

(Model.)

J. S. LONG.

SAW SET.

No. 292,755.

Patented Jan. 29, 1884.

Fig. 1.

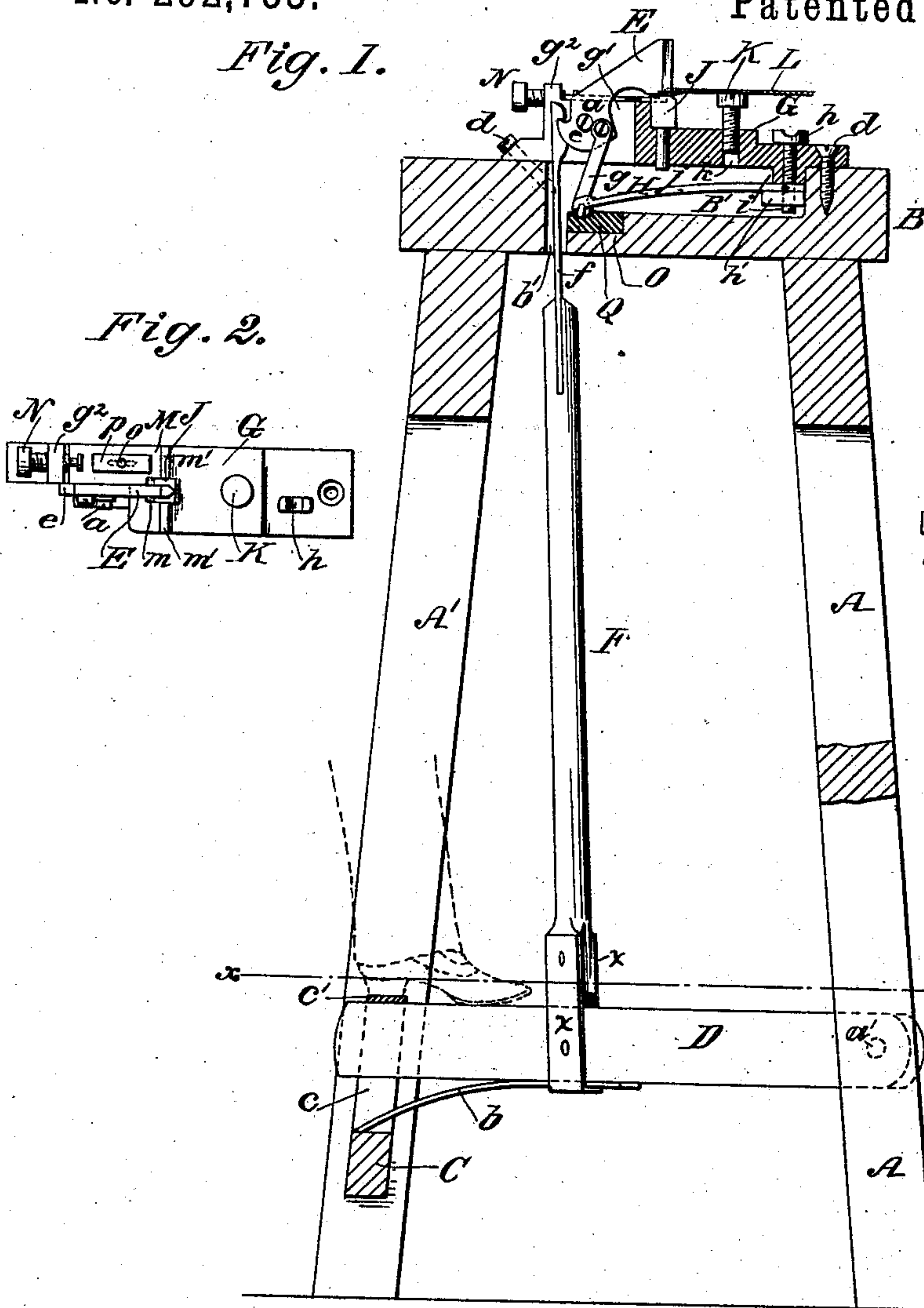


Fig. 2.

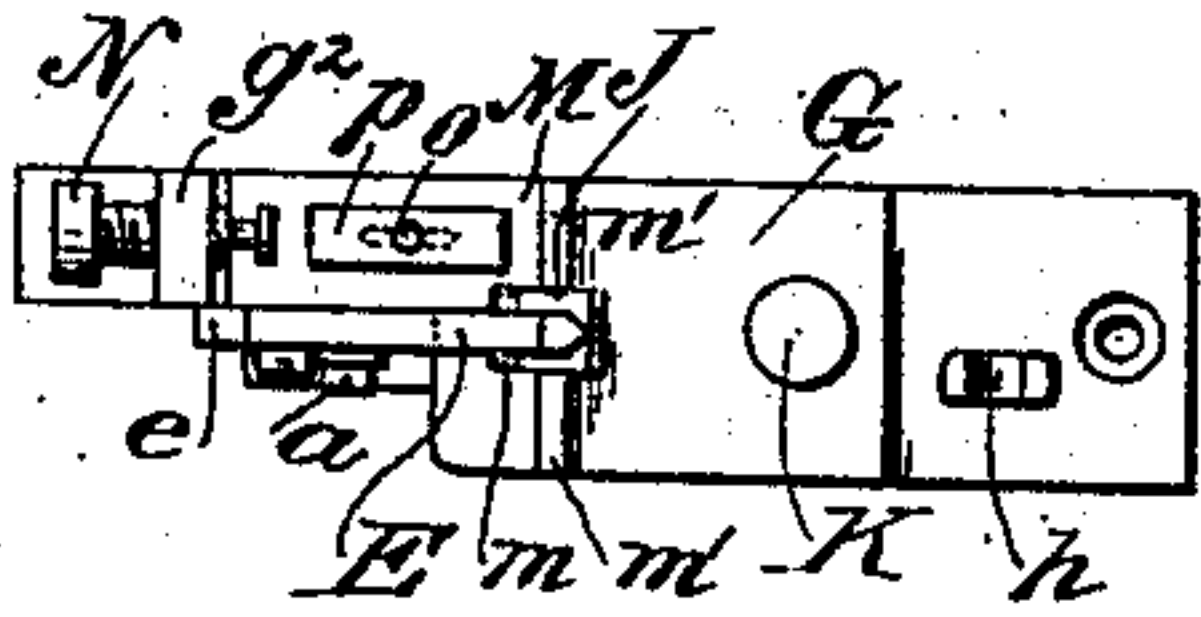


Fig. 3.

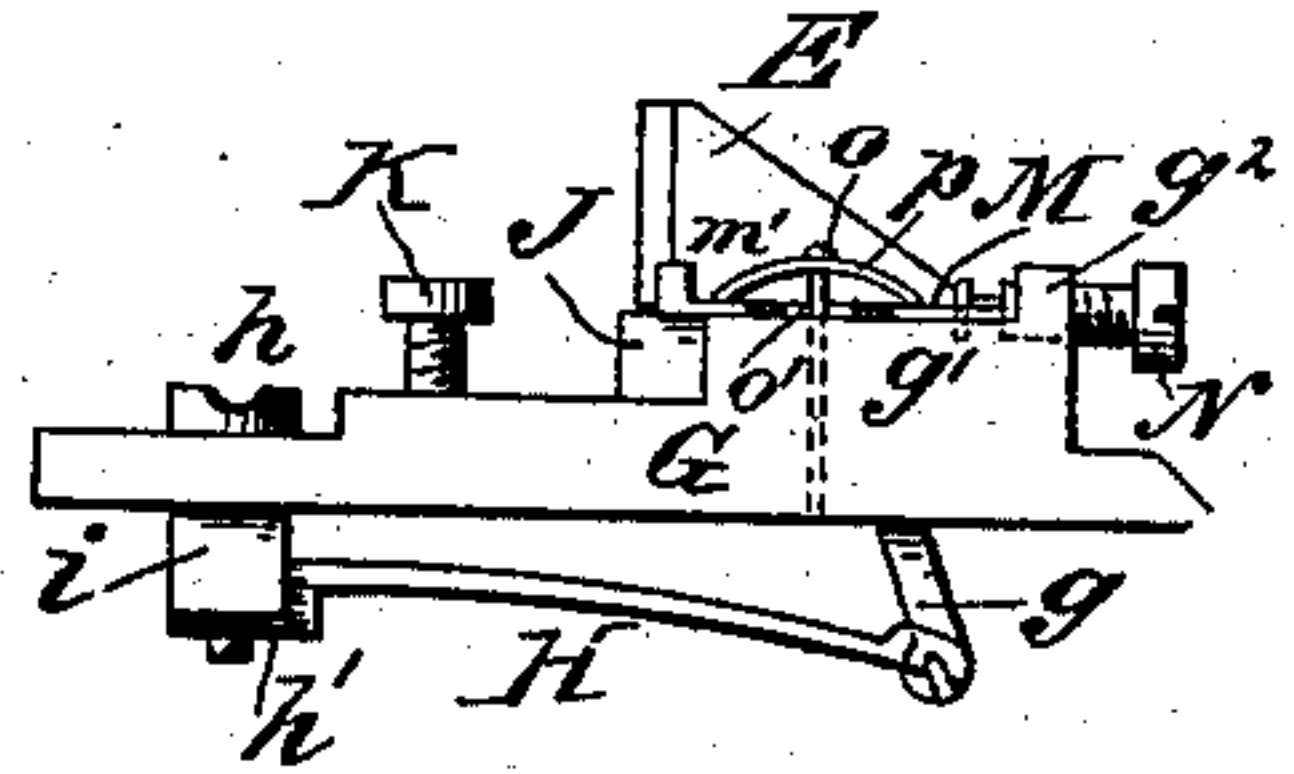
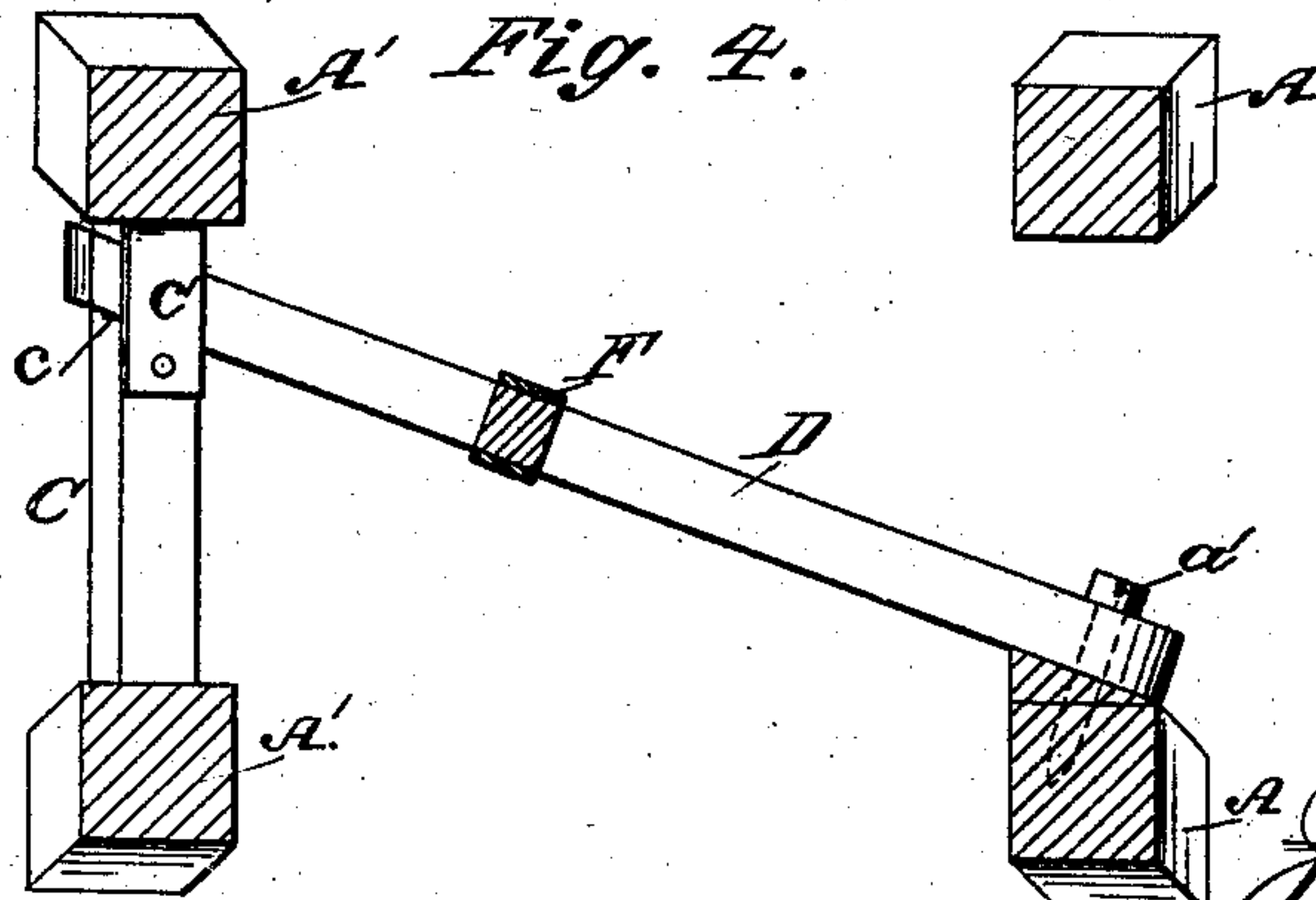


Fig. 4.



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JOHN SHANNON LONG, OF MURPHYSBOROUGH, ILLINOIS, ASSIGNOR TO HIMSELF AND JOSEPH BASTIEN, OF SAME PLACE.

SAW-SET.

SPECIFICATION forming part of Letters Patent No. 292,755, dated January 29, 1884.

Application filed September 4, 1883. (Model.)

To all whom it may concern:

Be it known that I, JOHN S. LONG, of Murphysborough, in the county of Jackson and State of Illinois, have invented a new and Improved Saw-Set, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in that class of saw-sets that are operated by the foot of the user; and the invention consists of the construction, arrangement, and combination of parts, all as hereinafter described and claimed.

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

Figure 1 is sectional elevation of my new saw-set mounted upon its frame or stand. Fig. 2 is plan view of the saw-set removed from the frame or stand. Fig. 3 is a side elevation of the same; and Fig. 4 is a sectional plan view of the frame or stand, taken on the line *x x* of Fig. 1.

The frame or stand upon which the operative parts of the saw-set are placed is composed of the uprights *A A* and *A' A'*, and the board or table *B*, secured upon the upper ends of the said uprights. The uprights *A' A'* are tied together near their lower ends by the wide cross-piece *C*. To one of the uprights *A* is pivoted upon the bolt *a'* the treadle *D*, by which the hammer *E* of the saw-set is operated through the medium of the connecting-rod *F* and notched spring-hook *f*, secured to the upper end of the rod *F*. The lower end of this rod is made with a loop, *x*, in which the treadle *D* and treadle-spring *b* are carried, as shown. The cross-piece *C* has formed in it the slot *c*, through which the free end of the lever *D* passes, and in which it is held by the plate *c'*, placed over the slot. The free end of the lever *D* is held normally elevated by the treadle-spring *b*, which is attached at one end to the under side of the treadle *D*, passes through loop *x*, and rests at the other upon the bottom of the slot *c*, as shown in Fig. 1. The cross-piece *C*, with its slot *c*, having the treadle *D* placed therein, serves as a guide for always keeping the treadle *D* in place, and by reason

of the oblique arrangement of the treadle *D* in relation to the cross-piece *C* the latter serves as a rest for the heel of the operator when working the hammer, as illustrated in dotted lines in Fig. 1. The hammer *E*, by which the teeth of the saw *L* are struck, is pivoted by the pivot *a* to the base-plate *G* of the saw-set, which plate is fitted in the recess *B'*, made in the upper surface of the board or table *B*, and held to the table by the screws *d d*. (Shown in Fig. 1.) At its rear end the hammer *E* is formed with the notch *e*, with which the spring-hook *f* is adapted to engage when the free end of the treadle *D* stands at its highest position, as shown in Fig. 1. This connects the hammer *E* with the treadle *D*, so that the hammer may be turned backward upon the pivot *a* by pressing downward upon the treadle *D*. In front of the pivot *a* the hammer *E* is connected by the link *g* to the free end of the heavy spring *H*, the rear end of which is made fast to the under side of the base-plate *G* by the screw *h* and nut *h'*, so that the backward movement of the hammer *E* on its pivot *a* will lift the free end of the spring *H* and put a tension upon the spring which will cause the hammer to deliver a blow upon the anvil *J* when the hammer is released from the spring-hook *f*. The releasing of the hammer *E* from the notch of the spring-hook *f* is automatic, owing to the movement of the notch *e* in the arc of a circle; and the engagement of the hook *f* with the notch *e* of the hammer is also automatic, owing to the elasticity of the hook *f* and the relative position of the rear end of the hammer *E* with the aperture *b'*, made through the table *B*, through which aperture the plate *f* passes, as shown in Fig. 1. The nut *h'* and rear end of the spring *H* are held between the flanges *i i*, formed upon the under side of the base-plate *G*, so that by turning the thumb-screw *h* the tension of the spring *H* upon hammer *E* may be regulated for causing the hammer to deliver hard or light blows, according to the thickness of the saw operated upon. The anvil *J* is fitted in a suitable orifice, *j*, made in the base-plate *G*, and may be removed. In front of the anvil *J* is fitted, in the screw-

threaded openings *k*, made in the base-plate G, the screw saw-support K, upon which the blade of the saw L may be supported and guided, as illustrated in Fig. 1, and this support K may be raised or lowered by turning it to the right or left, for giving the teeth of the saw more or less set, as desired.

Upon the elevated portion *g'* of the base-plate G, which elevated portion stands on a level with the upper surface of the anvil J, is placed the sliding notched guide-plate M, for holding the teeth of the saw, when being set, in position upon or above the anvil. This plate M reaches under the head of the hammer E, but that part of plate M that is directly over the anvil J is notched out, as shown at *m*, Fig. 1. The edges of plate M, on each side of the anvil, are formed upwardly-projecting lips *m' m'*, against which the saw-teeth rest. At its rear end the guide-plate M engages with a swivel adjusting-screw, N, which has a bearing in the projection *g''* of the base-plate G, and the plate M is held against lateral movement upon the base-plate G by the pin *o*, that passes up through the base-plate G and passes through the slot *o'*, made in the guide-plate M, as shown in Fig. 3; and the plate M is held down to place upon the base-plate G by the spring *p*, held upon the upper end of the pin *o* by a nut or by heading the pin *o*, as shown clearly in Fig. 3. By turning the screw N the guide-plate M may be adjusted to or from the front of the anvil for guiding and supporting in position the saw-teeth. Thus the range of work that may be done on the machine is not limited, but extends alike to large and small saws.

Q is a cushion, of rubber or other elastic material, for causing the hammer E to rebound after delivering its blow. This cushion is fitted in the recess O, made in the table B, and is by preference so arranged that the lower end of the link *g* is adapted to strike upon it at the time the hammer delivers its blow, so that the reaction of the cushion Q will lift the hammer and hold it normally out of contact with the anvil, as will be understood from Fig. 1. In this manner no attention need be paid by the operator to the hammer at the time of moving the saw from tooth to tooth upon the anvil, and this is a great advantage, since it enables him to give his whole attention to holding the saw upon the anvil so that the teeth will be properly struck by the hammer E.

In operation, the spring H, support K, and guide-plate M having been first properly adjusted to suit the teeth of the saw to be set, the operator will place the heel of one of his feet upon the cross-piece C, with the ball of his foot resting upon the treadle D, as illustrated in dotted lines in Fig. 1. He will then take the saw in both of his hands and place it upon the support, with the teeth of the saw resting against the lips *m' m'* of the guide-plate M, with one tooth over the notch

m and over the anvil. He will then, by a simple downward pressure of the ball of his foot, force downward the treadle D, which will first pull down the plate *f*, and with it the rear end of hammer E, until the extremity of hook *f* has slipped off from the hammer-notch *e*, thus releasing or discharging the hammer E with a sudden blow caused by the tension upon the spring H, which, when the hammer is released by plate *f*, will cause the hammer to deliver its blow. The blow having been struck, the cushion Q will raise the face of the hammer off from the tooth of the saw. The saw will then be moved to bring another tooth over the anvil. The operator will then raise the ball of his foot, which will permit the spring *b* to lift the treadle D, which will raise rod F and hook-plate *f*, so that it will engage again with the notch *e* of the hammer, and then the operation will be repeated, and so on, until all of the teeth of the saw are set.

Among the special advantages of my invention are the following: The hammer delivers upon the saw-teeth a blow of uniform force, which may be regulated with the utmost precision by turning the thumb-screw *h*. Every blow will be alike in power until a new adjustment of the force is made by turning the thumb-screw. The blow of the hammer may be made heavy or light, as the thickness or thinness of the saw may require.

The notched adjustable plate M, with its lips *m' m'*, in connection with the adjustable rest K, facilitates the setting of the teeth of saws of variable sizes at any desired degree of set with rapidity and precision. The movement of the hammer being made by the foot of the operator, his hands are both at liberty to guide the saw.

The machine is equally adapted to setting the teeth of all descriptions of saws. No part of the saw is obscured by the mechanism; but the operator stands over the saw and looks down upon it as the work proceeds.

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

1. The combination, in a saw-set, of the hammer E, spring H, cushion Q, and connecting-link *g*, substantially as and for the purposes set forth.

2. The combination, with the hammer E, spring H, cushion Q, and link *g*, of the treadle D, rod F, and spring-hook *f*, substantially as and for the purposes set forth.

3. The combination, with the spring-hammer E *e*, of the rod F, provided at its upper end with the hooked spring-plate *f*, and at its lower end with a loop through which passes the lever D, provided with a spring, *b*, extending from within the loop to the bottom of the covered slot *c c'* in cross-piece C, in which the lever D works, said lever being pivoted at its other end to an upright, A', of the frame, substantially as set forth.

4. The combination of the hammer E, piv-
oted in a vertical recess, with plate G, the
link *g*, and spring H, pivotally connected to
said link at its inner end, and secured at its
5 outer end, within guides *i i*, on the under
side of plate G, by an adjusting-screw and
nut, *h h'*, and the table B, recessed, as at B',

for the reception of said spring and its con-
nections, substantially as set forth.

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Witnesses:

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