

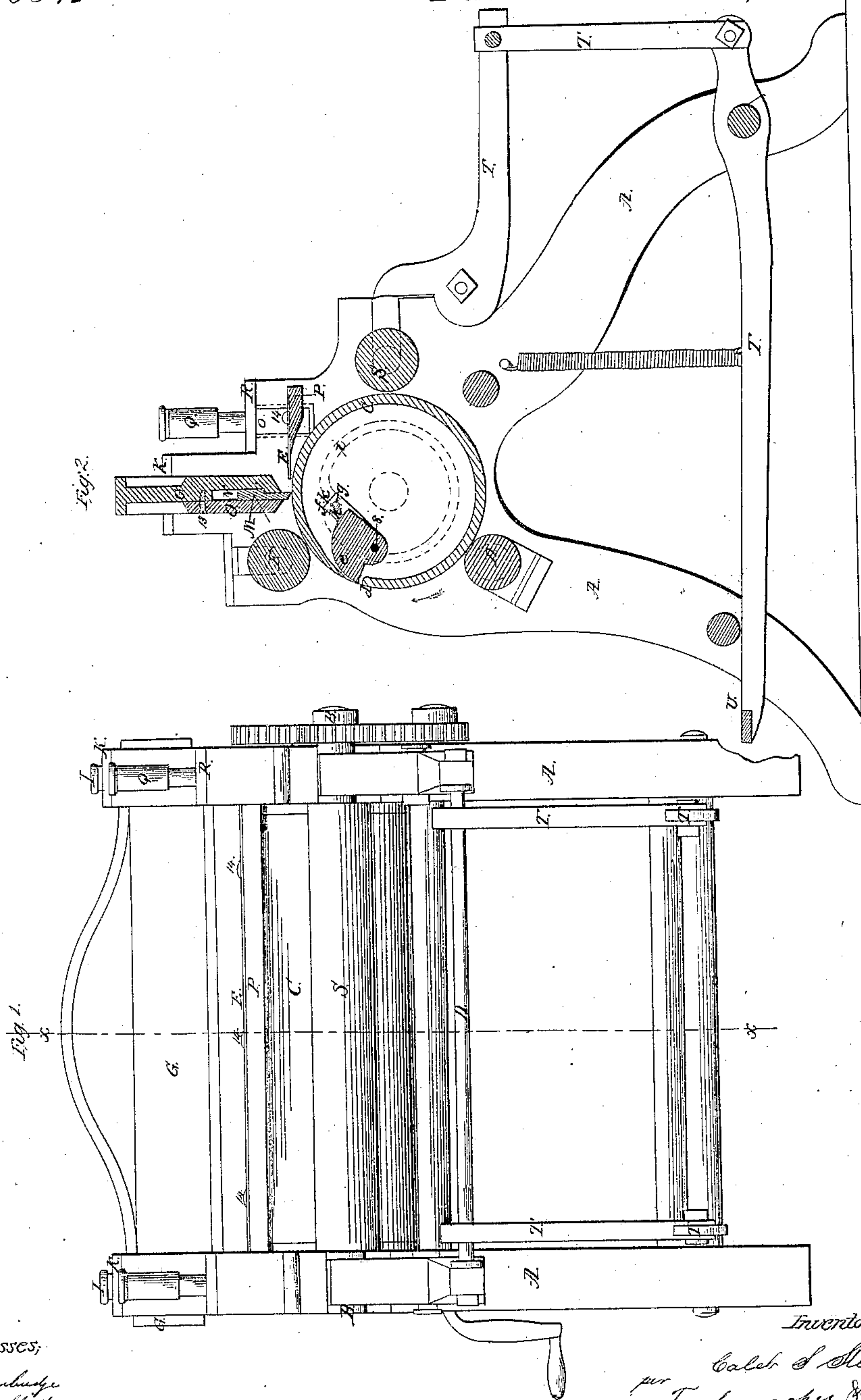
Sheet 1-2, 21c/15

C. S. Stearns,

Splitting Leather,

N^o 78,697

Patented June 9, 1868.



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Fig. 4.

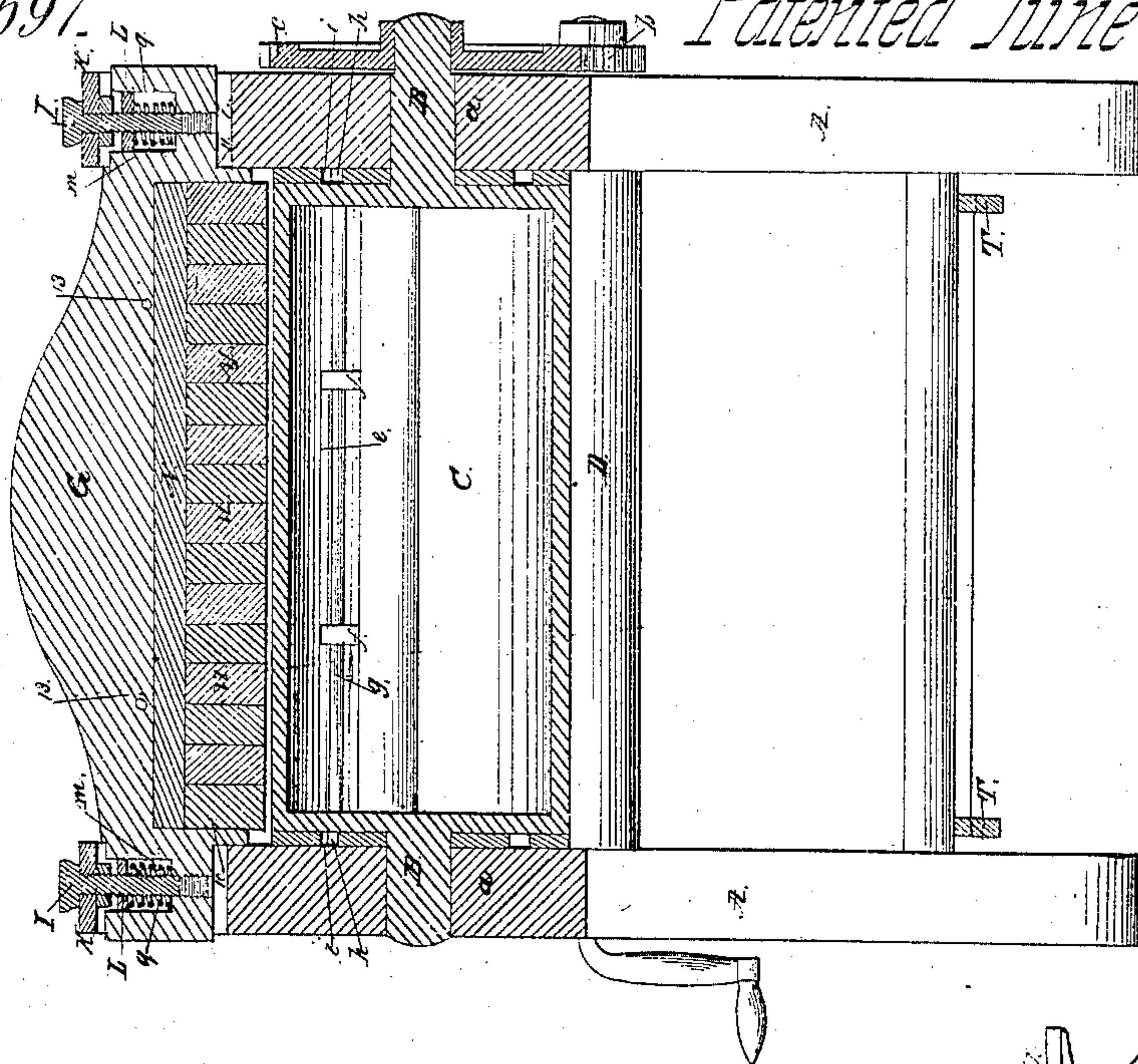
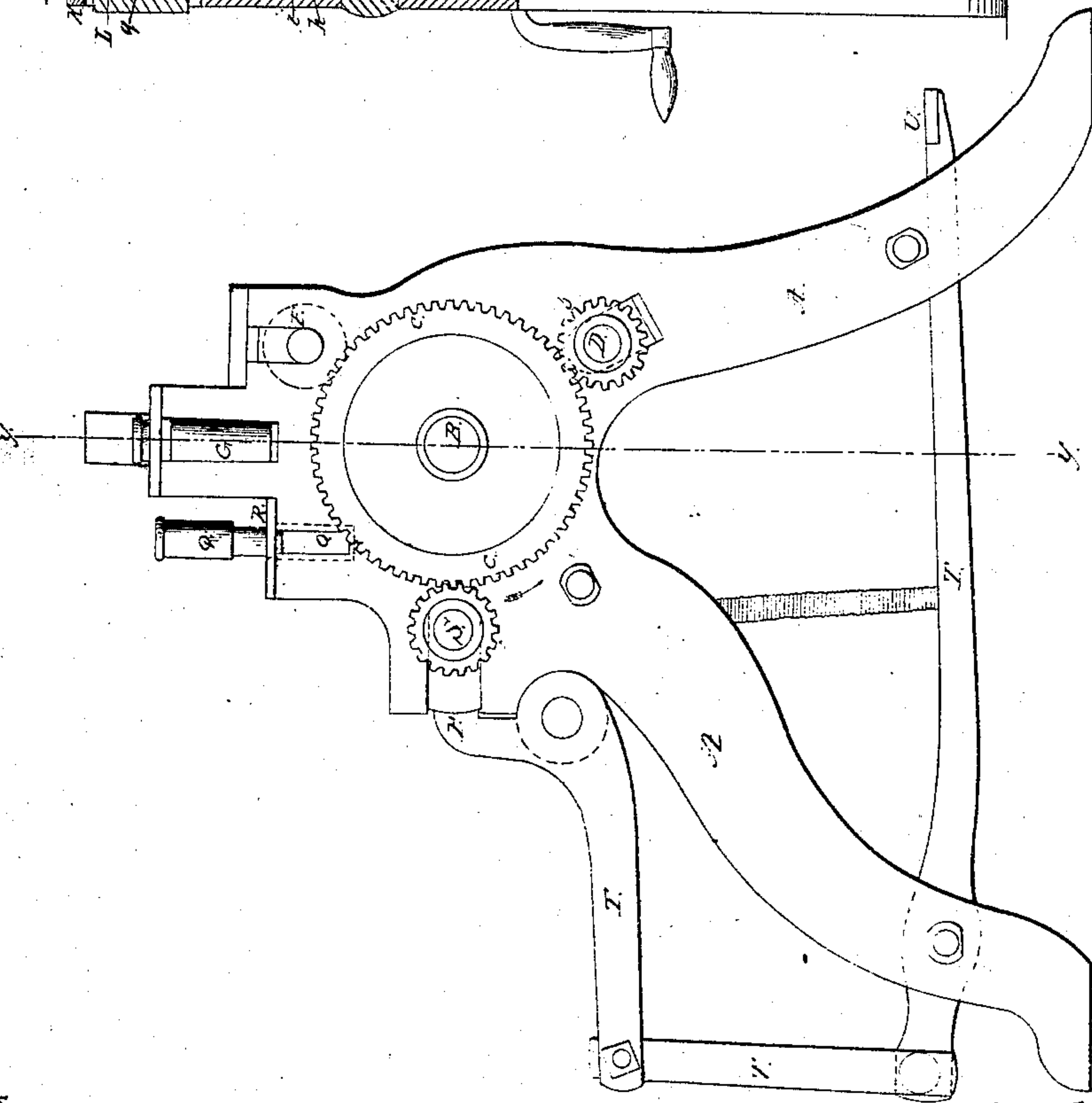


Fig. 3.



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UNITED STATES PATENT OFFICE.

CALEB S. STEARNS, OF MARLBOROUGH, MASSACHUSETTS, ASSIGNOR TO
HIMSELF AND THOMAS COREY, OF SAME PLACE.

IMPROVED MACHINE FOR SPLITTING AND ROLLING LEATHER.

Specification forming part of Letters Patent No. 78,697, dated June 9, 1868.

To all whom it may concern:

Be it known that I, CALEB S. STEARNS, of Marlborough, in the county of Middlesex and State of Massachusetts, have invented a Machine for Splitting and Rolling Leather, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a front elevation of my combined machine for splitting and rolling leather. Fig. 2 is a transverse vertical section on the line *x x* of Fig. 1. Fig. 3 is an elevation of one side of my combined machine. Fig. 4 is a longitudinal vertical section on the line *y y* of Fig. 3.

The operations of splitting and rolling leather have heretofore been performed by the employment of two separate and independent machines.

My present invention has for its object to unite in one machine these two operations; and my invention consists in a roller for subjecting the leather to severe pressure, as required in the rolling process, in combination with the carrying-cylinder of a splitting-machine, the strip of leather, after having been split by the knife, being led down between the cylinder and the roller, which is then brought up thereto and forcibly presses it upon the surface of the cylinder, so as to condense the fibers, and thereby render it hard and compact, as required.

My invention also consists in a spring presser-bar provided with sectional blocks for bearing the leather down upon the cylinder, to insure its being fed to the knife in such manner that a strip of uniform thickness may be cut, each sectional block acting independently of the other, and being made to conform to and press upon the surface of the portion of the leather immediately under it, however uneven the said surface may be; and, furthermore, my invention consists in certain mechanism for adjusting the knife into its position for regulating the thickness of the leather to be split, instead of adjusting (as heretofore) the carrying-cylinder for the same purpose; and, moreover, my invention consists in placing the roller which feeds the split leather out of the machine in a peculiar position with respect to the carrying-cylinder.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A is the frame-work, in suitable stationary bearings, *a*, in which the shaft B of the hollow carrying-cylinder C is revolved by a pinion, *b*, on one end of the shaft of the roller D, (to be hereinafter mentioned,) engaging with a cog-wheel, *c*, on one end of the shaft B, power being communicated by any suitable means to the end of the roller-shaft opposite to that bearing the pinion *b*. Within the interior of the carrying-cylinder is placed a mechanism for grasping the leather as it is carried around to be split. This grasping mechanism consists of two jaws—one, *d*, a stationary jaw, forming the edge of the opening in the cylinder into which the end of the leather is entered, and the other, *e*, a movable jaw, pivoted at 8 to the sides or ends of the hollow cylinder. Through lugs *f*, projecting from the movable jaw *e* and entering the cylinder C, passes a longitudinal rod, *g*, each end of which is provided with a loose friction-roller, *h*, which enters a cam-groove, *i*, (seen dotted in Fig. 2,) formed in a plate secured to the inside of the frame-work. After the cylinder has carried the leather beyond the splitting-knife E (presently to be described) and the grasping mechanism arrives around to the position where the leather was entered therein, the rolls *h* are depressed by coming in contact with the projections *k* at the top of the grooves *i*, and the movable jaw *e* is thereby vibrated on its pivot or axis 8, so as to swing open sufficiently to release its hold on the leather, which, having just previously passed between the feed-roll D and cylinder C, is carried out of the machine, the feed-roll also serving at the same time to draw the unsplit portion of the leather against the knife and under the roller F, which is placed at a short distance from the cylinder C to one side of a vertical line passing through its center, for the purpose of flattening down the portion of the leather close up to the grasping mechanism preparatory to passing under the spring presser-bar G, the construction of which will now be described. The top of the frame-work directly over the center of the cylinder C is cut away, forming a cavity, *l*, for

the reception of the ends of a bar, G, extending longitudinally across it. Each of these ends are recessed out at 9, as shown in Fig. 4, for the reception of a vertical spiral spring, *m*, within the center of which projects the lower end of a screw-pin, I, which passes through a plate, K, screwed to the top of the sides of the frame, over the cavity *l*.

L is a nut, which is turned more or less up or down upon the screw-pin I for the top of the spiral spring *m* to bear against, in order to compress it as required, for a purpose presently to be explained.

The longitudinal bar G is provided with a rectangular recess, extending from 10 to 11, for the reception of a series of separate and independent sections or blocks, M, of the form shown in Figs. 2 and 4, a longitudinal ledge, *n*, being formed, against which the shoulder 12 of each block rests.

N is a piece of rubber, which extends across the tops of these blocks, and serves as a spring, which yields when the blocks are pressed upward by the increased thickness of the strip of leather passing under them.

O is a plate, screwed at 13 to the side of the bar G, to keep the sectional blocks M, with their spring N, in place, and at the same time allow them to move freely in a vertical direction, as required. The lower ends of these blocks are beveled off, as seen in Fig. 2, and they are so placed that the line passing through them is parallel with and nearly up to the edge of the splitting-knife E, which consists of a thin horizontal steel plate, screwed at 14 to a longitudinal bar, P, the ends of which are moved up and down within dovetailed ways *o*, (seen dotted in Figs. 2 and 3,) formed in the sides of the frame-work, by turning the screws Q, which pass through plates R into the ends of the longitudinal bar P, by which means the edge of the knife E is adjusted to gage the required thickness of the leather to be split. The upper or uneven piece of leather passes over the edge of the knife out of the machine, while the lower piece, of uniform thickness, is fed under the knife, upon the surface of the cylinder, between it and a roller, S, (which, by its connections with a series of levers, T, constituting a treadle,) is brought up forcibly against the split piece of leather, so as to roll and subject it to severe pressure, for the purpose

of condensing its fibers and giving the leather a compact, hard, and smooth finish. This treadle is worked by the foot of the operator, which, as it presses down on the front cross-bar, U, throws the upper levers or jaw, *p*, against the sliding bearings of the shaft of the rollers S and forces the split leather against the cylinder with the degree of pressure required. As the cylinder continues to revolve, the split portion is carried thereby between it and the roller S, soon after which the jaws are opened, and the leather is fed out of the machine, in a manner previously set forth.

From the foregoing construction it is evident that the apparatus for performing the two operations of splitting and rolling may be conveniently and compactly combined in one machine, and each operation may be performed independently by simply disconnecting the mechanism appertaining to the other. For instance, if the leather is to be split without being rolled, the treadle is not operated, and the roller, consequently, is not operated up against the leather, while at the same time it may be rolled without being split by raising the knife, which is readily done by turning the screws Q. Instead of using a rubber spring, N, in one piece, a separate and independent spring of rubber or metal for each block may be employed without departing from the spirit of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The roller S, for rolling leather, in combination with the carrying-cylinder C, when the roller S is acted on by levers T, or their equivalent, all constructed and arranged substantially as and for the purpose described.
2. The blocks M, with the springs N, acting independently of each other, and constructed substantially as described.
3. The screw Q and plates R, in combination with the knife E, substantially as set forth.
4. The roller D, for feeding the split leather out of the machine, when used in combination with the carrying-cylinder C, and arranged substantially as and for the purpose set forth.

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