No. 675,235. Patented May 28, 1901.

J. I. NEWBURG.

SAW SET AND GUMMER.

(Application filed Aug. 23, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

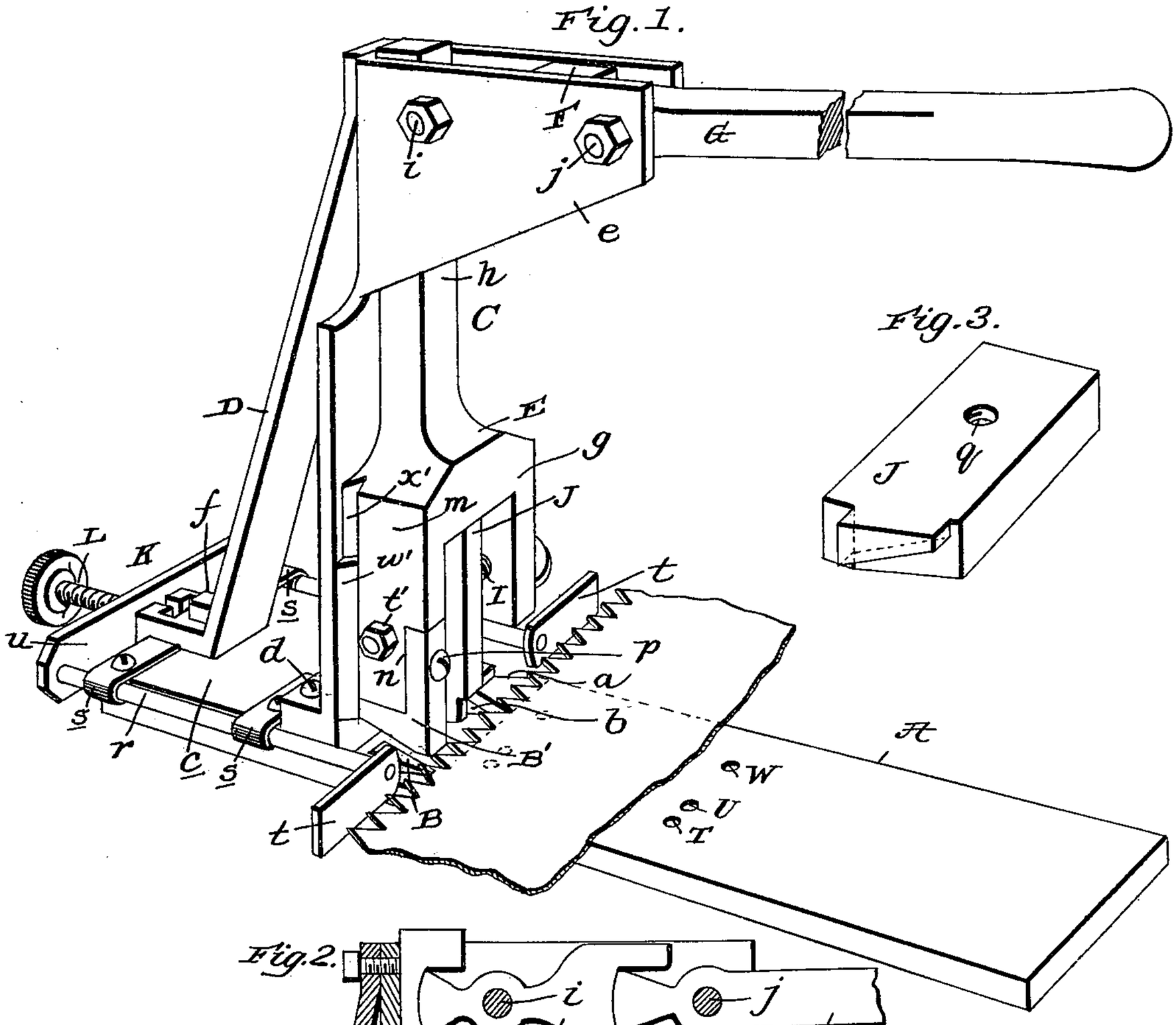


Fig. 3.

Fig. 2.

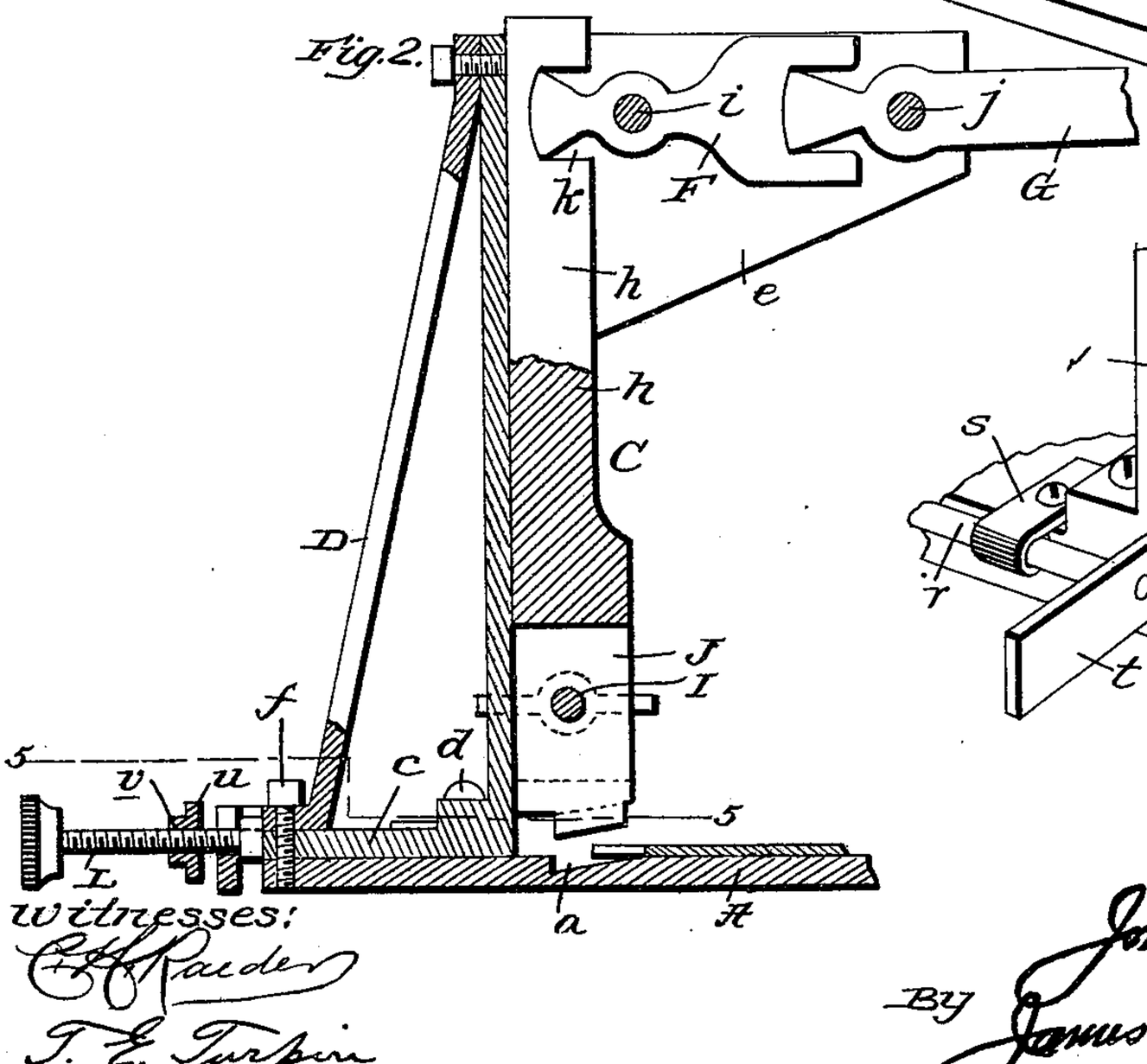
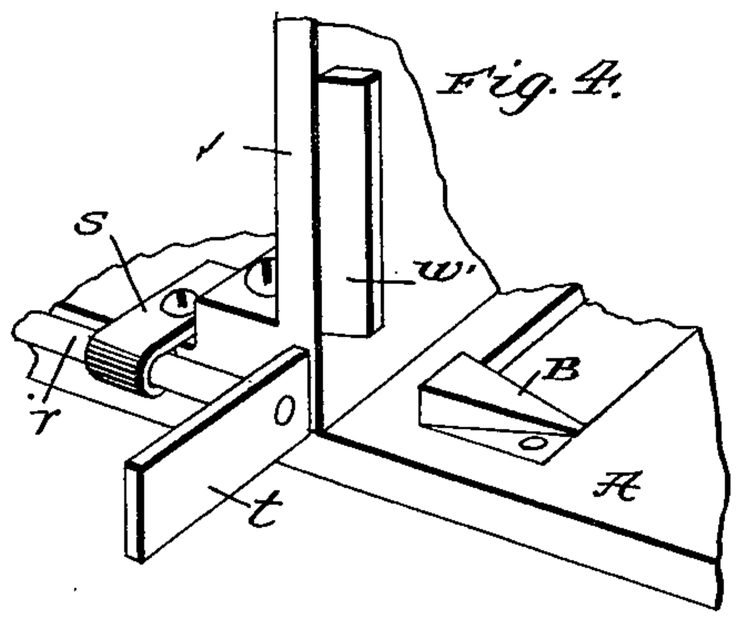


Fig. 4.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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Fig. 5.

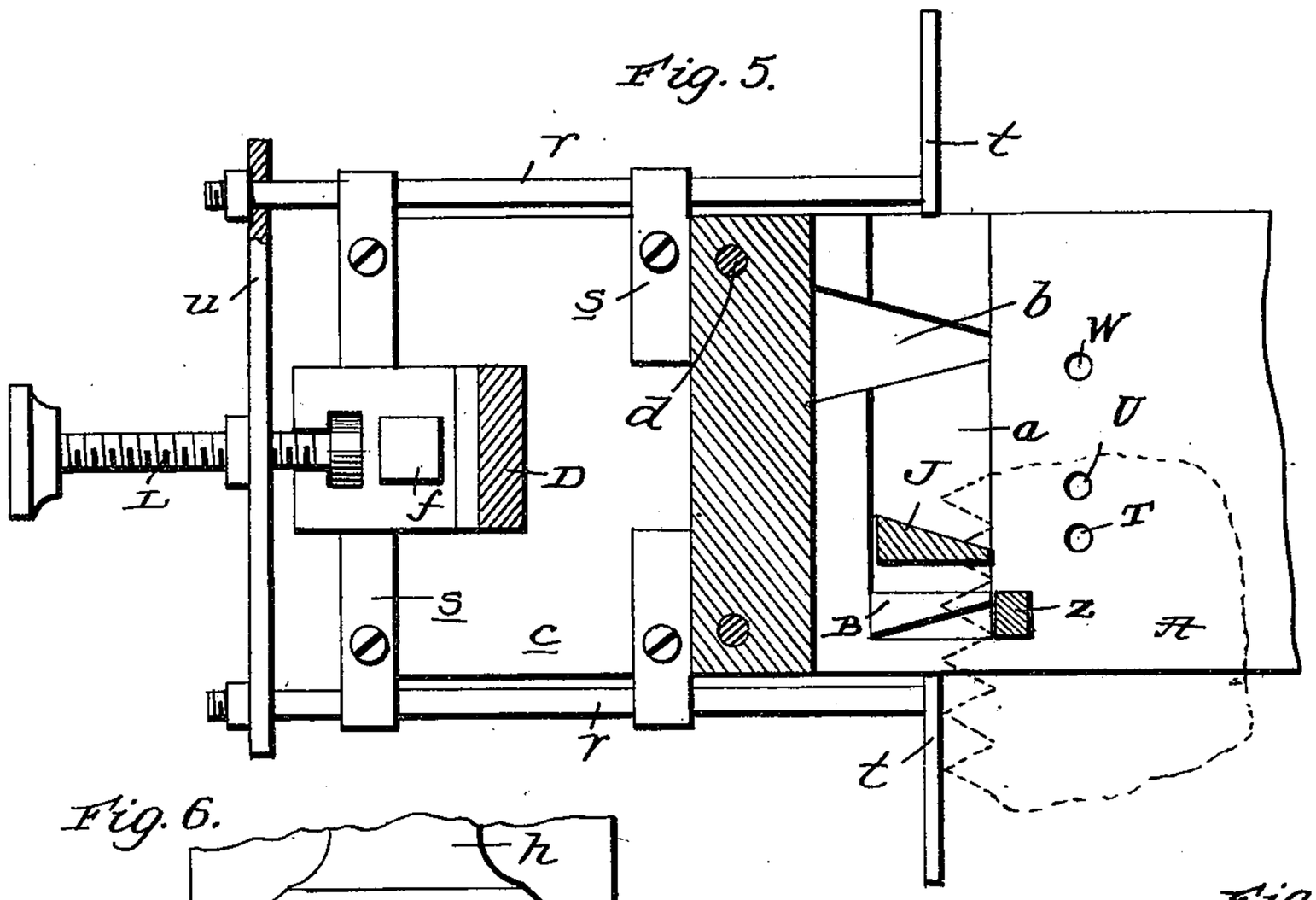

Fig. 6.

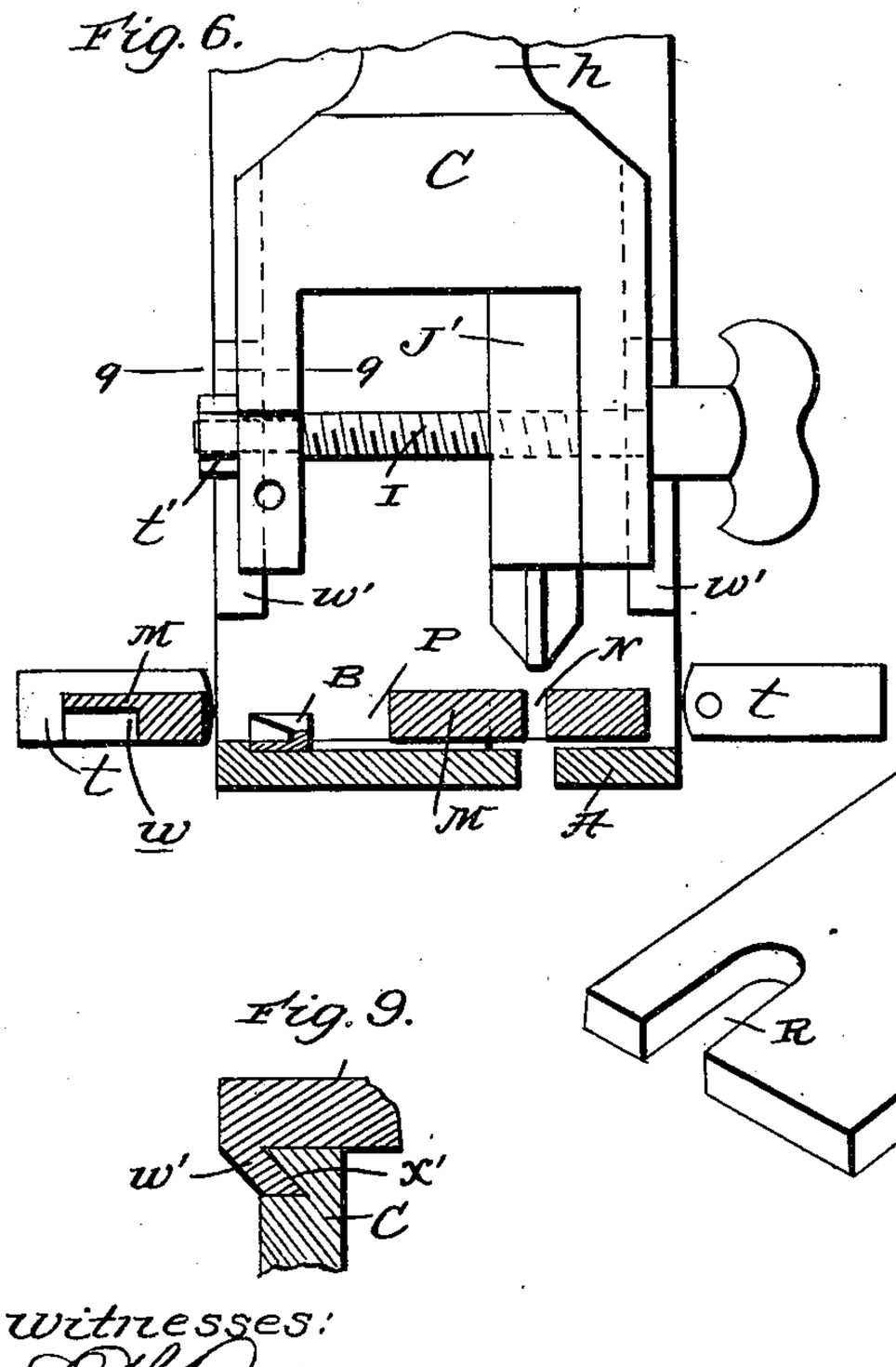

Fig. 7.

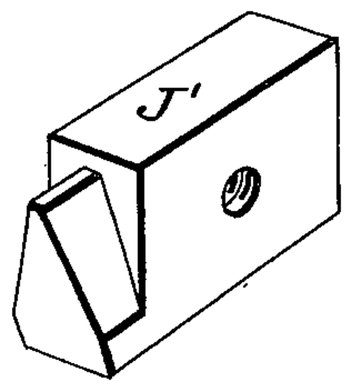

Fig. 8.

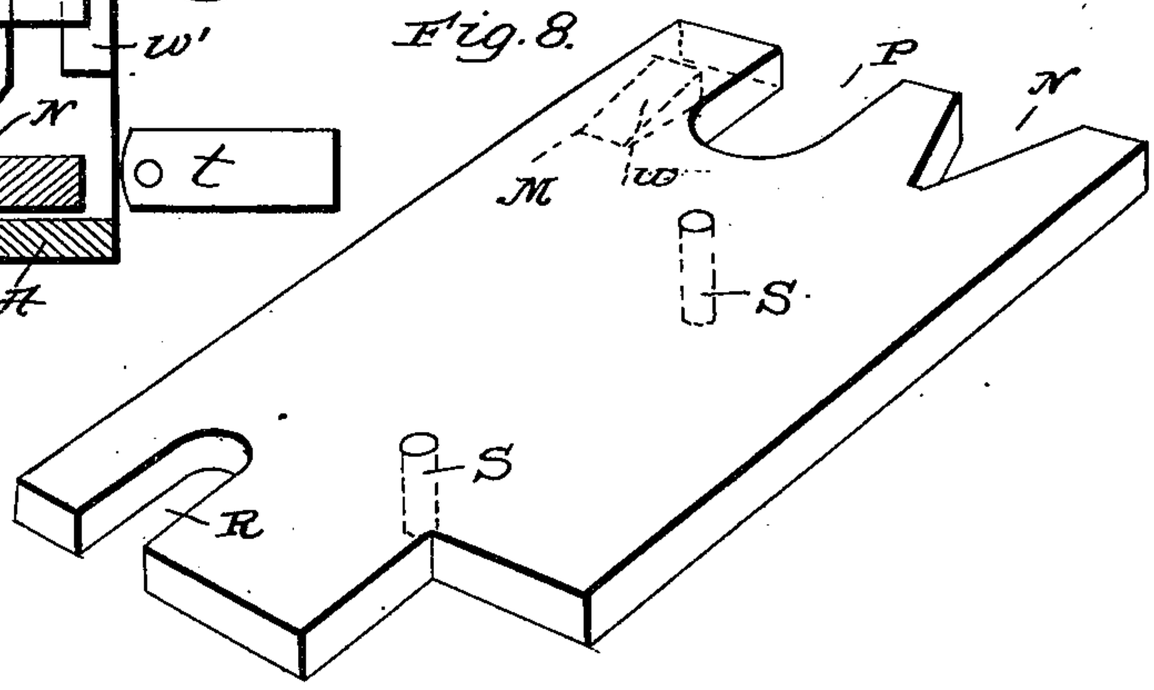

Fig. 9.

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UNITED STATES PATENT OFFICE.

JOHN I. NEWBURG, OF VICKSBURG, MISSISSIPPI.

SAW SET AND GUMMER.

SPECIFICATION forming part of Letters Patent No. 675,235, dated May 28, 1901.

Application filed August 23, 1900. Serial No. 27,824. (No model.)

To all whom it may concern:

Be it known that I, JOHN I. NEWBURG, a citizen of the United States, residing at Vicksburg, in the county of Warren and State of Mississippi, have invented new and useful Improvements in Saw Sets and Gummers, of which the following is a specification.

My invention relates to improvements in saw sets and gummers; and it has for its general object to provide a simple, inexpensive, and durable machine through the medium of which a person entirely ignorant of the art may truly and expeditiously set the teeth of a saw or cut away a saw-plate to deepen the interdental spaces, and this with but little effort on the part of such person.

The invention will be fully understood from the following description and claims, when taken in connection with the accompanying drawings, in which—

Figure 1 is a perspective view of my improved machine with the hand-lever broken, the said machine being shown as equipped with a saw-setting die and a saw being illustrated in proper position to have its teeth set. Fig. 2 is a detail longitudinal and vertical section of the same. Fig. 3 is a perspective view of the saw-setting die removed. Fig. 4 is a detail broken perspective illustrating the fixed setting-die and one of the gages, together with a portion of the base and the upright rising therefrom. Fig. 5 is a horizontal section taken on the broken line 5 5 of Fig. 2. Fig. 6 is a transverse section taken in a plane in front of the plunger and illustrating the machine as equipped with a gumming-plate and a gumming-die. Fig. 7 is a perspective view of the gumming-die removed. Fig. 8 is a similar view of the gumming-plate. Fig. 9 is a detail transverse section taken in the plane indicated by the broken line 9 9 of Fig. 6.

In the said drawings similar letters of reference designate corresponding parts in all of the several views, referring to which—

A is the base of my improved machine, the same being provided at an intermediate point of its length with an inclined plane *a* and also with an opening *b* in said inclined plane for a purpose presently set forth.

B is a fixed setting-die, which is preferably of the shape shown and is secured to or formed integral with the base A, adjacent to one end of the inclined plane *a* thereof, and C is an upright frame provided at its lower end with a base-flange *c*, superposed on the base A in rear of the inclined plane *a* and connected to the base A by screws *d* or other suitable means. The frame C is disposed transversely of the base A and is reduced in width at its upper end and provided with two vertically-disposed and forwardly-reaching flanges *e*. Said frame is preferably braced by a stay D, which is connected to the same adjacent to its upper end and has its lower end arranged on the base-flange *c* and connected to said base-flange and the base A by a screw *f*.

E is a vertically-movable plunger, which rests against the transverse upright frame C and has a yoke *g* at its lower end and a shank *h* extending upwardly therefrom, the said shank being disposed between the flanges *e* of frame C, so as to enable said flanges to hold the plunger against lateral movement.

F is a short lever fulcrumed on a transverse pin *i* between the flanges *e*, and G is a hand-lever fulcrumed on a pin *j* between said flanges *e*. The lever F has one of its ends shaped as shown and arranged in a recess *k* in the plunger-shank *h*, and it also has a recess *l* in its opposite end to receive the inner end of the hand-lever G, said inner end of lever G being shaped as shown for a purpose which will presently appear. It will be readily observed that when the outer arm of the lever G is depressed the plunger E will be forcibly moved downwardly and that the leverage and the power applied to the said plunger will be increased incident to the downward movement thereof, this being due to the fact that as the outer arm of lever G is depressed the inner arm thereof will swing in a direction away from the fulcrum-point of the short lever F. In this way the plunger E may be depressed with great power, as is necessary in gumming or deepening the interdental spaces of a saw-plate. When the outer arm of lever G is moved upwardly, the inner arm of lever F will be moved upwardly and will operate to raise the plunger E. It follows from the foregoing that an operator is enabled to actuate the plunger E both in setting the teeth of a saw and in deepening the interdental spaces of a

saw-plate with but a minimum amount of effort, which is a desideratum in this class of devices.

The side *m* of the yoke *g*, which rests in the same vertical plane as the fixed die B, is recessed, as indicated by *n*, to receive an angular die B′, the said die B′ being detachably connected to the side *m* of the yoke by a screw *p* or other suitable means for a purpose presently described and having its lower side inclined in conformity to the upper side of the fixed die B, as shown.

I is a screw disposed transversely and journaled and held against endwise movement in the yoke of plunger E, and J is an adjustable setting-die. This setting-die has a threaded aperture *q*, receiving the screw I, and also has its rear edge or side arranged against the upright transverse portion of the frame C, whereby it is held against turning when the screw is turned to adjust it toward or from the fixed setting-die B. It is not essential, however, to have the rear side of the adjustable die J arranged against the transverse portion of frame C, because the upper end of said die bears against the upper wall of the yoke, and it is thereby held against turning on the adjusting-screw. The said setting-die J is preferably of the shape shown in Fig. 3, and it is adjustably mounted in the manner described to permit of it being adjustably fixed at various distances from the fixed die B to suit saw-teeth of different sizes or those which are arranged at different distances apart.

K is a gage which is preferably bail-shaped and has arms *r* movable in guides *s* on the base-flange *c* and terminating at their forward ends in lateral wings *t*, provided with flat faces, as shown. The arms *r* of the bail-shaped gage are preferably journaled in the transverse portion *u* of the gage as well as in the guides *s* in order to permit of the wings *t* being swung upwardly against the upright frame C when the device is not in use, this being advantageous, because it lessens the space taken up by the device.

L is a screw swiveled in the lower end of the brace D and base-flange *c* and extending rearwardly therefrom and through a threaded aperture *v* in the transverse portion *u* of the gage.

In using my improved machine to set the teeth of a saw the gage is first adjusted according to the extent to which it is desired to set the teeth and the saw is then placed on the base A with the points of its teeth bearing against the faces of the gage-wings *t*. If desired, the gage may be adjusted subsequent to the placing of the saw on the base A; but in either case the bearing of the points of the teeth against the faces of the wings *t* will insure the uniform setting of all of the teeth. After the saw is placed on the base A and the gage K is properly adjusted the screw I is turned to carry the setting-die J to a position over the tooth next to that resting on the fixed die B. With this done the outer arm of the lever G is depressed and the plunger C is forced downwardly, when the two teeth mentioned will be properly set. When the plunger is depressed, the beveled portion of the die B′ clears the point of the saw-tooth; but the forward portion *z* of its lower end bears on the saw-blade just over the point of the fixed die B, and thereby effects the setting opposite to that accomplished by the adjustable die. It will also be observed that the lower end *z* of die B′ holds the saw as in a vise and prevents casual movement thereof incident to the setting operation and, further, that the said square end *z* is calculated to flatten teeth or restore them to a position in the same plane as the body of the saw-plate when said teeth have previously been set incorrectly. The operation described is repeated until all of the teeth of the saw are set, the saw being of course properly adjusted subsequent to the setting of each pair of teeth.

The adjustability of the die J in the yoke *g* of plunger E permits of the machine being adapted to set the teeth of saws of different sizes, and as the said die J operates in conjunction with the inclined plane *a* the range of adjustment is very great.

When it is desired to use my improved machine as a saw-gummer, the nut *t′* on the screw I is removed and said screw is drawn out of one of the sides of the yoke *g* and turned out of the setting-die J, after which the gumming-die J′ (see Fig. 7) is placed on the screw and said screw is replaced and secured in the side of the yoke from which it was withdrawn. The die B′ is also removed from the side *m* of the yoke *g*, and a gumming-plate M is placed on the base A, the said plate M having notches N, P, and R in its ends to assist in cutting out the interdental spaces of saws of different kinds and also having dowel-pins S, which latter are designed to be placed in sockets T, U, and W in the base A. When the dowels S are placed in the sockets T of the base, the notch N will be registered with the opening *b*, the gumming-die J′ illustrated being adapted to operate in conjunction with a notch N, such as shown. When the plate M is placed to register the notch N with the opening *b*, the recess W′ in the under side of the plate M will receive the fixed die B, so as to permit of said plate M resting flat on base A. When the dowel-pins S are placed in the sockets U of base A, the notch R of the plate will register with the opening *b*, while when the dowels S are placed in the sockets W the notch P will register with the opening *b*.

When it is desired to use either of the notches P R of plate M, it is obvious that gumming-dies corresponding in shape with the said notches P R will be employed.

In using the machine as a gummer the gage K is properly set and the saw-plate to be gummed is placed on the plate M with the points of its teeth bearing against the faces

of the gage-wings *t* and one of its interdental spaces resting coincident with the notch N in the plate M and the opening *b* in base A. The gumming-die J′ is also adjusted to a position coincident with notch N and opening *b* and is then depressed through the medium of the hand-lever G, when in conjunction with the walls of the notch N it will shear or cleanly cut the saw-plate, and thereby deepen and enlarge the interdental space thereof. This operation is repeated with reference to each of the interdental spaces of the saw-plate, the said plate being of course properly adjusted subsequent to each gumming operation.

It will be appreciated from the foregoing that my improved machine is highly efficient when used as a saw-set and also as a gummer and that it is highly advantageous, inasmuch as with its assistance a person entirely ignorant of the art of setting and gumming saws may correctly adjust a saw to set or gum the same and as correctly perform the setting and gumming operations. It will also be appreciated that all of the teeth of a saw will be set uniformly and that when the machine is used as a gummer all of the interdental spaces cut thereby will be of a uniform shape and size.

The flattening of the teeth of a saw by the square ends *z* of the die B′ in the manner before described takes place prior to the setting of the teeth by the die B′ in conjunction with die B and the die J in conjunction with the inclined plane *a*, this being due to the fact that the die B′ extends a considerable distance to the left of the point of die B, as shown in Fig. 1.

In the preferred embodiment of the invention the upright frame C is provided with guide-flanges *w′*, which take into grooves *x′* in the plunger C (see Figs. 1 and 9) and are calculated to effectually hold the said plunger against casual lateral movement incident to its rectilinear movements.

I have entered into a detail description of the construction and relative arrangement of the parts embraced in this the preferred embodiment of my invention. I do not desire, however, to be understood as confining myself to such specific construction and arrangement of parts, as such changes or modifications may be made in practice as fairly fall within the scope of my claims.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a machine for the purpose described, the combination of a base, a frame rising from the base, and having a transverse portion and portions reaching forwardly from the same, a vertically-movable plunger having a yoke at its lower end, a screw bearing in said yoke, a die mounted on the screw and held against turning whereby when the screw is turned the die is adjusted in the direction of the width of the yoke, a lever fulcrumed in the frame and engaging the plunger, and a hand-lever also fulcrumed in the frame and engaging the first-named lever, substantially as specified.

2. In a machine for the purpose described, the combination of a base, a plunger carrying a die, and a gage adjustable with respect to the plunger and die, and having wings at its forward end; said wings being disposed at opposite sides of the plunger and pivotally mounted to permit of them being swung laterally inward when not in use.

3. In a machine for the purpose described, the combination of a base, a frame rising from the base, a vertically-movable plunger, a transverse screw bearing in the plunger, a die mounted and adjustable on the screw and held against turning, a gage adjustable with respect to the plunger and die, a lever fulcrumed at an intermediate point of its length, and having one of its ends arranged in a recess of the plunger and having a recess in its opposite end, and a second lever fulcrumed at an intermediate point of its length, and having one of its ends arranged in the recess of the first-named lever.

4. In a machine for the purpose described, the combination of a base, a plunger, a die carried by the plunger, and a gage comprising side portions, a transverse portion, and swinging portions carried by the side portions and provided with flat faces, and a screw for adjusting the said gage.

5. In a saw-setting machine, the combination of a base having an inclined plane and a setting-die thereon, a plunger having a portion arranged to operate in conjunction with the setting-die of the base, and a setting-die carried by the plunger and adapted to operate in conjunction with the inclined plane of the base, substantially as specified.

6. In a saw-setting machine, the combination of a base having an inclined plane, and a fixed setting-die, a plunger having a portion provided with an inclined surface and a square surface, and a die adjustable in the plunger and adapted to operate in conjunction with the inclined plane of the base, substantially as specified.

7. In a saw-setting machine, the combination of a base having an inclined plane, a fixed setting-die, a plunger having a portion arranged to operate in conjunction with the fixed setting-die and the base, a setting-die adjustable in the plunger and adapted to operate in conjunction with the inclined plane, and an adjustable gage.

8. A combined saw setting and gumming machine, comprising a base having an inclined plane and a fixed setting-die, a gage, a plunger having a removable portion adapted to operate in conjunction with the fixed setting-die and the base, a screw arranged in the plunger, setting and gumming die adapted to be interchangeably mounted on the screw and adjusted through the medium of the same, a gumming-plate, and suitable means for detachably securing the same on the base.

9. A combined saw setting and gumming machine, comprising a base having a fixed setting-die and an inclined plane, and also having sockets, a gage, a plunger having a yoke one of the sides of which is recessed, a setting-die detachably secured in the recess of the yoke and having an inclined portion and a square portion at its under side, a screw bearing in the yoke of the plunger, saw setting and gumming dies adapted to be interchangeably employed on the screw and adjusted through the medium of the same, and a gumming-plate recessed to accommodate the fixed setting-die and having an opening the walls of which are adapted to operate in conjunction with the gumming-die, and also having dowel-pins adapted to rest in the sockets of the base, substantially as specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN I. NEWBURG.

Witnesses:
THOMAS E. TURPIN,
CHARLES H. RAEDER.