No. 648,405. Patented May 1, 1900.

S. HALTOM.

SAW SETTING AND FEEDING DEVICE.

(Application filed Aug. 18, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

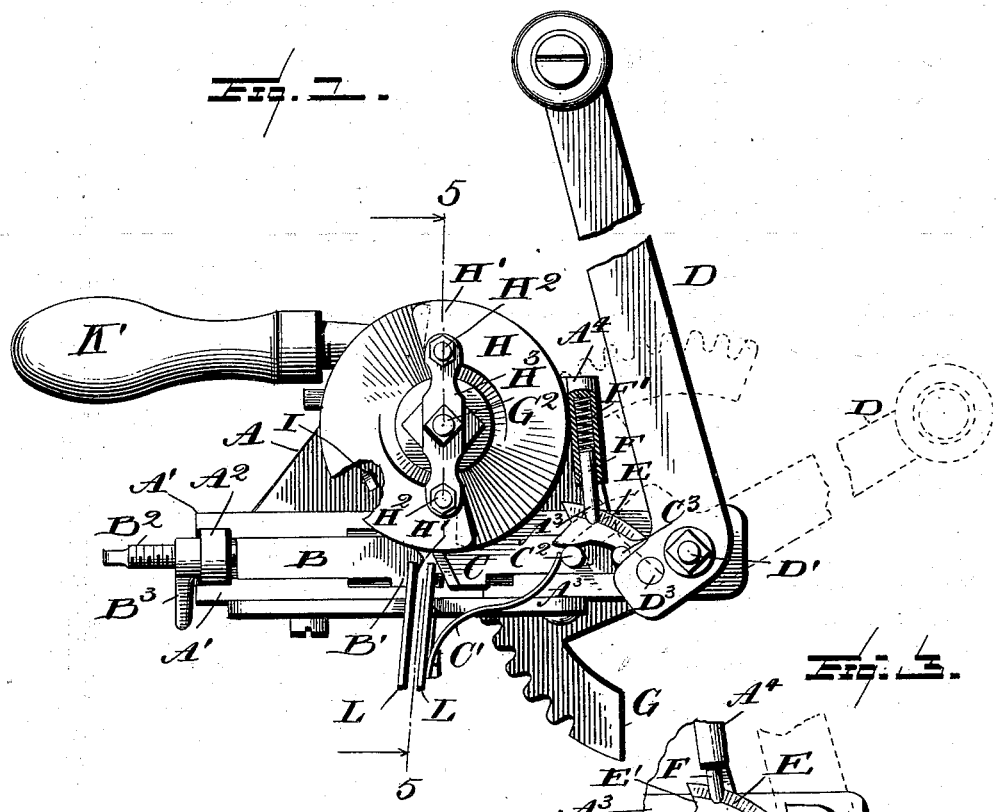


Fig. 4.

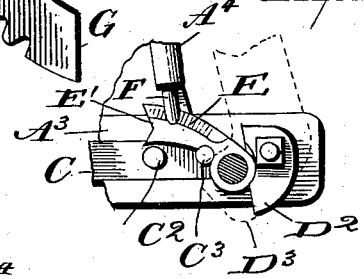
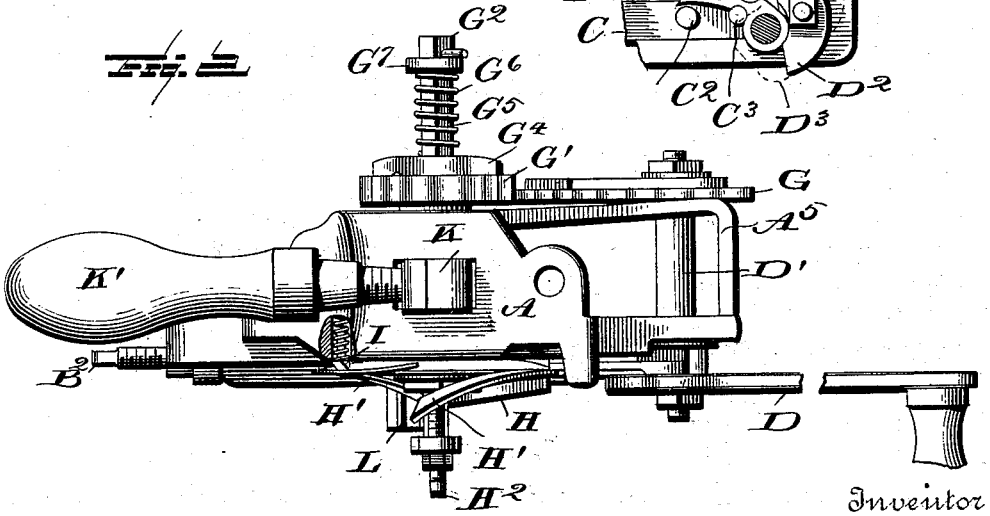


Fig. 2.



Witnesses:
L. C. Hills.
Alfred T. Sage

Inventor:
Samuel Haltom,
By E. B. Stocking
Attorney

No. 648,405. Patented May 1, 1900.

S. HALTOM.

SAW SETTING AND FEEDING DEVICE.

(Application filed Aug. 18, 1899.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 4.

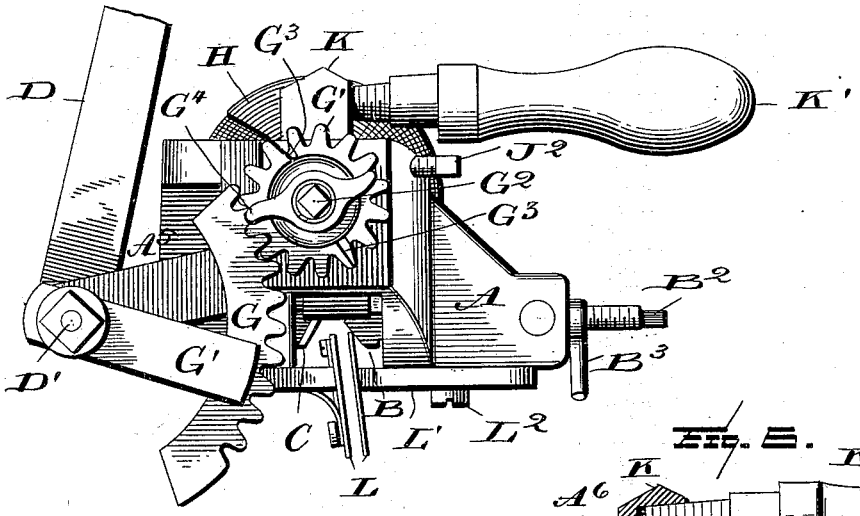


Fig. 5.

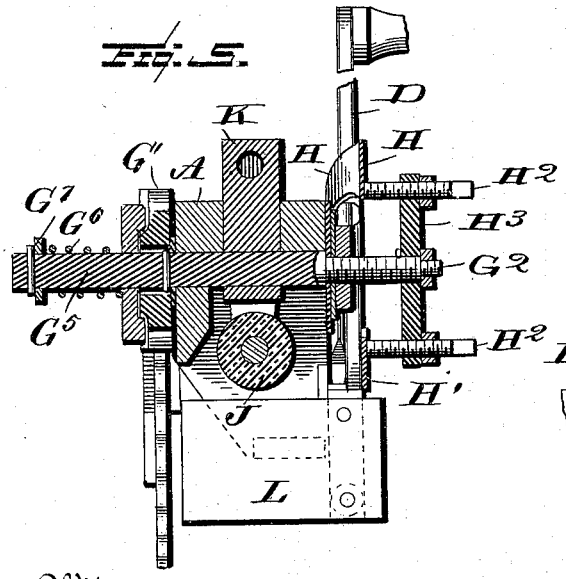


Fig. 3.

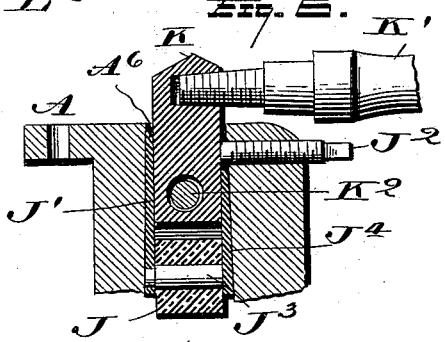
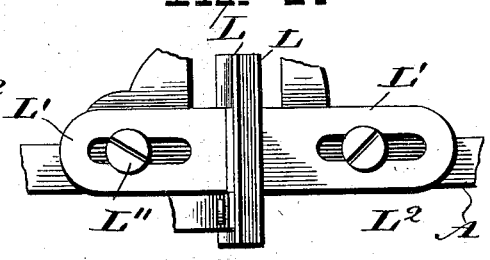


Fig. 7.



Witnesses:
L. C. Hills.
Alfred I. Ange.

Inventor:
Samuel Haltom,
By E. B. Stocking
Attorney

UNITED STATES PATENT OFFICE.

SAMUEL HALTOM, OF HENDERSON, TEXAS, ASSIGNOR OF ONE-HALF TO ABRAHAM G. NADEL, OF SAME PLACE.

SAW SETTING AND FEEDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 648,405, dated May 1, 1900.

Application filed August 18, 1899. Serial No. 727,669. (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 Saw Setting and Feeding Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to saw-setting devices, and more particularly to a construction adapted to automatically feed the saw so as to present a new surface for the action of the setting-punch after each operation of said punch.

The invention has for one object to provide a simple and improved construction of setting device whereby the punch will be actuated upon and positively driven by a latch carried upon the operating-lever.

A further object of the invention is to improve the structure of feeding devices which are driven by said lever in its return movement after the setting operation.

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 invention. Fig. 2 is a plan. Fig. 3 is a detail of the latch for the setting-punch. Fig. 4 is an elevation of the opposite side of the machine from that shown in Fig. 1. Fig. 5 is a vertical section on the line 5 5 of Fig. 1. Fig. 6 is a detail vertical section taken at a right angle to the section shown in Fig. 5, and Fig. 7 is a detail plan of the guiding-plates.

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

The letter A represents a framework, which may be of any suitable configuration or construction adapted to support the parts carried thereby. Upon this framework and within guides A′ an anvil B is supported, having an operating-face B′, and said anvil is capable of adjustment by means of the set-screw B^2, journaled in the boxing A^2, and the locking wrench-nut B^3. Operating in connection with this anvil and opposite thereto is a setting-punch C, guided by the flanges A^3 upon the frame A and normally held out of contact with the anvil B by means of a spring C′, bearing upon a pin or stud C^2. For the purpose of operating this punch a suitable lever D is pivoted to the frame, as at D′, and carries upon its face next the punch C a cam D^2, which imparts a preliminary movement to the punch and brings the stud C^2 thereon into position for engagement with the latch E, by which the positive movement is imparted to the punch. The latch E is pivotally mounted upon an angle-arm D^3 of the lever D and 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 actuated by the spring F′. The face of the latch is provided with a seat E′, adapted to rest upon the stud C^2, and the latch is held away from the stud C^2 when the lever is raised by means of a pin C^3, which engages a face of the latch, as shown in Fig. 3. It will be seen that when the lever D is in the position shown by dotted lines in Fig. 1 the latch E will come into contact with the stud C^2, and the movement of the lever to a vertical position positively actuates the punch through the action of the angle-arm D^3 and the latch E. After this angle-arm passes beyond the plane of the punch the latch is thrown out of engagement therewith and the spring C′ returns the punch to the position shown in Fig. 1.

For the purpose of simultaneously actuating the feeding mechanism in the movement of the lever D the pivotal shaft D′ of this lever is provided at its opposite end with a segmental gear G, the same being supported by an extension A^5 from the frame A. This gear meshes with a pinion G′, freely rotatable upon the shaft G^2, which carries at its opposite ends the feed-wheel H. This pinion is provided with suitable sockets G^3, coöperating with a pawl G^4, which is mounted upon a squared portion G^5 of the shaft G^2 and held in contact with the gear G′ by means of the spring G^6 bearing against said pawl and a collar G^7. It will thus be seen that the movement of the pinion in one direction will rotate the shaft and feed-wheel through the medium of the pawl secured to said shaft,

while the opposite rotation of the pinion will not effect such rotation.

The feed-wheel H, as shown, is composed of spirally-disposed wings or blades H′, mounted upon the shaft G^2 and adapted to be adjusted by means of set-screws H^2, mounted in the opposite ends of a cross-bar H^3 to determine the curvature of the spiral blades H′. In the operation of the feeding device one of these blades engages the saw at each movement of the operating-lever. For the purpose of preventing a backward rotation of the feed-wheel from any cause a spring-catch I is mounted in the frame and adapted to be forced inward during the movement of the wheel and to spring outward into position as the end H′ of one blade passes over the same.

For the purpose of determining the degree or extent to which the saw may be introduced into the device a gage-wheel J has been provided, which may be of any suitable material and is mounted in a recess A^6 of the frame A. This recess is also adapted to receive the handle-block K, into which a handle K′ may be secured, said block being loosely mounted upon a cross-pin K^2 to permit a slight movement of the same for the purpose of clamping the block K into contact with the plate J′, carried by the gage-roller J. This clamping is effected by means of a set-screw J^2, which by bearing against the block K holds the plate J′, which supports the journal J^3 of the roller J, into contact with the wall of the recess A^6, and the roller may thus be adjusted. A suitable filler-block J^4 may be used to prevent any lateral movement of the roller J. For the purpose of guiding the operator in the introduction of the saw parallel obliquely-disposed plates L have been provided and disposed at an angle to the setting-punch. These guide-plates are secured in position by slotted arms L′ and set-screws L^2, passed through the same and into the frame A, thus permitting the adjustment of the guide-plates for various widths of saws.

In operation the toothed blade of the saw to be set is introduced between the anvil B and setting-punch C, with the parts in the position shown in Fig. 1. The movement of the lever D away from the operator causes the feed-wheel to rotate and advances the saw to present the proper tooth upon the anvil, and when the lever D has reached the position shown by dotted lines in Fig. 1 the punch has been moved slightly inward by the cam-face D^2 of the lever, and the latch is in position to engage the stud C^2 upon the punch. The return movement of the lever brings the angle-arm D^3 thereof and the latch into the same plane, and thus positively forces the punch into contact with the anvil. During this return movement of the lever no motion whatever is transmitted to the feed-wheel. It will be seen that by an adjustment of the anvil different thicknesses in the material to be operated on can be compensated for, and likewise by a proper adjustment of the feed-wheel the degree of feed may be regulated and the blade set to engage any size of teeth.

It will be obvious that changes may be made in the details of construction and configuration without departing from the spirit of the invention as defined by the appended claims or that, if found desirable, the setting or feeding device may be used independently of each other, although they are primarily adapted for simultaneous and coöperative action.

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

1. In a saw-setting device, an anvil, a sliding punch, a pivoted operating-lever, and a latch pivoted to said lever and adapted to engage and positively actuate said punch toward said anvil; substantially as specified.

2. In a saw-setting device, an anvil, a sliding punch, a pivoted operating-lever, a latch pivoted to said lever and adapted to engage and positively actuate said punch toward said anvil, and a pressure-finger bearing upon said latch; substantially as specified.

3. In a saw-setting device, an anvil, a sliding punch, a pivoted operating-lever, a latch pivoted to said lever and adapted to engage and positively actuate said punch toward said anvil, a pressure-finger bearing upon said latch, and a spring to restore said punch to its initial position; substantially as specified.

4. In a saw-setting machine, an anvil, a sliding punch, a pivoted operating-lever, a latch pivoted to said lever and adapted to engage said punch, a pressure-finger bearing upon said latch, a spring to restore said punch to its initial position, and a cam upon said lever to impart a preliminary movement to said punch; substantially as specified.

5. In a saw-setting device, an anvil, a sliding punch, a pivoted operating-lever, a latch pivoted to said lever and adapted to engage said punch, a pressure-finger bearing upon said latch, a spring to restore said punch to its initial position, a cam upon said lever to impart a preliminary movement to said punch, and a set-screw for adjusting said anvil; substantially as specified.

6. In a saw-setting device, an anvil, a sliding punch, a pivoted operating-lever, a latch pivoted to said lever and adapted to engage said punch, a pressure-finger bearing upon said latch, a spring to restore said punch to its initial position, a cam upon said lever to impart a preliminary movement to said punch, a set-screw for adjusting said anvil, a gear operated by said lever, a feeding device carried by a rotating shaft, and a pinion on said shaft meshing with said gear; substantially as specified.

7. In a saw-setting device, an anvil, a sliding punch, a pivoted operating-lever, a latch pivoted to said lever and adapted to engage said punch, a pressure-finger bearing upon said latch, a spring to restore said punch to its initial position, a cam upon said lever to impart a preliminary movement to said punch,

a set-screw for adjusting said anvil, a gear operated by said lever, a feeding device carried by a rotating shaft, a pinion on said shaft meshing with said gear, a pawl engaging sockets on said pinion, and means for permitting the rotation of the pinion without affecting the shaft of the feeding device; substantially as specified.

8. In a saw setting and feeding device, the combination with a setting mechanism, of a feeding-blade carried by a rotatable shaft, a driving-pinion loosely mounted on said shaft and having a socket therein, a pawl mounted to rotate with said shaft and engaging said socket, a spring for holding said pawl in contact with said pinion, and means for driving said pinion; substantially as specified.

9. In a saw setting and feeding device, the combination with a setting mechanism, of a feeding-blade carried by a rotatable shaft, a driving-pinion loosely mounted on said shaft and having a socket therein, a pawl mounted to rotate with said shaft and engaging said socket, a spring for holding said pawl in contact with said pinion, means for driving said pinion, and an adjusting-screw bearing against a portion of said blade; substantially as specified.

10. In a saw setting and feeding device, the combination with a setting mechanism, of a feeding-blade carried by a rotatable shaft, a driving-pinion loosely mounted on said shaft and having a socket therein, a pawl mounted to rotate with said shaft and engaging said socket, a spring for holding said pawl in contact with said pinion, an adjusting-screw bearing against a portion of said blade, and a catch adapted to engage said blade to prevent its movement in one direction; substantially as specified.

11. In a saw-setting device, the combination with a setting mechanism, of a gage-roller adjustably mounted in a recess of the frame adjacent to said setting device, a handle-block carried by said recess, and means for clamping said handle-block, roller and frame in contact with each other; substantially as specified.

12. In a saw-setting device, an anvil, a sliding punch, a pivoted operating-lever, a latch pivoted to said lever and adapted to engage and positively actuate said punch toward said anvil, and parallel guide-plates adjustably mounted upon the frame of the device and disposed at an angle to said anvil and punch; substantially as specified.

13. In a saw setting and feeding device, a frame supporting an anvil, a setting-punch coöperating with said anvil and having thereon a stud, an operating-lever provided with an angle-arm, a cam upon said lever to impart a preliminary movement to said punch, a latch pivoted to the angle-arm of said lever and having a seat adapted to engage said stud, a pin upon said punch adapted to act against said latch in the movement of the punch away from the anvil, a retracting-spring to impart such movement, and a pressure-pin adapted to force said latch toward said stud; substantially as specified.

14. In a saw setting and feeding device, a frame supporting an anvil, a setting-punch coöperating with said anvil and having thereon a stud, an operating-lever provided with an angle-arm, a cam upon said lever to impart a preliminary movement to said punch, a latch pivoted to the angle-arm of said lever and having a seat adapted to engage said stud, a pin upon said punch adapted to act against said latch in the movement of the punch away from the anvil, a retracting-spring to impart such movement, a pressure-pin adapted to force said latch toward said stud, a segmental gear carried by the shaft of said lever, a feeding-wheel having spirally-disposed blades and a journaling-shaft, a pinion mounted upon said shaft to rotate therein and meshing with said gear, and means carried by said shaft for causing the rotation of the shaft and wheel during the movement of the pinion in one direction; substantially as specified.

15. In a saw setting and feeding device, a frame supporting an anvil, a setting-punch coöperating with said anvil and having thereon a stud, an operating-lever provided with an angle-arm, a cam upon said lever to impart a preliminary movement to said punch, a latch pivoted to the angle-arm of said lever and having a seat adapted to engage said stud, a pin upon said punch adapted to act against said latch in the movement of the punch away from the anvil, a retracting-spring to impart such movement, a pressure-pin adapted to force said latch toward said stud, a segmental gear carried by the shaft of said lever, a feeding-wheel having spirally-disposed blades and a journaling-shaft, a pinion mounted upon said shaft to rotate therein and meshing with said gear, means carried by said shaft for causing the rotation of the shaft and wheel during the movement of the pinion in one direction, an adjustable gage-roller adjacent to said setting device, and guide-plates adjustably mounted upon the frame beneath said setting device; substantially as specified.

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

SAMUEL HALTOM.

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