

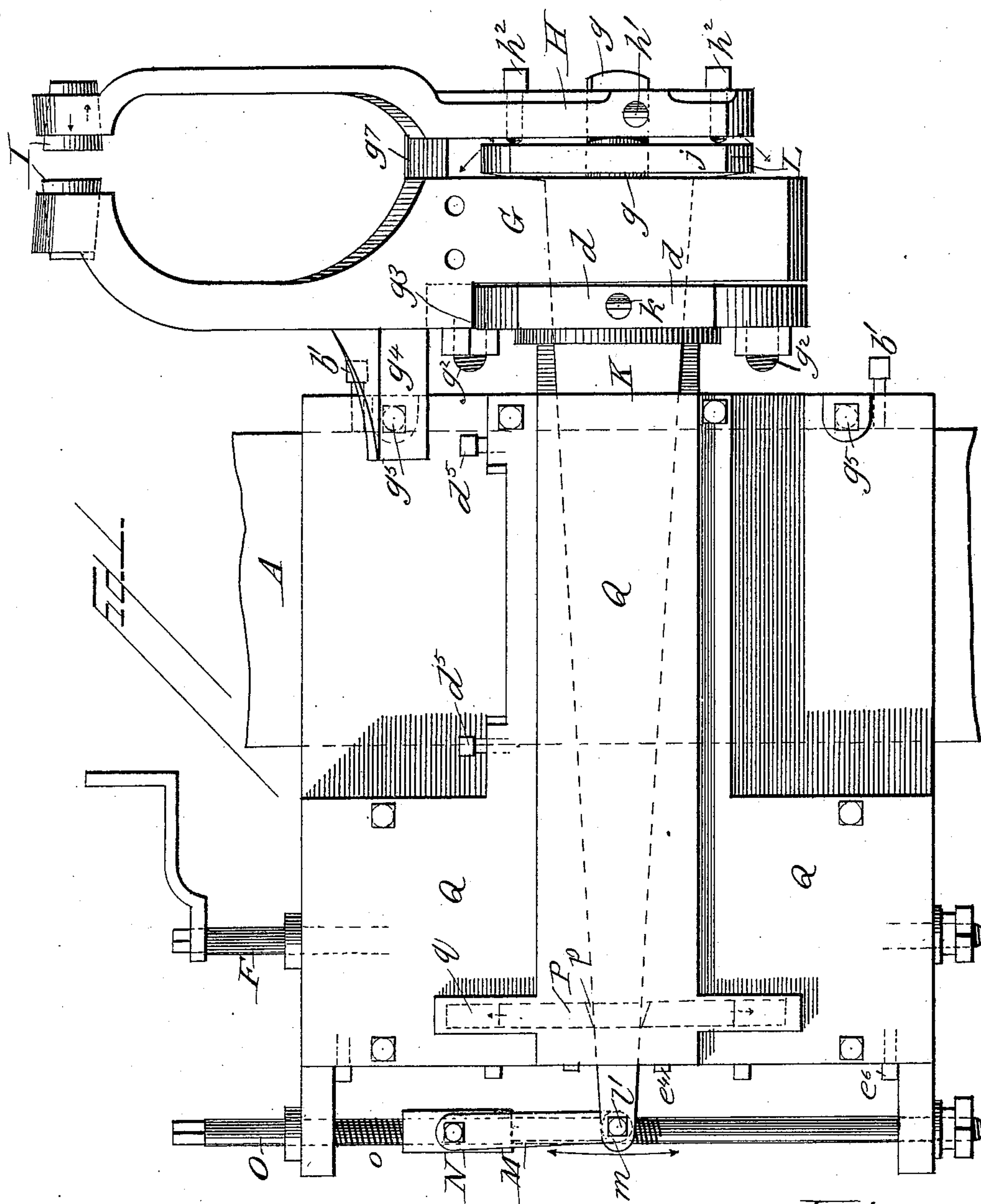
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4 Sheets—Sheet 1.

J. A. MAYER.
SAW GUIDE.

No. 420,950.

Patented Feb. 11, 1890.



Attest:

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M. Burroughs

Inventor
Joseph A. Mayer
By M. T. E. Chandler
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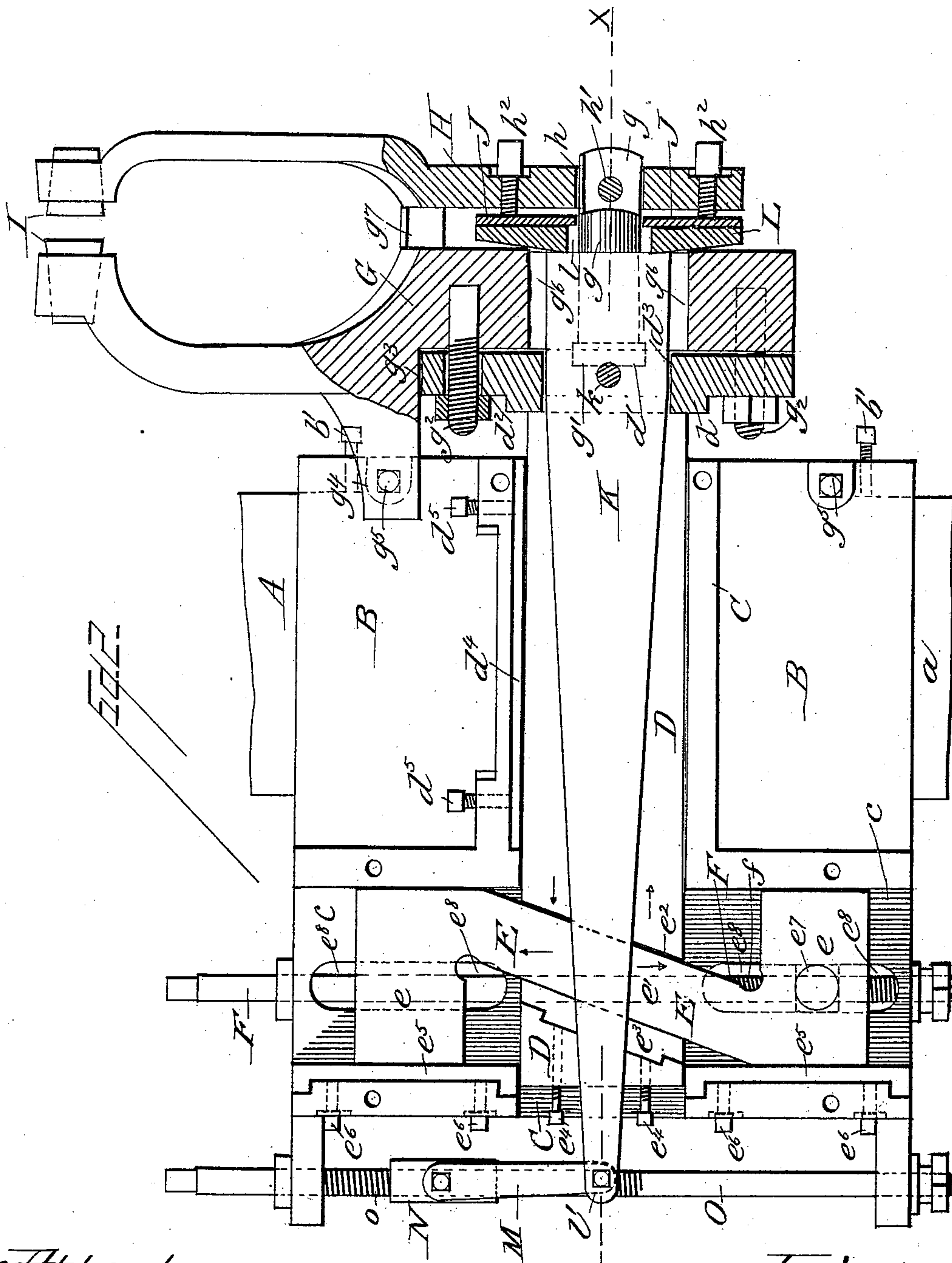
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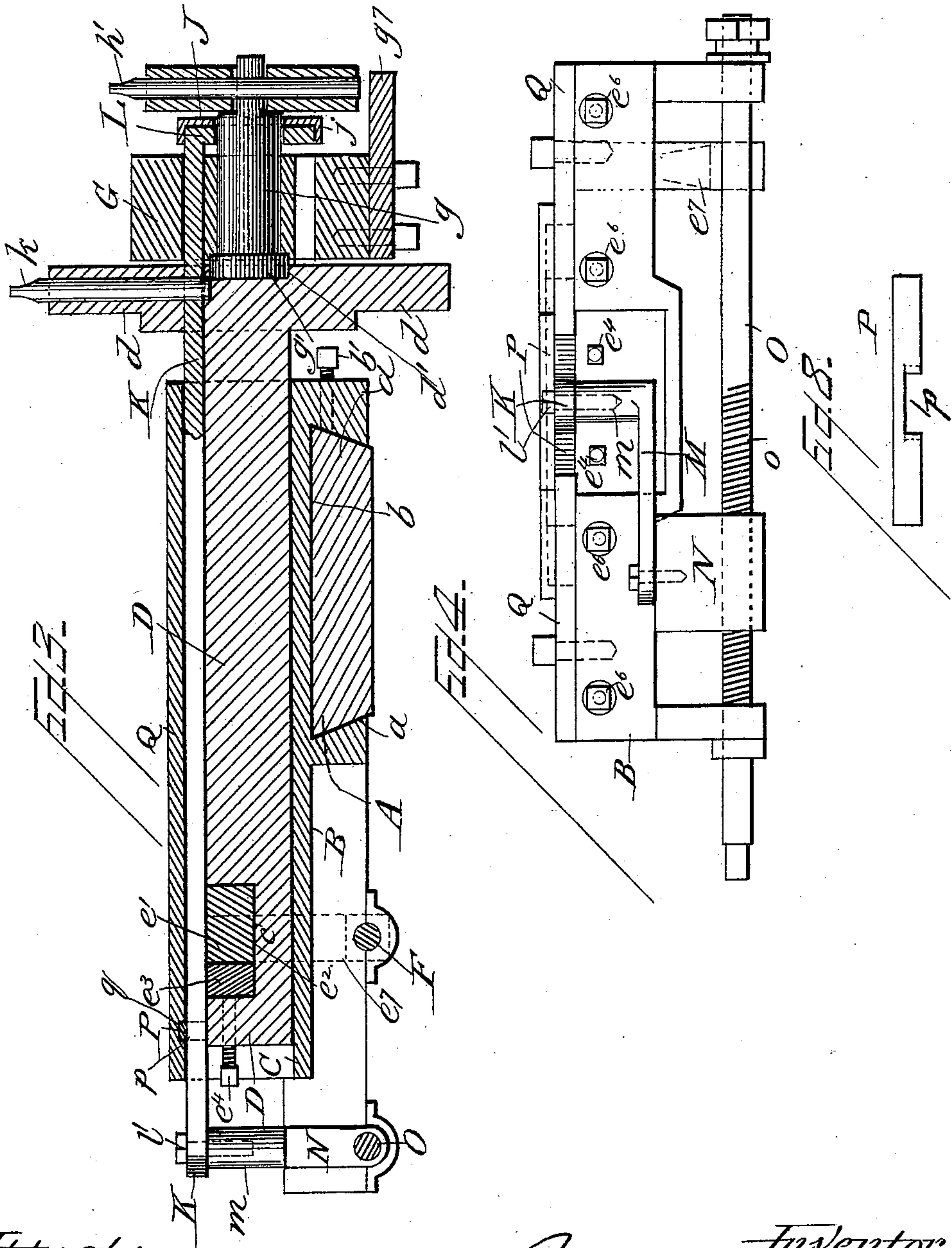
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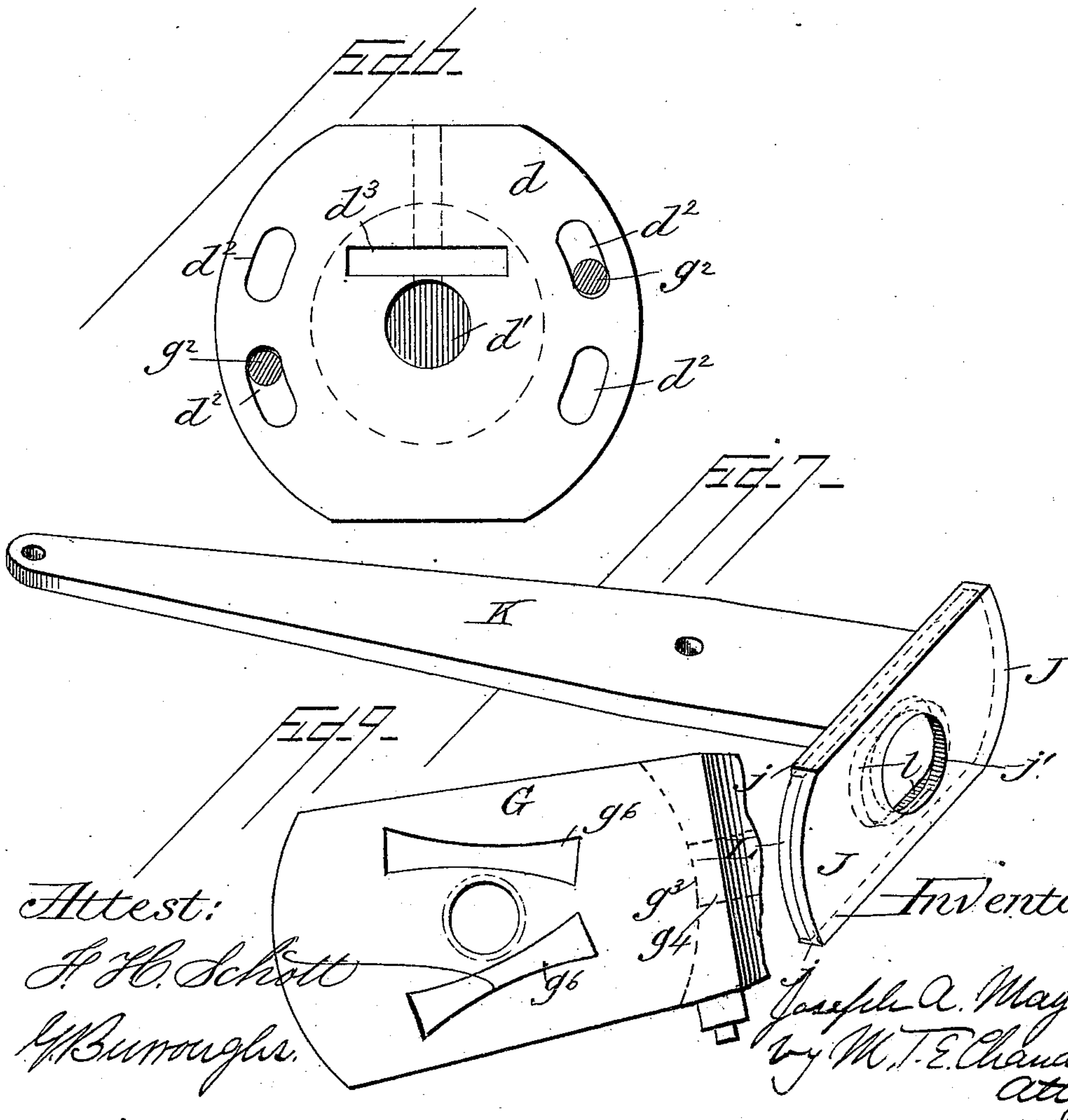
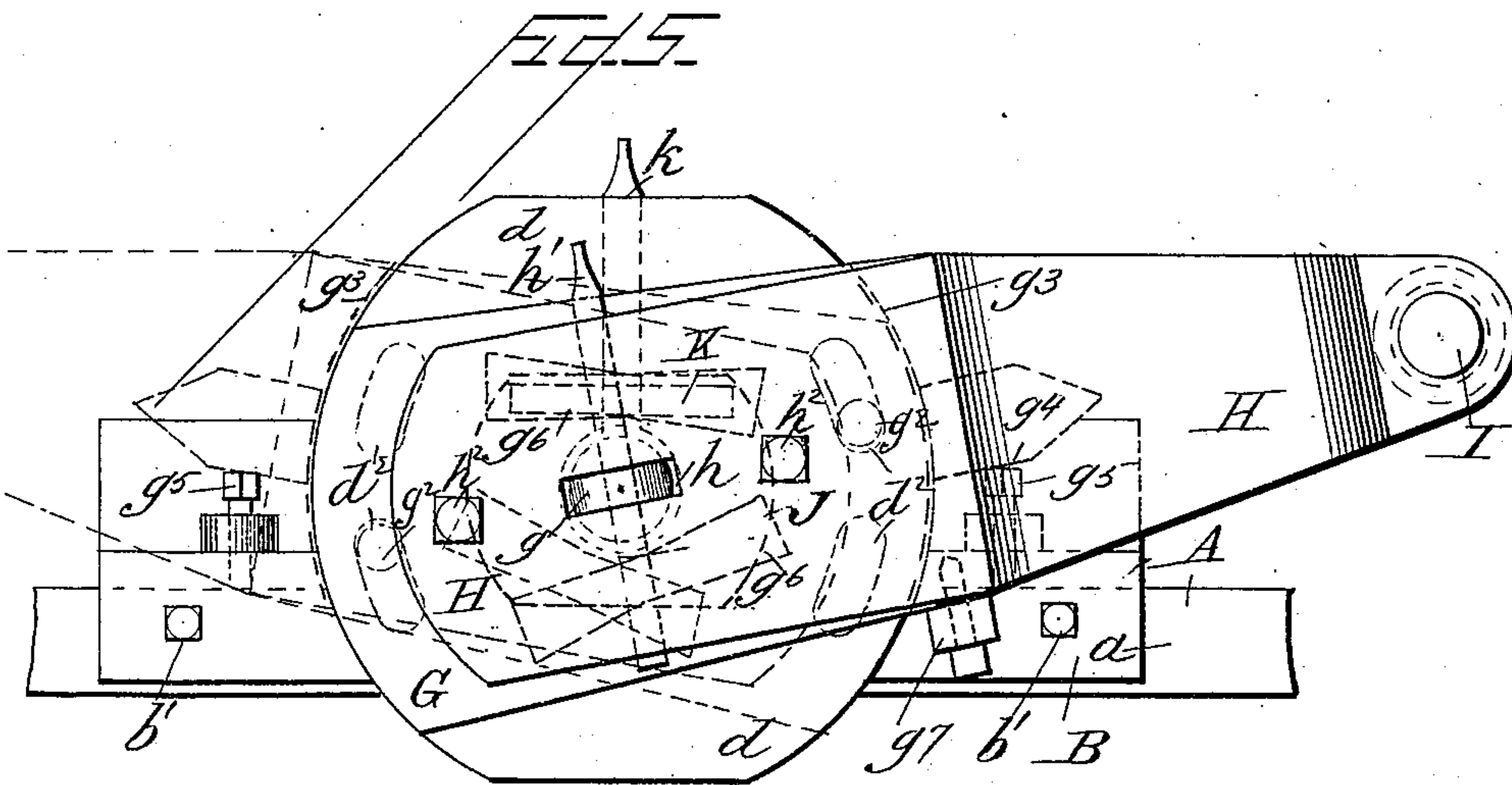
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UNITED STATES PATENT OFFICE.

JOSEPH A. MAYER, OF MUSKEGON, MICHIGAN.

SAW-GUIDE.

SPECIFICATION forming part of Letters Patent No. 420,950, dated February 11, 1890.

Application filed September 25, 1889. Serial No. 324,991. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. MAYER, a citizen of the United States, residing at Muskegon, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in Saw-Guides; 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 of reference marked thereon, which form a part of this specification.

The invention relates to improvements in saw-guides, the objects being to render such a guide adjustable, both laterally and vertically, in relation to the saw, and to so construct and arrange the parts of the guide that all variations or irregularities of motion caused by the wear of said parts or by other means may easily and quickly be remedied.

The guide consists, essentially, in a bed-plate secured to the saw-supporting frame, a pair of adjustable jaws provided with suitable wearing-pieces attached to said frame, and means for adjusting the jaws, as hereinafter described, illustrated in the drawings, and pointed out in the appended claims.

It further consists in certain details of construction and arrangement of parts, hereinafter more fully described.

In the accompanying drawings, in which similar letters of reference designate corresponding parts, Figure 1 represents a plan view of a saw-guide embodying the invention. Fig. 2 represents a similar view with the cover of the adjusting-slide and adjacent parts removed. Fig. 3 is a longitudinal section on line *x x* of Fig. 2. Fig. 4 is an end view. Fig. 5 is the opposite end view. Fig. 6 is a face view of the head-block. Fig. 7 is a perspective view of the lever K with its plates L and J. Fig. 8 is a detail view of the slide P. Fig. 9 is a face view of the inner jaw G.

Referring to the drawings by letter, A designates the main saw-frame having the guide-plate *a*, provided with dovetailed side edges, and B designates the base or bed plate of the saw-guide, provided in its under surface with the transverse groove or recess *b*, having dove-

tailed edges to fit and move upon the guide-plate *a*. The bed-plate can be fixed in any desired position on the guide-plate by the set-screws *b' b'*, which pass through threaded openings in the edges and impinge on the corresponding edges of the guide-plate. The bed-plate has on its upper surface a straight central longitudinal guide casing or boxing C, of suitable depth, and at its rear end a similar guide-casing *c*, having about half the depth of the casing C and crossing the latter transversely at right angles. The guide-casings serve purposes hereinafter explained.

D is a slide-bar fitted and moving in the guide-casing C, and having on its front end outside of the bed-plate the head-block *d*, which is provided with a central circular recess *d'*, the curved adjusting-slots *d''*, concentric with the said recess and arranged in pairs on each side thereof, and the horizontal slot *d'''* just above the central recess and flush with the upper surface of the slide-bar D when the latter is in position.

d'' is a wear-plate on the edge of the slide-bar D within its guide-casing C, and *d'' d''* are set-screws, by means of which the said plate may be brought more or less firmly against said edge to take up wear and prevent loss of motion.

E is an adjusting slide-bar having the rectangular heads *e e* at its ends and the inclined connecting-shank *e'*, the said heads fitting and moving in the guide-casing *c*. The shank *e'* lies in an inclined recess *e''* in the upper surface of the slide-bar D, and a wear-plate *e'''* bears against its rear edge, the rear edge of the wear-plate being shouldered, as shown, to prevent it slipping in the recess *e''*, in which it slides. The said wear-plate is adjusted by the set-screws *e'' e''*. *e''' e'''* are similar wear-plates bearing against the rear edges of the heads *e* on each side in the guide-casing *c*, and *e'' e''* are set-screws to adjust said wear-plates.

e'' is an arm depending vertically from one of the heads *e* through one of the slots *e'' e''* in the floor of the guide-casing *c*. The said arm is provided with a threaded opening to engage the threaded portion *f* of a transverse shaft F, that turns in bearings secured to the lower edges of the sides of the bed-plate.

The said shaft is provided with collars near one end and nuts near the other, to prevent its moving in the direction of its length, and is squared at one end for the attachment of a suitable crank-handle or wrench. By means of said shaft and depending arm e^7 the shank e' is moved in the inclined recess e^2 , and the slide-bar D moved outward in the guide-casing C.

G is the inner jaw of the saw-guide, having flat body and curved beak convex outwardly, the body being approximately rectangular and provided about centrally with a bearing-opening for the large cylindrical fulcrum-pin g , the shank of which rests in said bearing-opening, while its cylindrical head g' rests in the circular recess d' of the head-block d .

g^2 g^3 are bolts which stand from the body of the jaw G at equal distances on each side of the pin g , and which may either pass through suitable openings in the jaw or be integral therewith. The said bolts also pass through opposite slots d^2 in the head-block d and engage nuts on the inner side of the latter.

g^3 is a concave shoulder on the jaw G, which shoulder rests against the adjacent convex edge of the head-block and aids in keeping the jaw aligned therewith.

g^4 is a lug standing inwardly from the jaw G over the bed-plate, and g^5 g^6 are screws engaged in the threaded recesses in said plate on each side of the guide-casing C. The head of one of these bolts stands under the lug g^4 when the jaw G stands with its beak extending to either side and aids in holding the jaw at the inclination to which it has been set by means of the bolts g^2 and slots d^2 . The said bolts and slots also hold the jaw to the head-block. When the jaw G is reversed on the head-block, the shoulder g^3 rests against the opposite edge of the latter, which is also convex. When reversing the position of the jaw, the latter turns easily with the fulcrum-pin g . g^6 g^6 are similar slots at equal distances above and below the fulcrum-pin g , which slots converge in the direction of the beak of the jaw and have their sides convex or rounded inward centrally for a purpose hereinafter explained.

g^7 is a supporting-bar secured by bolts to one edge of the jaw G at the junction of the head and beak and resting under the edge of the outer jaw of the said guide at a corresponding point. The said bar may be removed and attached to the opposite edge of the jaw G, when the jaws are reversed in position.

H is the outer jaw of the saw-guide, having a body and beak similar in contour to those of the inner jaw, and provided in its body with a central longitudinal slot h for the insertion of the flattened perforated end of the fulcrum-pin G, which has convex shoulders adjoining said end, so that the jaw H can turn a slight degree laterally on said end.

h' is a pivotal pin passing downward through a vertical opening extending between the edges of the jaw H and through the perforation in the flattened end of the fulcrum-pin.

h^2 h^2 are adjusting-screws passing through the threaded openings in the jaw H at equal distances from the ends of the slot h , and serving the purpose hereinafter explained. The jaw H is made lighter than the jaw G, as it is intended to be adjustable thereon to a certain degree. The jaws have registering openings in their beaks, which openings taper inwardly and receive the opposite facing tapered wear-blocks I I, which rest against the opposite surfaces of the saw.

J is an adjustment-plate provided with flanges $j j$ on its side edges and a central circular opening j' , by means of which the plate is mounted on the fulcrum-pin g . The plate J rests against the inner surface of the jaw H, with the points of the adjusting-screws h^2 h^2 impinging against it on each side of the fulcrum-pin.

K is a lever pivoted near its inner end in the slot d^3 of the head-block d by means of a pin k passing down through an opening extending down the upper edge of said block and through a registering opening in said lever, and after passing through the slot d^3 also passes through the upper slot g^6 in the jaw G. Secured to the end of the said lever, and extending downward and laterally therefrom, is the adjusting-plate L, having a central laterally-extended opening or slot l for the passage of the fulcrum-pin g . The upper and lower edges of the plate L rest between the flanges $j j$ of the adjustment-plate J, and are free to slide slightly therein. The outer or free end of the lever K is perforated vertically for the reception of bolt or pin l' , that secures it to the hollow upstanding internally-threaded boss m of an arm M, that has its outer end pivoted upon a traveler-block N. This block is provided near to and parallel with its lower edge with a threaded opening to engage the threaded portion o of a transverse shaft O, journaled in bearings secured to the lower edges of the sides of the bed-plate outward from the shaft F. The shaft O is also provided with collars or nuts to prevent it moving in the direction of its length, and has one end squared for the engagement of a crank-handle or wrench. By means of the shaft O and the traveler-block N the end of the lever K can be moved to and fro and the lever set in adjustment at suitable angles.

The lever K tapers from the plate L to its outer end, and near said end is straddled by a slide P, having in its lower edge a central notch P' , provided with beveled side edges to seat itself neatly on the lever.

Q is a cover or lid bolted to the bed-plate over the guide-casing C, and provided in its inner surface with a recess to receive the

slide P, which moves with the lever and prevents dust from entering the guide-casings above the adjusting slide-bar E.

The beaks and jaws of the saw-guide incline somewhat upward when in position, because, while the slot d^3 is horizontal, the inclined registering slot g^6 has to be aligned therewith to permit the lever K to pass through both. This inclination of the jaws can be varied slightly, however, on account of the inward convexity of the sides of the slots g^6 , which permit the jaws G to turn slightly up or down on the lever, and the jaw G, by means of the supporting-bar g^7 , changes equally the inclination of the jaw H. The inclination of the jaws is adjusted, by means of the curved slots d^2 and bolts g^2 , in the ordinary well-known manner, and when the beaks of the jaws are reversed the bolts engage with the slots on the opposite side.

As the jaw G is firmly attached to the head-block d of the slide-bar B, the motion of said bar, caused by the adjusting-bar E and bolt F, will adjust the said jaw and the parts connected thereto inward and outward on the bed-plate.

The wear-blocks I I are adjusted to different distances apart to accommodate saws of different thicknesses, as follows: When the shaft O changes the inclination of the lever K, the inclination of the adjusting-plate L being also changed, and consequently changing the inclination of the adjusting-plate J, against which the plate L bears. As the plate L bears against the inner side of the jaw H, it will as it turns change the inclination of the said jaw in relation to the jaw G, and will therefore alter the distance of the wear-blocks I from each other. When this jaw H has been thus set at the proper inclination, it may be fixed in position by the set-screws h^2 being turned up to bear heavily on the adjustment-plate T.

Having thus described my invention, I claim—

1. In a saw-guide, the combination of the slide-bar moving on the bed-plate, the head-block secured to the end of the slide-bar, the fulcrum-pin seated in the central recess in the outer face of the head-block, the jaws of the saw-guide mounted centrally on the fulcrum-pin, so that they can have their directions reversed in relation to the head-block, and means, substantially as described, whereby the said jaws can be secured in position on the head-block.

2. In a saw-guide, the combination of the slide-bar moving on the bed-plate, the head-block secured to the end of the slide-bar and provided with a central circular bearing-recess on its outer side, and curved slots arranged similarly on each side of, equally distant from, and concentric with said recess, the fulcrum-pin having an end bearing in said

recess, the guide-jaws mounted on the fulcrum-pin, and the bolts and nuts connecting the inner of said jaws to the head-block, substantially as specified.

3. The combination, with the slide-bar D, moving in a guide-casing C on the bed-plate, the wear-plate d^4 and set-screw d^5 , of the adjusting-bar E, moving in the guide-casings c and having an inclined shank seated in a corresponding groove in the bar D, the wear-plate $e^3 e^5$, the set-screws $e^4 e^6$, and means, substantially as described, whereby the bar E is moved in its guide-casing, substantially as specified.

4. The combination, with the head-block and the fulcrum-pin having a bearing at its inner end in a central recess of said block, and its outer end flattened and perforated and having convex shoulders inward of said flattened end, of the inner saw-guide jaw mounted on the cylindrical part of the fulcrum-pin, the outer saw-guide jaw pivoted on the flattened end of said pin, and means, substantially as described, whereby the outer jaw can have its inclination to the inner jaw adjusted to separate or bring together the wearing-blocks in the beaks of the jaws, substantially as specified.

5. The combination of the head-block, the fulcrum-pin, the saw-guide jaws mounted on said pin, the outer of said jaws pivoted on the flattened end of the fulcrum-pin and capable of lateral motion thereon, the lever passing through and pivoted in a slot in the head-block, the adjusting-plate on the outer end of the said lever, the adjustment-plate riding on the said adjusting-plate, and means, substantially as described, whereby the lever can be moved, substantially as set forth.

6. The combination, with the fulcrum-pin having a bearing on the head-block and the jaws pivoted on said pin, of the pivoted lever, the adjusting-plate on the end of the lever, the flanged adjustment-plate riding on the adjusting-plate, and the adjusting-screws passing through a threaded opening in the outer jaw impinging on the adjustment-plate, substantially as specified.

7. The combination, with the slide-bar D and the head-block d , provided with the recess d^1 and slots $d^2 d^3$, of the fulcrum-pin, the inner jaw G, having the central opening for the fulcrum-pin and provided with the slots $g^6 g^6$, the lugs g^4 , the supporting-bar g^7 for the outer jaw, the bolts g^2 , the screws j^5 , and the outer jaw pivoted to the end of the fulcrum-pin, substantially as specified.

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

JOSEPH A. MAYER.

Witnesses:

ELIZA F. MEES,

GEORGE D. SMITH.