

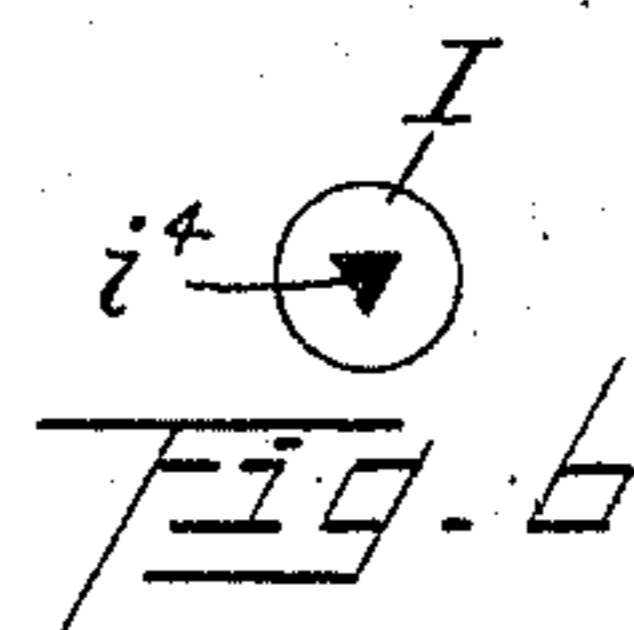
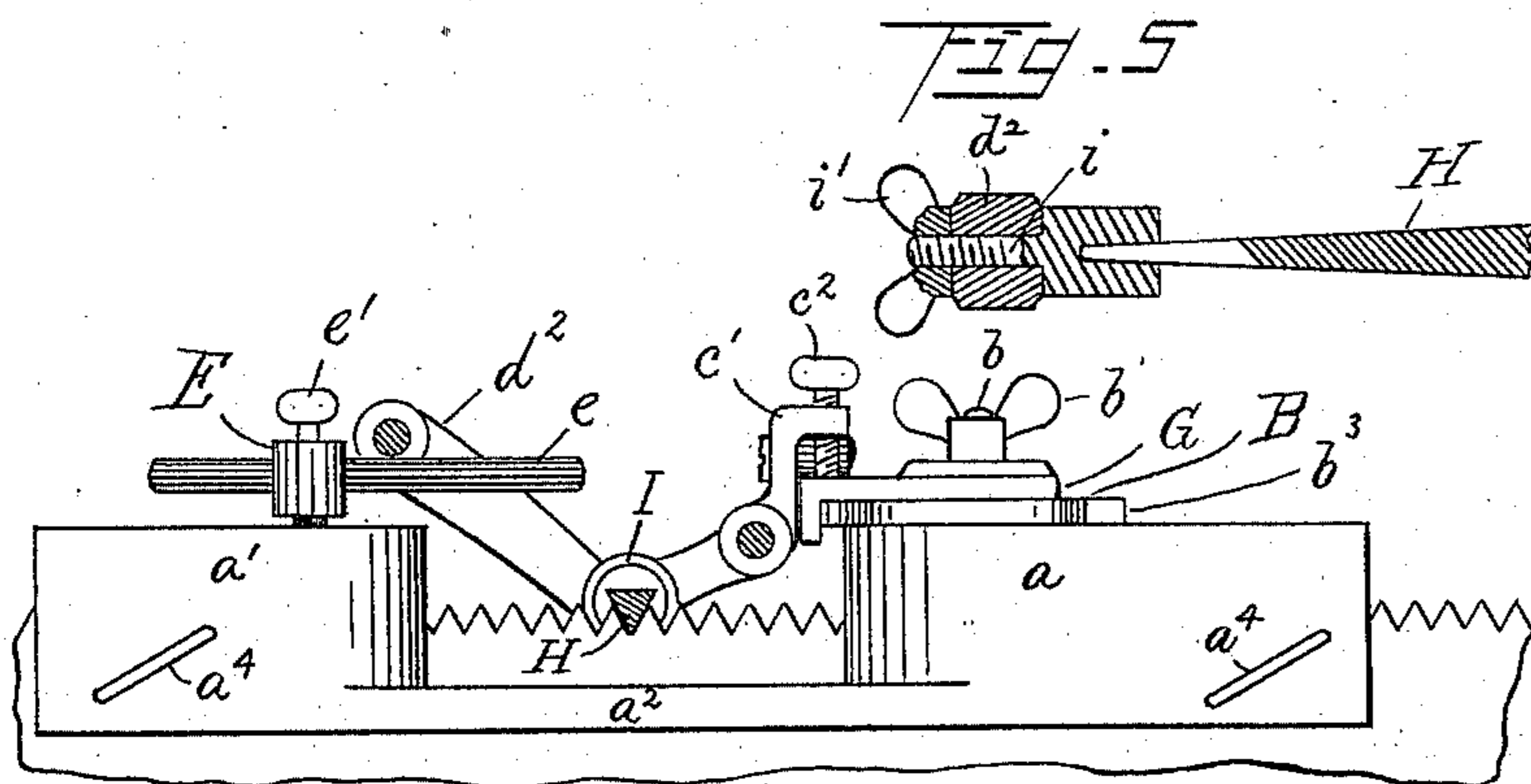
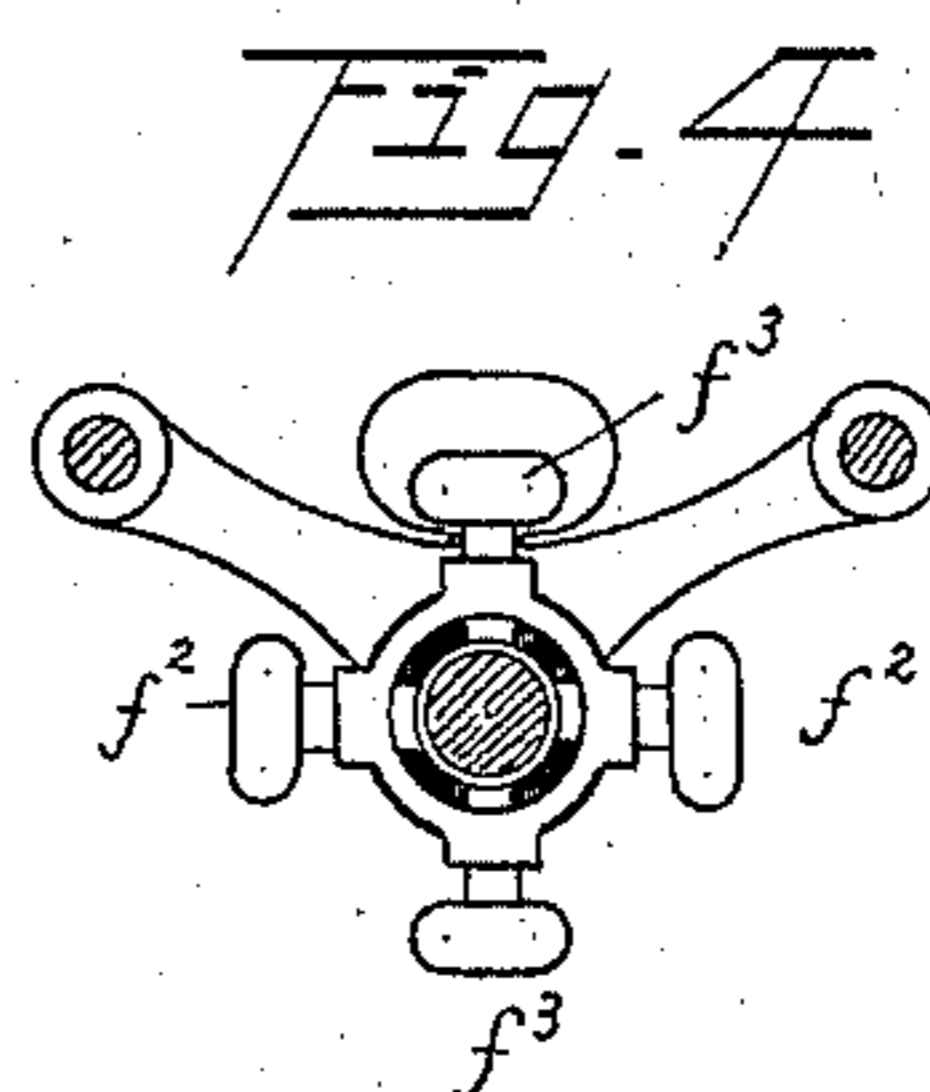
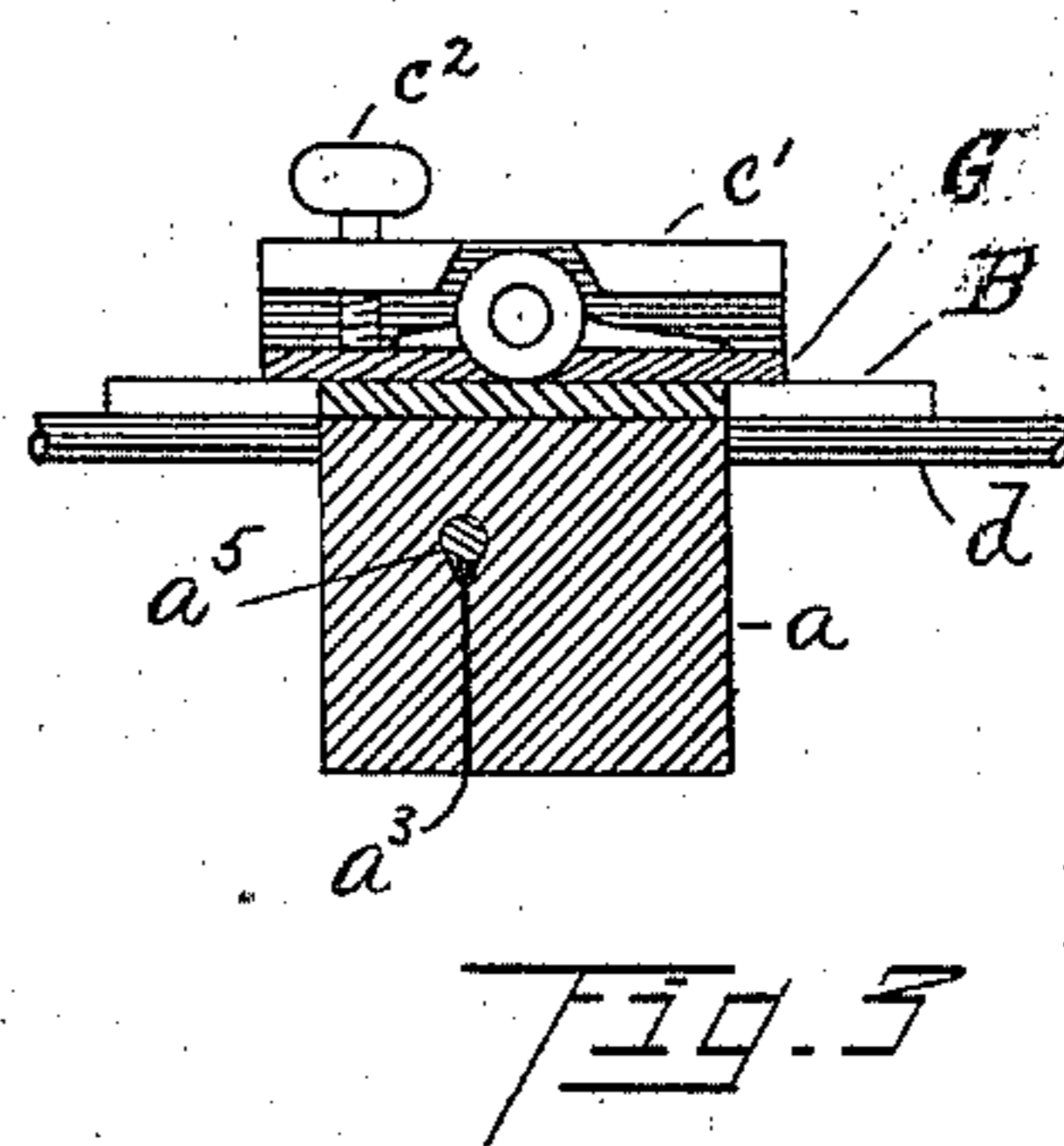
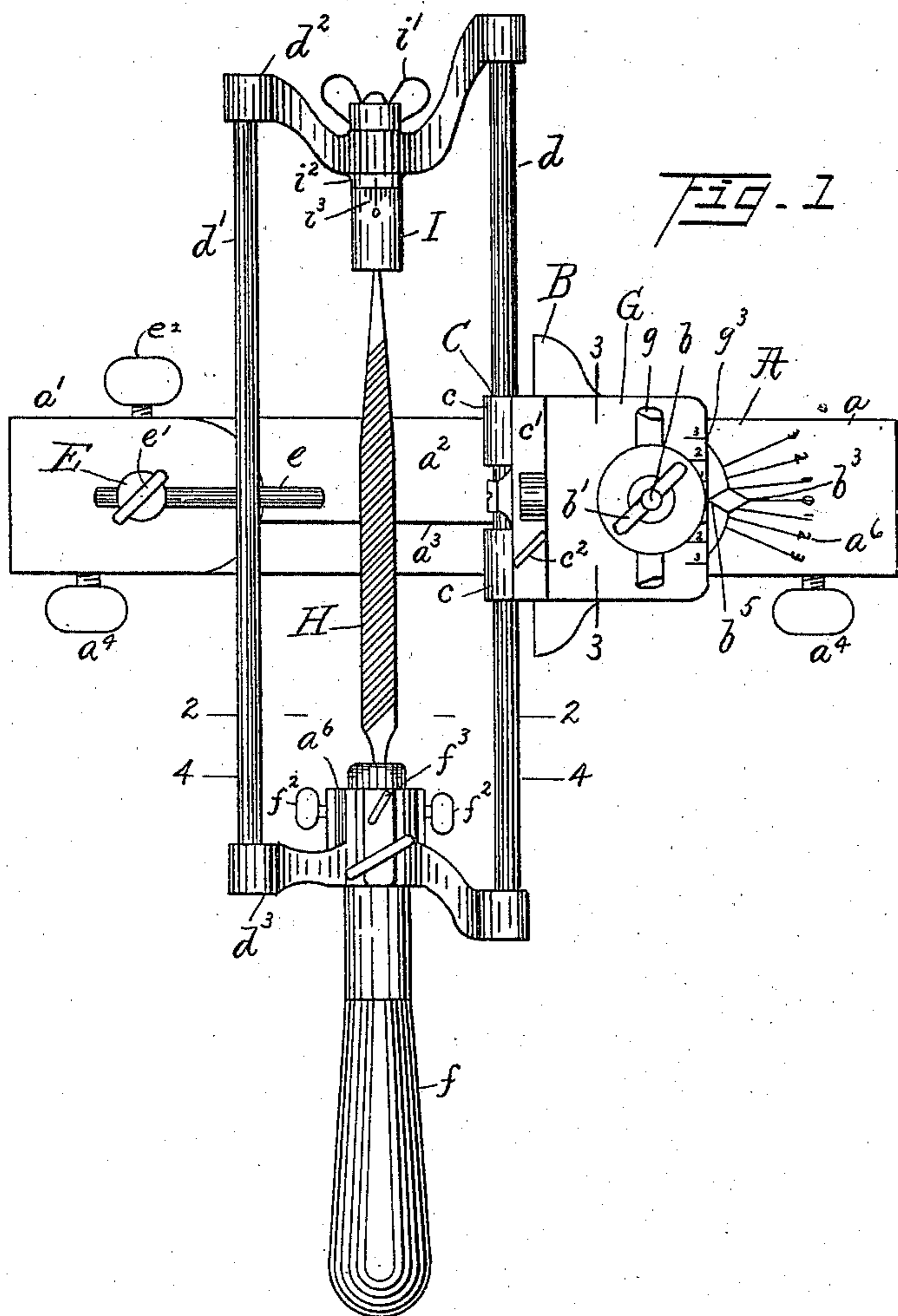
(No Model.)

2 Sheets—Sheet 1.

M. J. WILSON.  
SAW FILING DEVICE.

No. 575,192.

Patented Jan. 12, 1897.



Witnesses.

*F. Griswold*  
*W. C. Sterling*

Fig. 2

Inventor.  
*Milford J. Wilson*  
By *E. L. Thurston*  
his atty

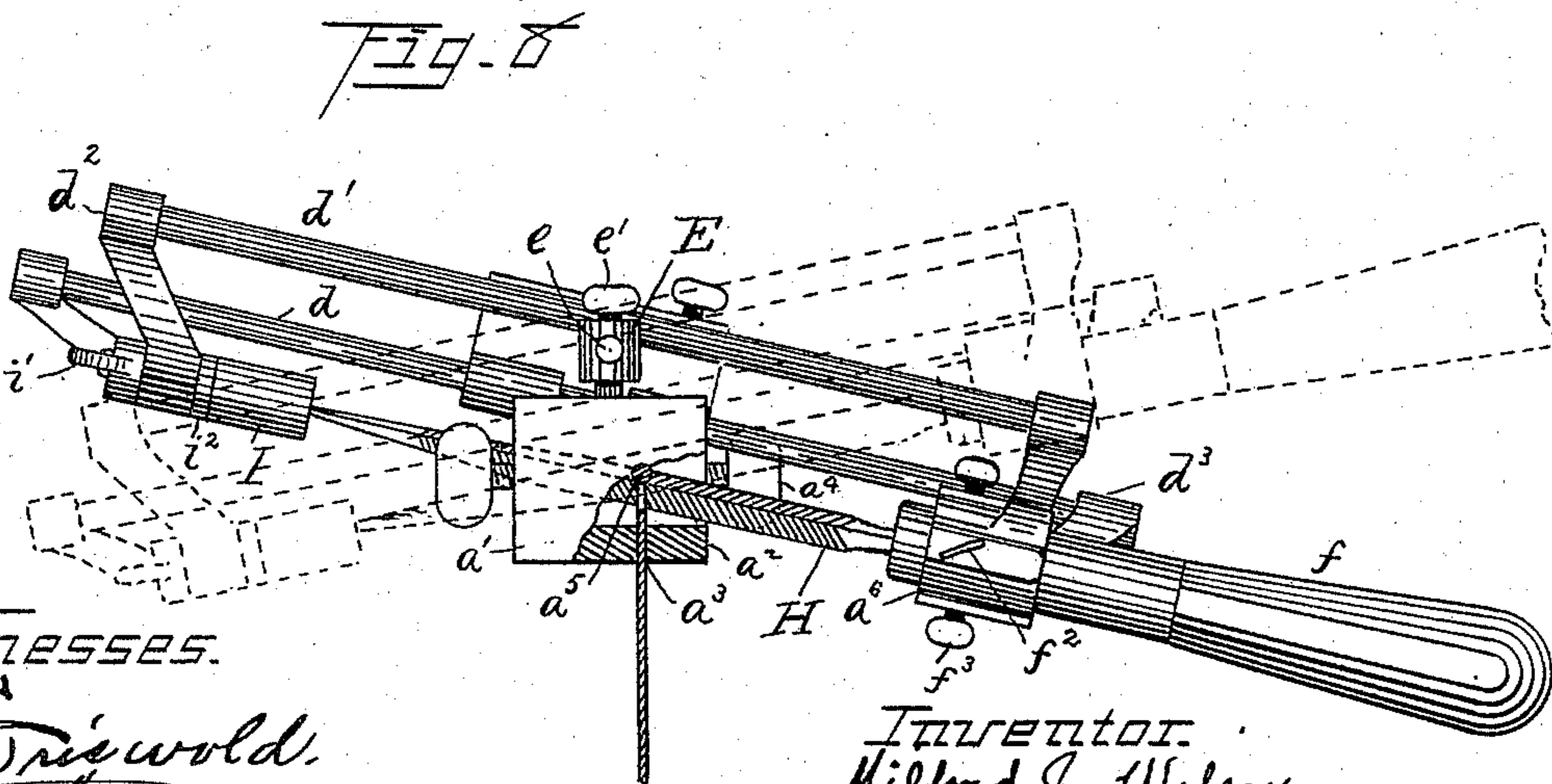
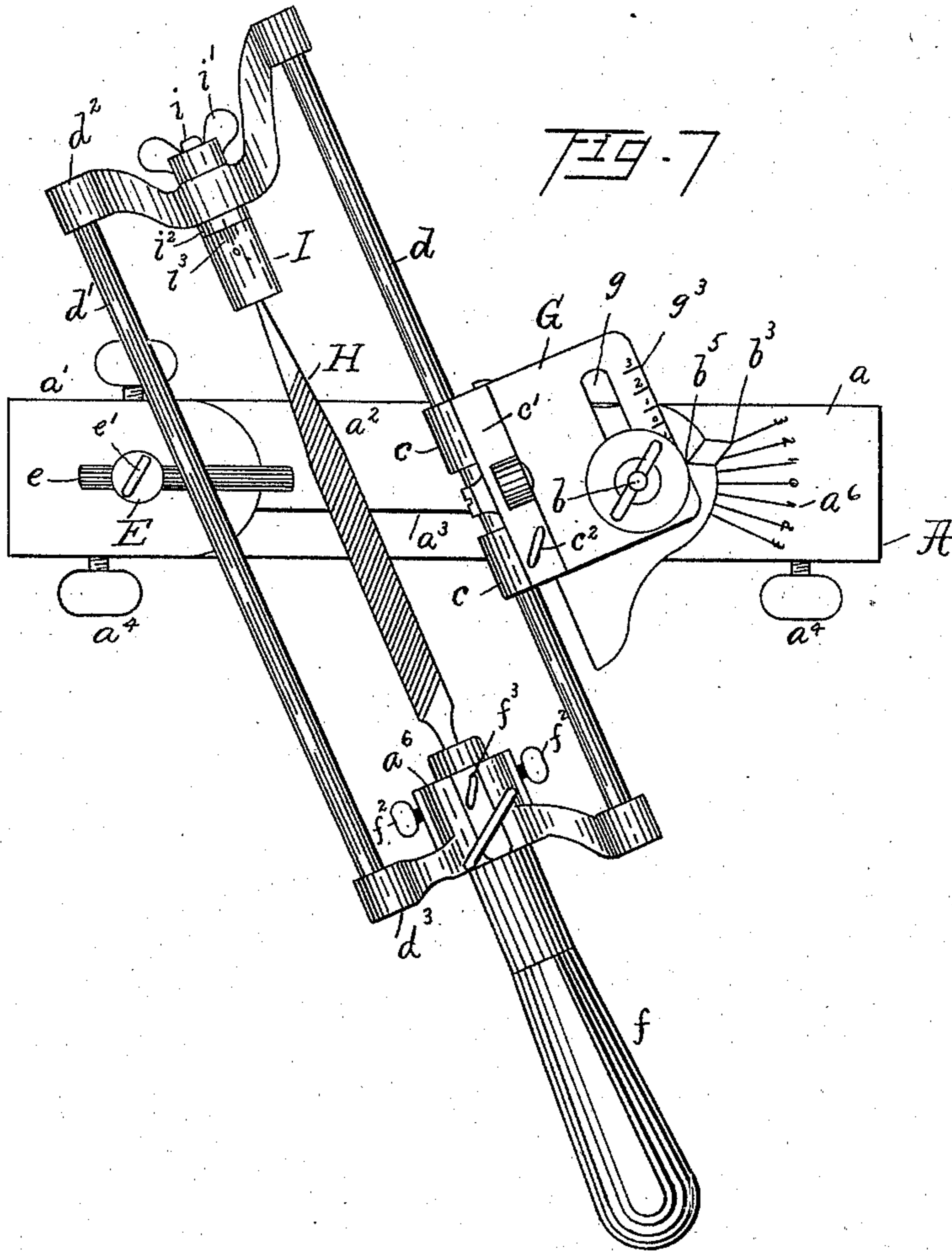
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Inventor.  
*Wilford J. Wilson*  
By *E. L. Thurston* his atty

# UNITED STATES PATENT OFFICE.

MILFORD J. WILSON, OF PAINESVILLE, OHIO.

## SAW-FILING DEVICE.

SPECIFICATION forming part of Letters Patent No. 575,192, dated January 12, 1897.

Application filed June 3, 1895. Serial No. 551,475. (No model.)

*To all whom it may concern:*

Be it known that I, MILFORD J. WILSON, a citizen of the United States, residing at Painesville, in the county of Lake and State of Ohio, have invented certain new and useful Improvements in Saw-Filing Devices; and I do hereby 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.

The object of my invention is to provide a simple and inexpensive saw-filing device with which the teeth of any saw may be filed uniformly at any desired pitch or angle and to any given depth and in any desired shape.

The invention consists in the construction and combination of parts hereinafter described, and pointed out definitely in the claims.

In the drawings, Figure 1 is a plan view of my improved device. Fig. 2 is an end view of a section on line 2 2 of Fig. 1. Fig. 3 is a sectional view on line 3 3 of Fig. 1, looking to the left. Fig. 4 is a sectional view on line 4 4 of Fig. 1. Fig. 5 is a horizontal longitudinal section through the file-point holder. Fig. 6 is an end view of the file-point holder. Fig. 7 is a plan view of the device when the file is in position to work at an angle on the saw. Fig. 8 is an end view of the device, viewed from the left of Fig. 2.

Referring to the parts by letters, A represents the base, which has two thick raised portions  $a$   $a'$ , preferably at the ends, and a thin intermediate portion  $a^2$ . A kerf  $a^3$  is cut in the base from the under side thereof, passing through the part  $a^2$  and partly through the raised ends  $a$   $a'$ . The saw to be filed enters this kerf and projects through the part  $a^2$  a definite distance, depending upon the depth of the kerf in the ends. As commonly used the base rests upon the saw-teeth; but set-screws  $a^4$   $a^4$  are provided for clamping the saw in the kerf. The base is moved along the saw, (which is generally held in a vise,) so that the file may act upon the different teeth, and in so moving it is apt to be worn deeper by the teeth. It is desirable to prevent any change in the depth of the kerf, since it is the depth of the kerf which causes the saw to project equal distances at all times through the part  $a^2$ .

To prevent the wearing away of the kerf, I provide the smooth horizontal rods  $a^5$ , preferably cylindrical in form, which are embedded in the ends  $a$   $a'$  and form the tops of the kerfs therein. When the device is so constructed, these bars bear upon the saw-teeth.

B represents a plate which is pivoted on the top of the end  $a$  by means of a bolt  $b$ , said bolt passing up through the said end piece behind the kerf  $a^3$ .

G represents an adjustable plate which lies upon the plate B. In it is formed a slot  $g$ , through which the bolt  $b$  passes. The plate G may be moved backward or forward upon plate B, and the plate B may be turned upon its pivot in either direction for the purposes to be presently explained; and then both plates may be clamped immovably upon the base by means of a thumb-nut  $b'$ , which screws onto the upper threaded end of the bolt  $b$ . On the left-hand edge of the plate G is a depending flange which bears against the left-hand edge of the plate B, thereby preventing the plate G from turning upon the bolt  $b$  as a pivot except as it turns with plate B.

C represents an oscillating file-frame support, which lies against and is pivoted on a horizontal pivot to the left-hand side of the plate G. Two perforated ears  $c$   $c$  are formed on the file-frame support, and through these ears the guide-rod  $d$  of the file-frame reciprocates. On the upper edge of the file-frame support is a flange  $c'$ , which extends toward the right over the plate G. As this file-frame support is rocked upon its pivot the engagement of the flange  $c'$  with the plate G limits the depression of the rear end of said support, and an adjustable screw  $c^2$ , which screws down through the front part of said flange, engages with the plate G and limits the depression of the front end of said file-frame support.

The file-frame consists of two parallel rods  $d$   $d'$  and two end pieces  $d^2$   $d^3$ , with which said rods are secured. The file H is secured to the two end pieces in a position between and parallel to the two rods  $d$   $d'$  by means to be presently described.

E represents a post which is vertically adjustable in the end  $a'$ , the set-screw  $e^2$  being provided for securing said post at any elevation. On the upper end of the post E is a horizontal bar  $e$ , with which the rod  $d'$  of the

file-frame engages to limit the depth to which the file may act upon the saw. This post is placed behind the kerf, and the pivot of the file-frame support is likewise behind the kerf.

5 In fact when the file-frame is placed so that the file moves in a plane at right angles to the kerf the bolt  $b$ , the pivot of the file-frame support, and the post  $E$  are in the same vertical plane parallel with the kerf.

10 I represents the file-point holder, which has in its front end a socket  $i^1$  of suitable shape to receive the file. On the rear end of the point-holder is a cylindrical stem  $i$ , having a threaded end. This stem passes through  
15 a correspondingly-shaped hole in the rear end piece  $d^2$  of the file-frame, wherefore said point-holder may be turned to any desired position, depending upon the shape which it is desired to give the saw-teeth. A nut  $i'$ , which  
20 screws onto the end of the stem, is the means for fixing said point-holder to the end piece. On the end piece  $d^2$  is an indicator-mark  $i^2$  and on the file-point holder are the graduat-  
25 ing-marks  $i^3$ . By the aid of these marks the file-point holder may be turned to the right or left of the zero-mark and the file be thereby fixed in the frame at any desired angle.

To do the best work with the described device, it is necessary that the file shall be parallel with the guide-rod  $d$ , and to secure that  
30 result I provide the adjustment-screws  $f^2 f^3$ , which screw into the boss  $a^6$ , through which is formed the socket which receives the file-handle  $f$ . When the file has been passed  
35 through said socket and the point of the file is in the socket  $i^1$  in the holder I, the handle of the file may, by the movement of said screws  $f^2 f^3$ , be moved up or down or to right or left until said file is parallel to said guide-rod.

40 In operating the described device the saw is placed in the kerf  $a^3$  and is clamped therein. Then the plate B may be turned upon its pivot, so as to bring the file to the angle at which it is desired to file the tooth. The angle is  
45 shown by the pointer  $b^3$  on plate B and the graduations  $a^6$  on the base. When the alternate teeth have been filed, the saw is usually turned around, end for end, in which case the angle of the file with respect to the saw must  
50 be reversed. This result is produced by again turning the plate B in the reverse direction exactly the same number of degrees past the zero-mark.

Nearly everyone who sharpens a saw pre-  
55 fers to hold the point of the file higher than the handle when filing and to file only as he moves the file away from him. In order to permit the point of the file to be thus raised, the file-frame guide is pivoted, as before stated,  
60 to the plate G, and in order that the file may be held at the same pitch at every stroke of the file the set-screw  $c^2$  is provided. The position of this set-screw, which may be ad-  
65 justed as desired, determines what the pitch shall be. The pivot of the file-frame guide, when the file is working at right angles to the saw, lies, as before stated, behind the kerf in

which the saw is held. Therefore if the file grinds the saw when the point is raised the said file will be lifted away from said tooth  
70 when the handle is raised. The device is therefore intended to be used as follows: Just before the file is pushed forward the handle is depressed and the point raised until the set-screw  $c^2$  is brought into contact with the  
75 plate G. Then the file is moved forward, and in so moving grinds the tooth. Then the handle is raised, which lifts the file from the tooth, whereupon the file-frame is drawn backward to the first position. This operation is re-  
80 peated until the engagement of the rod  $d'$  with the vertically-adjustable bar prevents the file from cutting any deeper into the saw. In order that this shall also be the mode of op-  
85 eration of the device when the file-frame is set so that the file moves at an angle, either to right or left, to the saw, as shown in Fig. 7, it is necessary to provide means for keeping the pivot of the oscillating file-frame support behind the saw in the kerf, and in order to  
90 avoid changing the elevation of the post  $E$  when the angle of the file with respect to the saw is reversed it is necessary to provide means for keeping the pivot of the file-frame support substantially in line with the bolt  $b$   
95 and post  $E$ . Both of these results are secured by means of the sliding plate G, for when the plate B is moved to carry the handle of the file to the right the plate G is moved backward upon the plate B until the pivot of  
100 the file-frame support is in line with the bolt  $b$  and post  $E$ , and when the plate B is turned to carry the handle to the left said plate G is moved forward until the same condition is brought about. This result is secured with  
105 precision by means of graduations on either of the plates G or B and an indicating-mark on the other of said parts, as, for example, the notches  $g^3$  in the right-hand edge of the plate G and the pointer  $b^5$  on the plate B. There  
110 are as many notches  $g^3$  as there are indicator-marks  $a^6$  on the base, and the notches are so arranged that if the pointer  $b^3$  points to the third or any other indicator-mark  $a^6$  from one end the third or the corresponding notch from  
115 the other end of the plate G is brought into line with the pointer  $b^5$ , whereupon the parts are in the relative position heretofore pointed out as desirable—viz., the pivot of the file-frame support is in line with the bolt  $b$  and post  $E$ .  
120 So long as this relation of parts is preserved the bar  $e$ , when once fixed in position, will permit the file to cut to the same depth whatever may be the angle at which the file is moving.

Having described my invention, I claim—

1. In a saw-filing device, the combination of a supporting-plate, an oscillatory file-frame support loosely pivoted on a horizontal pivot, and an adjustable stop carried by one part  
130 and adapted to engage with the other, which permits the oscillation of the file-frame support upon its pivot and determines the extent of such oscillation in one direction, with a

file-carrying frame which reciprocates in said file-frame support, substantially as and for the purpose specified.

2. In a saw-filing device, the combination  
5 of a base, a plate B pivoted thereto on a vertical axis, a horizontally-movable plate G carried by the plate B, and means for fixing the positions of said plates relative to each other and to the base, with an oscillatory file-frame  
10 support pivoted on a horizontal pivot to the plate G, and a file-carrying frame, which reciprocates in said support, substantially as and for the purpose specified.

3. In a saw-filing device, the combination  
15 of a base, a plate B pivoted thereto on a vertical axis, a horizontally-movable plate G carried by and adjustable upon the plate B, and means for fastening said two plates in the desired relative positions, with a file-frame sup-  
20 port loosely pivoted to said plate G, a file-carrying frame having two rods  $d$   $d'$ , one of which reciprocates in said support, and a vertically-adjustable post with which the other rod en-  
25 gages to regulate the depth, said parts being combined substantially as described, whereby the pivot of the file-frame support may be brought into line with the said post and the pivot of the plate B.

4. In a saw-filing device, the combination  
30 of a base, a plate B pivoted thereto on a vertical axis, said plate and base having graduations by means of which the said plate may

be turned to any desired angle to its normal position on said base, a horizontally-movable plate G carried by said plate B, said two  
35 plates having graduations which cooperate with the graduations first named to position the plate G in proper relation to the pivot of plate B and to the post E, and means for fastening the plates B and G in the desired po-  
40 sitions, with an oscillatory file-frame support pivoted loosely to the plate G, a file-carrying frame having two rods  $d$   $d'$ , one of which reciprocates in said support, and a vertically-  
45 adjustable post with which the other file-frame rod engages, substantially as and for the purpose specified.

5. In a saw-filing device, in combination, a base adapted to be secured to the saw, a horizontally-movable plate B pivoted to the  
50 base, an adjustable plate G carried by said plate B and having a slot, a bolt  $b$  which passes through said slot and serves as the pivot to the plate B, a nut on said bolt, an oscillating file-frame support pivoted to said  
55 plate G, and a file-frame which reciprocates in said file-frame support, substantially as and for the purpose specified.

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

MILFORD J. WILSON.

Witnesses:

L. F. GRISWOLD,  
E. L. THURSTON.