

No. 657,005.

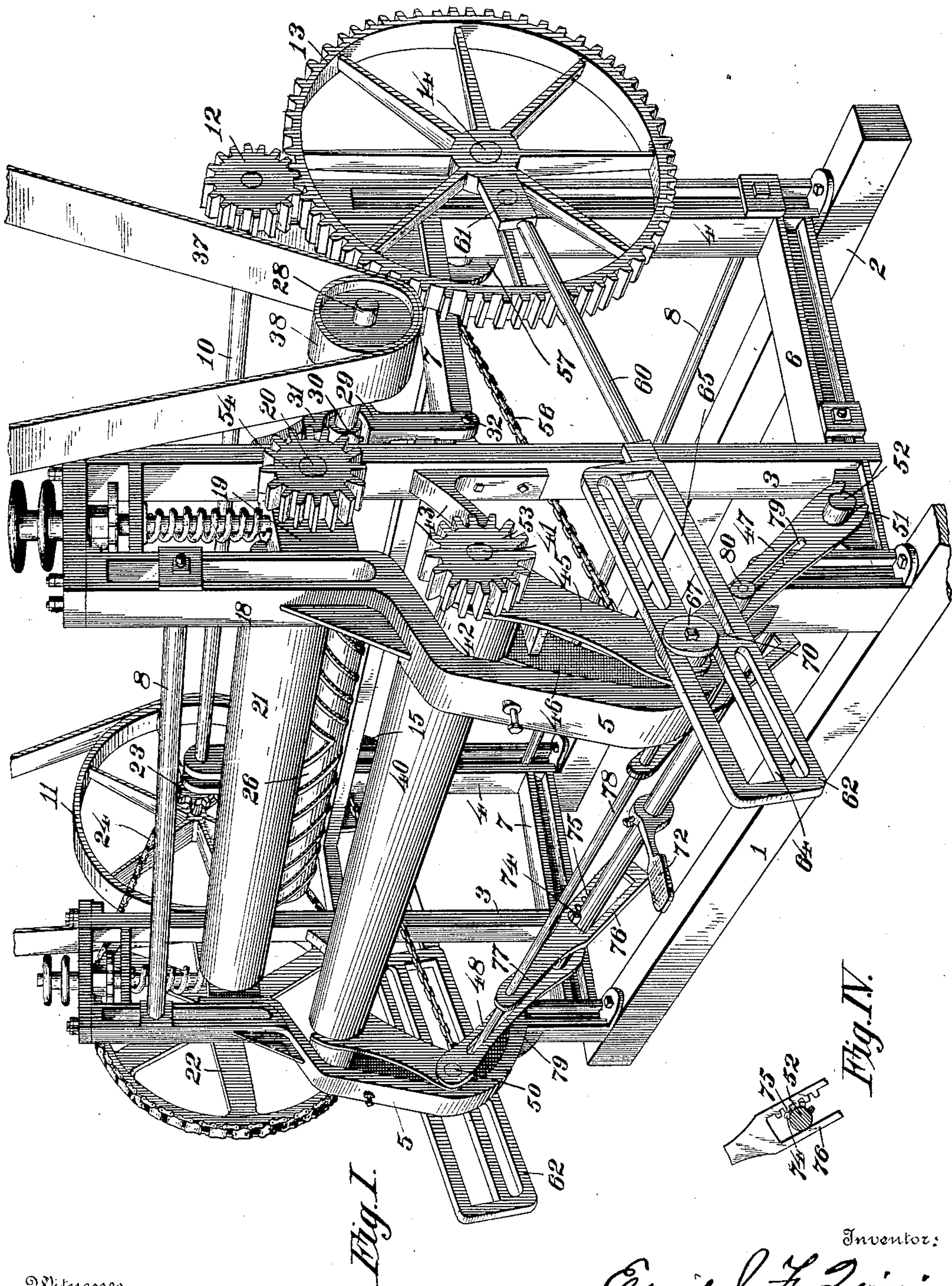
Patented Aug. 28, 1900.

E. J. F. QUIRIN.
LEATHER WRINGING MACHINE.

(Application filed Apr. 2, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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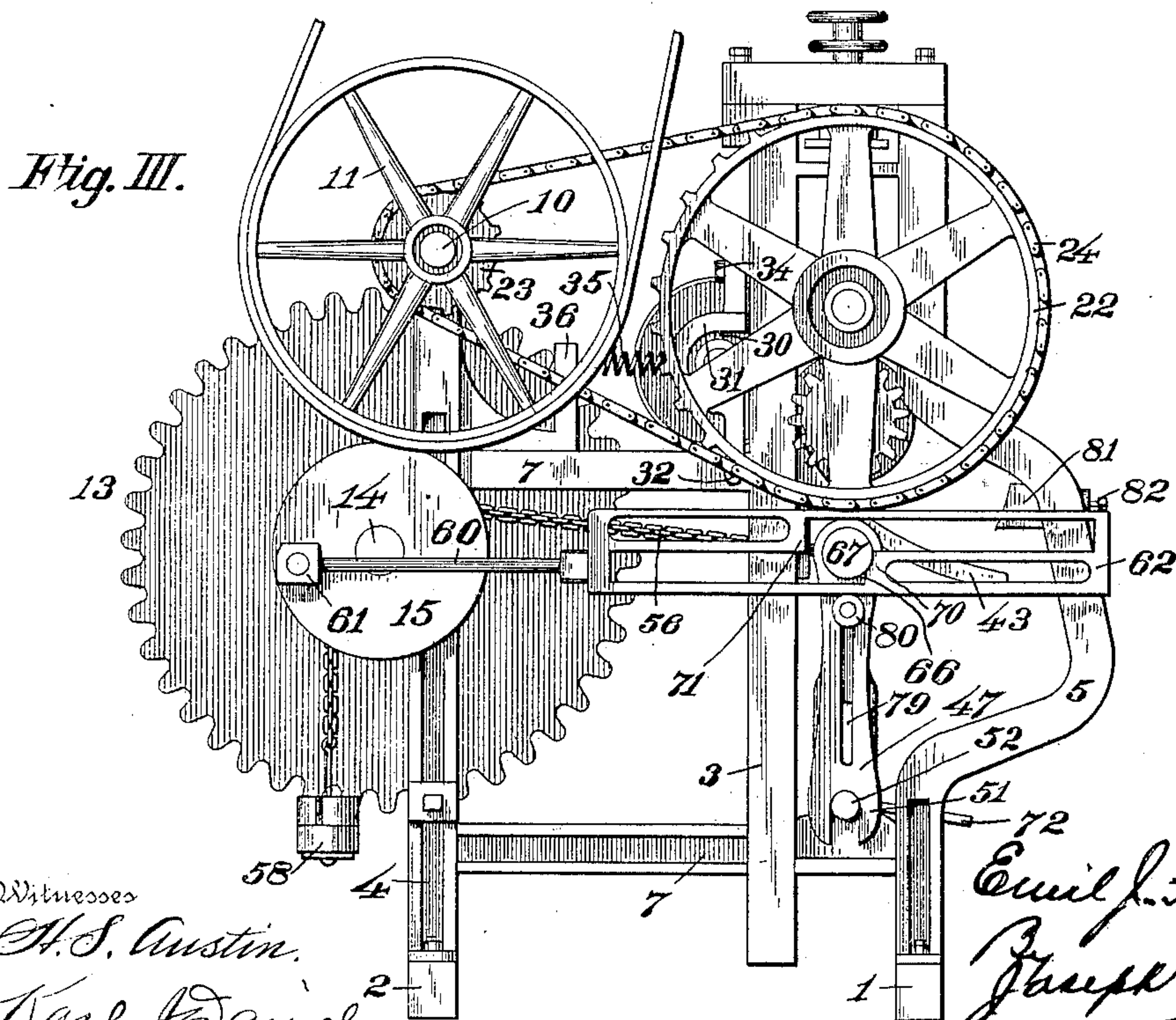
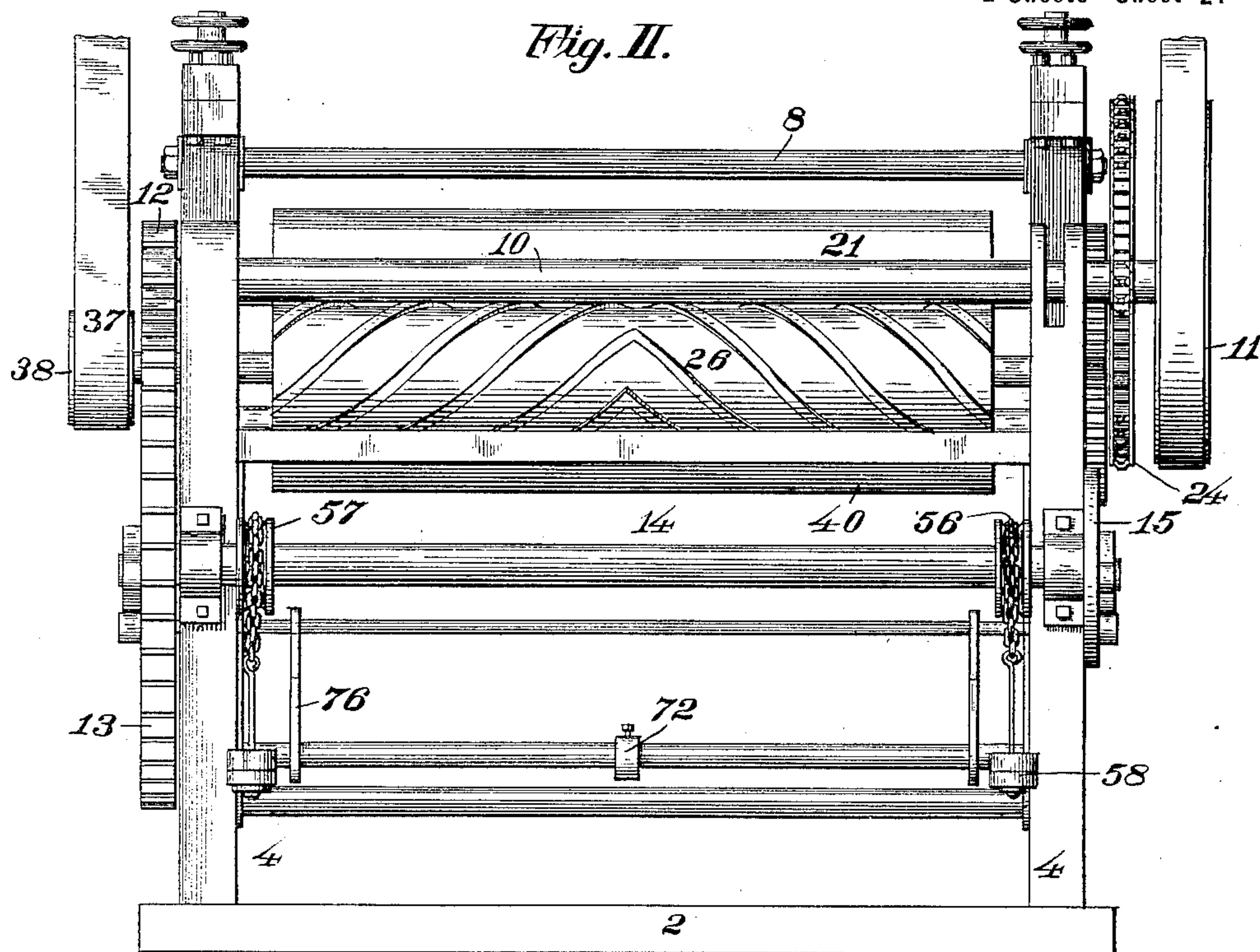
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UNITED STATES PATENT OFFICE

EMIL J. F. QUIRIN, OF TIOGA CENTRE, NEW YORK.

LEATHER-WRINGING MACHINE.

SPECIFICATION forming part of Letters Patent No. 657,005, dated August 28, 1900.

Application filed April 2, 1900. Serial No. 11,207. (No model.)

To all whom it may concern:

Be it known that I, EMIL J. F. QUIRIN, of Tioga Centre, in the county of Tioga, State of New York, have invented certain new and useful Improvements in Wringing-Machines, of which the following is a complete specification, reference being had to the accompanying drawings.

The object of my invention is to produce certain improvements in the machine described and illustrated in Patent No. 619,614, granted to me February 14, 1899, whereby the efficiency of the machine is increased and its operation facilitated.

In the accompanying drawings, Figure I is a perspective view of my improved machine looking toward the front thereof and showing the compression-rollers in the inoperative or open position. Fig. II is a rear elevation of the subject-matter of Fig. I. Fig. III is an end elevation of the subject-matter of Fig. I viewed from the opposite side shown in that figure, showing the compression-rollers in the operative or closed position. Fig. IV is a detail view of the rack and mutilated gear shown in Fig. I.

Referring to the numerals on the drawings, 1 and 2 indicate the sills, which constitute the bed upon which the frame of my machine rests. Combined with uprights 3 and 4 and breast-pieces 5, united by suitable cross-pieces 6 and 7 and tie-rods or similar binding members 8, they constitute the frame of my machine in a preferred form of embodiment.

Suitably mounted in the uprights 4 is a shaft 10, which, provided at one end with a fixed driving-pulley 11, constitutes the main driving-shaft of my machine. To the end of the shaft 10 opposite the pulley 11 is secured a pinion 12, which meshes with a gear 13, secured to the end of a shaft 14. To the end of the shaft 14 opposite the gear 13 is fixed an eccentric head or disk 15. (See Fig. III.) In a recess provided between the uprights 3 and parallel portions 18 of the breast-pieces 5, respectively, are adjustably mounted spring-depressed boxes 19, within which is revolubly mounted a roller-shaft 20, which between the boxes carries a compression-roller 21, that is fixed to it. The roller 21 is characterized by having a permeable envelop or jacket which may be made like the

porous bands of my previous patent, but which I prefer to make as a close-fitting covering of suitable material, such as felt or fabric of requisite thickness. The shaft 20 is provided upon its end adjacent to the pulley 11 with means for operatively uniting it with the driving-shaft 10. Such means may consist of a sprocket-gear 22, secured to the shaft 20 and geared to a pinion 23, fixed to the shaft 10, as by a sprocket-chain 24.

In operative proximity to the roller 21 is revolubly mounted a smoothing-roller 26. (Indicated in all figures, but clearly shown in Fig. II.) The smoothing-roller is preferably substantially the same in form and function as that described in my previous patent; but it is mounted in yielding and swivel bearings, by which in addition to its rotary movement it may yield to any inequality in the leather that passes between it and the compression-rollers. To accomplish the end specified, the shaft 28, to which the smoothing-roller 26 is secured, is mounted near its opposite ends in boxes 29, swiveled on vertical trunnions 30. (See Figs. I and III.) The trunnions 30 of each box are mounted in a bent portion of a frame 31, which is pivoted, as indicated at 32, at its lower end to a cross-piece 7 near its juncture with its upright 3. The frames 31 are limited in their oscillatory movement, as by an adjustment-screw 34, turning loosely in the upper end of the frame and threading into the upright 3. Each of the frames is yieldingly urged toward its upright 3, as by a coiled spring 35, seated at one end against the bend of the frame and at the other end against a projection 36 upon a cross-piece 7. The shaft 28 is preferably independently driven, as by a belt 37, working upon a pulley 38 on said shaft.

The mechanism above described is adapted to be constantly actuated, and particularly to impart to the compression-roller 21 uninterrupted rotary movement. It is essential, however, to provide in conjunction with the one compression member another which shall be adapted to operate intermittently—that is to say, to coöperate as a compression member with the roller 21 at required intervals and in the interim to remain at rest and become separated from the continuously-moving roller 21. I have accordingly illustrated pre-

ferred mechanism for accomplishing the object described. Such mechanism comprehends as a member to be operated upon a compression-roller 40, corresponding to the roller 21, with which it coöperates. The roller 40 is fixed about a shaft 41, and it is revolvably supported approximately near its ends, as in open boxes 42, having their lower external faces rounded to facilitate their downward movement upon bracket-arms 43, respectively, secured to the respective uprights 3. The boxes 42 have secured to them at opposite ends frame side pieces 45 and 46, which are placed so as to receive between them the brackets 43. Each pair of frame side pieces 45 and 46, with their respective boxes 42, constitutes one member of a toggle-lever, the other member of which consists of a pair of frame side pieces 47 and 48. Said last-mentioned member of the toggle-lever is movably united to the first-named member, as by a pin 50. The lower ends of each frame side piece 47 and 48 are preferably bifurcated, as indicated at 51, and, straddling a rock-shaft 52, suitably mounted, as in the frame cross-pieces 6, are movable thereon independently of the movement of the rock-shaft. From the foregoing description it will be perceived that if means be employed for bringing the two members of the toggle-lever into alinement, as shown in Fig. III, such means will suffice to bring the rollers 21 and 40 into close operative relations.

The shaft 41 being provided with a pinion 53 is, when the rollers are closed together, adapted to engage with a pinion 54, secured to the end of the shaft 20, and to derive motion from said shaft. To yieldingly hold the members of the toggle-levers in the alined positions after they have assumed the same, counterweighted chains or like flexible members 56 are employed, they being fastened, respectively, at one end to points adjacent to the pins 50 of the toggle-levers and passed over respective pulleys 57, turning as upon the shaft 14, beyond which the counterweights 58 are employed. The preferred means for forcing the toggle-levers into alinement consists of a pair of pitmen 60, which are respectively united at one end to the gear 13 and disk 15, respectively, as by eccentric-pins 61, and are provided at their other ends, respectively, with actuating-frames 62, that coöperate with the pins 50 to move them in opposite directions. The means employed in each for rendering the frames operative in the manner described consists of a pair of disalined longitudinally-disposed tracks or ways 64 and 65, which are connected by a medially-located transverse track or way 66. In the tracks or ways of each frame, as described, moves a roller or bearing 67, carried upon or incorporated with one of the pins 50. When the parts are in the position illustrated in Fig. I, the frames are free to reciprocate through the movement of the pitmen 60 without actuating the toggle-levers. If, however,

when the rollers 67 are opposite to the track 66 the frames be lifted, the next reciprocation thereof will cause the shoulders 70 to engage the rollers 67 and draw the respective members of the toggle-levers into alinement, in which position the frames are again free to reciprocate without actuating the toggle-levers, the rollers 67 working in the ways 65, respectively. During the time of the last-mentioned operation the rollers 21 and 40 are compressed against each other into operative contact. When again it is desired to separate the rollers to introduce a new skin between them, all that is necessary is to again depress the frames 62, so that the rollers 67 shall operate in the manner above described, when the rollers 67, passing into the track 66, are engaged by the shoulders 71 (compare Figs. III and I) and bend the toggle-lever, forcing its members out of alinement, as illustrated in Fig. I.

The means for raising and depressing the frames 62 which I prefer to employ comprise a foot-lever 72, adjustably fixed to the rock-shaft 52, which is provided adjacent to the respective frame side pieces 48 with mutilated pinions 74, that work, respectively, in racks 75 upon one side of oblong frames 76. Each of the frames 76 is provided with a projection 77 of suitable extent to carry a rod 78, that projects through slots 79, extending lengthwise through the respective frame side pieces 48 and 49. Beyond the latter the ends of the rod 78 project underneath the frame 62, which they engage through interposed antifriction-rollers 80.

When the members of the machine are in the position shown in Fig. I, the tracks 64 of the frames 62 confining rollers 67, the pinions 74 on the rock-shaft 52 are at the upper end of the rack 75. If now it be desired to actuate the toggle-levers and bring their members into alinement for forcing the rollers 21 and 40 together in the manner above described, it is only necessary for the operator to depress the foot lever or pedal 72, when through the lifting of the rod 78 the frame 62 will be raised and will perform the required function through the engagement of the shoulders 70 with the rollers 67, as was above specified. When he desires to separate the rollers, he releases the pedal 72, and the machine automatically separates the rollers 21 and 40.

From the foregoing description, the operation of which has been set forth in the description of its several groups of mechanisms, it will be perceived that the required operation of uniting and separating the coöperating rollers may be with ease accomplished at required intervals of any preferred duration without interfering with the continuous operation of the main driving-shaft of the machine. It may be also well to direct attention to the fact that provision is made for readily assembling and disassembling the members of the toggle-lever and for effecting required adjustments. In the latter connec-

tion it may be observed that buffers 81 are employed on the inner faces of the respective breast-pieces 5 for receiving the impact of the boxes 42 occasioned by the drop of the roller 40 and that these buffers are rendered adjustable, as by means of set-screws 82, projecting through the breast-pieces 5.

What I claim is—

1. In a wringing-machine the combination with a frame, driving-shaft, and compression-rollers, one of which is movable to and from the other, of toggle-lever mechanism carrying said movable roller, a pitman operatively connecting the driving-shaft and the toggle-lever mechanism, and means for causing said pitman to actuate the said toggle-lever mechanism in one direction or the other for actuating the movable roller as required, substantially as set forth.

2. In a wringing-machine the combination with a frame, driving-shaft, and compression-rollers, one of which is movable to and from the other, of toggle-lever mechanism carrying the said movable roller, and a pitman provided with disalined communicating tracks adapted to accommodate a coöperative member of the toggle-lever mechanism, shoulders in said tracks adapted to actuate said member in opposite directions, and means for bringing one shoulder or the other into coöperation with said member as required, substantially as set forth.

3. In a wringing-machine the combination with a frame driving-shaft, and compression-rollers, one of which is movable to and from the other, of toggle-lever mechanism carrying the said movable roller, and a pitman provided with disalined communicating tracks adapted to accommodate a coöperative member of the toggle-lever mechanism, a transverse track establishing communication between the tracks previously mentioned, and means for shifting the position of the members of the toggle-lever mechanism from one to the other of the first-named tracks, through the transverse track, substantially as set forth.

4. In a wringing-machine the combination with a frame driving-shaft, and compression-rollers, one of which is movable to and from the other, of means for raising and lowering the movable roller, comprising boxes near the opposite extremities of the roller-shaft, and brackets supporting and guiding the downward movement of the boxes, substantially as set forth.

5. In a wringing-machine the combination with a frame, driving-shaft, and compression-rollers, one of which is movable to and from the other, of means for raising and lowering the movable roller, comprising boxes near the opposite extremities of the roller-shaft, brackets supporting and guiding the downward movement of the boxes, and adjustable

buffers adapted to receive the impact of the boxes, substantially as set forth.

6. In a wringing-machine the combination with a frame, driving-shaft, and compression-rollers, one of which is movable to and from the other, of a pair of toggle-levers supporting the movable roller near its opposite extremities, means for operatively connecting the toggle-lever with the driving-shaft and uprights and breast-pieces in the frame for limiting the movement in opposite directions of the toggle-levers, substantially as set forth.

7. In a wringing-machine the combination with a frame, driving-shaft, and compression-rollers, one of which is movable to and from the other, of counterweighted toggle-lever mechanism supporting the movable roller, and means connected with the driving-shaft for operating the toggle-lever mechanism in opposite directions, substantially as set forth.

8. In a wringing-machine the combination with a frame, driving-shaft, and compression-rollers, one of which is movable to and from the other, of a pair of toggle-levers supporting the opposite extremities of the movable roller, pitmen provided with disalined communicating tracks, operatively uniting the driving-shaft and a member of the toggle-levers respectively, a rod movable endwise of the lower member of the toggle-levers adapted to engage the said pitmen and means for raising and lowering the rod, substantially as set forth.

9. In a wringing-machine the combination with a frame, driving-shaft, and compression-rollers, one of which is movable to and from the other, of a pair of toggle-levers supporting the opposite extremities of the movable roller, pitmen provided with disalined communicating tracks operatively uniting the driving member and a member of the toggle-levers respectively, a rod movable endwise of the lower member of the toggle-levers, adapted to engage the said pitmen and means for raising and lowering the rod, said means comprising a rock-shaft and foot-lever, a pinion on the rock-shaft and a frame provided with a rack engaging with the pinion, said frame supporting the pitmen-actuating rod, substantially as set forth.

10. In a wringing-machine the combination with a frame and its compression-rollers, of a smoothing-roller provided with a shaft mounted in swiveled boxes, trunnioned in yielding frames upon the main frame, substantially as and for the purpose specified.

In testimony of all which I have hereunto subscribed my name.

EMIL J. F. QUIRIN.

Witnesses:

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A. G. VAN NORSTRAN.