

No. 711,947.

Patented Oct. 28, 1902.

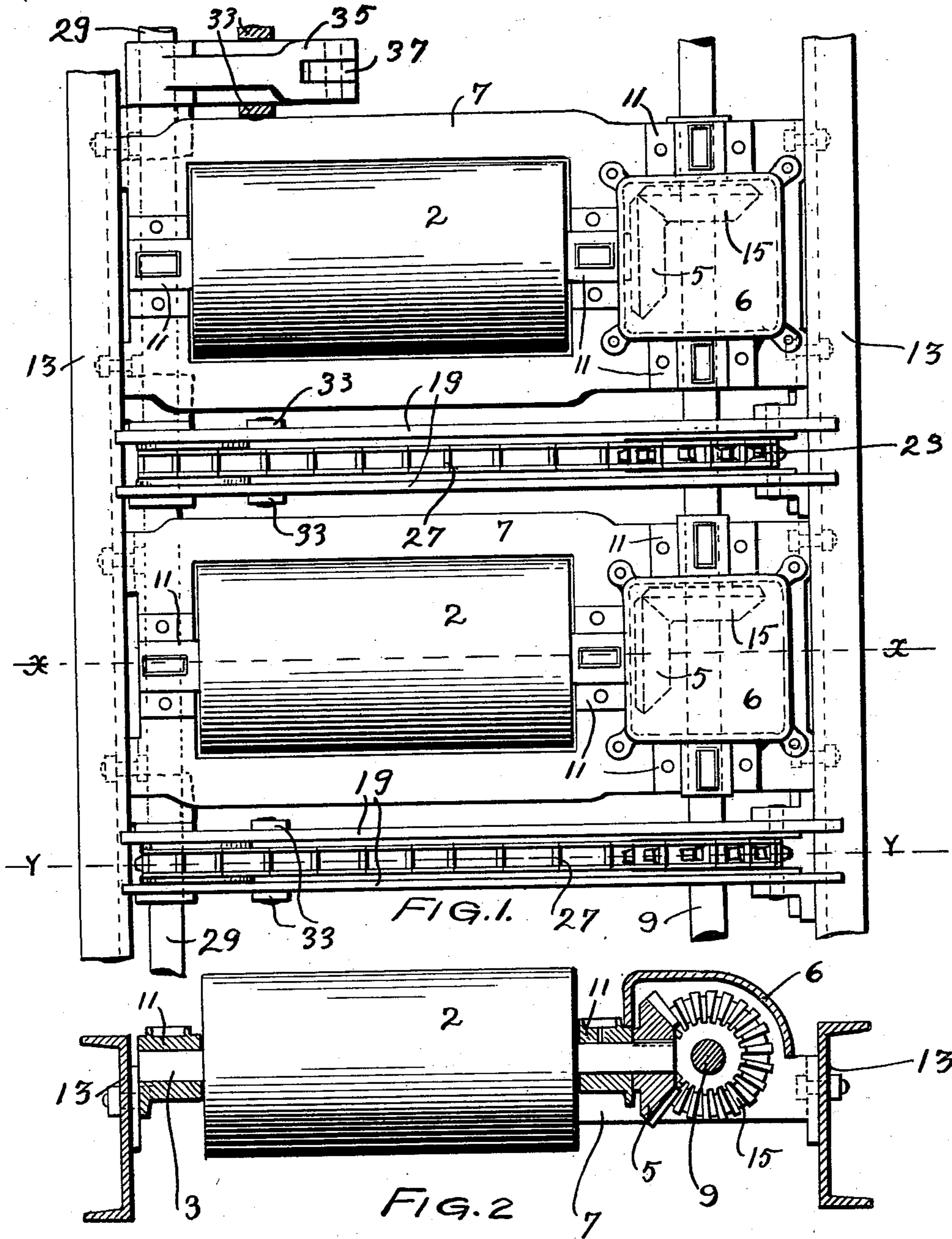
H. G. DITTBENNER.

GEAR COVER AND FRAME FOR LIVE ROLLS.

(Application filed Dec. 20, 1901.)

2 Sheets—Sheet 1.

(No Model.)



WITNESSES
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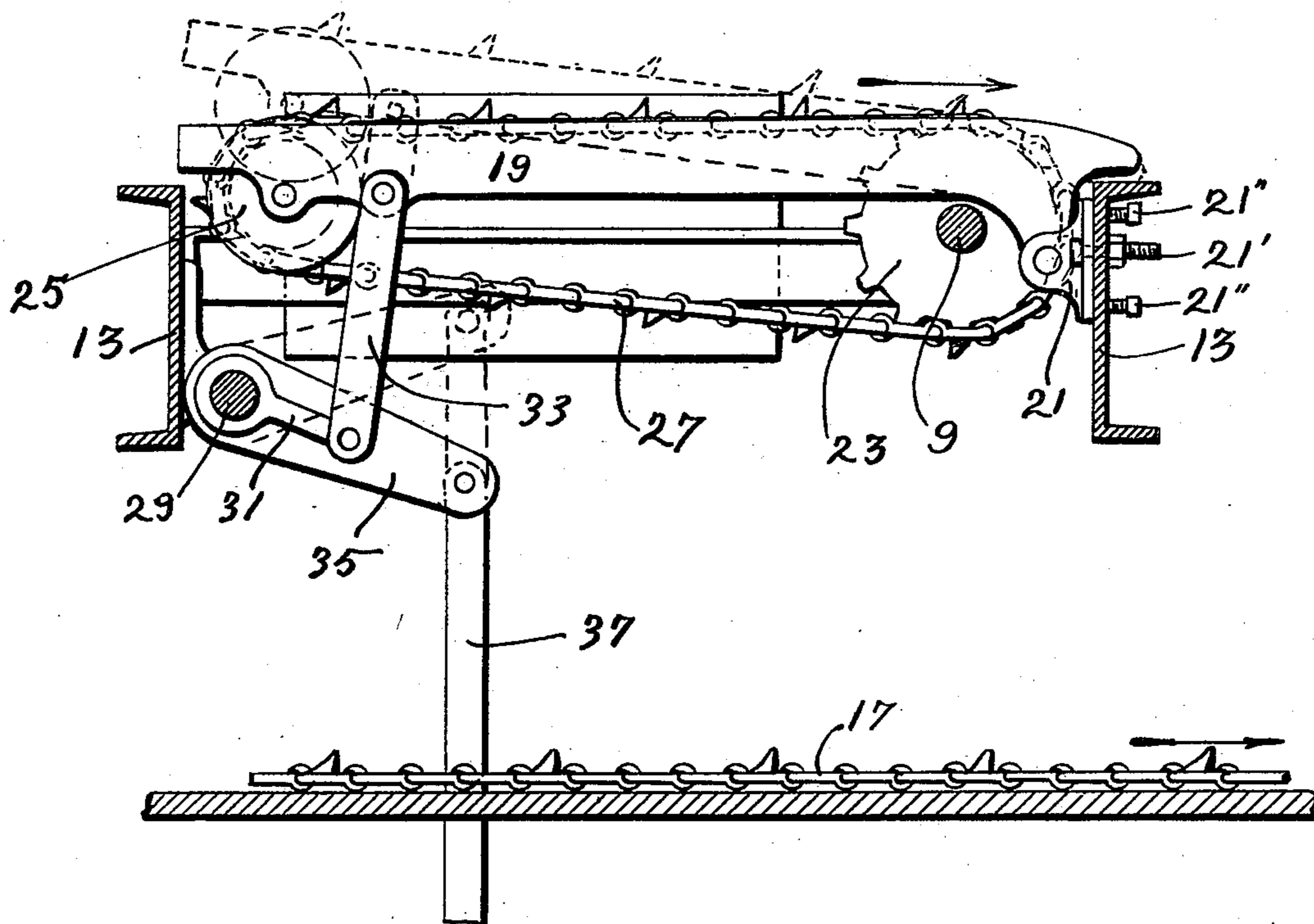
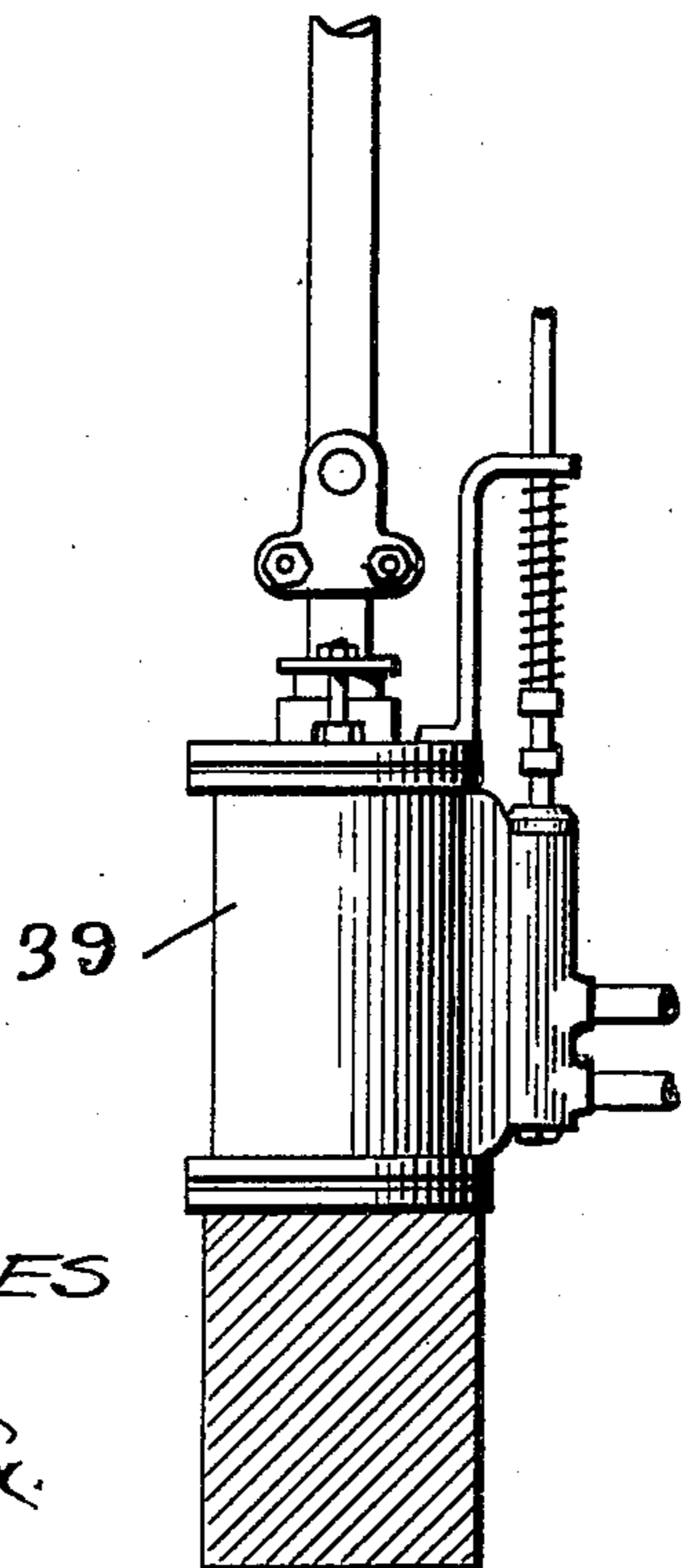


FIG. 3



WITNESSES

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UNITED STATES PATENT OFFICE.

HERMANN G. DITTBENNER, OF MINNEAPOLIS, MINNESOTA.

GEAR-COVER AND FRAME FOR LIVE-ROLLS.

SPECIFICATION forming part of Letters Patent No. 711,947, dated October 28, 1902.

Application filed December 20, 1901. Serial No. 86,651. (No model.)

To all whom it may concern:

Be it known that I, HERMANN G. DITTBENNER, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain Improvements in Gear-Covers and Frames for Live-Rolls, of which the following is a specification.

This invention relates to improvements in live-rolls used for handling and sorting lumber; and the objects I have in view are to provide improved means for supporting and covering the gears by which the rolls are driven, said means being arranged to permit a ready reversal of the direction of movement of the rolls, and also to provide an improved frame by which the live-rolls may be supported.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in the constructions and combinations described hereinafter and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan view of a portion of the supporting-frame for a series of live-rolls, illustrating my present invention. Fig. 2 is a section on line *x x* of Fig. 1, the roll and its shaft being shown in elevation. Fig. 3 is a vertical section on line *y y* of Fig. 1.

In the drawings, 2 2 represent live-rolls of any ordinary size or construction. They are mounted upon shafts 3, said shafts being provided with the bevel-pinions 5. Each of these rolls is mounted in a frame 7, preferably of cast metal, said frame being provided with bearings for a shaft 3 and for the driving-shaft 9, which is arranged at right angles to the shaft 3. Suitable caps 11 are placed over the shafts 3 and 9 and are secured to the frame 7. The frames 7 are arranged at any suitable distance apart between suitable channel or other beams 13, to which they are secured by bolts or in any other suitable way. These frames are preferably of the form shown and being fastened at the corners to said beams serve to brace the same against twisting and swaying. Each of the frames 7 has a substantially rectangular recess within which the pinion 5 on the shaft 3 is arranged. There is also arranged in this recess a corresponding pinion 15 upon the driving-shaft 9. This latter

pinion engages the pinion 5, and by means of the shaft 9 and pinion 15 all of the rolls 2 are positively operated. Hence these rolls are called "live-rolls." The construction shown and described permits the rolls to be driven in either direction, as by removing the shaft 9 and turning it end for end or reversing the pinion 15 thereon said rolls may be driven in opposite directions.

For the purpose of removing the lumber from the live-rolls at any point and transferring it to the transverse carrier 17 I provide between the rolls a series of carriers, which are constantly driven and which may, when desired, be elevated so as to be brought in contact with the lumber and slabs passing along on the rolls. As shown, each carrier consists of a skid-frame 19, pivoted upon lugs 21 on one of the beams 13 and extending upward over the shaft 9 and then substantially horizontally to a point near the other beam 13. These lugs are secured to the beams 13 by bolts 21', and I prefer to provide set-screws 21" in said beams, so that upon loosening the bolts 21' and moving the set-screws the lugs may be moved away from the beams and upon withdrawing the set-screws and tightening the bolts the lugs may be drawn back against the beams. In this way I am able to regulate the tension of the carrier-chains. A sprocket-wheel 23 is arranged upon the shaft 9 between the two parts of the skid-frame 19. A sprocket-wheel 25 is mounted upon the parts of the frame 19 at its free end. A sprocket-chain carrier 27 passes around the sprocket-wheel 23 and around the sprocket-wheel 25 and extends between the two parts of the skid-frame. When the carrier is in its normal position, as shown by full lines in Fig. 3, it lies below the tops of the live-rolls, and hence does not come in contact with the lumber that is being moved along by said rolls. When it is desired to transfer the lumber from the rolls to the carrier 17, the frame 19 is raised to the position shown by dotted lines in Fig. 3, and the carrier 27 engages the lumber passing along on said rolls and carries it over the beam 13 and deposits it upon the carrier 17. Any suitable means may be provided for raising the frame 19. I have here shown a shaft 29, provided with crank-arms 31, connected to the frame 19 by links 33. The crank-arm 35 is secured

to the shaft 29 and connected to the piston-rod 37. A suitable steam-cylinder 39 is provided for operating the piston-rod 37. It will be seen that I secure in this manner an exceedingly effective and simple construction for the support and operation of the live-rolls and coöperating parts. The frames 7 are each preferably made integrally, usually each being cast in one piece. These frames are dropped between beams 13 and are secured thereto by the bolts 7'. They form efficient means for supporting the live-rolls and permitting the pinions to be arranged so as to drive said rolls in either direction. The transverse carriers are driven from the same shaft that operates the live-rolls, and the means for supporting and operating said carriers are simple and efficient. I also prefer to provide a gear-case for inclosing the pinions 5 and 15. This case is represented at 6 and consists of a suitable shield arranged over said pinions 5 and 15 and suitably secured to the frame 7.

The details of the construction herein shown and described may of course be varied without departing from my invention.

I claim as my invention—

1. The combination, with the longitudinal beams 13, of a series of live-roll frames 7 arranged between said beams and supported thereby, the rolls 2 provided with shafts 3 mounted in said frames, and the driving-shaft 9 also mounted in said frames at right angles to the shaft 3 and provided with suitable pinions engaging corresponding pinions upon the shafts of the rolls, substantially as described.

2. The combination, with the frame 7 provided with bearings of a driving-shaft, a roll, provided with a suitable shaft mounted in said frame, a pinion upon the roll-shaft and a reversible pinion upon the driving-shaft, substantially as described.

3. The combination, with the longitudinal beams, of a series of frames arranged between and supported by said beams, each of said frames being provided with suitable bearings, rolls mounted in said frames, a shaft also mounted in said frames and suitable gearing connecting said driving-shaft and said rolls, substantially as described.

4. The combination, with the longitudinal beams, of a series of frames arranged between and supported by said beams, each of said frames being formed integrally and provided with suitable bearings, rolls provided with suitable shafts mounted in said frames, a driving-shaft also mounted in said frames and suitable pinions connecting said driving-shaft and said roll-shafts, substantially as described.

5. The combination, with the longitudinal beams, of integral frames 7 located between and supported by said beams, rolls mounted in said frames, a driving-shaft 9 also mounted in said frames, pinions connecting said driving-shaft and said roll-shafts, and suitable gear-covers inclosing said pinions and secured to said frames, substantially as described.

6. The combination, with the longitudinal

beams, of transverse frames located between and secured to and supported by said beams, live-rolls mounted in said frames, the series of skid-frames arranged between said transverse frames and pivoted to one of said beams, the carriers 27 supported by said skid-frames, and means for raising the free ends of said skid-frames, for the purpose specified.

7. The combination, with the longitudinal beams, of transverse frames arranged between and supported by said beams, suitable rolls mounted in said frames, a driving-shaft 9 extending parallel with said beams and connected with said rolls, frames 19 pivoted to one of said beams and extending over the shaft 9, carriers 27 supported by said frames, means for raising the free ends of said frames 19.

8. The combination, with the driving-shaft 9 provided with a sprocket-wheel 23, of a frame 19 pivoted at one end in proximity to said shaft and extending over the same and provided at its free end with a sprocket-wheel 25, a sprocket-chain carrier mounted upon the wheels 23 and 25, and means for raising or lowering the free end of said frame 19, substantially as described.

9. The combination, with the parallel beams, of rectangular frames provided between said beams and supported thereby and secured at their corners thereto and bracing and staying the same against swaying or twisting, rolls mounted in said frames, and means for operating said rolls.

10. The combination, with the parallel beams, of frames provided between said beams and supported thereby and secured thereto, and adapted to brace and stay said beams against swaying or twisting, skid-frames provided between said frames and pivotally supported at one end to one of said beams, carriers provided on said skid-frames, and means for raising the free ends of said skid-frames.

11. The combination, with the parallel beams, of transverse staying or bracing frames provided between said beams and secured thereto, skid-frames arranged between said transverse frames and pivoted at one end to one of said beams, carriers provided on said skid-frames, means for moving said skid-frames toward or from the beam whereon they are pivoted to regulate the tension of said carriers, and means for raising the free ends of said skid-frames.

12. The combination, with the parallel beams, and means for bracing or staying the same, of a driving-shaft provided with a sprocket-wheel, a skid-frame pivotally supported on one of said beams and having a sprocket at its free end, a carrier mounted on said driving-shaft sprocket and said skid-frame sprocket, means for raising or lowering the free end of said skid-frame, and means for moving its pivotal support toward or from the beam whereon it is secured, whereby the tension of said carrier may be regulated.

13. The combination, with the longitudinal

beams, of transverse bracing-frames arranged
between and supported by said beams, suit-
able rolls mounted in said frames, a driving-
shaft extending parallel with said beams and
5 connected with said rolls, skid-frames ar-
ranged between said beams, lugs adjustably
secured to one of said beams and whereon said
skid-frames are pivoted, carriers supported
by suitable sprockets on said frames and on

said driving-shaft, and means for raising the 10
free ends of said skid-frames.

In witness whereof I have hereunto set my
hand this 16th day of December, 1901.

HERMANN G. DITTBENNER.

Witnesses:

RICHARD PAUL,
M. C. NOONAN.