

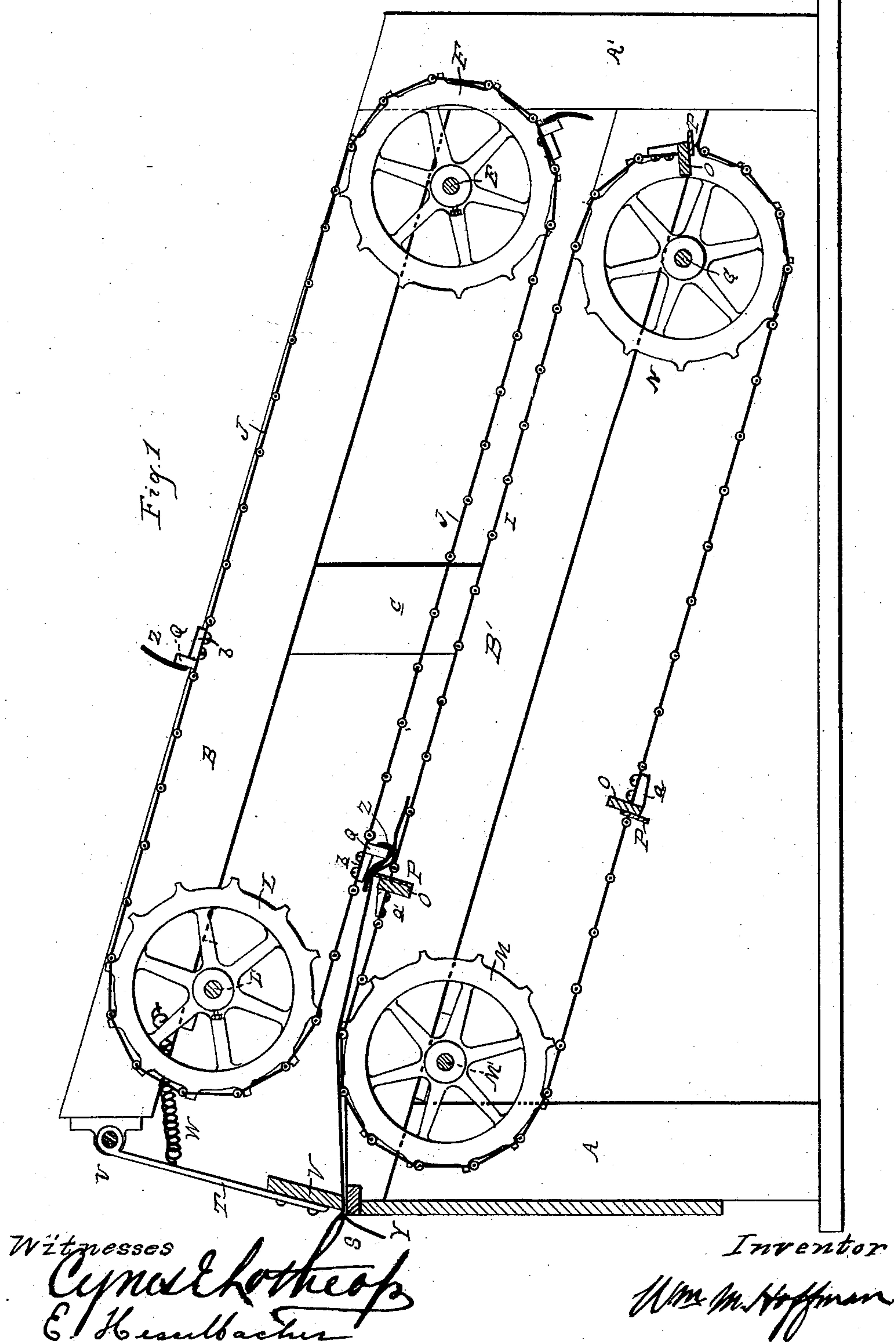
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3 Sheets—Sheet 1.

W. M. HOFFMAN.  
LEATHER STAKING MACHINE.

No. 389,511.

Patented Sept. 11, 1888.



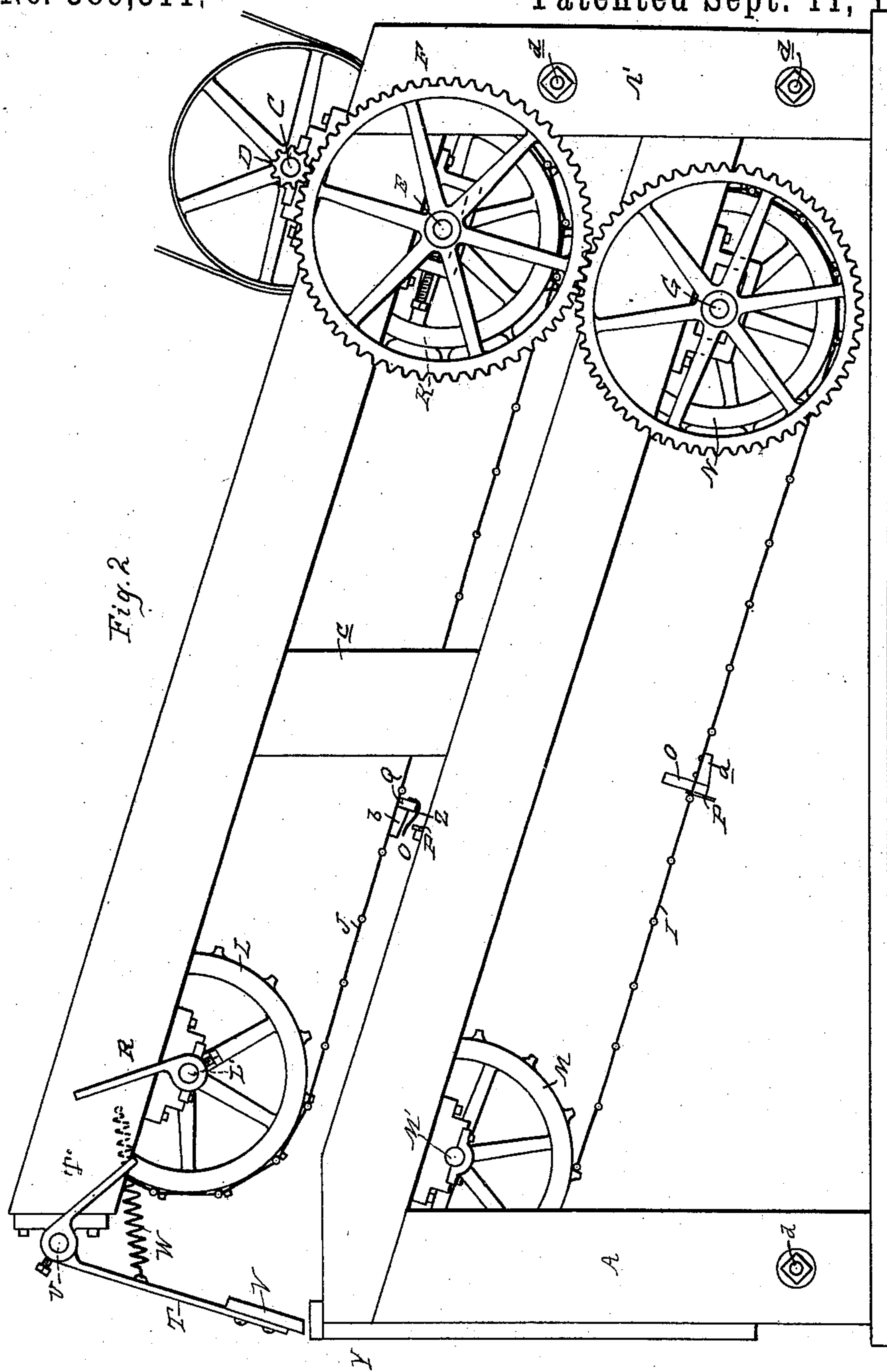
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LEATHER STAKING MACHINE.

No. 389,511.

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Witnesses:

Cyrus K. Rothop  
E. H. Esselbacter

Inventor:

Wm. M. Hoffman

(No Model.)

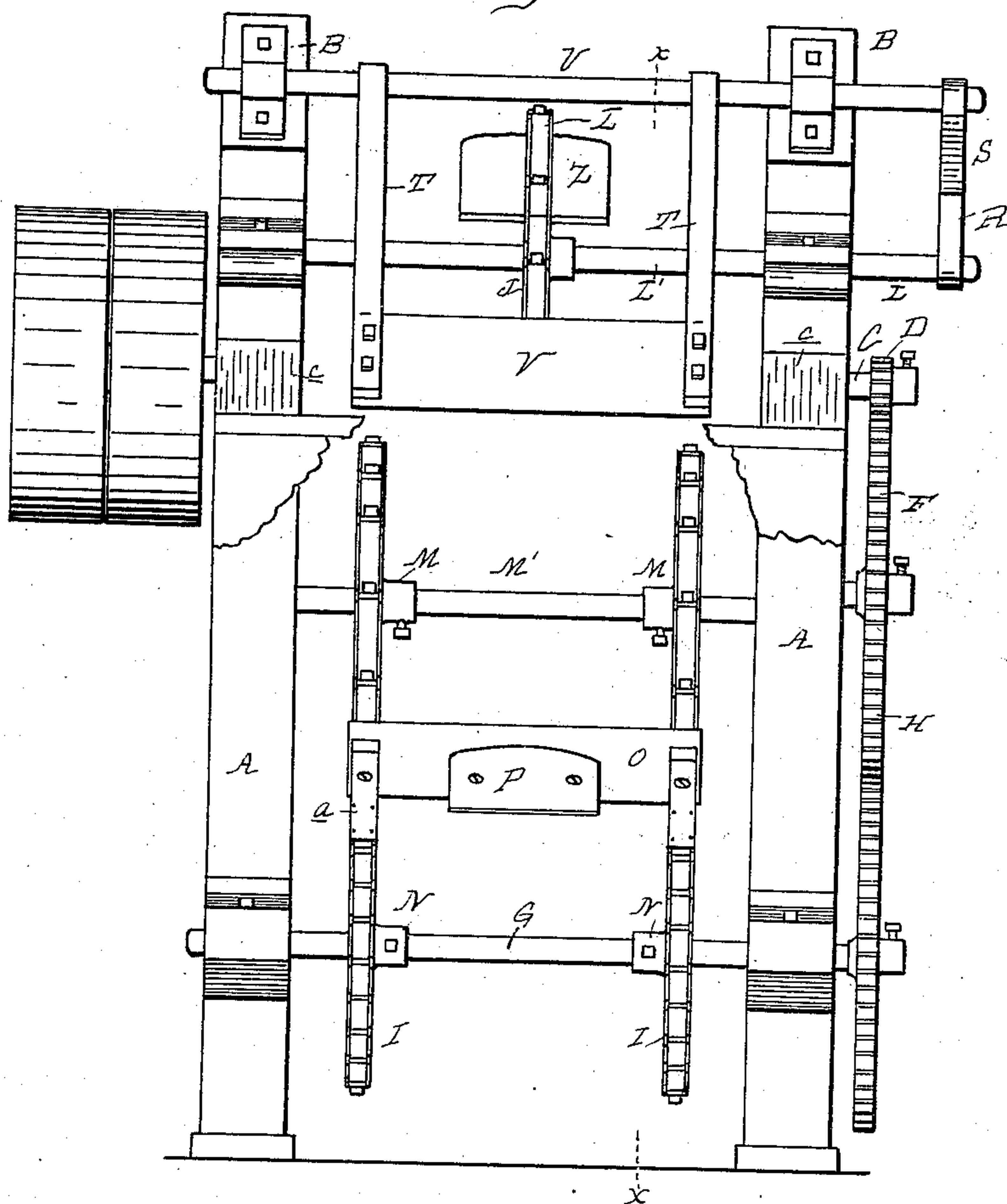
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Fig. 3



Witnesses:

Cyrus Kothop  
E. Hesselbacher

Inventor:

Wm M Hoffman



# UNITED STATES PATENT OFFICE.

WILLIAM M. HOFFMAN, OF DETROIT, MICHIGAN, ASSIGNOR TO THE HOFFMAN MACHINE COMPANY, OF SAME PLACE.

## LEATHER-STAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 389,511, dated September 11, 1888.

Application filed January 24, 1888. Serial No. 261,716. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM M. HOFFMAN, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful  
5 Improvement in Leather-Staking Machines, of which the following is a specification.

My invention consists in an improvement in machinery for staking, stretching, and softening leather, hereinafter fully described and  
13 claimed.

Figure 1 is a vertical longitudinal section on the line *xx*, Fig. 3. Fig. 2 is a side elevation, and Fig. 3 a rear elevation.

The principle of my invention consists in  
15 staking the leather while one end is securely held by a movable stake-plate and a movable flexible pad for holding the leather on the edge of the plate.

A represents the two front posts, and A' the  
20 two rear posts, of the frame of the machine.

B' represents two strong beams connected with posts A' A and firmly secured thereto, preferably set on an incline rising toward the front of the machine.

25 B represents two similar beams, one end of each of which is secured to the posts A', and said beams are supported on beams B' by up-rights *c*.

*d* represents bolts and nuts which tie the  
30 posts A' and posts A together.

N represents two sprocket-wheels secured on the shaft G, which is journaled in bearings fastened to the beams B' near the rear of the machine, and M represents two similar  
35 sprocket-wheels secured to the shaft M', which is journaled in bearings secured to the beams B' near the front of the machine.

I I represent two endless chains, each of which connects one of the sprocket-wheels M  
40 and N.

O O O represent three boards, the ends of which are secured to the respective chains I, and which have angle-pieces *a* bolted to one of the links of the chains. On each board O  
45 is secured a stake-plate, P, shorter than the board and extending above the board and having its upper edge rounded, as shown in Fig. 3. The stake-plate P is preferably made of thin steel or other metal.

50 F and L represent sprocket-wheels, which are secured to shafts E and L', respectively,

said shafts being journaled in bearings secured to beams B at the same distance apart as are the shafts M' G, and these sprocket-wheels are connected by an endless chain, J. 55

The sprocket-wheels F and L are adjustably secured to their respective shafts, (the way shown in the drawings is by set-screws,) so that the position of said sprocket-wheels and chain J may be altered without disturbing any  
60 other part of the machine.

Q Q Q represent boards secured to chain J, each having an angle-piece, *b*, which is riveted to one of the links of the chain, and these boards are placed at the same distance from  
65 each other on chain J that the boards O are from each other on chains I.

Z represents a pad of flexible material, such as rubber, secured to and projecting from each board Q, and the sprocket-wheels F and L are  
70 so placed on their shafts that the chain J and boards Q, with their flexible pads Z, lie substantially in a line drawn through the stake-plate P at right angles to the chains I J.

D represents a pinion secured to a shaft, C, 75 to which motion is communicated by a belt-pulley or any other suitable device.

H and K represent two gear-wheels of the same size secured, respectively, to the shafts G and E and meshing together, and the pin-  
80 ion D meshes into wheel K, so that when pinion D is rotated it drives the wheels K and H, and with them the sprocket-wheel F and the two sprocket-wheels N, with equal speed in opposite directions, and by means of chains J  
85 and I the sprocket-wheel L and the sprocket-wheels M are also driven with equal speed in opposite directions.

Y represents a table extending across the front of the machine secured to the posts A. 90

T T' represent the two arms of a bell-crank lever journaled on a shaft, U, secured to the front ends of the beams B, and the arm T extends down, either by itself or by an extension, V, far enough to come in contact with  
95 the surface-table Y, thus forming with said table a clamp.

W represents a spring, which may be of any size or kind, connected with arm T of the bell-crank lever T T' and tending to draw said arm  
100 toward the table Y.

R represents a tappet secured to the shaft



L' in such a manner that once in each rotation of said shaft it strikes arm T' of the bell-crank lever and forces the arm T away from the table Y against the resistance of spring W.

5 S represents the leather to be stretched, which is held against the operation of the stake-plates by the clamp T or its extension V and table Y.

I usually fill the space between the chains I  
10 with a canvas belt to support the leather. This belt may be laced to the chains and have slits through it to permit the stake-plates to rise above it.

The operation of my invention is as follows:  
15 The sprocket-wheels F and L are so adjusted that as they and sprocket-wheels M and N rotate the board Q, with its flexible pad Z, will travel through the space between the upper and lower sprocket-wheels slightly in advance of its corresponding board, O, and stake-  
20 plate P. This distance is adjusted with reference to the character of the leather to be staked, for it is obvious that the nearer the board Q and the stake-plate P come together the  
25 stronger will be the grip on the leather of the flexible stretcher and stake-plate P. So for heavy leather these are made to travel closely together, and for lighter leather the distance is increased. The adjustment being made and  
30 the machinery set in motion, the operator, standing in front of the machinery, takes the leather which is to be staked, and as the clamp opens inserts it between the clamp and the  
35 the flexible pads Z now comes in contact with the upper surface of the leather, by which the pad is bent toward the table, and immediately thereafter the corresponding stake-plate P comes in contact with the under surface of the  
40 leather, which is thus gripped flexibly between plate P and the pad Z, and as these move away from the clamp the leather is drawn over the stake-plate and is stretched.

Whenever clamp T opens, which is once in  
45 each revolution of the sprocket-wheels, as shown in the drawings, or may be arranged to occur more or less often, if desired, the operator moves the leather either from side to side or farther into the machine to stake each  
50 part of the leather until the whole has been stretched and staked, when he withdraws it from the machine as the clamp opens and puts in a fresh piece.

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

1. In a machine for staking leather, the combination, with a pair of sprockets carrying an endless chain having stake-plates secured

thereto at intervals, of a similar pair of sprockets carrying a similar chain provided with  
60 flexible pads secured thereto at such intervals as to co-operate with the stake-plates, and a suitable support for the leather, the chains being arranged to travel in unison and in suitable contiguity, substantially as described. 65

2. In a machine for staking leather, the combination, with a clamp for the leather having automatic intermittent action, of four sprocket-wheels, two upon each shaft, carrying two  
70 endless chains, upon which are mounted at intervals a series of flexible pads, four similar sprockets similarly mounted and carrying two endless chains, upon which are secured a series of staking-plates at such intervals as to register with the flexible pads, and means for driving  
75 said chains in substantial unison, substantially as described.

3. In a machine for staking leather, the combination of the following elements: an intermittently-working clamp for holding the  
80 leather, four sprocket-wheels carrying two endless chains, upon which are secured at regular intervals a series of staking-plates, and two sprocket-wheels adjustably secured to their respective shafts and carrying an endless chain,  
85 on which is secured at like regular intervals a series of flexible pads, the shaft of one of said sprockets having a tappet automatically releasing the clamp at each rotation, substantially as and for the purposes set forth. 90

4. In a machine for staking leather, the combination of the two sprocket-wheels M and two sprocket-wheels N, connected by the two  
95 chains I, the stake-plates P, carried on said chains I, the sprocket-wheels F and L, connected by chain J, and flexible pads Z, carried on said chain, the bell-crank lever T T', the spring W, the tappet R, and table Y, substantially as shown and described.

5. In a staking-machine, the combination,  
100 with a support for the leather, of two endless belts traveling in unison and in contiguity to each other, one belt carrying at intervals a series of staking-plates and the other at like intervals a series of flexible pads, a bell-crank  
105 lever thrown by a spring into clamping engagement with the leather, and a rotating arm engaging the other arm of the bell-crank at each revolution and releasing the leather, substantially as described.

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Witnesses:

CYRUS E. LOTHROP,  
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