

No. 611,106.

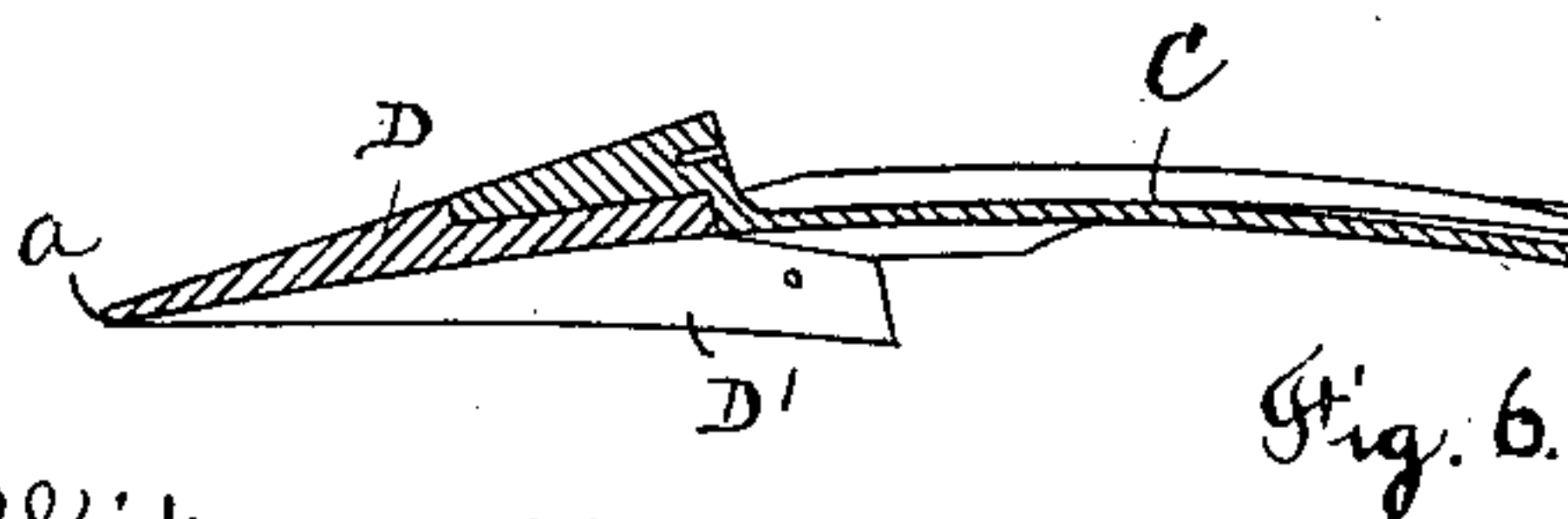
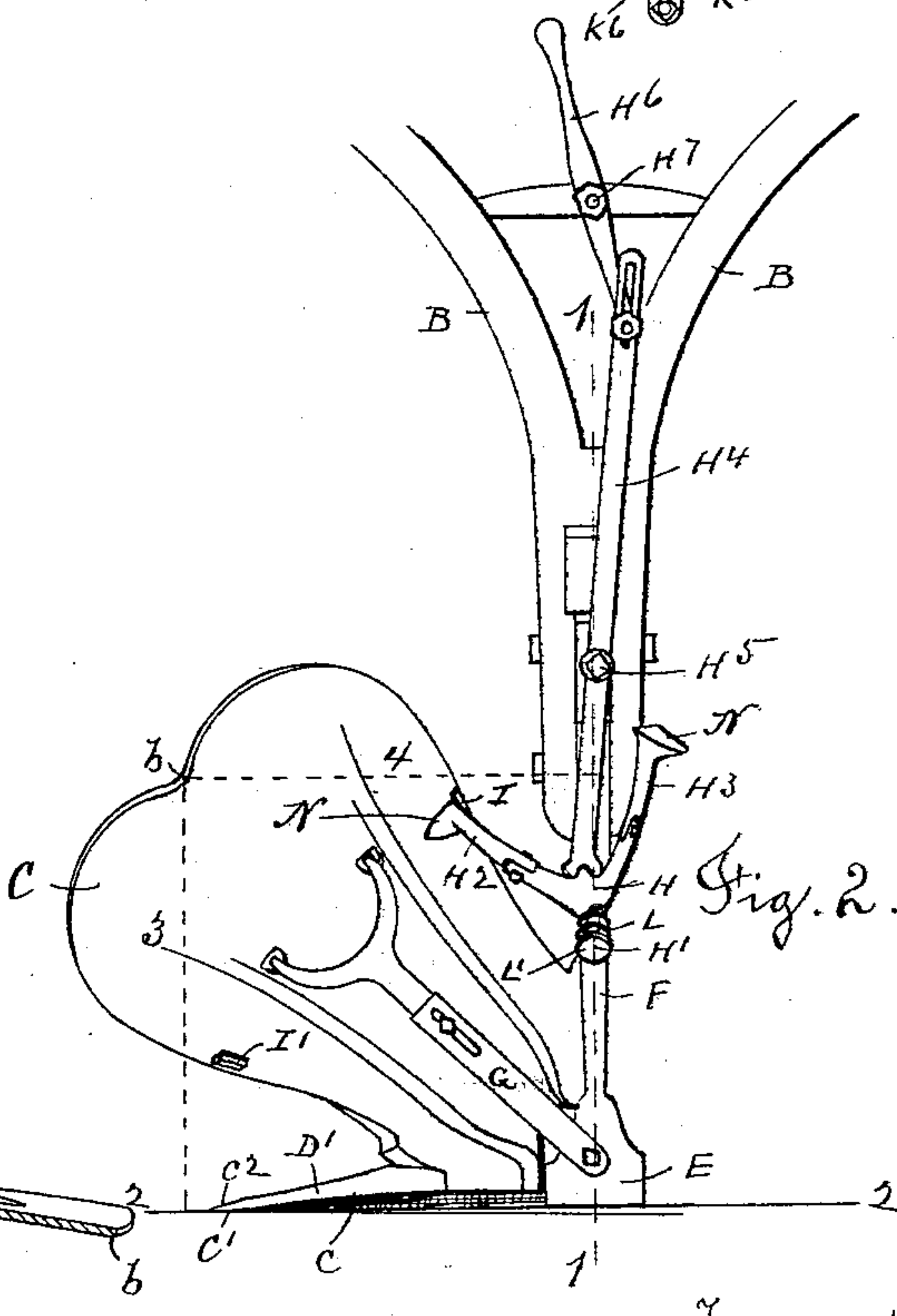
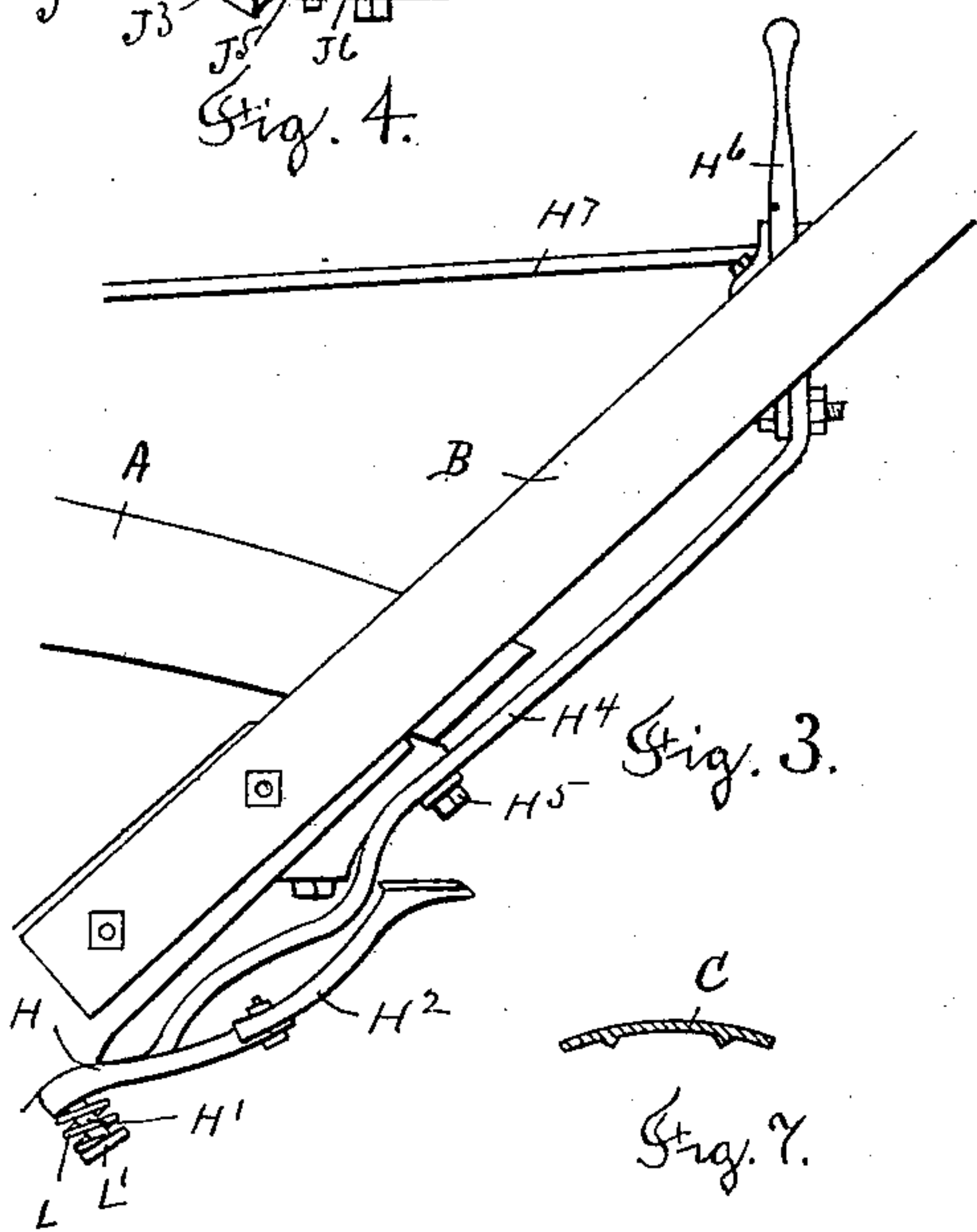
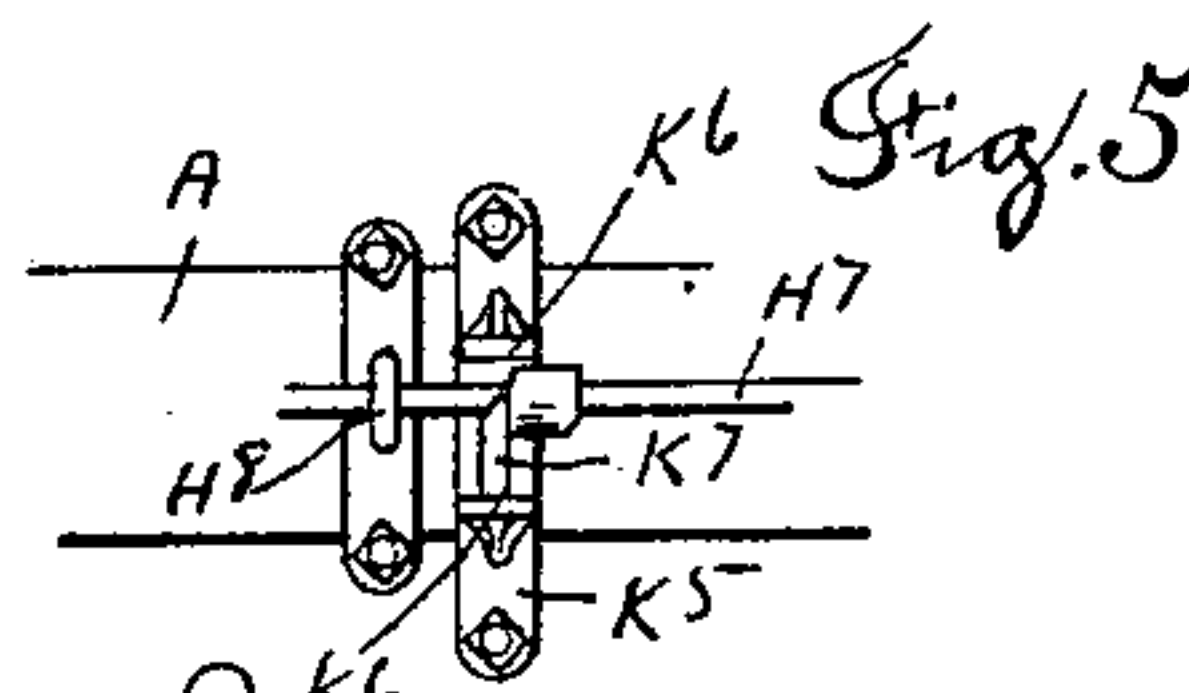
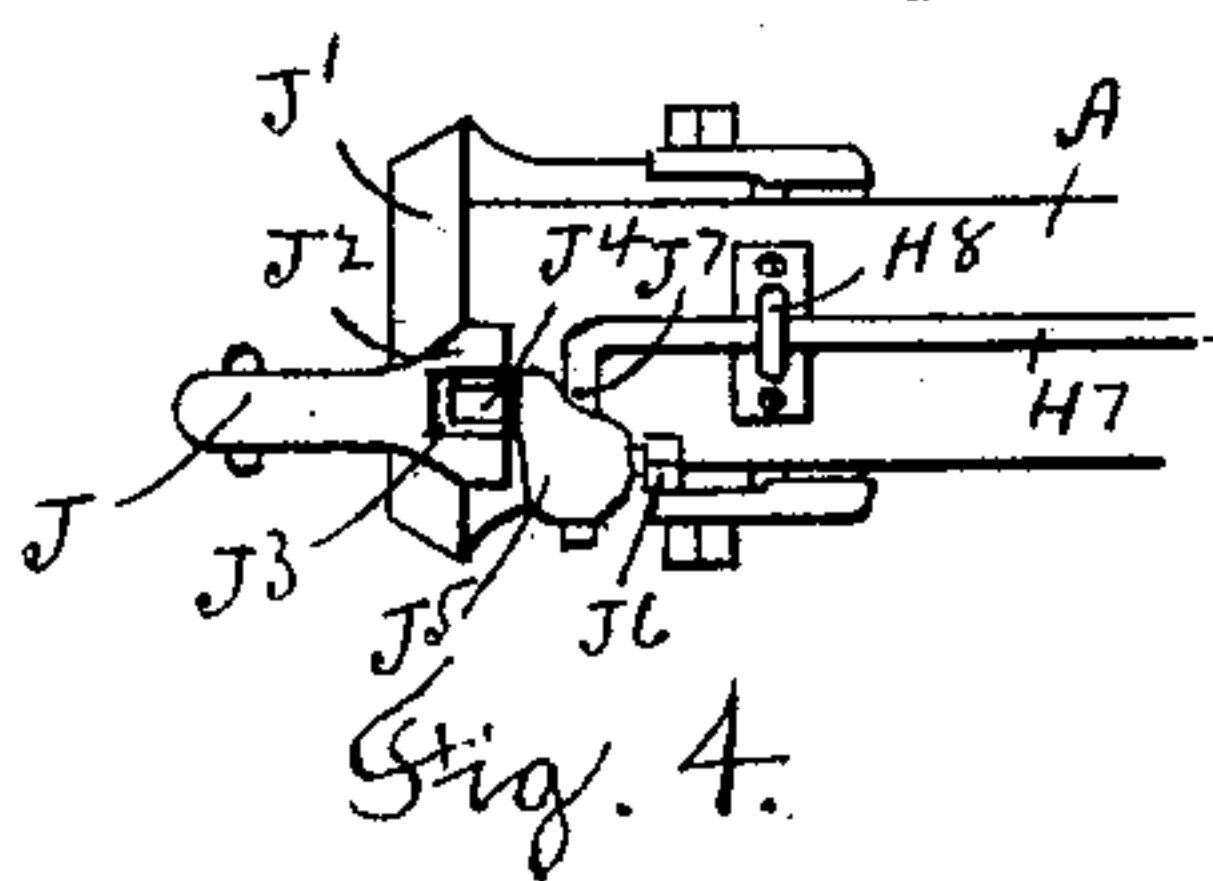
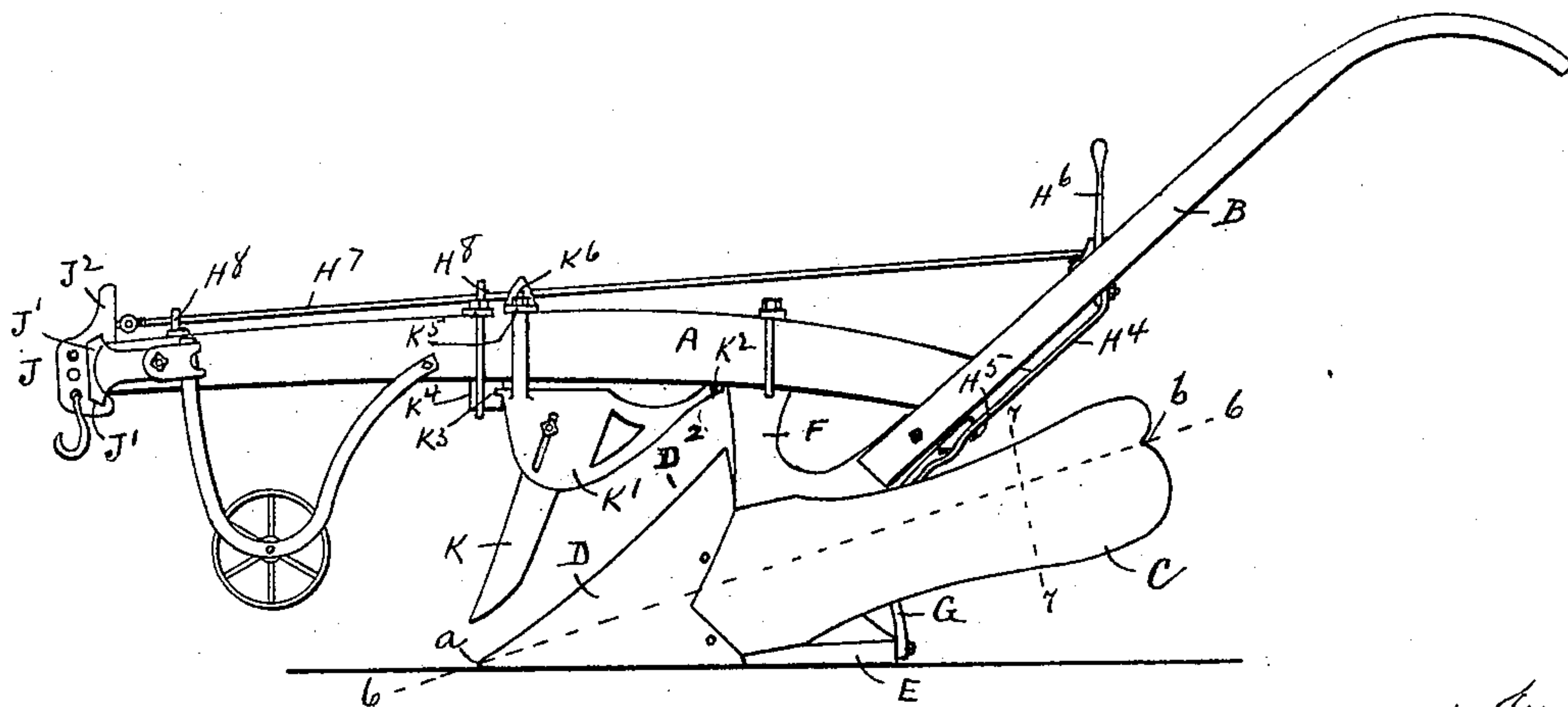
Patented Sept. 20, 1898.

G. A. CRANE.

PLOW.

(Application filed May 31, 1894.)

(No Model.)



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UNITED STATES PATENT OFFICE.

GEORGE A. CRANE, OF WORCESTER, MASSACHUSETTS.

PLOW.

SPECIFICATION forming part of Letters Patent No. 611,106, dated September 20, 1898.

Application filed May 31, 1894. Serial No. 513,026. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. CRANE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Plows, of which the following is a specification, reference being had to the accompanying drawings, forming a part of the same, and in which—

Figure 1 represents a side elevation of a plow embodying my invention. Fig. 2 is a rear view of the same. Fig. 3 is a side view of the latching mechanism for locking the moldboard in position. Fig. 4 is a top view of the forward end of the plow-beam, showing the clevis and the connected mechanism for shifting the same. Fig. 5 is a top view of the central portion of the plow-beam and showing the mechanism for shifting the cutter. Fig. 6 is a sectional view of the moldboard on line 6 6, Fig. 1. Fig. 7 is a section of the moldboard on line 7 7, Fig. 1.

Similar letters refer to similar parts in the different figures.

My present invention has for its objects to increase the efficiency and ease of action of a plow by means of the form and position of the acting side of the moldboard; to provide mechanism which can be simultaneously operated to shift the clevis, cutter, and moldboard-latching mechanism by a single action on the part of the operator, and these objects I accomplish by the means and in the manner hereinafter described, and pointed out in the annexed claims.

Referring to the accompanying drawings, A denotes the plow-beam; B, one of the handles; C, the moldboard; D, the plow-point; E, the bed, and F the standard.

The moldboard C and point D are united together and pivoted directly to the frame at the front end and by means of the forked link G pivoted to the frame at the rear end, so the connected moldboard and point can be swung around beneath the bed of the plow from the position shown in Figs. 1 and 2 to a corresponding position upon the opposite side of the standard in order to change the plow from a left to a right hand plow in the manner common in swivel-plows, the rear of the moldboard being connected to the bed by means of a link G in the usual manner.

The surface between the tip of the plow-point at *a* and the center of the rear edge of the moldboard at *b* on the line 6 6, Fig. 1, corresponds with the arc of a circle, and when the moldboard is locked in position for work, as shown in Figs. 1 and 2, the point *b* at the center of the rear edge of the moldboard is the same distance from the vertical plane passing through the tip of the plow-point as from the horizontal plane corresponding with the bottom of the plow, so the sod in passing over the moldboard is moved vertically and horizontally the same distance.

The point D is provided with cutting-wings *D'* *D*², as is common in swivel-plows, the wing *D'* acting when the plow is in the position shown in Figs. 1 and 2 to separate the sod, and the wing *D*² performing the same function when the plow is reversed, both wings being of the same construction and having the under side of the wing cut away, as at *c*, so that when the plow is locked in position only the under surface of the wing at the extreme edge, as indicated at *c'*, Fig. 2, will run on the bottom of the furrow and be subjected to wear in order that the surface *c* will be worn away by use and preserve an acute angle with the opposite or upper surface *c*² of the wing, so the continued wear of the wings *D'* and *D*² will thereby keep their edges constantly sharp.

The moldboard C is locked in position by means of a two-pronged latch H, pivoted on a fixed stud H' and provided with two prongs H² and H³, adapted at their free ends to engage lugs I and I' on the moldboard in its right and left hand position, respectively.

The latch H is rocked on the stud H' by means of a lever H⁴, pivoted to a fixed stud H⁵ and operated by the short hand-lever H⁶, attached to a rod H⁷, which is journaled in bearings H⁸ and extends the length of the plow-beam, so the angular movement of the hand-lever H⁶ will rock the rod I simultaneously with the movement of the latch H. The clevis J, supported upon the end of the plow-beam, is carried upon ways J' J' and is capable of sliding transversely to the right or left to vary the line of draft. Extending upward from the clevis J is a projection J², provided with a vertical slot J³ to receive a pin J⁴, carried in a block J⁵, adjustably attached by a

set-screw J^6 to an arm J^7 , extending at right angles from the rod I. The block J^5 is set upon the arm J^7 , so as to bring the pin J^4 out of alinement with the rod I, so the rotation
 5 of the rod I will cause the pin J^4 to act as a crank-pin to slide the clevis J laterally on the ways J^1 , the amount of the throw of the crank-pin being determined by the adjustment of the block J^5 on the arm J^7 .

10 The cutter K is carried in a frame K' , pivoted at its rear end to the under side of the plow-beam at K^2 , while the forward end of the frame K' is held in ways K^3 , formed in a block K^4 , attached to the under side of the
 15 plow-beam, and in order to strengthen the support of the frame K' it is also suspended from a strap K^5 , resting upon the under side of the plow-beam. The strap K^5 is provided with the two upwardly-projecting lugs K^6 K^6 ,
 20 between which is placed a cam K^7 , attached to the rod I, so the rotation of the rod and cam, acting against the lugs K^6 K^6 , will serve to slide the strap K^5 and carry the forward end of the cutter-frame K' to the right or left
 25 simultaneously with the movement of the clevis.

The two-pronged latch H, pivoted on the stud H' , is held against the frame of the plow by a spiral spring L, placed between the latch
 30 and the head L' of the stud H' , in order to allow the latch to yield so the lugs I and I' on the inner side of the moldboard can slide over and engage a lip N on the ends of the prongs H^2 and H^3 as the moldboard is swung around
 35 on its pivots from one side of the standard F to the other. The prongs H^2 and H^3 of the latch H and also the link G are each made in two sections, which overlap each other and are connected by bolts which pass through
 40 slotted ends of the sections, so as to permit of adjustment in length for the purpose of bringing the rear end of the moldboard farther from or nearer to the frame of the plow in order to vary the width of the furrow and
 45 secure the advantage of a larger or smaller plow by a single adjustment of the link G and latch H.

What I claim as my invention, and desire to secure by Letters Patent, is—

50 1. The combination with a plow-beam of

horizontal journal-bearings supported on said beam, a rocking rod journaled in said bearings and extending lengthwise said beam, a lever-handle attached to the rear end of said rod by which said rod is rocked, a shifting mold-
 55 board, a rocking latch by which said moldboard is locked in position and a pivoted lever intermediate between said rocking latch and said lever-handle, whereby said latch is operated simultaneously with the rocking motion of said rod, substantially as described. 60

2. The combination with a plow-beam, of a rod journaled in bearings and extending lengthwise said beam, a hand-lever attached to the rear end of said rod, a clevis capable
 65 of sliding in ways on said beam and transversely to the draft of the plow, a projection extending upwardly from said clevis and provided with a slot, a block J^5 attached to said rod and a crank-pin carried by said block
 70 whereby the lateral movement of said clevis is varied, substantially as described.

3. The combination with the beam of a plow, of a rod journaled in bearings and extending lengthwise said beam, a hand-lever attached
 75 to the rear end of said rod, a cutter-frame pivoted at its rear end to said beam and capable of lateral motion at its front end, lugs K^6 , K^6 extending upwardly from said frame, and a cam attached to said journaled rod and
 80 arranged to act against said lugs and move said cutter-frame laterally, substantially as described.

4. The combination with a plow-beam and a shifting moldboard of a rocking latch by
 85 which said moldboard is held in position, a rod journaled in bearings lengthwise said beam, a hand-lever by which said rod is rocked, an intermediate lever between said rod and said latch, a shifting clevis, a crank-pin rotated
 90 by said rod and engaging said clevis, a movable cutter-frame and a cam attached to said rod and engaging said cutter-frame, substantially as described.

Dated this 26th day of May, 1894.

GEORGE A. CRANE.

Witnesses:

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 EMMA KESTER.