No. 7,327. PATENTED APR. 30, 1850.

B. ROWE.

LEATHER ROLLING, SPLITTING, AND STRETCHING MACHINE.

Fig. 2.

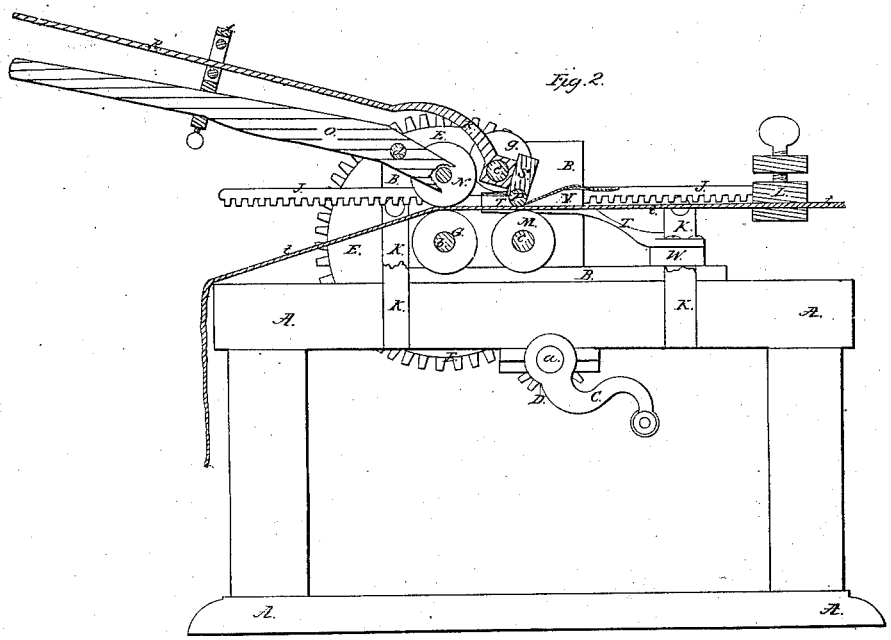
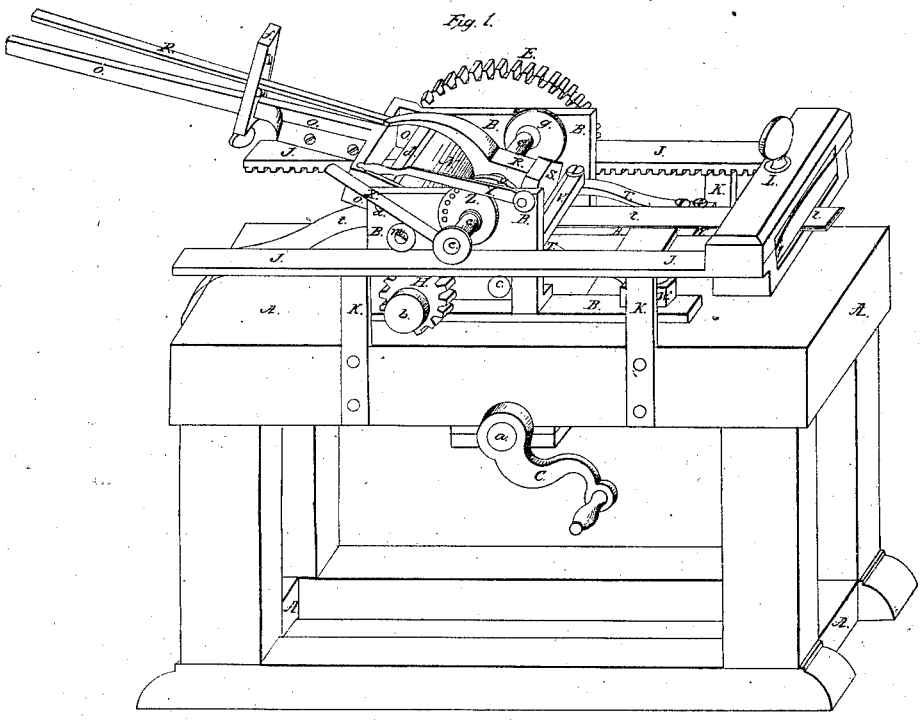


Fig. 1.



UNITED STATES PATENT OFFICE.

BRADFORD ROWE, OF ALBANY, NEW YORK.

APPARATUS FOR SPLITTING AND STRETCHING LEATHER.

Specification of Letters Patent No. 7,327, dated April 30, 1850.

To all whom it may concern:

Be it known that I, BRADFORD ROWE, of the city of Albany and State of New York, have invented a new and useful Machine for Rolling, Splitting, and Stretching Leather, which I call "Rowe's Leather Rolling, Splitting, and Stretching Machine;" and I declare the following specification, with the drawings hereto attached as part of the same, to be a full and accurate description thereof, similar letters in the drawings indicating the same parts of the machine.

Figure 1 is a perspective view and Fig. 2 is a longitudinal section of the machine in profile just inside of the side piece B, Fig. 1.

A A A A represents a stout table or frame of wood or iron which sustains the machinery.

B B B B represents a pair of vertical metal frames or side pieces, parallel with each other, which support the principal part of the apparatus.

Motion is given to the machine by a winch C attached to the end of a shaft *a* extending across the frame A, on the other end of which is a small cogwheel, D, Fig. 2, (not seen in Fig. 1). This wheel couples or cogs into a larger wheel E fixed in a shaft *b* extending across the frame through the side pieces B, B. On this shaft is secured a metal roller G Fig. 2 (concealed by the side pieces in Fig. 1). On the same shaft *b* on each end, just outside of the side pieces are two small cogwheels, one of them on the hither end being shown H Fig. 1. These wheels give motion by a rack to a horizontal sliding frame J, J. This frame slides upon four standards K, K, and has at its front end a clamp L to hold the one end of the piece of leather to be operated on. Small pulleys *m* Fig. 1, keep the frame steady upon the standards.

On a shaft C is a roller M, Fig. 2, similar to, of same size and parallel with roller G. Directly over G another and similar roller N is suspended by a vibrating frame O, O. This is a forked lever sustaining the pivots of said roller N in its arms, which move freely between the side pieces B B. Just behind the roller at *d* the lever O is pivoted through the side pieces, while its end projects backward from the machine, forming a handle by which to manage the roller N. A fourth and smaller roller, not seen in Fig. 1, but at P, Fig. 2, is fixed upon a second vibrating frame S which forms a cross-head to a lever R, pivoted upon an axle *e* which runs across and through the side pieces B B. The lever itself being extended over and lying above lever O. The two levers are kept together and made to operate in concert, by means of a sliding frame *f* which embraces both levers, and can be clamped tight by a set screw at its bottom, to lever O, leaving lever R to pass freely through the frame, backward and forward, as O is moved up and down.

V is a knife extending horizontally between the side pieces B, B, with its flat side downward and edge beveled from above. Its lower side is ranged so as to lie a little above, an upper horizontal tangent line to the roller M; the point of the knife lying a small distance in front of the small roller P. The knife is supported in its position by two stout springs T, T, fastened to the frame B, B, at *w*, *w*. These springs are so set as to gage the knife to make the thickest cutting it is intended to effect by the machine; and to gage it down to cut with different degrees of thickness the following device is employed.

The shaft *e* before spoken of, on which the lever R vibrates, is not attached thereto, but passes through it, and can be moved independently of it. On each end of the shaft, close to the side pieces and just above the springs which sustain the knife V, is fastened an eccentric *g*, *g;* on the shaft *e* prolonged through the hither side piece B is a handle X by which the shaft with the eccentrics can be moved round, and by their pressure the springs depress the knife to any required degree. To gage and set these eccentrics there is an index plate Z, attached to the shaft *e* just on the outside of the side pieces B B, and to fix the index plate in its place when set, a detent *y* is used, being a spring lever, attached by one end to the side plate, and having near the other end a pin projecting therefrom, which can be entered into any of the gage holes, shown along the rim of the index plate Z. This is a simple plan by which both ends of the knife can be set, parallel with its first position, more truly and conveniently than by adjusting screws at each end of the knife.

The operation of the machine is thus: The rollers N and P are to be raised from the rollers G and M by dropping the ends

of the levers O and R. The clamp L is to be brought as close to the rollers as may be, and the piece of leather *t*, *t*, passed over the lower rollers, and its end fastened in the clamp L. The knife V is to be gaged by the lever X and set by the detent *y*. The lever O is then raised carrying with it the lever R by means of which the leather is compressed with great force between rollers N and G, also between rollers P and M. P operating with a double effect, viz, to gage the thickness of the cutting of the leather, and to compress the leather firmly just before it reaches the knife.

The compression of the leather between P and M is regulated by moving and setting the slide *f* backward or forward on O. This being arranged the winch C is turned, and the leather is drawn under the knife V, the skiving passing over it, producing a smooth and equable piece of work.

The levers O and R may be operated by a treadle or in any other convenient way.

The pressure of the roller N which runs freely on its axis, upon the roller G which is driven by the crank holds the leather firmly. By proportioning duly these rollers to the rate of motion of the rack frame J to which the leather is attached by the clamp L; the leather can be stretched thoroughly without injury to its fiber.

I claim—

The construction of a machine performing the business of rolling, splitting and stretching leather at one operation as set forth in the above specification and drawings, viz, the following combination of machinery: One roller (G) driven by the motive power, having another roller (N) moving above it, between which two rollers the leather is to be compressed, the upper roller running free upon its own axis, which is fixed in a vibratory frame, in order that said upper roller may be adjusted thereby to any variable or determinate pressure upon the leather, by proper power applied to said frame; a second roller placed a short distance in front of and parallel with the first named one, running free on its own axis; a smaller roller, (placed in a second vibrating frame, similar to and adjustable like the first mentioned frame) running above the last mentioned roller, to perform the functions of compressing the leather and holding it firmly to receive the cut of the knife; a knife supported by strong springs and placed just in front of the last mentioned pair of rollers, with its cutting edge a short distance from the point of compression of these rollers, so as to act upon the leather directly as it leaves the rollers; a movable frame to carry the leather to be operated on, moved by a gearing connecting it with the first roller (G) and giving it a certain proportional rate of movement compared with that of the roller, by which the quantity of stretch to be imparted to the leather can be regulated; an apparatus for gaging the knife to cut the leather to a given thickness, consisting of a pair of eccentrics *g* and *g*, on the ends of a shaft running parallel with the knife, and operating upon each end of it equably as the said shaft is turned around, with an index plate *z* and set-lever *y*, to regulate and fix the same during the operation of the machine.

BRADFORD ROWE.

Witnesses:

ROBT. VARICK MOTT,

H. S. MCCALL.