

(No Model.)

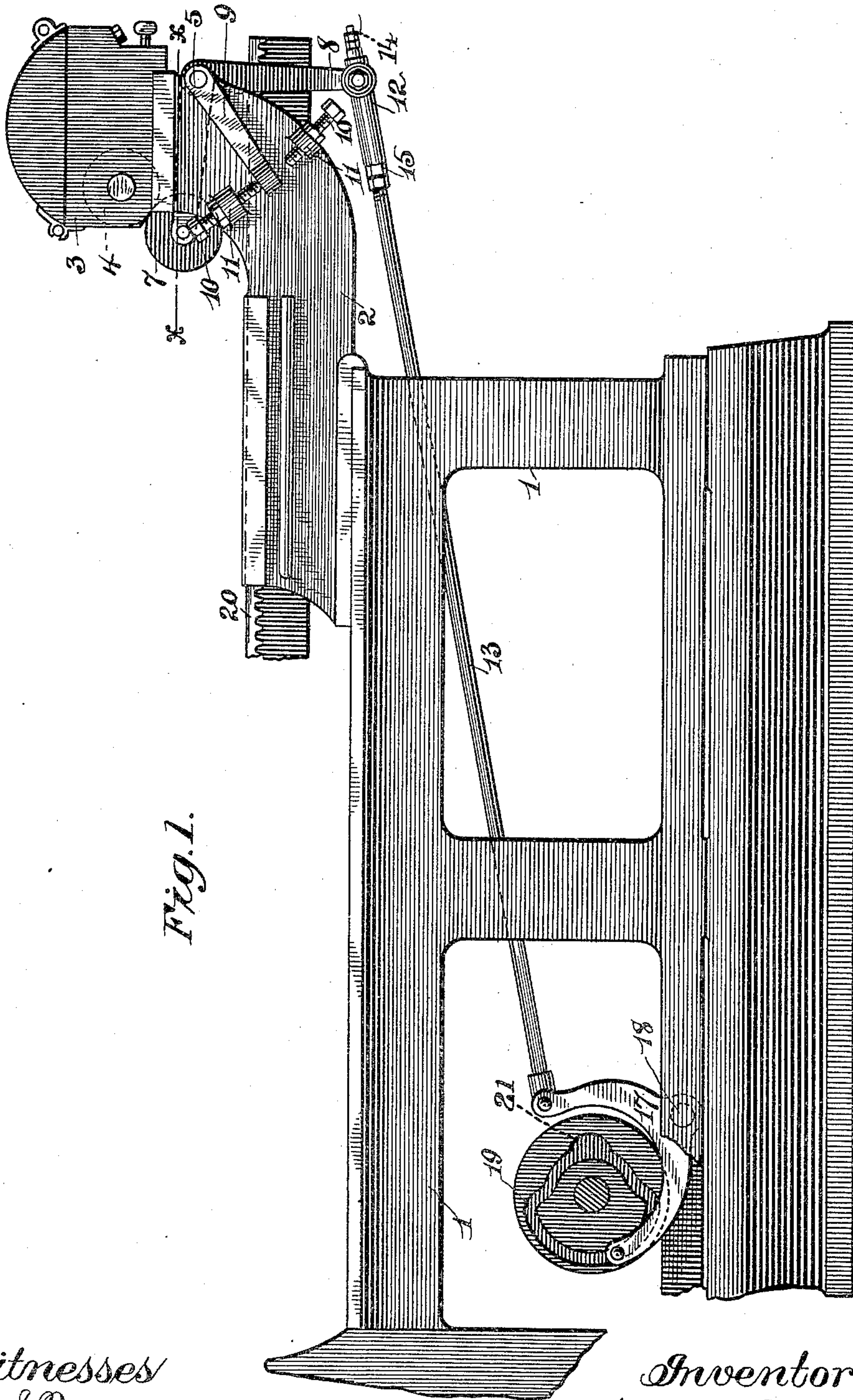
2 Sheets—Sheet 1.

S. WHITLOCK.

DUCTOR ROLLER MECHANISM FOR PRINTING PRESSES.

No. 436,846.

Patented Sept. 23, 1890.



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(No Model.)

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Fig. 2.

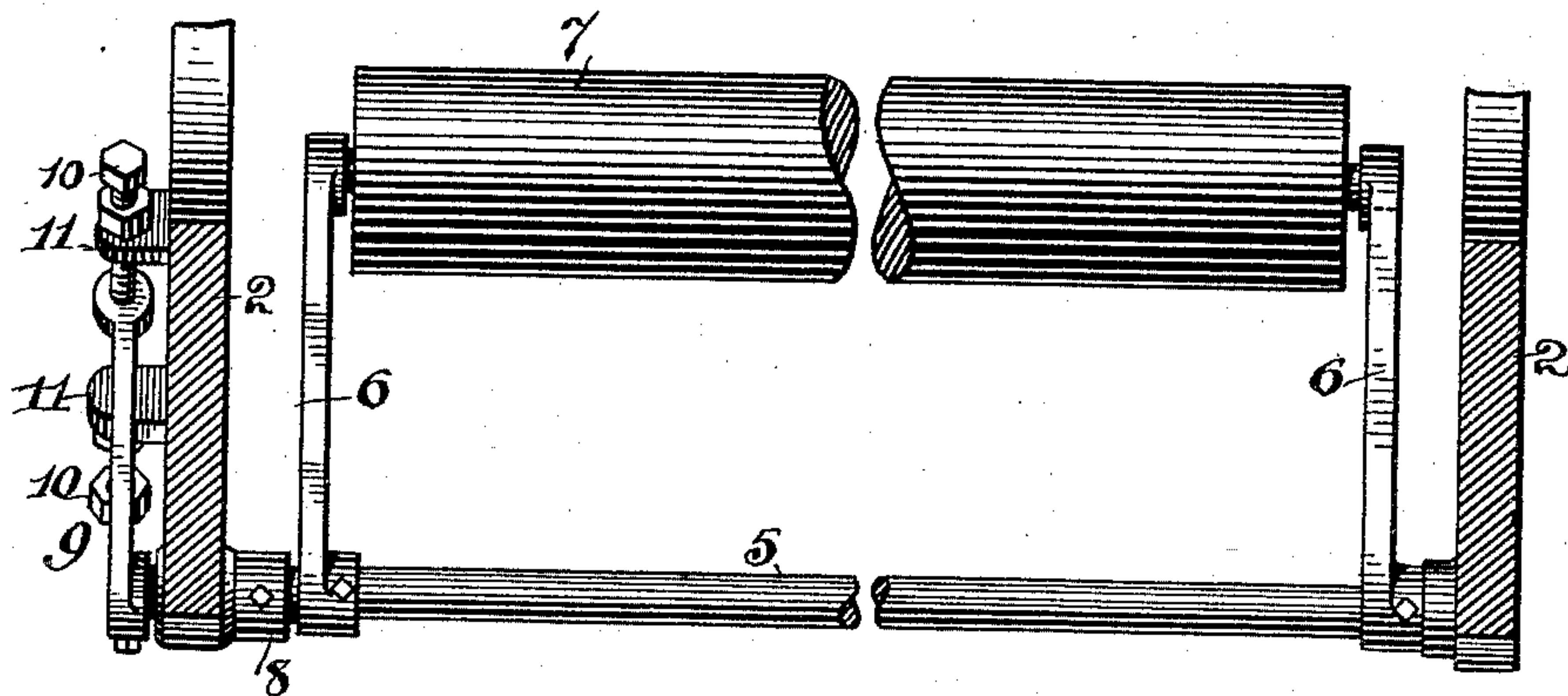
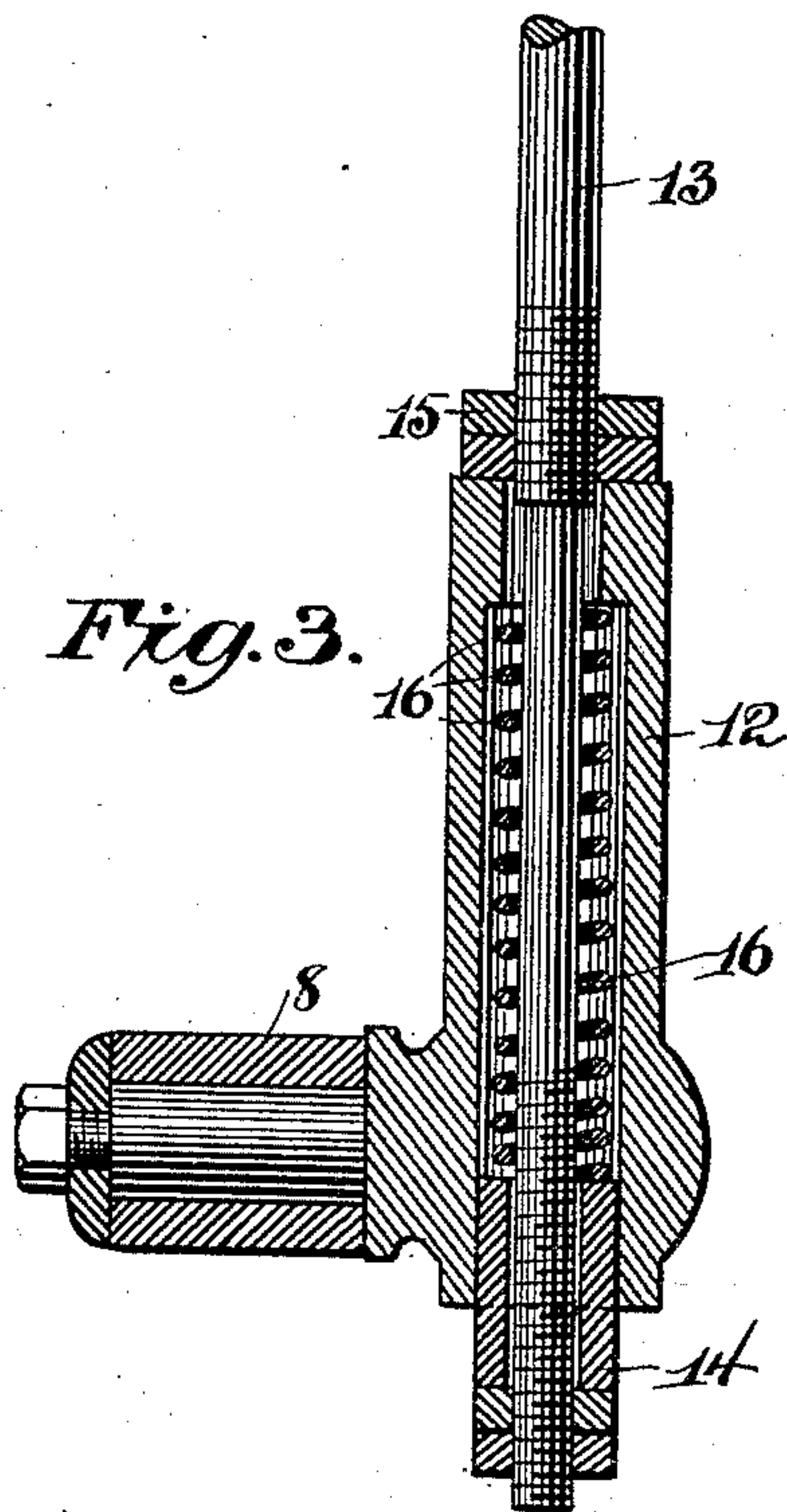


Fig. 3.



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UNITED STATES PATENT OFFICE.

STURGES WHITLOCK, OF SHELTON, CONNECTICUT, ASSIGNOR TO THE
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DUCTOR-ROLLER MECHANISM FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 436,846, dated September 23, 1890.

Application filed November 25, 1889. Serial No. 331,514. (No model.)

To all whom it may concern:

Be it known that I, STURGES WHITLOCK, a citizen of the United States, residing at Shelton, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Ductor-Roller Mechanism for Printing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in printing-machines, but more especially to the mechanism whereby the ink from the fount is transferred little by little, as required, to the ink-plate, whence the distributing mechanism disposes of it; and the object of my invention is to provide means for the support and operation of the ductor-roller, whereby the throw of the latter and its impact against the fount-roller and the ink-plate may be controlled and varied; and with these ends in view my invention consists in the construction and arrangement of parts hereinafter fully and in detail explained, and then recited in the claims.

In order that those skilled in the art to which my invention appertains may fully understand its construction and operation, I will describe the same in detail, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation; Fig. 2, a horizontal section at the line $x x$ of Fig. 1, the mechanism being shown in plan view; Fig. 3, a detail section of the housing and the cushion-spring.

Like numerals denote the same parts in all the figures of the drawings.

1 is the frame of the machine, and 2 are suitable brackets or extensions upon which the ink-fount 3 is supported.

4 is the fount-roll arranged within the fount, said roll adapted to be revolved by any convenient mechanism to convey the ink from the fount into the field of operation of the ductor-roller.

Journaled between the extensions 2 and projecting through one of them is a rock-shaft 5, having thereon two inwardly-projecting arms 6, between whose ends the ductor-roller

7 is journaled. Extending downward from the rock-shaft 5 is a rock-lever 8, and 9 is a stop-arm secured to the end of the rock-shaft, and whose end projects between two adjustable stops 10, which are preferably screws threaded through small brackets 11 on one of the frame-extensions. The end of the lever-arm 8 is pivotally secured to a tubular housing 12, through which is passed the diminished end of a connecting-rod 13, having thereon nuts 14, running upon threads and adapted to the interior diameter of the housing. 15 are stop-nuts screw-threaded upon the end of the body of the rod. Within the housing and arranged around the rod is a coil-spring 16, whose ends abut, respectively, against an offset at one end of the housing and the end of the innermost nut 14. The other end of the connecting-rod is pivotally attached to a curved lever 17, which is fulcrumed to the frame at 18, and is provided with a roll or stud engaging a grooved cam 19, whereby a reciprocatory movement in the direction of its length is imparted to the connecting-rod. At 21 the cam-groove is opened out so as to afford to the roll and therefore to the curved lever and rod a limited play, the purpose of which will be presently explained.

20 is the ink-plate, a portion only of which is shown in Fig. 1 to designate the distance necessary to be traversed by the ductor-roller in its passage between the ink-fount roll and the ink-plate.

In the operation of my invention the cam 19 is so timed as to raise the ductor-roller by rocking the shaft 5 at the time when the ink-plate has gone forward, and by the revolution of the fount-roll while the ductor is against it a certain quantity of ink is imparted to the latter. As the ink-plate returns the reverse movement of the cam swings said ductor-roller downward, so that it may be engaged and revolved by the surface of the reciprocating ink-plate, and thereby give up its ink to said plate. The upward motion of the ductor-roller is effected by means of the pushing movement of the cam on the lever and rod. This upward movement may be limited so as to vary the contact between the ductor and the ink-fount roller by means of the upper screw-threaded stop engaging the arm 9. If

the full pushing stroke of the cam is more than sufficient to accomplish the desired engagement between the ductor and fount-roll, then the surplus movement will operate simply to compress the spring within the housing. At the pulling movement of the cam the ductor-roller is carried downward toward the ink-plate until the shoe enters the opened portion of the cam-groove, when the ductor-roller drops by its own weight into contact with the ink-plate. The downward limit of movement of the roller may be determined and varied by the lower screw-stop. By this means a uniform impact of the ductor-roller, both in taking on and in giving off its ink, may be obtained and variations in the diameter of the ductor-roller due to atmospheric changes compensated for. Likewise rollers of different sizes may be used interchangeably without great delay, since the adjustments are exceedingly simple.

In case of a radical change in the size of the ductor-roller, it may be found needful to shift the housing upon the connecting-rod; but this is easily accomplished by means of the nuts.

In this my invention I do not wish to be confined to the precise details of construction herein shown and described, since the same may be varied in many minor respects without departing from the principle of my invention.

I claim—

1. The combination, in a printing-machine, with the ink-fount and its roller, of the vibratory frame and the ductor-roller journaled therein, the rock-lever, and the cam-actuated connecting-rod whereby the latter is operated, the stop-arm moving with the ductor-roller frame, and adjustable stops upon the extension, whereby the stop-arm is engaged at each end of its throw, substantially as specified.

2. The combination, in a printing-machine, with the vibratory ductor-roller and the stops for limiting its movements, of the rock-lever, the cam-actuated connecting-rod, and a spring interposed between the rock-lever and connecting-rod and adapted to form a compressible joint between them, substantially as set forth.

3. In a printing-machine, the combination, with the ductor-roller and its frame, of the rock-lever, the housing connected to said rock-lever, the connecting-rod adjustable longitudinally relative to the housing, and the spring interposed between the rod and housing, substantially as specified.

4. In a printing-machine, the combination, with the fount and its roller, of the shaft, the ductor-roller and the arms forming a journal-bearing for said roller, the rock-lever and the stop-arm connected to the frame, the adjustable stops on the extensions, the cam-actuated connecting-rod, and a compressible connection between it and the rock-lever, substantially as set forth.

5. The combination, with the rock-lever and the parts operated thereby, of the housing pivotally connected to the rock-lever, the connecting-rod passed through the housing, the spring, and the nuts whereby longitudinal adjustment of the housing on the rod is effected, substantially as specified.

6. In a printing-machine, the combination, with the vibratory ductor-roller, the positive stops for limiting its movements, and the rock-lever, of the connecting-rod, and a spring interposed between said lever and rod and adapted to take up extra lengthwise movement of the latter, as specified.

7. In a printing-machine, the combination, with the ductor-roller and the rod and connections whereby it is vibrated, of the cam for operating the rod and provided with an opening at one side, whereby a limited play is afforded to the ductor by its own gravity, substantially as specified.

8. In a machine of the character described, the combination, with the roller and its connections, of the cam having an opening therein at one side and a spring interposed between the roller and the other side of the cam, said spring adapted to take up any surplus movement of said cam, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

STURGES WHITLOCK.

Witnesses:

S. H. HUBBARD,
M. C. HINCHCLIFFE.