No. 650,045. Patented May 22, 1900.

S. HALTOM.

AUTOMATIC FEED FOR SAW SETTING MECHANISM.

(Application filed Aug. 18, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

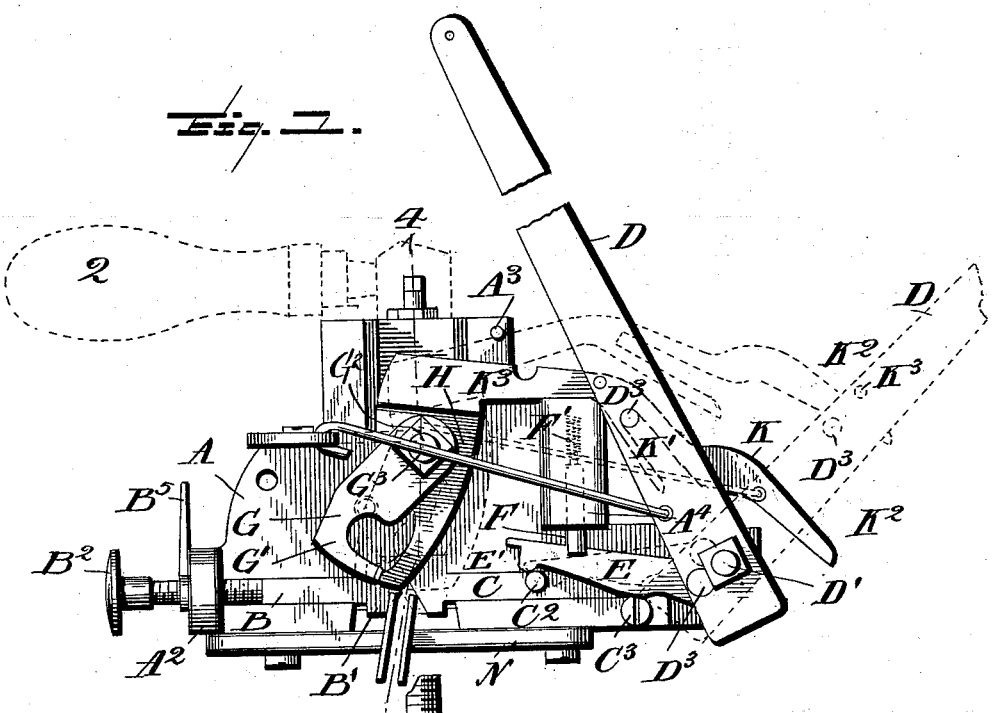

Fig. 2.

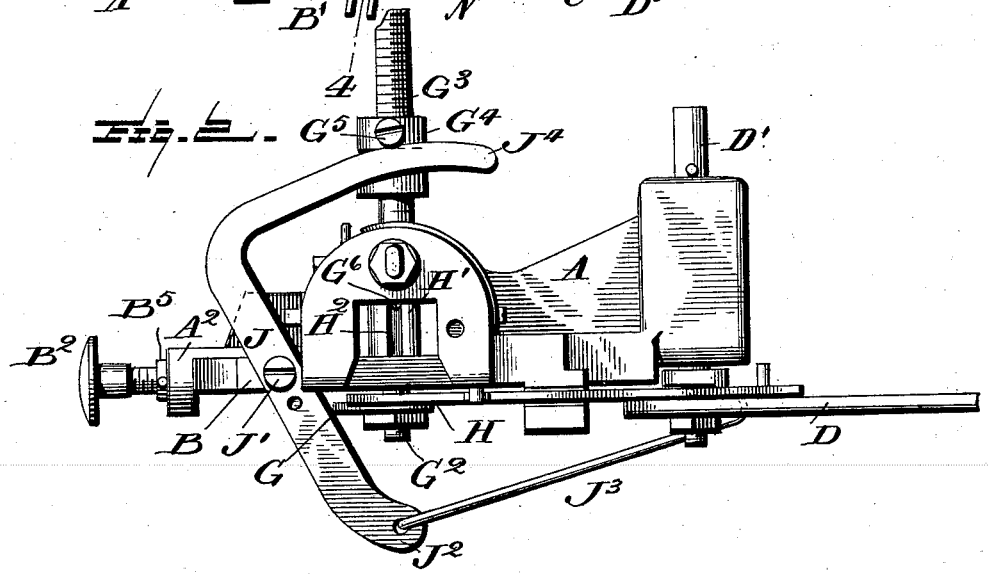

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Fig. 3.

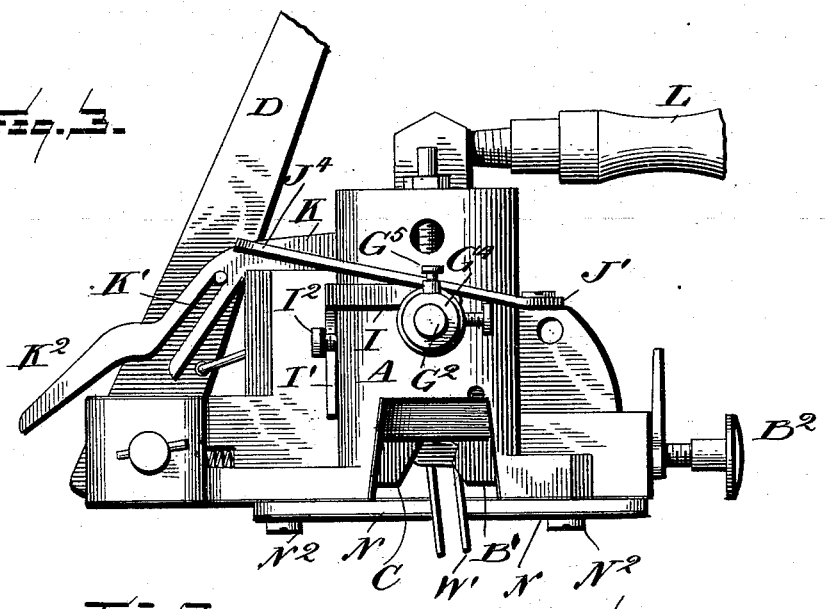


Fig. 7.

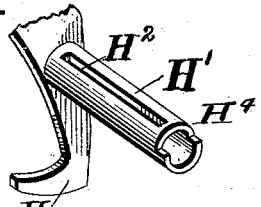


Fig. 4.

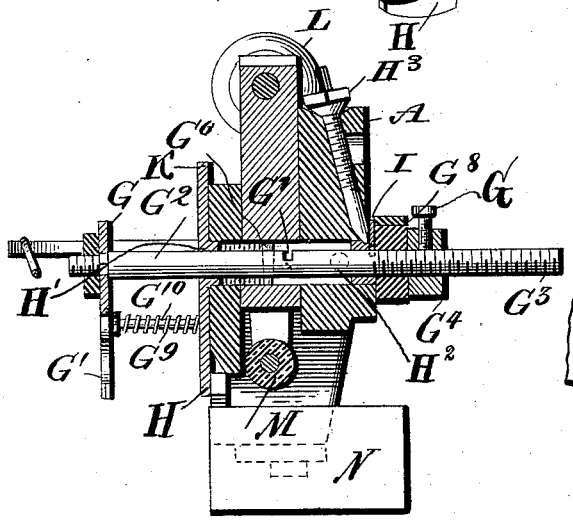


Fig. 5.

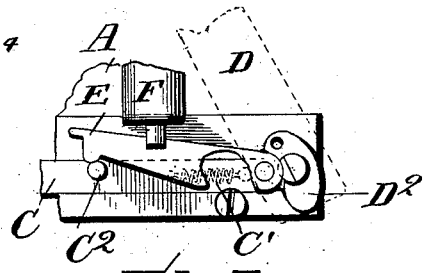
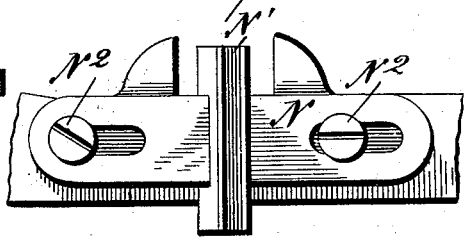


Fig. 6.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC FEED FOR SAW-SETTING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 650,045, dated May 22, 1900.

Application filed August 18, 1899. Serial No. 727,670. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL HALTOM, a citizen of the United States, residing at Henderson, in the county of Rusk, State of Texas, have invented certain new and useful Improvements in Automatic Feed for Saw-Setting Mechanism, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an automatic feed for a saw-setting device, and is particularly adapted to advance the saw into alinement with a setting-punch by a reciprocatory movement of a part of the mechanism.

The invention has for one object to improve and simplify the construction of feeding mechanism and embodies the use of an oscillatory and reciprocatory dog in connection with an oscillatory fixed dog.

A further object of the invention is to provide suitable locking devices to hold the parts and the saw in their adjusted position.

The invention also has for an object to improve the structure of saw-setting mechanism and its operating-lever, whereby the same is adapted for coöperation with the feeding mechanism.

Other objects and advantages of the invention will hereinafter appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 represents an elevation of the device. Fig. 2 is a plan thereof. Fig. 3 is an elevation of the rear face of the device. Fig. 4 is a vertical section on the line 4 4 of Fig. 1. Fig. 5 is a detail elevation of the operating-latch for the setting-punch. Fig. 6 is a detail plan of the guiding-plates, and Fig. 7 is a detail of the dog-carrying sleeve.

Like letters of reference indicate like parts throughout the several figures of the drawings.

The letter A represents the framework, which may be of any suitable configuration or construction adapted to support the parts carried thereby. Within a groove in this frame an anvil B is supported, having an operating-face B′ and adapted to be adjusted by means of a set-screw B^2, journaled in a boxing A^2 and secured in position by a locking wrench-nut B^5. Operating in connection with this anvil and opposite thereto is a setting-punch C, located in a suitable groove in the frame and normally held out of contact with the anvil B by means of a spring C′, located in a recess of the frame behind the punch and connected to said punch and frame, as shown by dotted lines in Fig. 5. For the purpose of operating the punch and other parts of the device a suitable operating-lever D has been provided, which is pivoted to the frame, as at D′, and provided upon its face next the setting-punch with a cam D^2 for imparting a preliminary movement to the punch. This movement advances the stud C^2 to such a position that it will be engaged by the latch E, by which positive movement will be imparted to the punch. The latch E is pivotally mounted at D^3 upon the lever D and eccentric to the pivotal point D′ of said lever. The latch E is normally forced toward the stud C^2 by means of a pressure-pin F, seated in a casing A^4, carried by the frame and held under tension by means of a spring F′. The free end of the latch is provided with a seat E′, adapted to rest upon the stud C^2. When the punch is withdrawn from the anvil, the operation of the lever D causes a face of the latch E to ride upon a pin C^3, as shown in Fig. 1, thus tripping or raising the latch and the stud C^2 to permit the spring to retract the punch. By reference to Fig. 1 it will be seen that the movement of the lever D toward the right and into the position shown by dotted lines will cause the latch E to connect with the stud C^2, and thus positively drive the punch in the return movement toward the left until the latch is raised from the stud by the pin C^3, at which time the punch returns to the position shown in Fig. 1. The structure of anvil, setting-punch, and operating-latch is illustrated in this application, but is claimed in a companion pending application, which shows substantially the form of parts hereinbefore described.

The particular automatic feeding mechanism set forth in this application comprises the dog G, mounted to reciprocate and to oscillate, and a fixed dog H, adapted only for oscillation across and between the teeth of a

saw. The dog G is provided with a hooked end G′ to engage the saw-teeth and is fixed upon a shaft G^2, which shaft at its opposite end may be threaded, as at G^3, for the purpose of securing and adjusting thereon set-collars G^4. This threading may, however, be omitted and the collars secured by means of set-screws G^5. The dog H is secured to one end of a sleeve H′, which is mounted to oscillate in the frame A above the teeth-setting device and suitably slotted, as at H^2, to permit the reciprocation therein of a pin G^6, carried by the shaft G^2. This shaft is also provided with a locking-notch G^7, adapted to be engaged by a gravity or spring catch I, secured to the frame A and guided by means of an angle-arm I′, operating behind a flanged pin I^2. For the purpose of retaining the sleeve H′ against endwise or longitudinal movement a holding-screw H^3 is passed through the frame and engages said sleeve. A spacing-collar G^8 may be attached behind the set-collar G^4 when found desirable, and the dog G will be returned to its initial position by means of a spring G^9, suitably mounted upon a rod G^{10}, frictionally bearing against the dog G and adapted to reciprocate in the frame for the purpose of compressing and guiding said spring. As a desirable method of operating this dog mechanism I have provided an angle-lever J, pivoted to the frame at J′ and having one end J^2 connected to the operating-lever D by means of a link J^3 and the opposite end J^4 bearing against the set-collar G^4, carried by the shaft G^2 of the reciprocating dog G. This mechanism will in the movement of the lever toward the right reciprocate the dog G without disturbing the position of the dog H. This dog is oscillated, however, by means of a guide lever or finger K, secured to the pivotal end of the dog H and provided with a slot K′ and shank K^2, in which slot a pin D^3, carried by the lever D, passes, and thereby produces a downward movement of the finger and an oscillation of the dog H. In the movement of the lever toward the right the upward swing of this finger is limited by means of a pin A^3, carried upon the frame, engaging a recess K^3 upon the finger K. The shank K^2 rests upon the pin D^3 in any position of the lever D, and thus prevents the parts from being displaced. When the dog H and its sleeve H′ are oscillated by the lever K, secured thereto, the pin G^6 from the shaft G^2 of the dog G is likewise oscillated, thus causing the dogs to move in unison.

For the purpose of raising and releasing the holding-catch I one end of the sleeve H′ has been provided with shoulders H^4, which rest beneath the catch I, and in their oscillation lift the catch after the dog H has obtained a hold upon one of the saw-teeth.

The operation of the setting-punch will be clearly understood from the foregoing description, and the movement of the lever D toward the right lifts the finger K, thus oscillating the holding-dog H out of contact with the saw-teeth and bringing the feed-dog G into contact with a subsequent tooth. The movement of this lever at the same time operates the crank-arm J to produce a reciprocation of the dog G and its shaft G^2, thus bringing the locking-notch in said shaft under the gravity-catch I, which then drops therein and holds the parts in position through the setting operation. The return movement of the lever D toward the left again engages the dog H with the saw-teeth, and the shoulders upon the sleeve from this dog raise the catch I, permitting the spring behind the dog G to return said dog to its initial position, thus alternately engaging each dog with the teeth of a saw.

It will be obvious that the device may be supported in any suitable manner and, if desired, by means of a handle L, suitably secured to the frame A, while a gage-roller M may be supported above the setting-punch to limit the extent to which a saw may be inserted, and this insertion may also be guided by means of obliquely-disposed guide-plates N, carried upon adjustable plates N′, which are secured in position by means of screws N^2. It will also be obvious that changes may be made in the details of construction and configuration and that the specific form of feeding mechanism herein described may be used in connection with other forms of setting devices than that herein illustrated.

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

1. In a saw-setting machine, the combination of devices for setting the teeth, of a holding-dog mounted for oscillation, an independently-movable feed-dog mounted for oscillation and reciprocation, and means for actuating said dogs; substantially as specified.

2. In a saw-setting machine, the combination of devices for setting the teeth of a saw, a holding-dog mounted for oscillation, an independently-movable feed-dog mounted for oscillation and reciprocation, and an angle-lever engaging the shaft of said reciprocatory dog for actuating the same; substantially as specified.

3. In a saw-setting machine, the combination of devices for setting the teeth of a saw, a holding-dog mounted for oscillation, an independently-movable feed-dog mounted for oscillation and reciprocation, an angle-lever engaging the shaft of said reciprocatory dog, and means connecting said dogs to produce a simultaneous oscillation thereof; substantially as specified.

4. A feeding device for a saw-setting mechanism comprising a dog mounted for oscillation, an independently-movable dog mounted for oscillation and reciprocation, an angle-lever engaging the shaft of said reciprocatory dog, means connecting said dogs to produce a simultaneous oscillation thereof, and a catch for retaining said shaft in one position; substantially as specified.

5. A feeding device for a saw-setting mechanism comprising a dog mounted for oscillation, an independently-movable dog mounted for oscillation and reciprocation, an angle-lever engaging the shaft of said reciprocatory dog, means connecting said dogs to produce a simultaneous oscillation thereof, a catch for retaining said shaft in any position, and means carried by the oscillating parts for releasing said catch; substantially as specified.

6. A feeding device for a saw-setting mechanism comprising a dog mounted for oscillation, an independently-movable dog mounted for oscillation and reciprocation, an angle-lever engaging the shaft of said reciprocatory dog, means connecting said dogs to produce a simultaneous oscillation thereof, a catch for retaining said shaft in one position, means carried by the oscillating parts for releasing said catch, a slotted guide-finger extending from the oscillatory dog and engaging a pin upon an operating-lever; substantially as specified.

7. In an automatic feed for saw-setting mechanism, the combination with an anvil, a setting-punch provided with a stud, an operating-lever, a latch pivoted to said operating-lever and adapted to engage said stud, means beneath said latch to raise the same, a feeding mechanism operatively connected with said lever, an oscillatory dog actuated by said lever, and a reciprocatory dog carried by said feeding mechanism; substantially as specified.

8. A feeding device for saw-setting mechanism comprising an oscillatory dog mounted for reciprocation, an oscillatory dog carried by a slotted sleeve surrounding the shaft of the first-mentioned dog and held against oscillation, a pin extending through said slot, a set-collar carried on said shaft, an angle-lever pivoted to the frame and bearing against said set-collar, and means for operating said lever; substantially as specified.

9. A feed device for saw-setting mechanism comprising an oscillatory dog mounted for reciprocation, an oscillatory dog carried by a slotted sleeve surrounding the shaft of the first-mentioned dog and held against oscillation, a pin extending through said slot, a set-collar carried on said shaft, an angle-lever pivoted to the frame and bearing against said set-collar, means for operating said lever, a gravity-latch adapted to engage a socket in said shaft, a shoulder carried by said sleeve and adapted to engage and elevate said catch in the oscillation of the sleeve, and means for oscillating said dogs preliminarily to the reciprocation of one thereof; substantially as specified.

10. A feed device for saw-setting mechanism comprising an oscillatory dog mounted for reciprocation, an oscillatory dog carried by a slotted sleeve surrounding the shaft of the first-mentioned dog and held against oscillation, a pin extending through said slot, a set-collar carried on said shaft, an angle-lever pivoted to the frame and bearing against said set-collar, means for operating said lever, a shoulder carried by said sleeve and adapted to engage and elevate said catch in the oscillation of the sleeve, means for oscillating said dogs preliminarily to the reciprocation of one thereof, a returning-spring for said reciprocatory dogs, and a device to retain said sleeve against reciprocation; substantially as specified.

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

SAMUEL HALTOM.

Witnesses:
R. F. BROWN,
JOHN R. ARNOLD.