F. J. Vittum.

Leather-Splitting Machine.

No. 74734 Patented Feb. 18, 1868.

Fig. 1

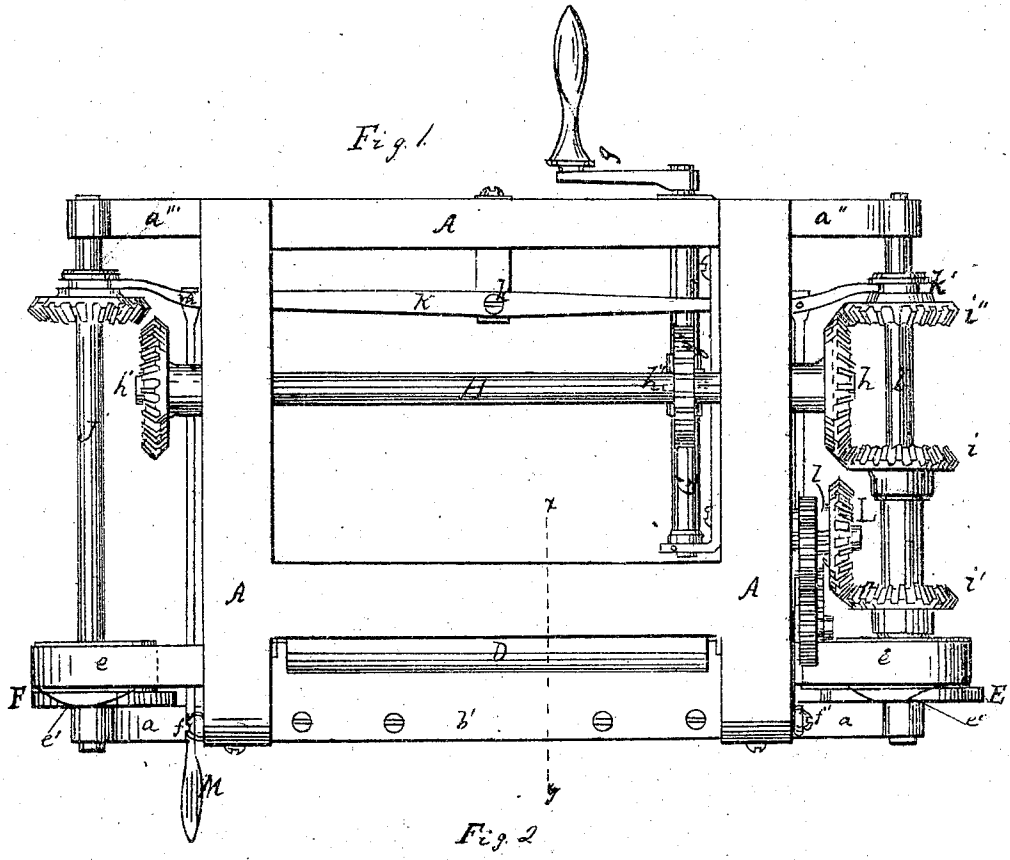


Fig. 2

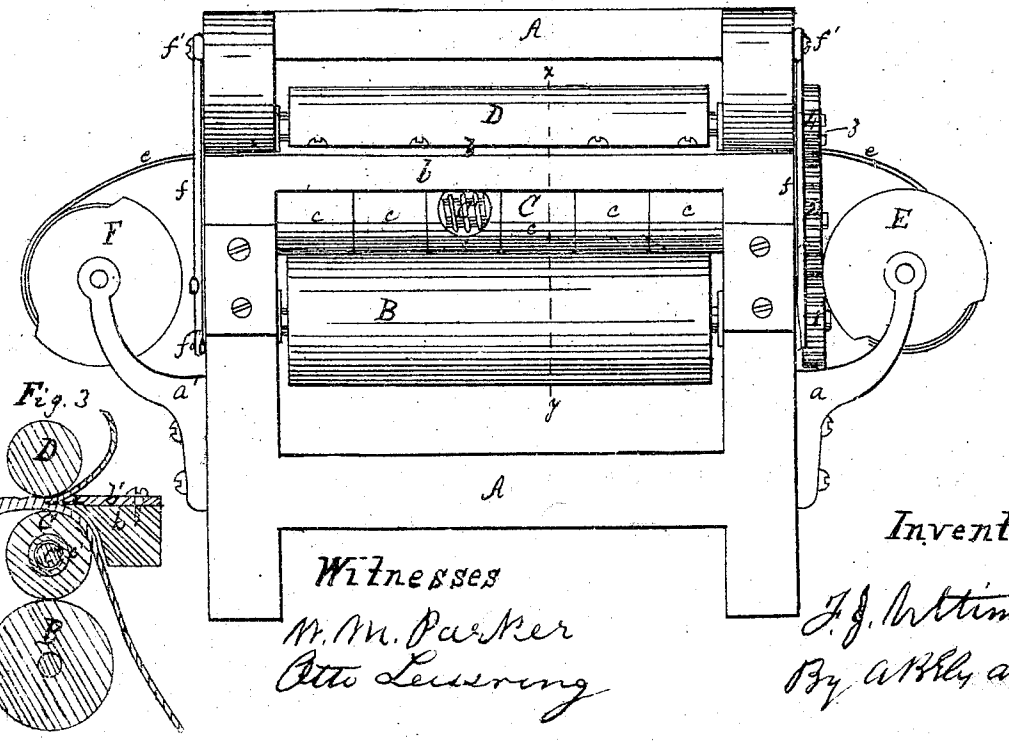


Fig. 3

Witnesses

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FRANCIS J. VITTUM, OF NEWBURYPORT, MASSACHUSETTS, ASSIGNOR TO W. N. ELY, OF STRATFORD, CONNECTICUT.

Letters Patent No. 74,734, *dated February* 18, 1868.

IMPROVED LEATHER-SPLITTING MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

Be it known that I, FRANCIS J. VITTUM, of Newburyport, in the State of Massachusetts, have invented a new and useful Improvement in Machines for Splitting Leather, of which the following, with the drawings, is a full description.

Figure 1 is a top view,

Figure 2 is a front view,

Figure 3 is a sectional view of the rollers, &c., through *x y*.

A A is the frame of the machine. B is a rubber or elastic roll, hung in bearings in the machine, and driven by gear-wheel 1. C is a compound roll, hung in bearings in the frame, and resting on roll B. This roll is composed of a small iron or other spindle, *c''*, surrounded by a loose spiral spring, *c'*, and this by a series of loose rings, *c c c*. D is a metallic or other roll, hung in bearings in the frame, and made adjustable as to its distance from roll C. This roll is driven by a gear-wheel, 4. *e e* is a thin cutting-knife, like a belt, coiled upon the flanged drums E and F, hung upon projecting bearings *a a'* on each side of the frame. The rear part of the knife rests upon a ledge, *b*, on the front of the frame, and its back runs against a half-grooved plate, *b'*, on top of *b*, and fastened to it by set-screws. G is the main driving-shaft, with crank at *g*, and having upon it a screw-gear at *h''*. H is another shaft, running across the frame from side to side, and having a gear-wheel, *g'*, taking into the threads of the screw *h''*. The shaft H projects at each end beyond the frame, and has upon its end bevelled gears *h h'*. I is another shaft on the right side of the frame, upon which the drum E is placed, and which is supported on projecting bearings *a a''*. Upon this shaft I, are placed three bevelled gears, *i i' i''*, the latter of which is loose and movable on the shaft. Gear-wheel *h* meshes permanently into *i*, and gear-wheel *i'* permanently into another bevelled gear-wheel, L, attached to the side of the frame. Bevelled gear *i''* may be shipped in and out of bevelled gear *h*. On the left side of the frame is another shaft, J, upon which the drum F is placed, and which is supported on projecting bearings *a' a'''*. Upon this shaft J is placed a loose bevelled gear-wheel, *j*, movable on the shaft, and which may be shipped in and out of bevelled gear *h'*. K is a lever, pivoted at *k* to a projection from the rear of the frame, and connected at its ends to collars *k' k''* on the shafts I and J, attached to the bevelled gears *i''* and *j*. M *m* is a rod, for operating the lever K, and shipping and unshipping the gears *i''* and *j* with gears *h* and *h'*. *l* is a gear-wheel, attached to the side of the frame on the axis of bevelled gear L. 2 and 3 are gear-wheels attached to the side of the frame. *d* is the leather passing between C and D, against the knife *e*. *f* are rods, on each side, hung on pivots *f'*, and pivoted below, at *f''*, to shipping-rods M *m*. *e'* are projections or cams on the back of the knife, near the two ends, intended to act upon the rods *f* alternately, and change the cutting-direction of the knife by shipping one and unshipping the other of the gears *h' k''*.

The operation is as follows: The crank *g*, being turned, revolves shaft G and worm-gear *h''*. This imparts motion to gear-wheel *g'*, and thus to shaft H and bevelled gears *h h'*. This imparts motion to bevelled gear *i*, and thus to shaft I, and bevelled gear *i'*, and bevelled gear *i''*, being shipped into gear. This will impart motion to drum E and bevelled gear L, thence to gear or pinion *l*, thence to gear or pinion 1 and roll B, thence to gears or pinions 2 and 3, and thence to gear or pinion 4 and roll D. The knife E will be unwound from drum F, and wound up on drum E. The leather, being fed in between C and D, will be split by the knife, one part passing above and the other below ledge and plate *b b'*. When the leather has passed through, or the knife has run its length, by drawing out the rod M *m* the gear *i''* will be unshipped from gear *h*, and gear *j* will be shipped into gear *h'*, and the motion of the knife will be reversed, and will unwind from drum E and wind up on drum F. When the knife is run to its length, the cam projection *e'* on the back, near the end, will automatically press against the rod *f*, and thus unship the gear *i''* or *j*, as may be desired, and change the direction of knife-motion.

Other automatic (or otherwise) methods of shipping and unshipping the gears, and of changing the direction of motion of the knife may be adopted. Grinders may also be adapted to the knife, so as to grind it and keep it sharp as it is used, and the knife may be wound or unwound, or drawn out so as to cut the whole or any part

of its length in any suitable manner, so that it be a ribbon or belt-knife, and not endless. The ring-roll should be made to move a little faster than the gauge-roll, to prevent the leather from crawling up against the gauge-roll.

The object of the compound roll C, with its spiral spring and sectional rings is, is combination with the rubber or elastic roll B, to receive and accommodate any inequalities of the leather, and enable a perfectly even and smooth sheet to be cut or split off.

My invention has more particular reference to the knife and the compound roller.

Having described my invention, what I claim in leather or other splitting-machines, or knife-machines for any continuous cutting purpose, is—

1. The long-belt knife, cutting either way, substantially as described.
2. The knife coiled on drums, and operating either way, substantially as described.
3. The compound roller, with spindle, spiral spring, and sectional rings, substantially as described.
4. The compound roller, as described, in combination with a rubber roller, substantially as described.
5. The compound roller, as described, in combination with a splitting-knife, substantially as described.
6. The cam or projection on the back of the knife, substantially as and for the purpose described.
7. Arranging and operating the knife by means substantially as described.

In testimony whereof, I have hereunto subscribed my name.

FRANCIS J. VITTUM.

Witnesses:

W. M. PARKER,

A. B. ELY.