(No Model.) 2 Sheets—Sheet 1.

J. CRYDERMAN.

REVERSING GEARING FOR MACHINERY.

No. 339,085. Patented Mar. 30, 1886.

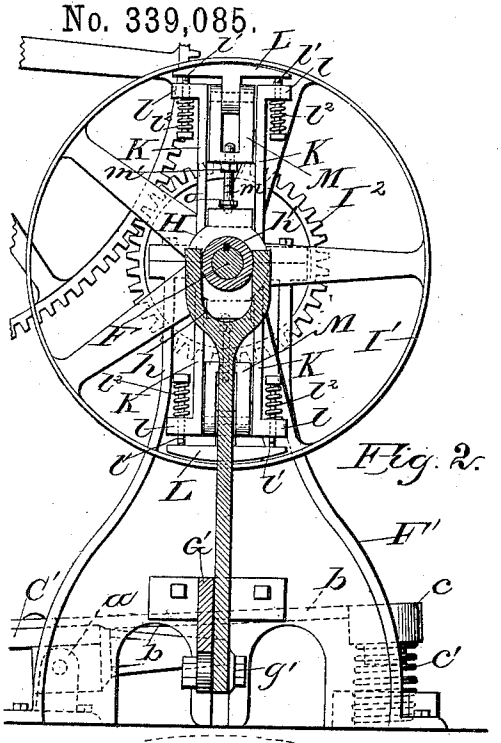


Fig. 2.

Fig. 1.

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Fig. 3.

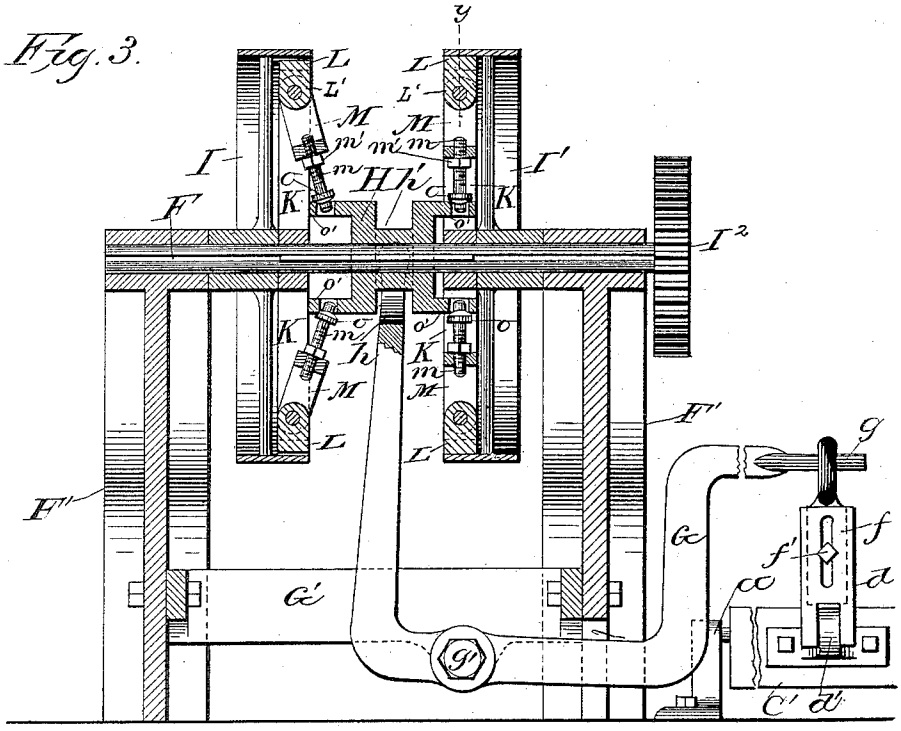
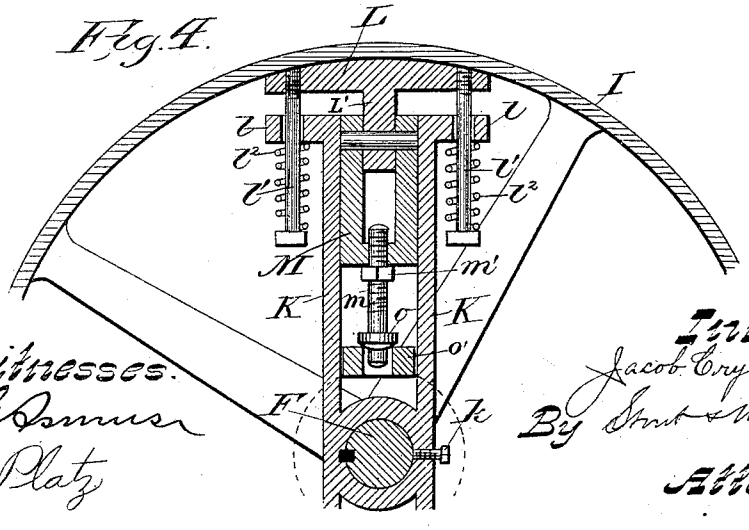


Fig. 4.



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UNITED STATES PATENT OFFICE.

JACOB CRYDERMAN, OF MILWAUKEE, WISCONSIN.

REVERSING-GEARING FOR MACHINERY.

SPECIFICATION forming part of Letters Patent No. 339,085, dated March 30, 1886.

Application filed April 23, 1885. Serial No. 163,195. (No model.)

To all whom it may concern:

Be it known that I, JACOB CRYDERMAN, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Reversing-Gearing for Machinery; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates particularly to devices for splitting leather, and will be fully described hereinafter.

In the drawings, Figure 1 is a front view of my invention. Fig. 2 is a section through line *x x*, Fig. 1. Fig. 3 is a section on line *z z*, Fig. 2; and Fig. 4 is a section on line *y y*, Fig. 3.

My device is to be attached to leather-splitting machines, or any other machine that there is a necessity of driving in two different directions. I show it as applied to a leather-splitting machine.

A is the standard of a splitter. B is its knife-eccentric, and C is the roller upon which the leather is wound after it leaves the knife.

C′ is a treadle that is pivoted in a standard, *a*, at each end of the machine.

b is an arm that projects from the treadle under the machine, and this arm on its end opposite the treadle carries a weight, *c*, that rests on a spring, *c′*.

d is a link projecting up from the inner edge of the treadle, to which it is hinged at *d′*, and this link has a slotted lug, *f*, adjustably secured to it by a bolt, *f′*. The upper end of lug *f* terminates in a ring, into which the rounded end *g* of a lever, G, projects, and the lever G is fulcrumed to a cross-bar, G′, at *g′*, its vertical arm terminating in a spanner, *h*, that fits in an annulus, *h′*, in a sleeve, H, that is keyed on pulley-shaft F between two loose pulleys, I I′, and on one end shaft F carries a pinion, I². The ends of shaft F bear in standards F′.

The hubs of the pulleys I I′ are about half as wide only as the faces of the pulleys, and just inside of each pulley an arm, K, is keyed on shaft F, and tightened in place by a set-bolt, *k*. These arms K are bifurcated at each end, and each bifurcation terminates in a flange, *l*, through which a bolt, *l′*, passes. The upper ends of bolts *l′* are screw-threaded and their lower ends are headed, (see Fig. 4,) and between the head of each bolt and its flange *l* a spring, *l²*, is interposed, while the upper ends of the bolts screw into a brake, L, the face of which conforms to the inner periphery of the pulley.

The brake L has a flange, L′, projecting from its under side between the arms of a toggle-link, M, and the upper end of a bolt, *m*, screws up into the bottom of this link, locked by a jam-nut, *m′*, serving to prevent the bolt from going in too far. The bolt *m* has a shoulder, *o*, near its inner end, and this end of the bolt projects into or through a slightly larger opening in an arm, *o′*, of the sleeve H.

The operation of my device is as follows: Normally the treadle is held by the arm *b*, just balanced so that the sleeve H will be equally distant from the hub of each pulley, and therefore with all the brakes off; but if the foot be pressed upon the treadle the weight *c* will be overcome, and the inner end of lever G will be raised, and this will cause the spanner on the opposite end to throw the sleeve toward pulley I, and forcing in the lower or inner ends of the toggles will force out the brakes and overcome the resistance of the springs, thus throwing pulley I into gear. Now, if the foot be removed and the toe placed under the treadle, the latter as it is lifted will in like manner throw the brakes off pulley I and apply the brakes of pulley I′, thus reversing the machinery to which my device is attached.

Instead of a treadle, I may use a hand-lever arranged substantially in the same manner.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a reversing-gear for leather-splitting or other machinery, the combination, with vertical standards united by a cross-bar and having suitable bearings for a drive-shaft carrying loose pulleys, and a lever fulcrumed to the cross-bar and terminating at one end in a spanner adapted to engage a clutch-sleeve operative on said drive-shaft to be thrown in and out of gear with the loose pulleys thereon, of weighted arm and a treadle united to said arm and adjustably connected to the clutch-operating lever, as set forth.

2. In a reversing-gear for leather-splitting or other machinery, a treadle having weighted arm and adjustably connected with a lever adapted to engage the sleeve of a clutch mech-

anism operative on the driving-shaft, in combination with suitable spring adapted to impinge against the weighted end of said treadle-arm, as set forth.

3. The combination, with a driving-shaft carrying loose pulleys I I′ and a sliding sleeve, H, of the bifurcated arms K, brakes L, having flanges L′, toggle-links M, pivoted to said flanges L′, screw-bolts *m*, having jam-nuts *m*′ and heads *o*, and connecting the sleeve and toggle-arms, the pins *l*′, having springs *l*², and the lever G, having span *h*, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

JACOB CRYDERMAN.

Witnesses:
STANLEY S. STOUT,
H. G. UNDERWOOD.