  
ner edge of the feed-finger is provided with the downward-projecting lip b<sup>5</sup>, (see Figs. 1  
and 2,) which has frictional contact with the  
85 inner edge of the stationary plate b<sup>6</sup>, thus preventing a lateral outward movement of the  
feed-finger.

The adjustable stop b<sup>7</sup> is recessed in the  
base of the bracket a<sup>4</sup>, and has a longitudinal  
adjustment therein by means of the bolt b<sup>8</sup>,  
90 having a screw-threaded connection therewith. This feature provides a positive stop  
for the feed-finger on its inward movement, and prevents the same following the saw be-  
yond a fixed point.

The spring C<sup>5</sup> (see Fig. 6) is coiled on the  
rock-shaft C<sup>3</sup>, and serves to hold the lower end  
of the feed-arm normally in contact with the  
cam C'.

The bracket D (see Figs. 1, 4, and 5) is  
100 notched on the inner side to overlap the edges  
of the horizontal bar D', as shown in Fig. 4.



This bracket is also mounted on the screw-threaded shaft  $D^2$ , by which means the same is moved along on the bar  $D'$ . The lower end of the hinge-plate  $d$  is mounted on the pivot-bolt  $d'$ . The clamping-plate  $d^2$  is adjustably secured to the outer side of the hinge-plate by the bolts  $d^3$ , the elongated slots  $d^4$  in the clamping-plate providing for a vertical adjustment with relation to the hinge-plate and the saw. The position of the saw is indicated by the vertical broken lines in Fig. 4 and by the horizontal lines in Fig. 5. The lower end of the clamping-spring  $d^5$  is bolted to the corresponding end of the bracket  $D$ , the upper end bearing against the top of the clamping-plate  $d^2$ . By means of the handle  $d^6$  the spring  $d^5$  may be thrown out of contact and the clamping-plate and hinge-plate swung outward and downward on the pivot-bolt  $d'$  and out of contact with the saw, which may then be readily removed from the machine.

The cam locking-lever  $D^3$  (see Figs. 4 and 5) is secured to the top of the bracket  $D$  by the pivot-bolt  $d^7$ . The wider and curved end of this lever bears against the saw on the opposite side from that of the clamp proper and near the back edge, the saw being clamped at this point between the back plate,  $d^8$ , secured to the bracket by the screw  $d^9$  and the locking-lever  $D^3$ . This arrangement permits of a free forward movement of the saw by the feed-finger, but locks the same against a back movement when the feed-finger drops back to engage the next tooth. One end of the lever-spring  $g$  is secured to the bracket  $D$  by the bolt  $g'$ , the opposite loose end bearing against the pin  $g^2$ , inserted in and projecting downward from the back end of the locking-lever, whereby the same is held normally against the saw.

It is of course understood that the clamping mechanism does not hold the saw so tight that the feed-finger engaging with the teeth cannot easily move the same in the operation of bringing each tooth in regular order of succession to the emery-wheel.

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

1. In a saw-sharpening machine, the combination, with the supporting-frame, of the head-piece  $B$ , the bracket  $a^1$ , said head-piece being pivoted to said bracket at one side and provided in the other side with a segmental slot, and an adjusting-bolt passing through said slot, whereby said head-piece may be given a greater or less degree of inclination, substantially as and for the purpose set forth.

2. In a saw-sharpening machine, the combination, with the cam  $C'$ , rigidly mounted on the driving-shaft, of a curved feed-arm having a roller journaled in the lower end, which has frictional contact with said cam, and provided in the upper end with an elongated slot, a feed-finger secured to said arm and adjustable in said slot, a rock-shaft upon which said feed-arm is rigidly mounted, and a spring coiled on said rock-shaft, whereby the lower end of said feed-arm is normally held in contact with the cam  $C'$  and the feed-finger brought into engagement with the teeth of the saw in regular order of succession, substantially as and for the purpose set forth.

3. In a saw-sharpening machine, the combination, with a feed-finger, of the bracket  $a^1$ , the adjustable stop  $b^8$ , and the adjusting-bolt  $b^9$ , having a screw-threaded engagement with said stop, substantially as and for the purpose set forth.

4. In a saw-sharpening machine, the combination of the bracket  $D$ , the bar  $D'$ , the screw-threaded shaft  $D^2$ , the hinge-plate  $d$ , pivoted at its lower end to said bracket, the clamping-plate  $d^2$ , provided with elongated slots and adjustably secured to said hinge-plate, and the spring  $d^5$ , substantially as and for the purpose set forth.

5. In a saw-sharpening machine, the combination, with the bracket  $D$ , of the cam locking-lever  $D^3$ , pivoted to said bracket, the back plate,  $d^8$ , and the spring  $g$ , whereby the saw is locked against a back movement only, substantially as set forth.

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Witnesses:

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