S. B. RANDALL.

MACHINERY FOR CUTTING WAVED EDGES ON LEATHER STRAPS.

No. 176,809 Patented May 2, 1876.

Fig. 1.

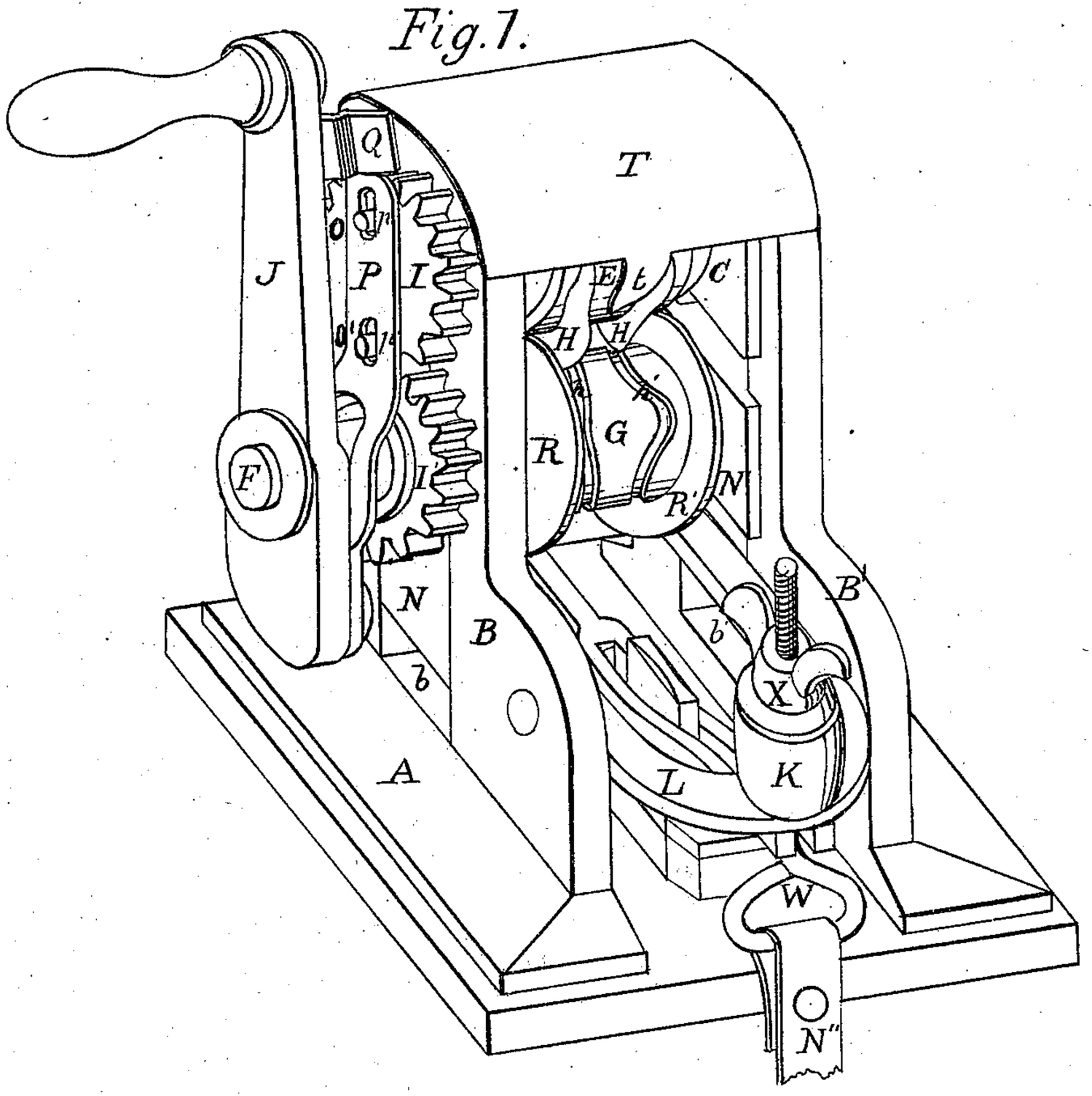


Fig. 2.

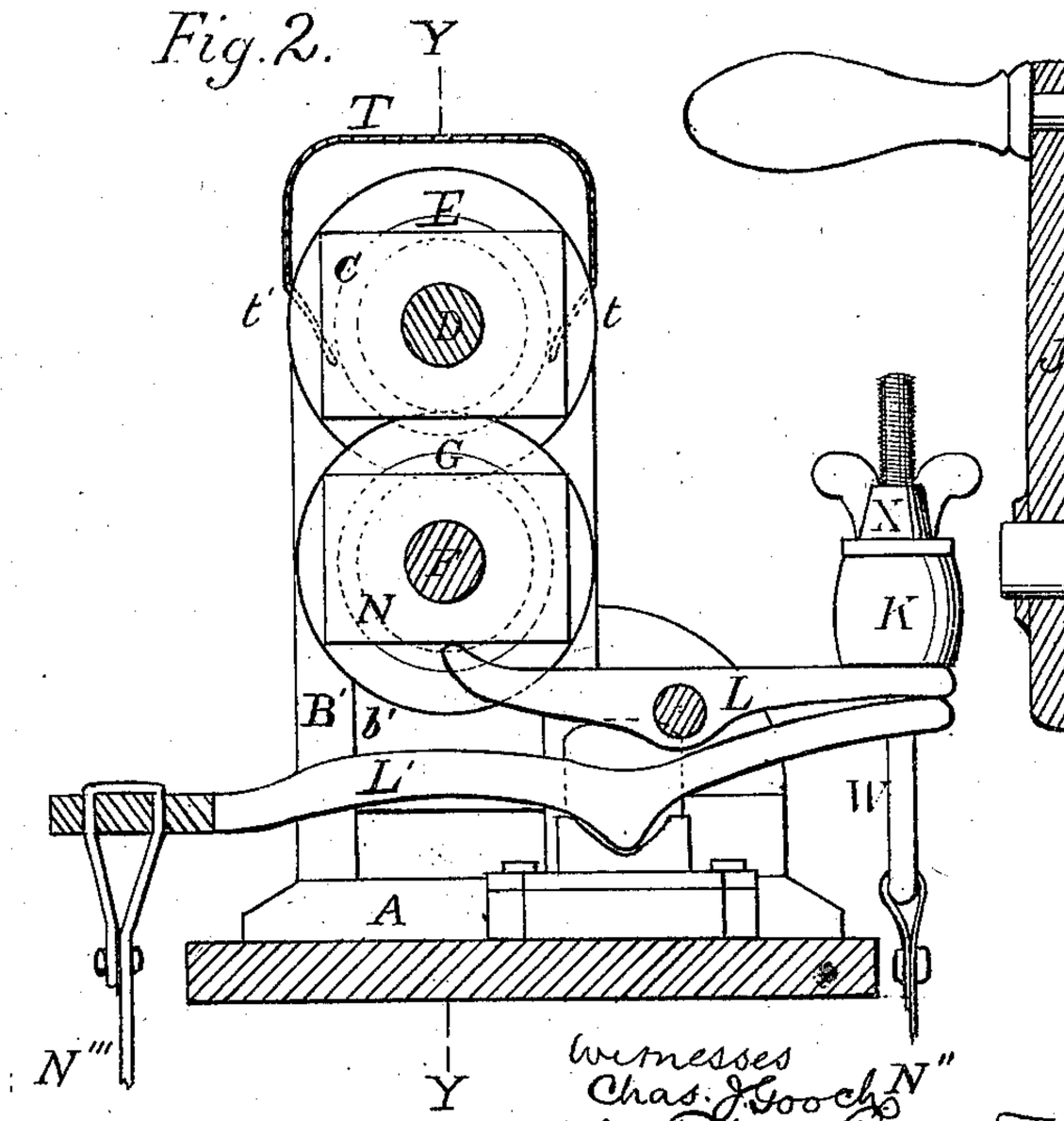
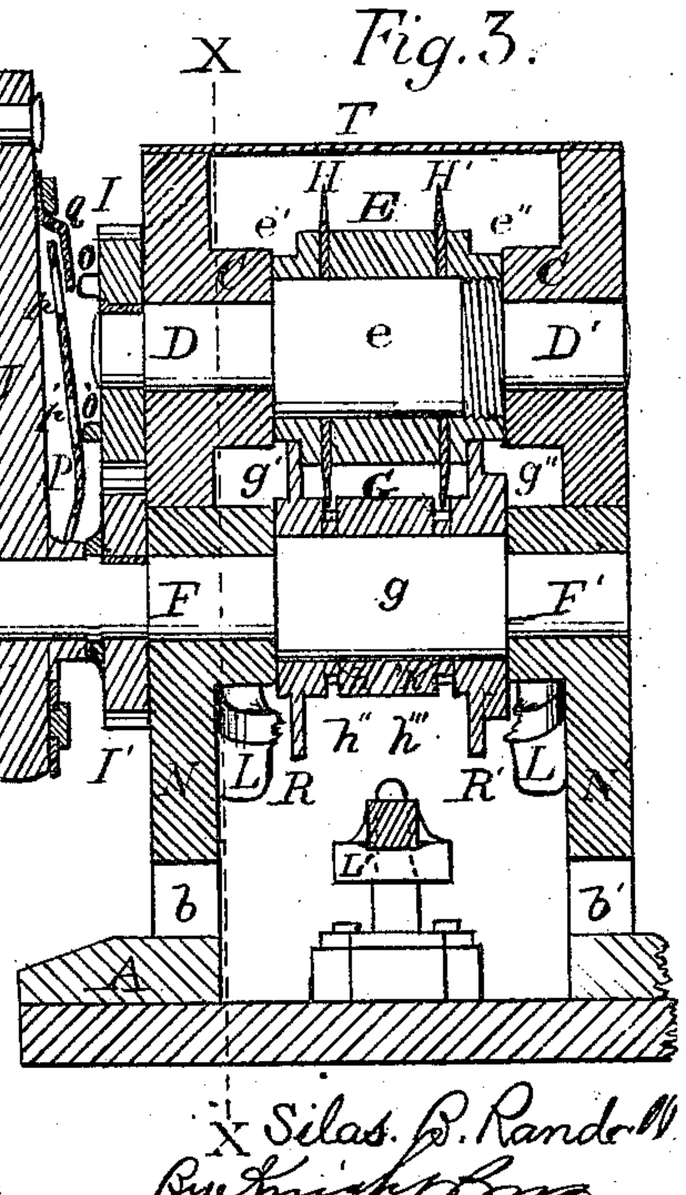


Fig. 3.



Witnesses
Chas. J. Gooch
Le Blond. Burdett

Silas B. Randall
By Knight Bros
Attorneys

UNITED STATES PATENT OFFICE.

SILAS B. RANDALL, OF CINCINNATI, OHIO.

IMPROVEMENT IN MACHINERY FOR CUTTING WAVED EDGES ON LEATHER STRAPS.

Specification forming part of Letters Patent No. **176,809**, dated May 2, 1876; application filed January 14, 1876.

To all whom it may concern:

Be it known that I, SILAS B. RANDALL, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Machine for Cutting Waved Edges on Leather Straps, of which the following is a specification:

My invention is an improvement on those machines for cutting waved edges on leather straps which employ a pair of rollers, of which one carries the cutting-blades and the other supports the leather; and my improvement comprises collars or flanges on the supporting-roll to confine the strap laterally, and also the cutting-roll. My improvement further comprises means whereby the blades of the cutting-roll and the corresponding waved grooves of the supporting-roll are maintained in their proper relative positions during the temporary separation of the rollers, for the purpose of introducing or of removing the strap at some other part than at one of its extremities.

My invention comprises a device for guarding the knives and for liberating the scalloped strap.

In the accompanying drawings, Figure 1 is a rear perspective view of a cutting-machine embodying my invention. Fig. 2 is a section at the line *x x*. Fig. 3 is a section at the line *y y*.

A is a frame or housing, whose standards B B′ have fixed bearings C for the journals D D′ of the upper or cutting roller E, and slots *b b* for the vertical shiftable bearings N N′ of my lower or supporting and guiding roll G. The upper roll E comprises a central shaft or hub, *e*, and a number of sleeves, *e′ e″*, whose ends are waved to correspond with the desired undulations of the waved cutters H H′, which are simply flat rings or annuluses of steel, whose outer margins are brought to a sharp edge, and whose introductions and clampings between the waved sleeves retain said blades to the waved form required. The lower roll G also comprises a shaft or hub, *g*, and sleeves *g′ g″*, of precisely similar waved ends to those of the upper roller, and which inclose rings *h* and *h′*, whose diameter is small enough and thickness great enough to prevent contact of the knives or cutters with the upper roller. These rings *h h′* are preferably of copper, or other comparatively soft metal. *h″ h‴* are the waved grooves thus formed. Flanges or collars R R′, which surround the lower roller, operate to prevent any surging or endwise displacement of either roll relatively to its fellow, and also serve to prevent any lateral displacement of the strap, and to guide the latter in its proper rectilinear path. Match cog-wheels I I′ compel isochronous rotation of the two rollers, said rotation being effected by means of a winch, J, upon the lower roller-shaft F. The bearing peripheries of the two rollers being equal in diameter, and their speed also equal, it follows that each roll acts with equal draft upon the strap. The desired upward pressure of the supporting-roller G is secured by the action of a rubber or other spring, K, which presses downward against a lever, L, whose other extremity bears upwardly against the sliding journal-boxes N N′ of said roller. W is a looped rod, which passes through lever I and spring K, and is tapped into a nut, X, for regulating the tension of the said spring. Straps N″ and N‴ pass down from the lever L, and from another lever, L′, to any suitable instrumentality, such as a treadle or hand-lever, which enables the operator, by drawing on the strap N″, to augment the action of the spring K, or, by drawing on the strap N‴, to temporarily depress the supporting-roll and enable the insertion or removal of the strap at any part of its length. For straps which are scalloped from end to end, however, this separation of the rollers is not necessary, as the end of the strap may be easily entered between the closed rolls, and the strap is delivered by the simple rotation of the rolls the instant the scalloping is completed.

In order to preserve the proper relative location of the cutting and supporting rollers during their temporary separation, I provide, on the upper cog-wheel I, two studs, O O′, and on the arm of the winch a spring-latch, P, having slots *p p′*, corresponding to the said studs. Said winch has also a button, Q, which, being turned downward, as shown in Fig. 3, holds the latch away from the studs, and permits a free rotation of the winch. But should it be desired to separate the rollers, the operator turns the winch until it is presented vertically upward, and, disengaging the but-

ton, permits the latch P to engage with the studs O O′, and thus, for the time being, effectually prevents the rotation of either roller, so that by no possibility can there be such displacement of the rolls as to bring the knives and the periphery of the supporting-roll in contact, so as to cause the knives to be broken by contact with said lower roll.

The vertical dimensions of the slots *p p′* are such as to permit the necessary depression of the lower roller without disengaging the latch.

T is a metallic cap or cover, made fast to the tops of standards, and having tongues or lips *t t′*, which, impinging on that part of the periphery of the upper roll which is included between its cutters, operates to prevent the strap adhering to the periphery of the cutting-roll, and serves to conduct the strap out of the machine. The said cover also serves to protect the knives against injury from external objects, and as a safeguard to persons handling the machine.

The latching device may be varied without changing its essential character—as, for example, a single oblong stud might be substituted for the pair of studs O O′, or they might be on the winch, the latch being on the gear-wheel; or the latch might be presented downward instead of upward.

I claim as new and of my invention—

1. The combination, with the upper wave cutting and feeding roll H H′ E, mounted in fixed bearings C, of the geared lower roll G, provided with confining collars or flanges R R′ and wave-grooves *h″ h‴*, and mounted in yielding bearings N N′, as and for the purpose set forth.

2. The combination, with the stationary upper roller, of the metallic cap T, whose tongues *t t′* impinge against the roller's periphery, as and for the purpose set forth.

3. The combination, with the upper cutting-roll, mounted in fixed bearings, and the lower roll, mounted in yielding bearings, of the locking device, consisting of the studs O O′, slotted latch P *p p′*, and button Q, as set forth.

In testimony of which invention I hereunto set my hand.

SILAS B. RANDALL.

Attest:

GEO. H. KNIGHT,

H. E. KNIGHT.