

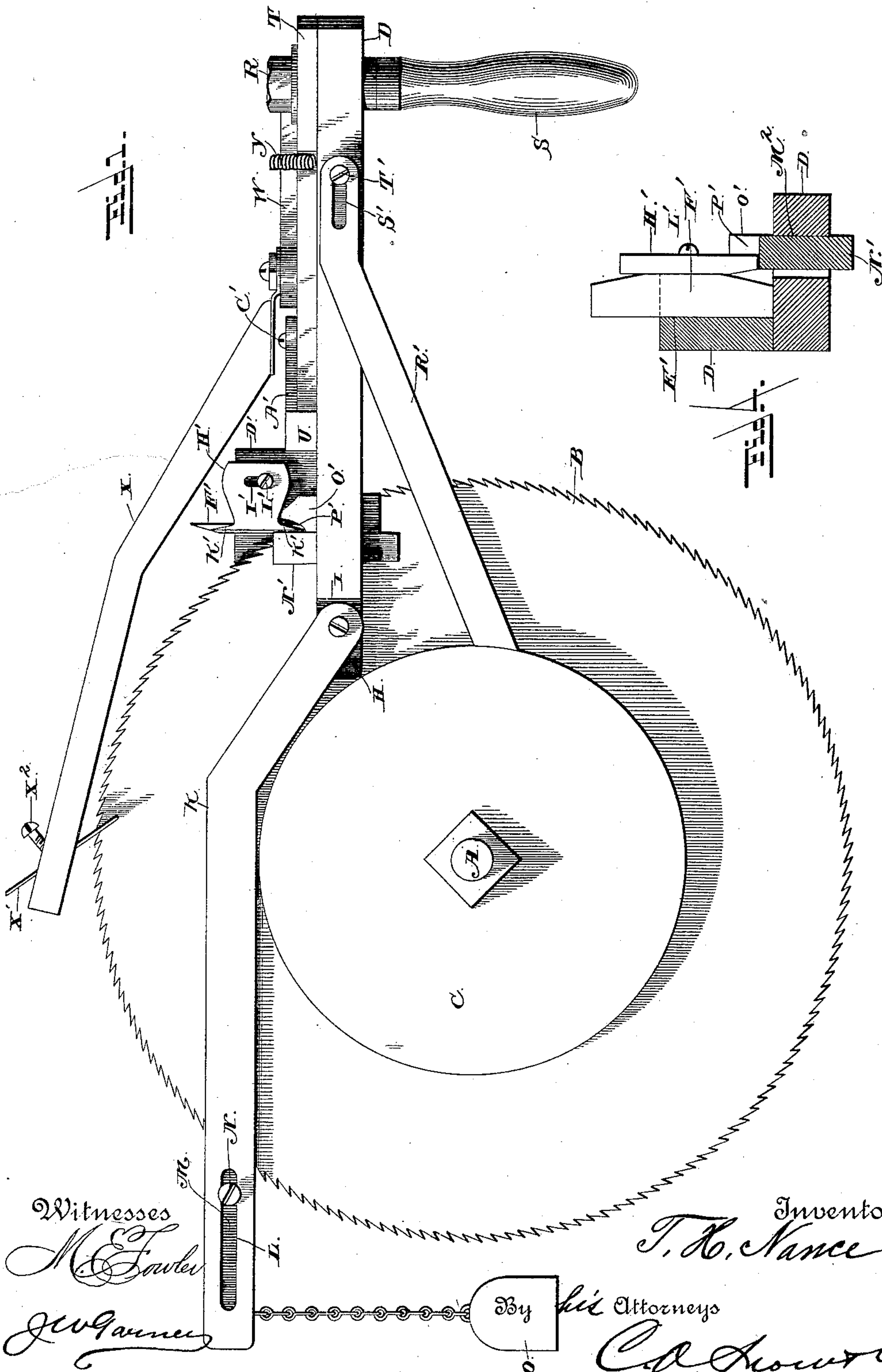
(No Model.)

3 Sheets—Sheet 1.

T. H. NANCE.
MACHINE FOR GUMMING SAWS.

No. 358,874.

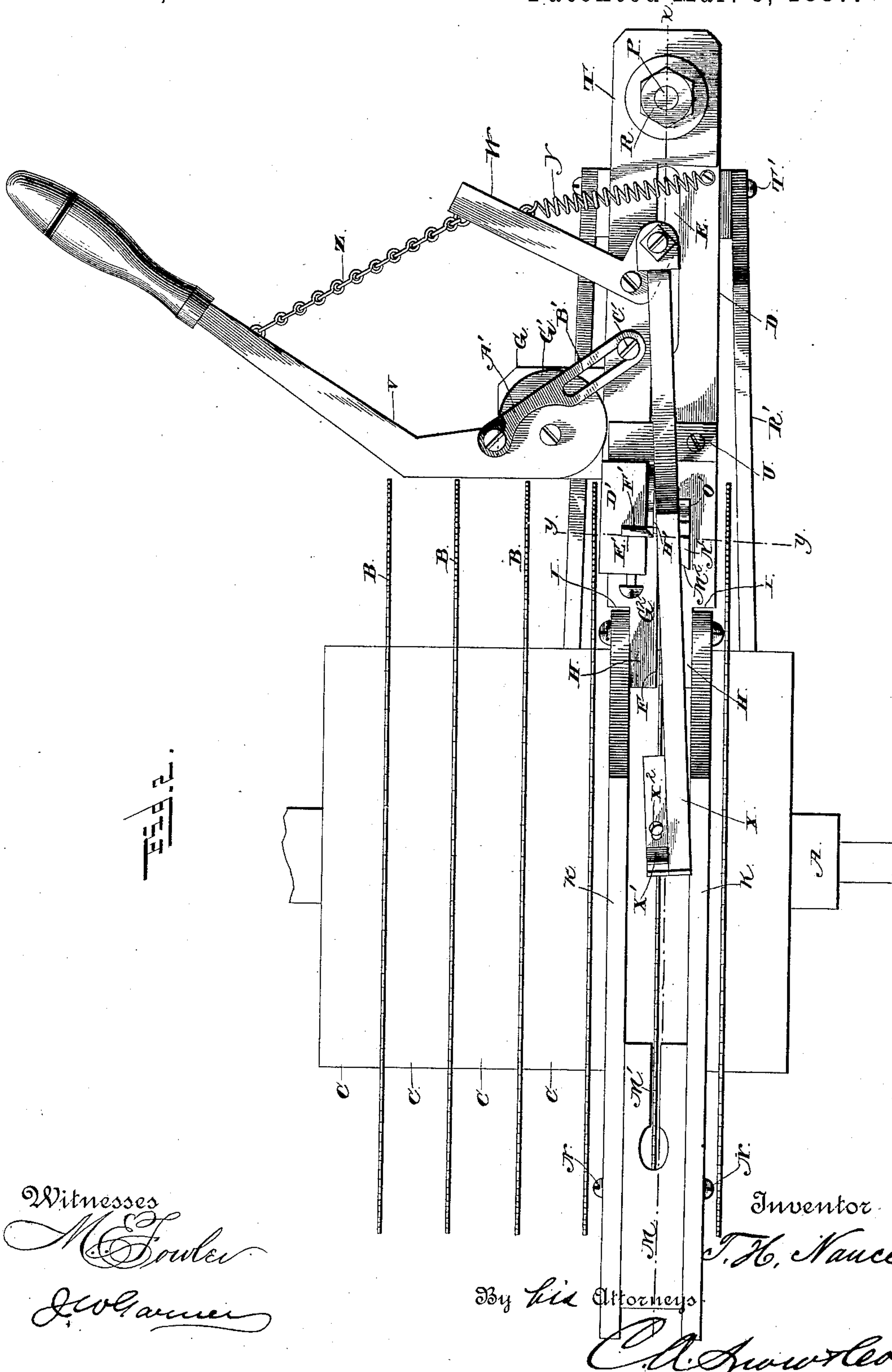
Patented Mar. 8, 1887.



3 Sheets—Sheet 2.

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N. PETERS. Photo-Lithographer. Washington. D. C.

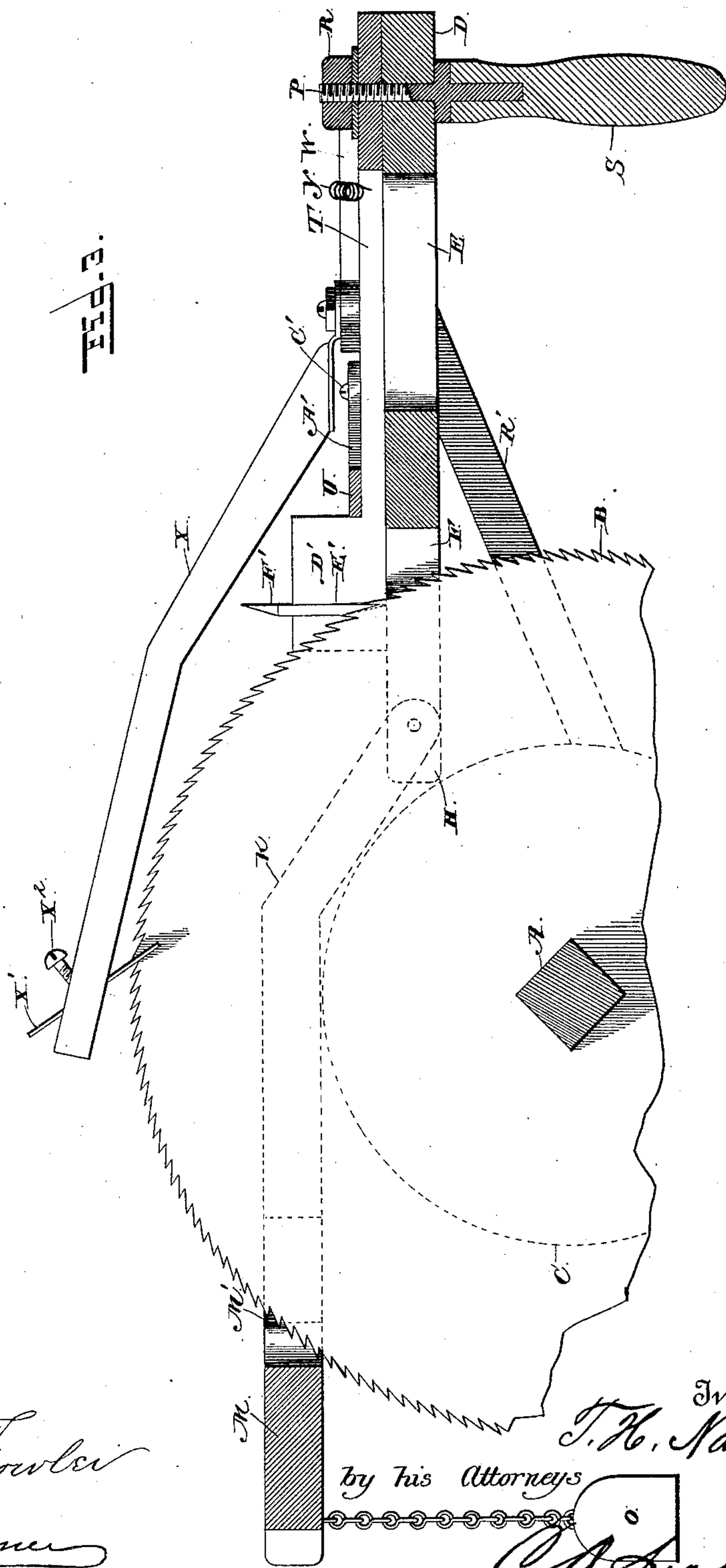
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3 Sheets—Sheet 3.

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Witnesses
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Inventor
T. H. Nance

by his Attorneys

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UNITED STATES PATENT OFFICE.

TURNER HUNT NANCE, OF TALLADEGA, ALABAMA.

MACHINE FOR GUMMING SAWS.

SPECIFICATION forming part of Letters Patent No. 358,874, dated March 8, 1887.

Application filed December 2, 1886. Serial No. 220,490. (No model.)

To all whom it may concern:

Be it known that I, TURNER HUNT NANCE, a citizen of the United States, residing at Talladega, in the county of Talladega and State of Alabama, have invented a new and useful Improvement in Machines for Gumming and Sharpening Gin-Saws, of which the following is a specification.

My invention relates to an improvement in machines for gumming and sharpening gin-saws; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a saw sharpener and gummer embodying my improvements, arranged in position to operate upon the teeth of a gin-saw. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical longitudinal sectional view taken on the line *x x* of Fig. 2. Fig. 4 is a vertical transverse sectional view taken on the line *y y* of Fig. 2.

A represents the shaft of a cotton-gin. B represents a series of saws which are attached to the said shaft, and C represents the usual blocks which are used to separate the saws on the shaft and to space them a suitable distance apart.

D represents the frame or body of the saw gumming and sharpening machine, which consists of a longitudinal bar of wood or metal, provided near one end with a slot, E, and in the front end with a longitudinal kerf or slit, F, which is open at its outer end. From one side of the frame or body, at a suitable distance from the outer end thereof, projects an ear, G. The extreme outer ends of the bifurcated portion of the frame or body formed by the slit or kerf are reduced to form ears H, which project beyond the shoulders I, and through the said ears are pivoted parallel arms K, the said arms being curved or angular, as shown. In the outer ends of the arms K are made longitudinal slots L.

M represents a block, which is inserted between the outer ends of the arms K, and is secured thereto by bolts or screws N, which extend through the slots L and enter opposite sides of the box. The latter is thus rendered longitudinally adjustable between the outer ends of the arms K, and may be secured at

any desired point by tightening the bolts or screws. From the outer end of the block M is suspended a weight, O, for the purpose to be hereinafter described, and the inner end of the said block is provided with a longitudinal kerf or slit, M', which aligns with the kerf or slit F.

P represents a bolt, which extends through a vertical opening made in the rear end of the frame D. A nut, R, is secured on the said bolt and bears against the under side of the same, and to the lower end of the bolt is attached a handle, S. On the upper end of the bolt P, and bearing on the upper side of the frame, is pivoted a laterally-movable arm, T. A guide, U, is bolted to the upper side of the frame D and extends across the arm T, so as to prevent the outer end of the latter from rising above the frame D.

V represents a lever, which is pivoted on the upper side of the ear G, and the said lever is provided at its inner end with an eccentric cam, G', which bears against the outer side of the pivoted arm T. A bell-crank lever, W, is pivoted on the upper side of the arm T, at a suitable distance from the rear end thereof; and to the short arm of the said bell-crank lever is attached a pivoted arm, X, which has at its outer end a downwardly and rearwardly inclined detent, X', that is adapted to engage one of the teeth of the saw. The said detent is clamped to the outer end of the arm X by a set-screw, X', and may be adjusted by first loosening the said set-screw, as will be readily seen.

Y represents a spring, which connects the long arm of the bell-crank lever with one side of the frame, the function of the said spring being to normally withdraw the long arm of the bell-crank lever over the arm T, so that the long arm of the said bell-crank lever bears against the upper end of the bolt P. A chain, rod, or cord, Z, connects the long arm of the bell-crank lever with the pivoted lever V.

A' represents a link, which is pivoted to the lever V. The inner end of the said link is provided with a longitudinal slot, B', and a screw, C', extends through the said slot and enters the pivoted arm T, thereby connecting the inner end of the link to the said pivoted arm.

The free end of the pivoted arm T is pro-

vided on its upper side with a head, D', in the inner side of which is made a vertical slot, E', adapted to receive a vertically-adjustable punch or cutter, F', which is secured in the head by a set-screw, G², by means of which the said cutter may be vertically adjusted in the head. Both ends of the cutter are sharpened alike, so that when one end becomes dull or worn the cutter may be taken out of the head G' and reinserted therein in a reverse position. To the inner side of the head D' is secured a gage, H', which comprises a plate having a vertical slot, I', and oppositely-extending tongues K', which bear against the inner edge of the punch. A set-screw, L', passes through the slot I' and enters the head D', and thus serves to secure the gage thereto. By loosening the said set-screw the gage may be vertically adjusted on the head D'. In one side of the body or frame D, and communicating with the kerf or slit F, is made a dovetailed recess, M², which is arranged alongside the head D'. In this recess are secured vertically-adjustable wedge-shaped dies N' and O'. The meeting edges of the said dies align with the punch and the gage, and in the upper side of the die O', on the edge which is adjacent to the die N', is made an inclined recess, P', which is adapted to receive the lower projecting tongue, K', of the gage.

R' represents a pair of curved or angular supporting-arms, the outer ends of which are provided with longitudinal slots S'. Set-screws or bolts T' pass through the said slots and enter opposite sides of the frame or body B, near the outer end thereof, so as to secure the arms R' thereto. The slots S' render the said arms longitudinally adjustable on the frame or body D, as will be readily understood.

The operation of my invention is as follows: In order to sharpen and gum the teeth of a gin-saw, my device is lowered onto the upper edge of the saw, so that the latter passes through the slits or kerfs F and M'. The supporting-arms R' are then turned so as to cause their outer ends to bear against the blocks C on opposite sides of the saw, and the weight at the outer ends of the arms K then serves to balance the machine on the saw. The arm X is turned so as to cause its detent X' to engage one of the teeth of the saw. The machine is adjusted longitudinally on the saw until the serrated edge of the latter projects rearwardly in the slit or kerf F far enough to cause the teeth to successively align with the punch at the free end of the arm T. The operator then grasps the handle R with his left hand, so as to steady the device on the saw, and with his right hand he grasps the handle on the outer end of the lever V and moves the same outwardly. The cam V' at the inner end of the said lever V is thus caused to bear against the outer side of the arm T, so as to move the latter inwardly over the frame or body D, and thereby cause the punch to sharpen and gum one of the teeth of the saw, as

will be readily understood. At the initial outward movement of the lever V the bell-crank lever which is connected thereto is caused to turn sufficiently far to retract the arm X a distance corresponding to the space of one tooth on the gin-saw, and thereby the latter is turned a corresponding distance, and thus the teeth of the gin-saw are successively presented to the action of the die and punch. The vertically-adjustable gage regulates the depth of the cut made by the punch between the teeth of the saw, and the block M between the outer ends of the arms K is made longitudinally adjustable, in order to adapt the machine to be used on saws of varying sizes. This is also true of the arms R'.

I am aware that it has been heretofore proposed to construct a machine for sharpening and gumming gin-saws that is adapted to be supported entirely on the edge of the saw, and has a depending detent to engage one of the saw-teeth and an upwardly-extending arm to engage the upper edge of the saw, and this I disclaim. This construction is disadvantageous, for the reason that the weight of the machine and the pressure exerted upon the lever to operate the punch are borne by the thin outer edge of the saw, thereby resulting in bending and twisting the same out of shape, and the pressure exerted by the detents on the teeth of the saw, when the punch is operated, tends to bend and dull the teeth.

It will be observed that my device is supported upon the blocks between the saws, and thereby the latter are entirely relieved of strain when the punch is operated. Moreover, my device embraces both sides of the saw and serves to strengthen and stiffen the same, to enable it to resist the lateral strain exerted by the cutting-punch, and thereby prevent the saw from being bent out of shape.

Another material advantage gained by my construction is that by connecting the detent-arm to the lever for operating the punch the machine is drawn closely to the serrated edge of the saw while the punch is being operated, thereby preventing the machine from moving from the edge of the saw at that instant and impairing the efficiency of the machine by causing the punch to not cut deeply enough between the saw-teeth.

Having thus described my invention, I claim—

1. In a machine for sharpening gin-saws, the frame D, having the kerf F, and the pivoted arms K, provided with the block having the kerf M', for the purpose set forth, substantially as described.

2. In a machine for sharpening gin-saws, the frame D, having the pivoted arms R', to bear against the blocks on the saw-shaft, substantially as described.

3. In a machine for sharpening gin-saws, the frame D and the longitudinally-adjustable arms R', pivoted to the said frame, for the purpose set forth, substantially as described.

4. In a machine for sharpening gin-saws, the frame D, having the arms K pivoted thereto, and the longitudinally-adjustable block M, attached to the said arms and having the kerf M', substantially as described.

5. In a machine for sharpening gin-saws, the combination of the frame D, having the weighted arms K, the arm X, having the detent X', to engage a tooth of the saw, and the lever V, to operate the punch and connected to the arm X, whereby the latter will be drawn rearwardly when the lever V is operated, for the purpose set forth, substantially as described.

6. In a machine for sharpening gin-saws, the combination of the frame D, the pivoted weighted arms K, attached thereto, and the arms R', pivoted to frame D, for the purpose set forth, substantially as described.

7. In a machine for sharpening gin-saws, the combination of the frame D, having the kerf F, and the dies arranged on one side of the kerf, the arm T, pivoted on the frame and having the head to carry the punch, the lever V, to operate the arm T, the bell-crank lever pivoted on the arm T and connected to the lever V, and the detent-arm X, attached to the bell-crank lever, for the purpose set forth, substantially as described.

8. In a machine for sharpening gin-saws, the base-frame D, having the weighted arms K attached thereto and projecting from one end, to bear upon the blocks on opposite sides of the gin-saw, for the purpose set forth, substantially as described.

9. In a machine for sharpening gin-saws, the combination of the base-frame D, having the projecting arms K at one end, for the purpose set forth, and the weight adjustable on the said arms, substantially as described.

10. The reversible gage H', having the slotted plate, and the oppositely-extending tongues K', substantially as described.

11. The combination, in a machine for sharpening circular saws, of the lever to operate the punch, and the longitudinally-movable detent-arm to engage the saw-teeth, the said detent-arm being connected to the lever and movable thereby to draw the machine toward the edge of the saw when the punch-lever is operated, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

TURNER HUNT NANCE.

Witnesses:

J. E. CAMP,
W. TAYLOR.