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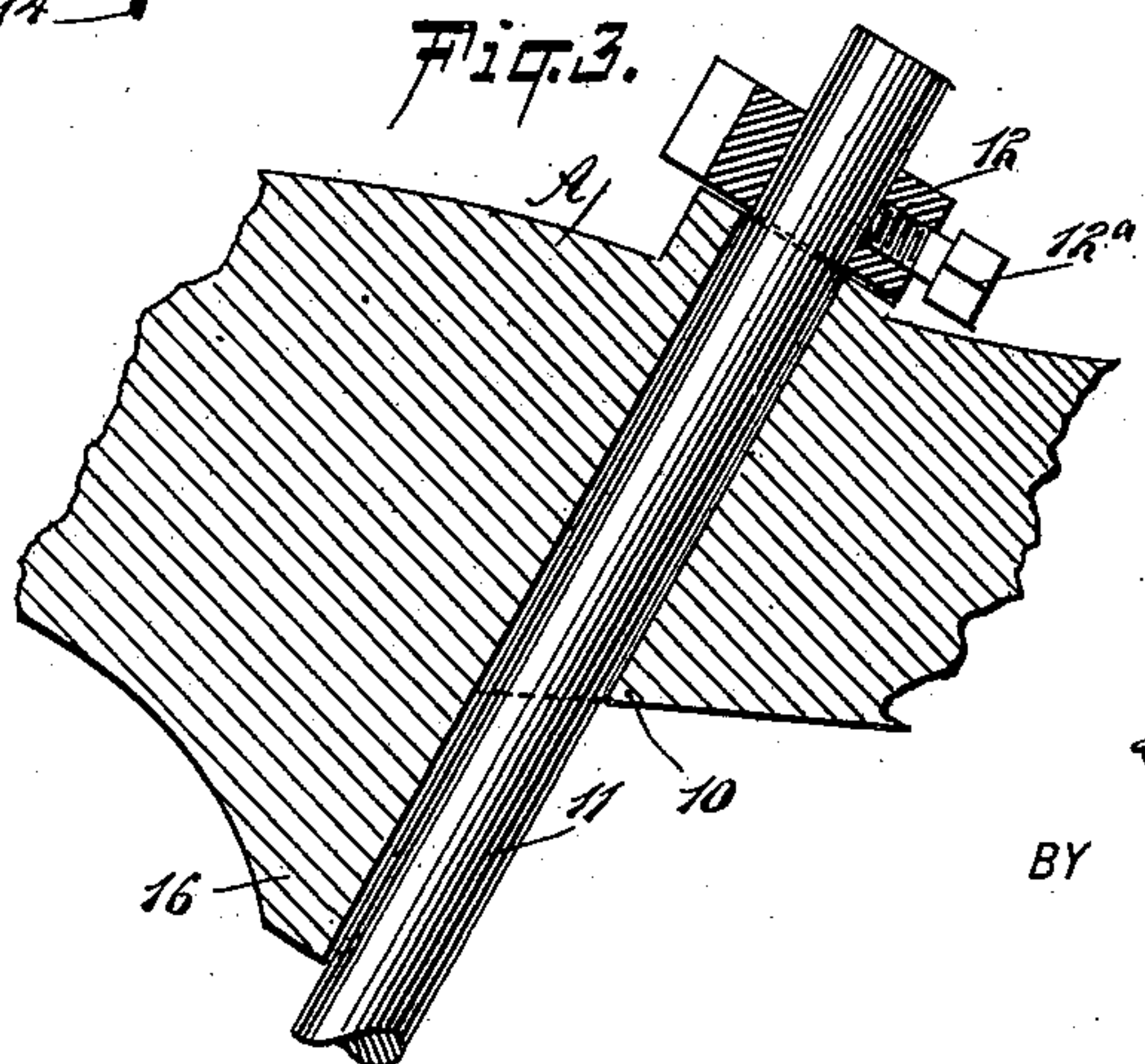
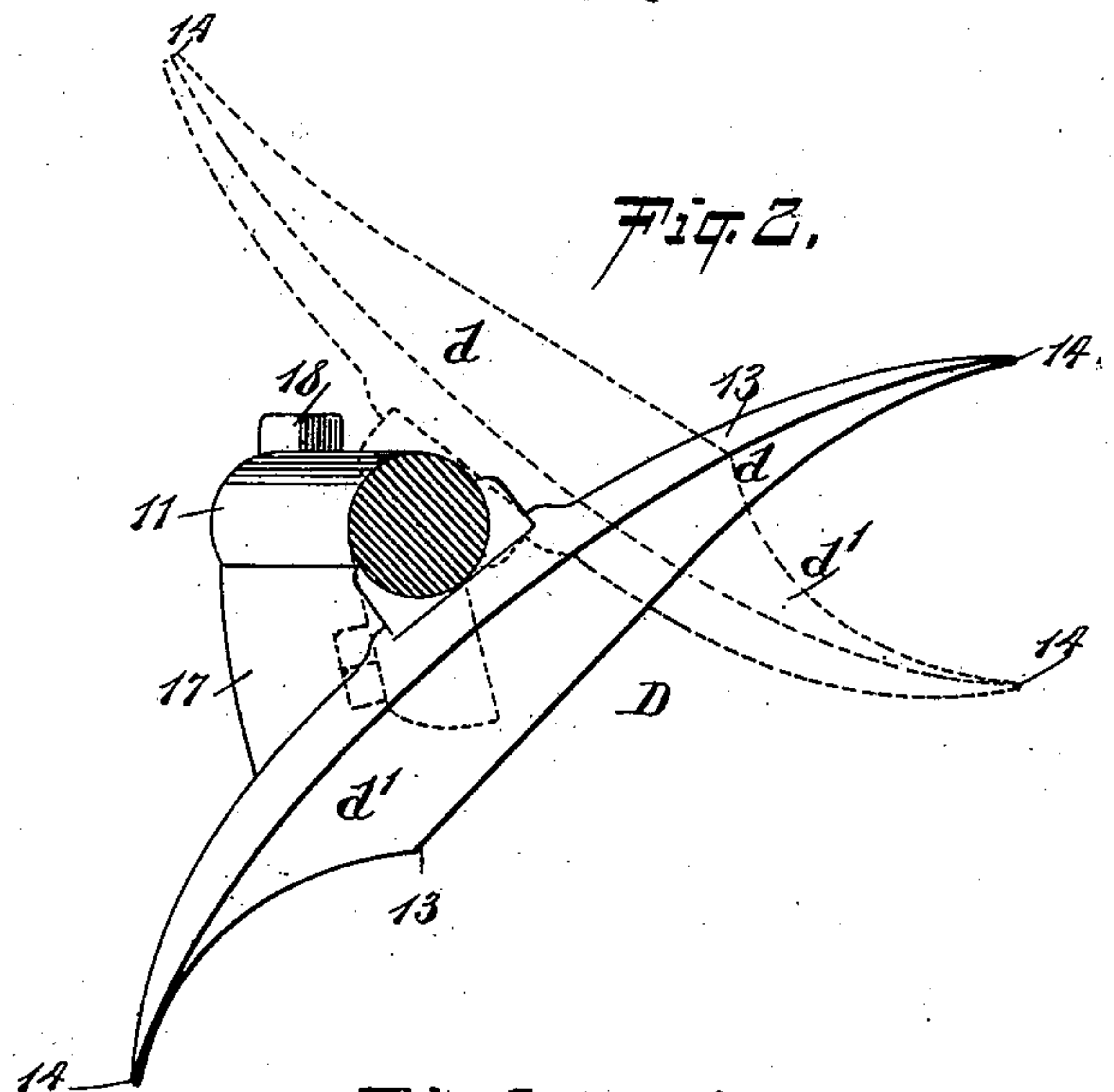
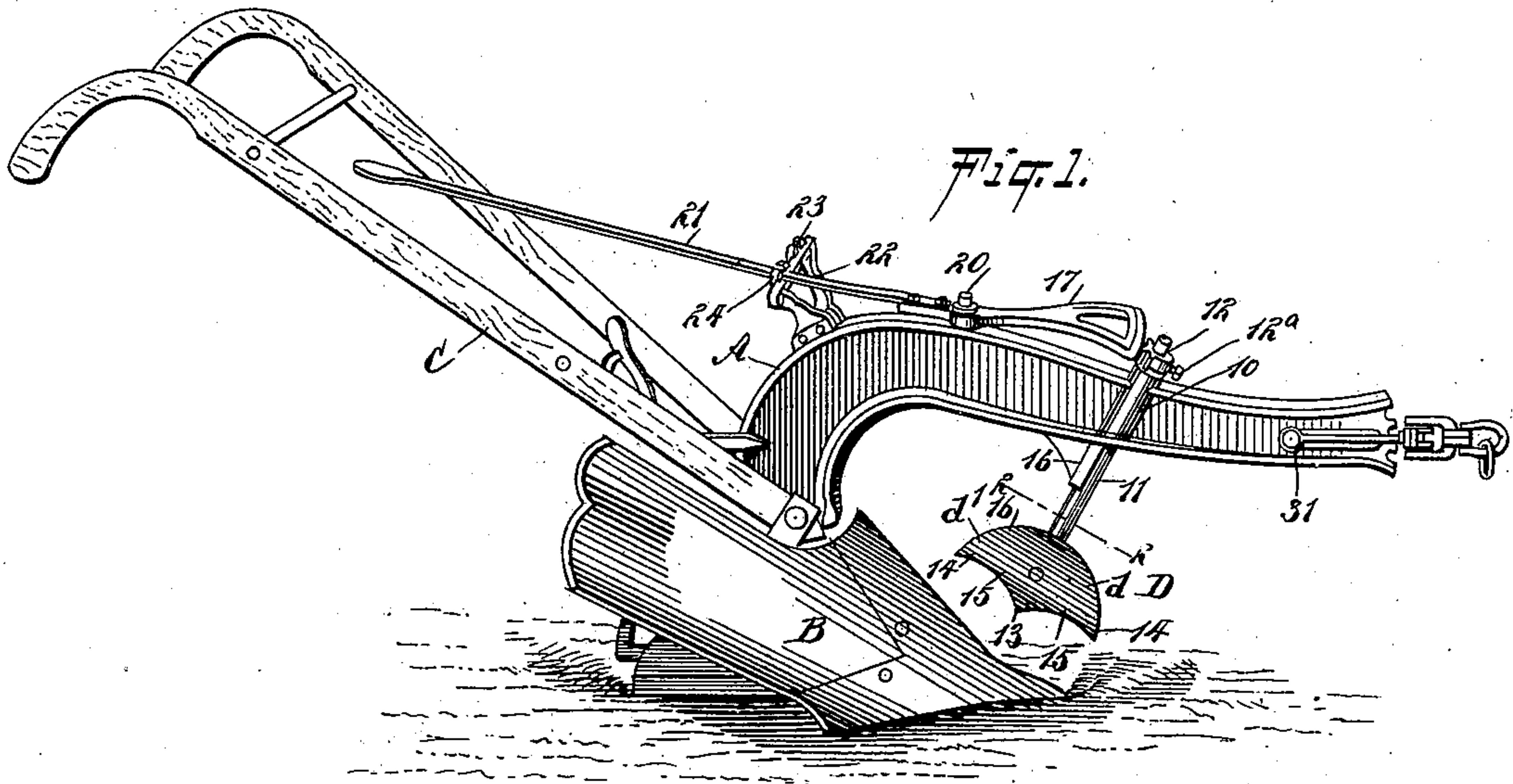
Patented Dec. 13, 1898.

E. C. ROBINSON.
HILLSIDE OR REVERSIBLE PLOW.

(Application filed Apr. 12, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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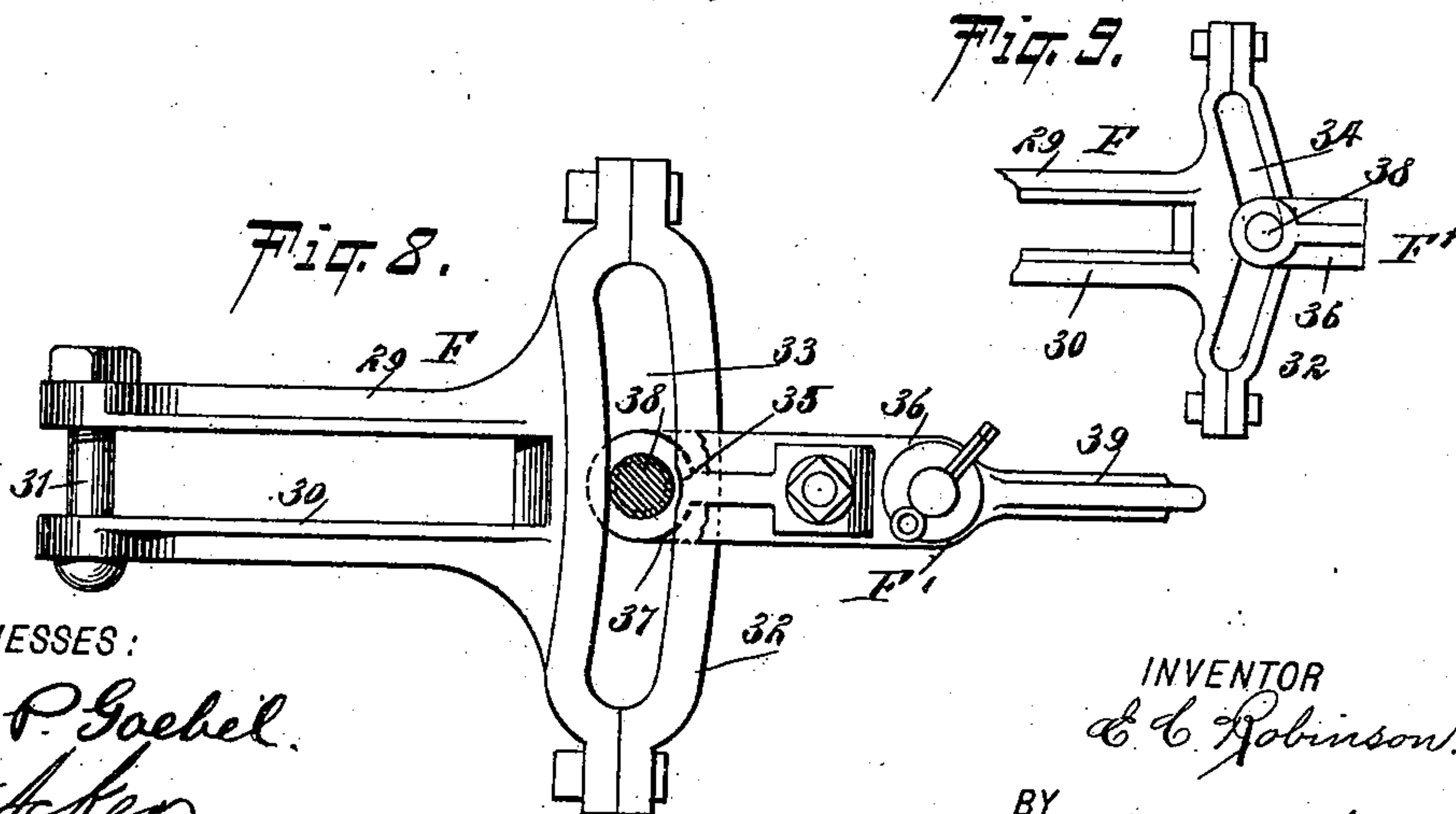
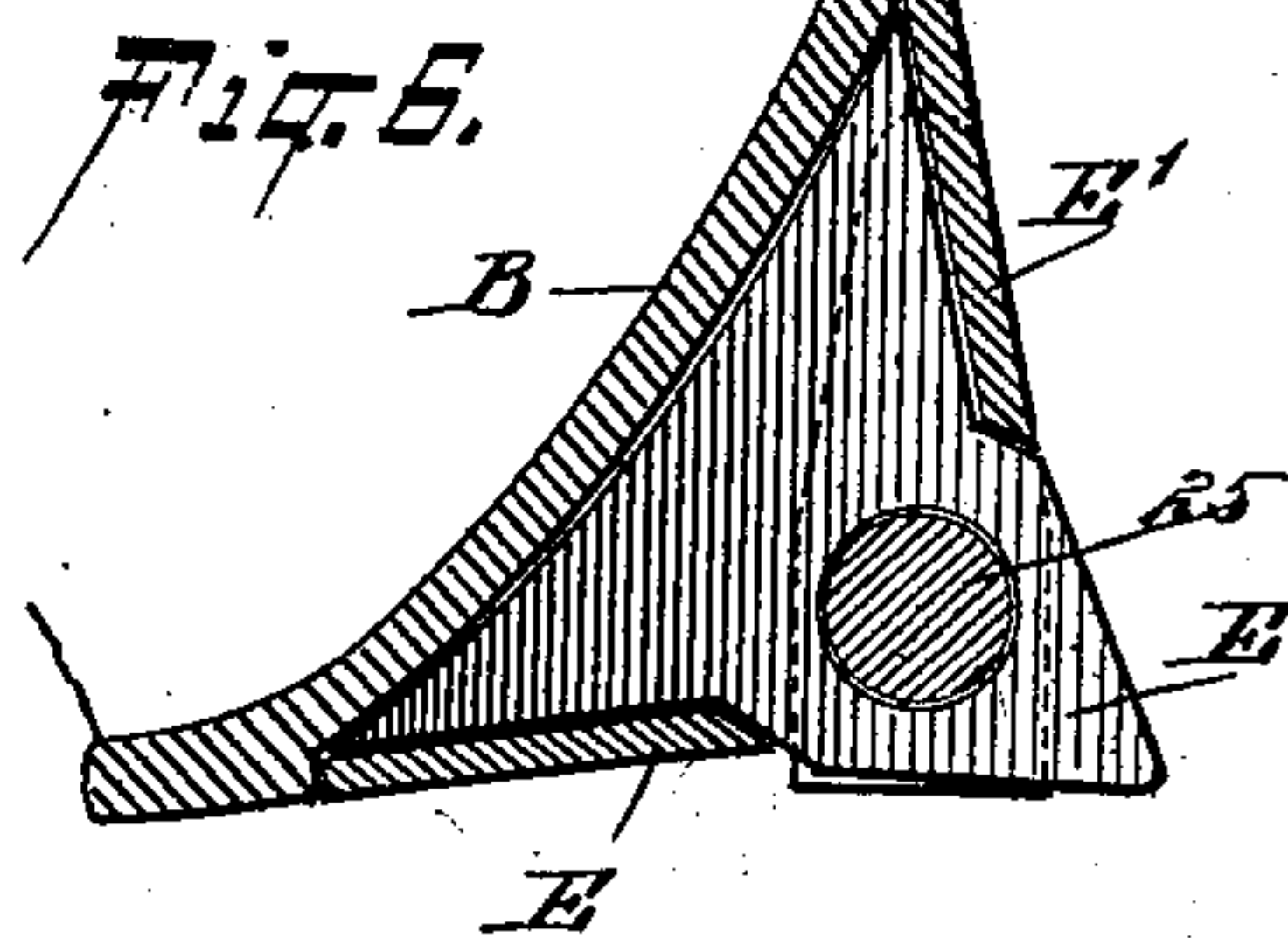
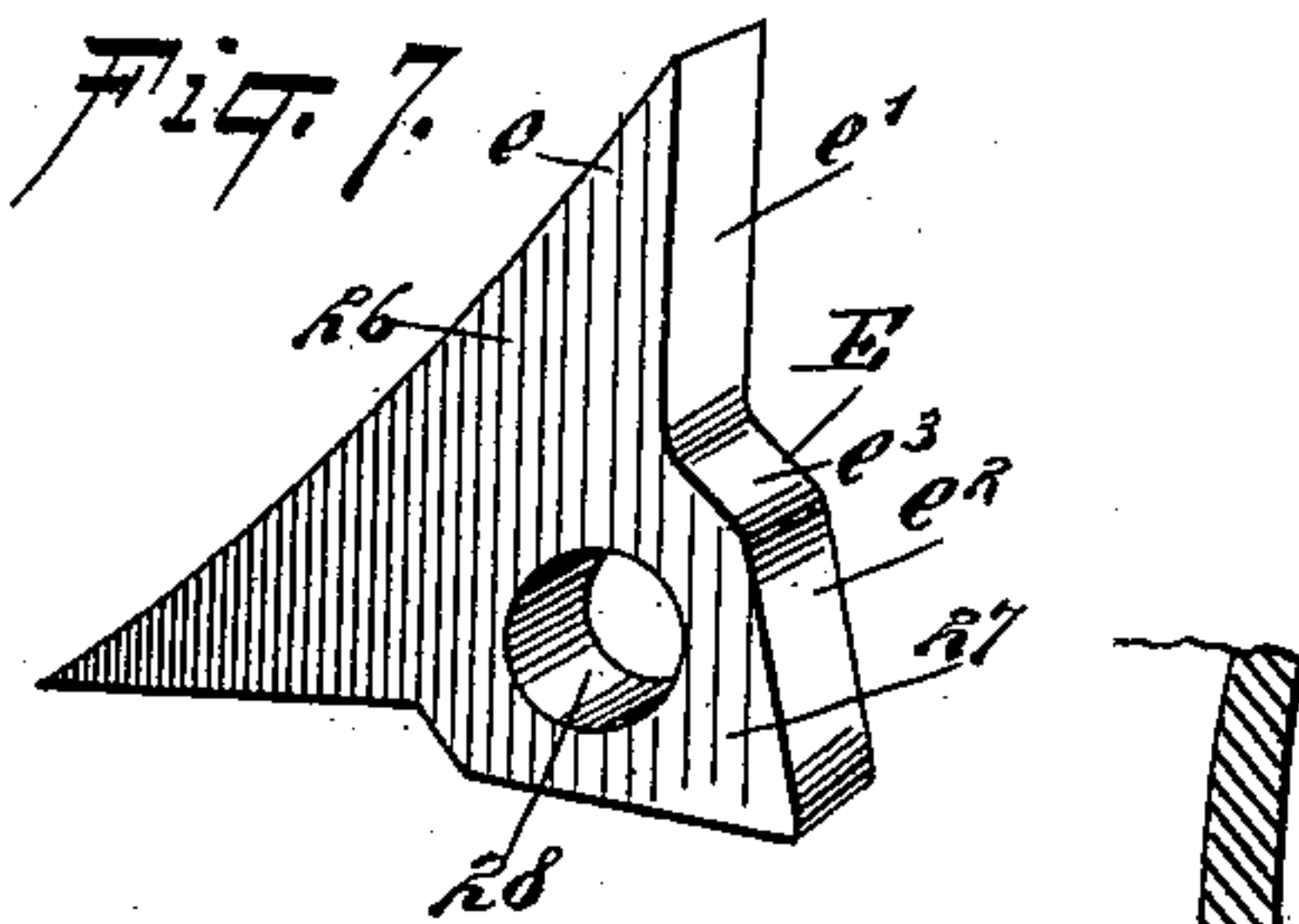
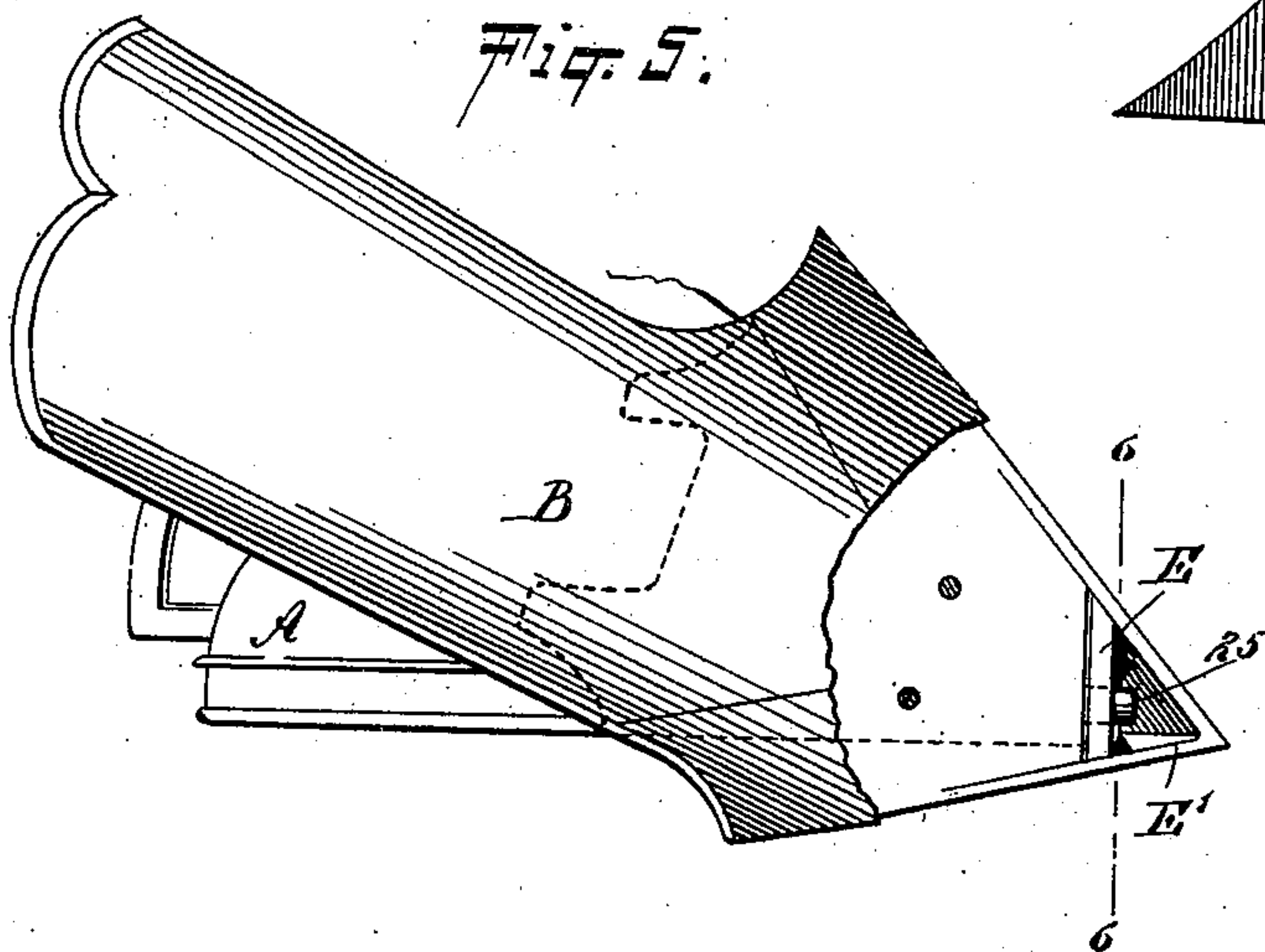
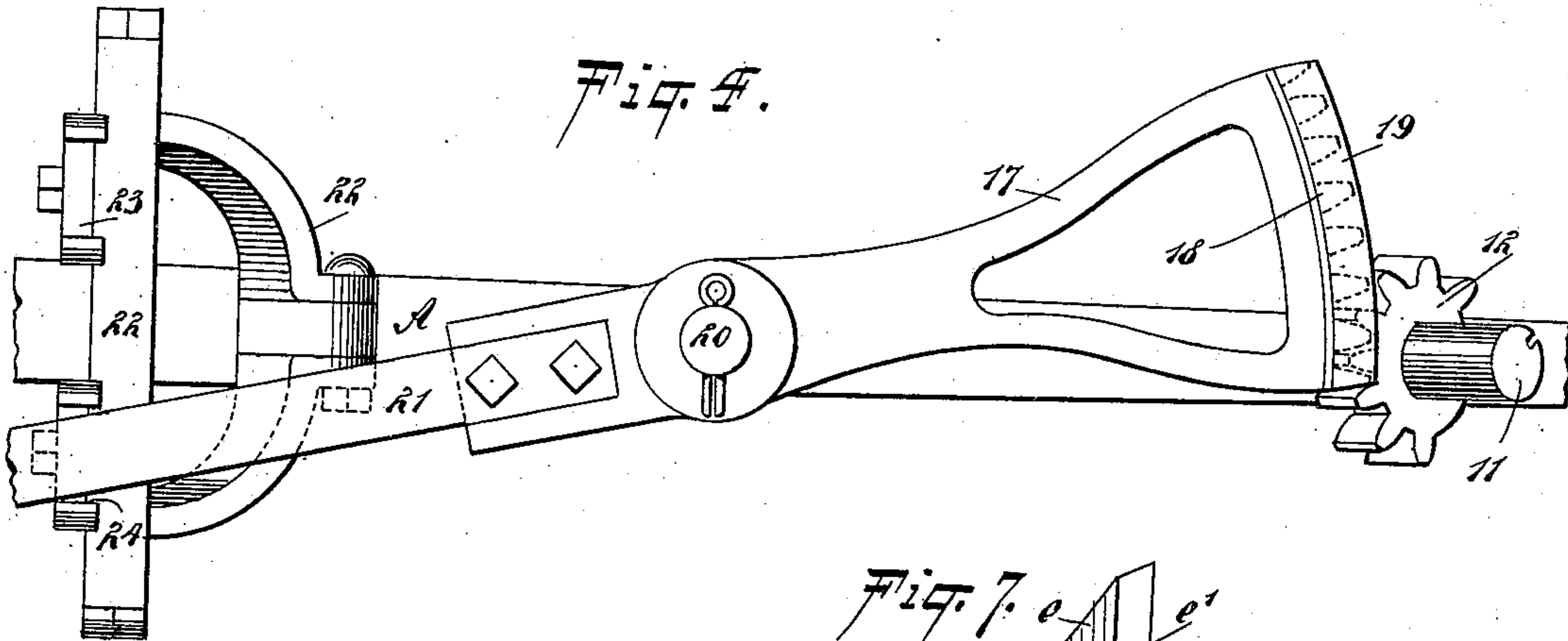
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UNITED STATES PATENT OFFICE.

EDSON CARR ROBINSON, OF CANANDAIGUA, NEW YORK, ASSIGNOR TO THE
ROBINSON CHILLED PLOW COMPANY, OF SAME PLACE.

HILLSIDE OR REVERSIBLE PLOW.

SPECIFICATION forming part of Letters Patent No. 615,908, dated December 13, 1898.

Application filed April 12, 1898. Serial No. 677,300. (No model.)

To all whom it may concern:

Be it known that I, EDSON CARR ROBINSON, of Canandaigua, in the county of Ontario and State of New York, have invented a new and useful Improvement in Hillside or Reversible Plows, of which the following is a full, clear, and exact description.

The object of my invention is to provide a simple, durable, and economic form of jointer, the jointer being a double one and in one piece, one point being a duplicate of the other, occupying, however, a reversed position, while the moldboards are in the same horizontal plane.

Another object of the invention is to provide an effective and light reversing device for the jointer and also to provide a means whereby the jointer-standard will be inclined usually in a forwardly direction, the inclination of the standard admitting of the jointer being reversed at the front and at the rear of the jointer-standard, according to the direction of its inclination.

Another object of the invention is to provide a frog-box which will receive the pivot-post on the beam of the plow and which will obviate the present necessity of frequently removing the frog.

Another object of the invention is to improve the construction of the clevis for the plow.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the improved hillside-plow having the improvements applied. Fig. 2 is a transverse section through the jointer-standard, taken practically on the line 2 2 of Fig. 1 and illustrating the jointer in its two positions. Fig. 3 is a section through the beam of the plow, illustrating the manner in which the jointer-standard is journaled therein. Fig. 4 is a plan view of a portion of the beam, drawn on an enlarged scale and illustrating particularly the construction of the reversing mechanism for the jointer-standard.

Fig. 5 is a front elevation of the reversible moldboard and point, illustrating a portion of the point broken away to disclose the improved frog-box. Fig. 6 is a section on the line 6 6 of Fig. 5. Fig. 7 is a detail perspective view of the frog-box disconnected from the frog. Fig. 8 is a plan view, partly in section, of the improved form of clevis particularly adapted for the plow; and Fig. 9 is a plan view of a slightly-modified form of the clevis shown in Fig. 8.

A represents the beam of the plow, B the reversible moldboard and point, and C the handles. A socket 10 is formed in or at one side of the beam A at a point between its front and rear ends, and the said socket is shown as given a forward inclination from bottom to top. Within the socket 10 the jointer-standard 11 is mounted to turn, the said jointer-standard being provided at its upper end with a mutilated gear 12, secured thereto by a set-screw 12^a or a like fastening device. The standard 11 is adapted to carry a jointer D. This jointer is of peculiar construction, being formed with a central lower point 13, end points 14, and concaved surfaces 15 between the points 13 and 14, while the upper edge 16 of the jointer is substantially semicircular or convexed. The back face of the jointer may be convexed or of any desired shape; but the front face is concaved, forming two moldboards *d* and *d'*, both of which are in the same horizontal plane and are defined by the central lower point 13. It will thus be observed that the jointer, including the points and moldboards, is cast in one piece, and one point and moldboard are the exact reverse of the other, so that the improved jointer practically combines in one casting a left-hand and a right-hand jointer-point, but a jointer might be made to comprise a separate moldboard between two separate jointer-points, and all parts combined constitute substantially the same general shape. The inclination of the standard permits the points of the jointer to be brought in proper relation to the upper edge of the point of the share and still have a downward inclination whether the share be carried from the right to the left or vice versa. The stand-

ard 11 is preferably given the forward inclination illustrated, because when so inclined the jointer may be turned in direction of the front, and the standard will only need
5 to be given one-third of a turn to bring the opposite end of the moldboard in position at the reversal of the plowshare, whereas when the jointer is reversed at the rear it would require at least two-thirds of the revolution
10 on the part of the standard to effect a proper result.

The reversing mechanism preferably employed consists of a quadrant 17, provided at its wider end with teeth 18, normally covered
15 by an overhanging flange 19, the teeth 18 of the quadrant being adapted to mesh with the teeth of the mutilated gear 12. A lever 21 is secured to the quadrant 17 at the rear of its pivot-point, the said point usually consisting
20 of a stud 20, which is attached to and forms a portion of the beam A. The lever 21 is carried rearward within convenient reach of the operator of the plow, and the jointer is held in either of its two positions by causing
25 the lever to enter between one or the other of the two sets of lugs 23 and 24 produced upon the upper portion of a bracket or a rack 22, secured to the beam preferably where its rearward bend commences. The lugs 23 and
30 24, which form locking devices for the lever, may be adjusted toward and from each other by transverse movement upon the beam-bracket 22, and set-screws 23^a are employed for securing the lugs after adjustment. By
35 this adjustment I am enabled to vary the two relative positions of the jointer.

It frequently happens that the frog of the plow becomes quickly worn by reason of the
40 stud 25 at the foot of the beam-standard constantly wearing the frog as the plow is reversed. When the frog is thus injured, it is entirely useless and must be replaced by a new one. As heretofore stated, it is one of the objects of this invention to provide a
45 remedy for this defect by providing a frog-box E. (Shown particularly in Fig. 7.) This frog-box consists of a casting or forging of suitable metal, being of somewhat triangular shape; but preferably the box consists of a
50 substantially triangular body 26 and an arrow-like head 27, the wider face *e* of the body being concaved. Under this construction it will be observed that at each side of the box two inclined surfaces *e'* and *e''* are provided
55 at different planes, connected by an inclined surface *e'''*; but I desire it to be understood that the form of the box may be changed, if desired, as may likewise the particular form of shifting mechanism for the jointer. The
60 box is provided at its head portion with an opening 28, which is adapted to receive the pivot-post 25 of the plow-beam standard. The frog-box is introduced into the frog E', as shown best in Figs. 5 and 6, in both of
65 which positions the relative position of the box to the frog, the moldboard, and point is clearly shown. It is evident that when the

box E becomes worn it may be disconnected from the frog after the point is removed from the frog and moldboard and substituted at
70 little cost, thus lengthening the lifetime of the frog, which wears mostly, as stated, at its pivoted connection with the beam, also from wear against the soil on the outside.

In Figs. 8 and 9 I have illustrated an im-
75 proved form of clevis, which consists of a body-section F and a hitch-section F'. The body-section consists, as usual, of two opposing arms 29 and 30, adapted to engage with opposite sides of the plow-beam, being con-
80 nected with the plow-beam by the bolt 31. The body further consists of a head 32, which is made, ordinarily, in two sections and is oblong, being provided either with a curved slot or opening 33, as shown in Fig. 8, or with
85 an angular slot or opening 34, as shown in Fig. 9. The hitch-section F' consists of two arms 36 and 37, connected by a roller-pin 38, the said roller-pin being adapted to travel in either of the slots 33 or 34. The arms 36
90 are properly connected with a draft ring or link 39.

The object of the "shifting clevis," as it may be termed, is to allow the draft-point on the clevis to automatically change itself, and
95 thereby prevent the plow from "taking too much land." When plowing around a curve on a level or on a hillside, the horses tend to draw the plow toward the land, and the roller-hitch upon the improved clevis will adjust
100 itself accordingly and allow the plow to run on a line with the furrow and not tend too much to the land. When plowing straight ahead, the roller of the clevis will naturally run to the center of the slot in the head of
105 the body.

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

1. The combination with a plow-beam, of a
110 jointer-standard mounted to turn and inclined forwardly from bottom to top, a reversing-lever arranged to swing transversely of the beam and operatively connected with the jointer-standard, and locking devices adapted
115 to be engaged by said lever and adjustable toward and from each other transversely of the beam to vary the extent of the angular movement of the jointer-standard.

2. A jointer comprising a moldboard hav-
120 ing a point at each end, and a third point on its lower side between the end points, and adapted to reverse each end alternately with the other, each time the plow is reversed.

3. A jointer consisting of two or more por-
125 tions having points with cutting edges facing in opposite directions, and a moldboard between the points common to both, and adapted to reverse each end alternately with the other, each time the plow is reversed.
130

4. The combination with a plow-beam of a jointer-standard, its upper end extending forward, its lower end extending backward of a perpendicular line, a jointer attached at its

lower end, and a lever connected with said standard, and sets of lugs for holding said lever in its two positions, said lugs being adjustable toward and from each other to allow the cutting edges of said jointer to be varied in their two relative positions in a hillside or reversible plow.

5. The combination, with a standard mounted to rotate and inclined forwardly from bottom to top, and means, substantially as described, for working the standard, of a jointer carried by the standard, consisting of two end points facing in opposite directions, and a moldboard between the points, common to both, the said moldboard being provided with a point at its under edge between the end points, the jointer being adapted to reverse each time the plow is reversed, substantially as described.

6. In a plow, a frog-box arranged for removable connection with the frog of the plow, substantially as described.

7. In a hillside or reversible plow, the combination, with the frog of the plow, of a frog-box removably fitted to said frog, being adapted to receive a pivot on the plow, substantially as described.

8. In a plow, a clevis arranged in the longitudinal central plane of the plow and consisting of a body-section provided with a slot inclined from its ends in direction of the said

central plane, and a hitch-section provided with a slide or a roller arranged to travel in said slot, as and for the purpose specified.

9. A jointer constructed in one piece, consisting of a moldboard having a point at each end, said jointer being attached to the lower end of a standard inclined forwardly from bottom to top, and adapted to reverse each end alternately with the other, each time the plow is reversed.

10. A jointer comprising a moldboard having a point at each end and a third point on its lower side between its end points, said jointer being attached to the lower end of a standard inclined forwardly from bottom to top, and adapted to reverse each end alternately with the other, each time the plow is reversed.

11. A jointer consisting of two or more portions having points with cutting edges facing in opposite directions, and a moldboard between the points, common to both, said jointer being attached to the lower end of a standard inclined forwardly from bottom to top, and adapted to reverse each end alternately with the other, each time the plow is reversed.

EDSON CARR ROBINSON.

Witnesses:

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