No. 672,745. Patented Apr. 23, 1901.

J. H. STONEMETZ.

WEB FEEDING DEVICE.

(Application filed Nov. 16, 1892. Renewed Sept. 26, 1900.)

(No Model.)

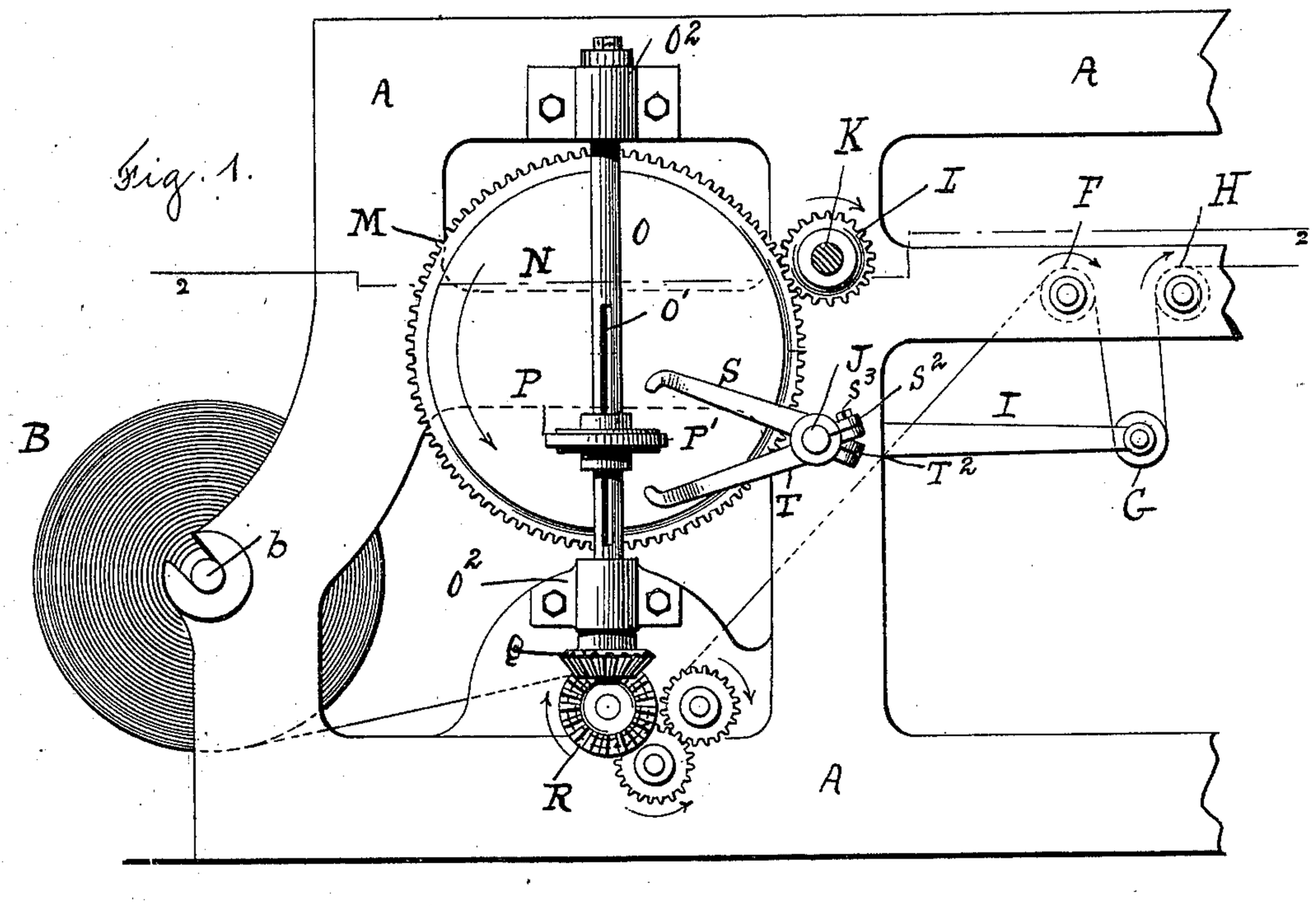

Fig. 1.

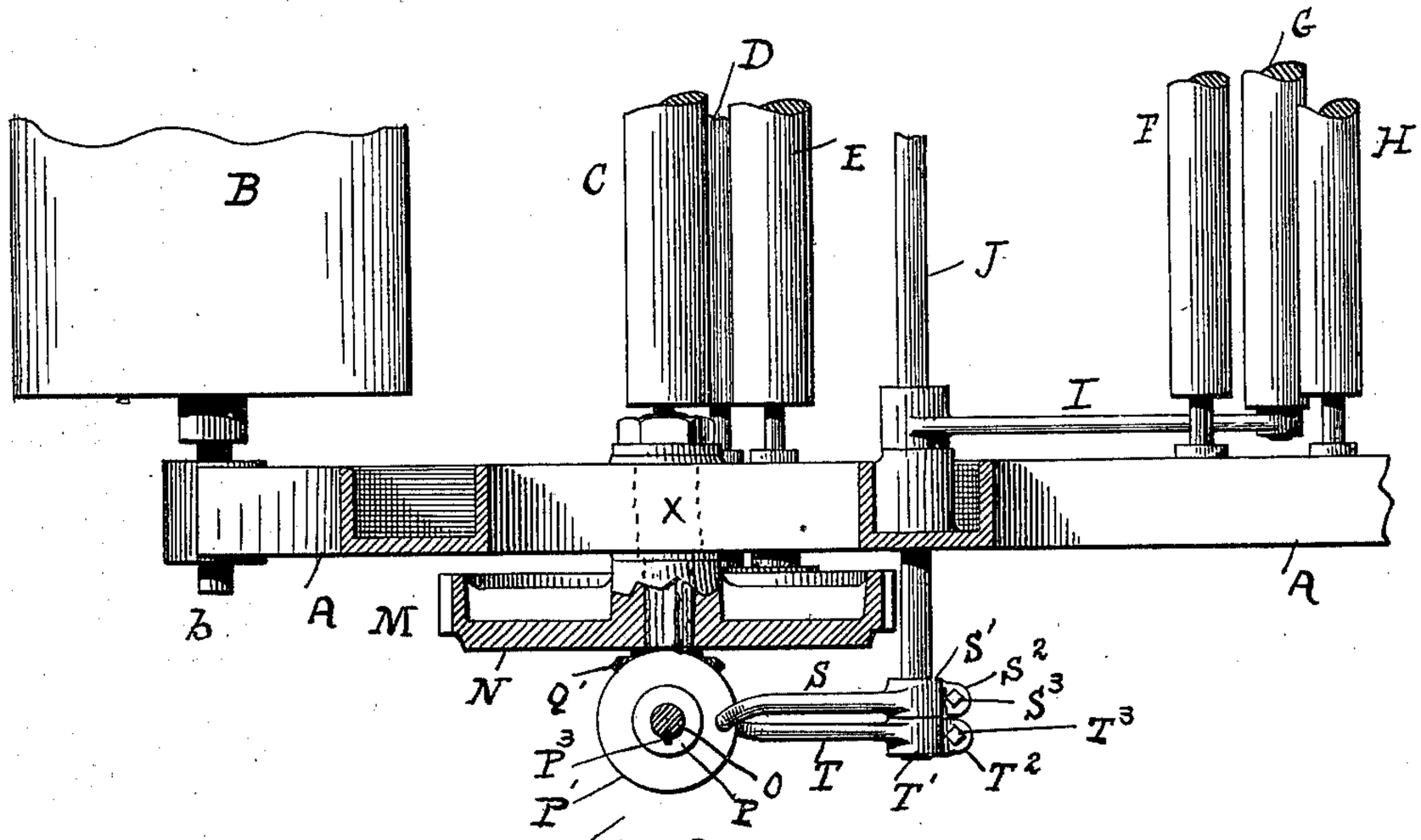

Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

JOHN H. STONEMETZ, OF BROOKLYN, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE CAMPBELL PRINTING PRESS & MANUFACTURING COMPANY, OF NEW YORK, N. Y.

WEB-FEEDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 672,745, dated April 23, 1901.

Application filed November 16, 1892. Renewed September 26, 1900. Serial No. 31,134. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. STONEMETZ, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Web-Feeding Devices, of which the following is a specification.

The aim of this invention is to produce a new and improved web-feeding device which will automatically adjust the feed in an intermittently-acting web-feeding mechanism, as hereinafter described.

To this end the invention consists of the device described and claimed in this specification and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of part of a press-frame with my improved feeding mechanism applied thereto, and Fig. 2 is a sectional plan view on line 2 2 of Fig. 1.

In some classes of printing-machines it is desired to intermittently feed the web into the press and also, preferably, to continuously unwind the web from the web-roll, so that there will come no strain upon the paper as the web is quickly pulled forward. Such a machine is shown in my Letters Patent No. 376,053, granted to me January 3, 1888, and this machine is of the type known as "reciprocating cylinder web-printing presses."

My invention consists of the means hereinafter described for adjusting or regulating the web-forwarding devices, as the continuously-operating rollers, from the action of the intermittently-feed-governing device, as the ordinary feeding-in looper-roller.

Referring to the drawings and in detail, A represents the press-frame, which may have at the end thereof suitable bearings or supports, in which the arbor *b* of the web-roll B may be placed in the ordinary manner, which web-roll constitutes the source of web-supply. From the web-roll B the web is led around over the roller C, around the roller D, and over the roller E, and these rollers C, D, and E are geared together, as shown, to slowly draw or unwind the web from the roll, so that the web will be constantly moving. From the roller E the web passes up over the stationary roll F, down over the looping-roller G, and then up over the roll H, and from the roll H into the press. The looping-roller G is mounted in arms I, which are secured to a common shaft J, and this looping-roller is adapted to rise as the web is quickly pulled into the press and then to fall to take up the slack of the web as it is unwound from the roll B by the continually-running rollers C, D, and E.

K represents a shaft, to which power may be applied in any of the usual ways, and on the end of this shaft is arranged a pinion L, which meshes with and drives a gear M, which is fastened to or adapted to turn on a short shaft X, which is journaled or fastened in the frame A. On the face of the gear M is formed a smooth disk N, as shown. A small vertical shaft O is journaled in suitable bearings o^2, secured to the main frame, and the line of this vertical shaft is in a vertical plane passing through the center of the disk N. On the lower end of this shaft is arranged a bevel-gear Q, which meshes with and drives a bevel-gear R, secured to the shaft of the roller C, whereby the shaft O will turn the rollers C, D, and E. This vertical shaft O has a keyway or slot o', as shown, and fitting upon the shaft is a disk P, which has a key p^3 fitting into the keyway o', whereby the disk P may revolve or turn the shaft O. This disk P has a suitable leather face P', which may be made up of layers in a way well understood, whereby the same forms a friction-disk. The shaft J is extended out beyond the disk N, and on the ends of the same are arranged tappet-arms S and T, which are mounted so as to be adjustable about the said shaft J. The tappet-arm S has a suitable hub S', which is split in two at the end, and extending therefrom are lugs S^2, through which a bolt or screw S^3 may be passed. By loosening the screw S^3 the tappet-arm S may be adjusted to assume any position on the shaft J. The tappet-arm T has a similar hub T', arms T^2, and an adjusting-screw T^3. In the normal operation of the machine these tappet-arms are not supposed to strike the friction-disk P; but they are so positioned that they can strike on the disk P to move

the same up and down on the vertical shaft O, as hereinafter described.

The operation is as follows: The rollers C, D, and E are continuously driven to slowly unwind the web from the roll at an even speed, and the web from beyond the roll H is pulled intermittently forward. This will raise the roller G, which will give the necessary slack in order that the web may be pulled easily forward. While the web beyond the roll H is stationary the slack drawn out by the rollers C, D, and E will be taken up by the roller G, which will fall. This is the normal action of the parts; but now suppose that the rollers C, D, and E should not pay out the web fast enough to supply the intermittent pulls beyond the roll H. Then in case there is not quite enough web in the loop formed by the roll G, the looping-roller G will be raised a little higher than its normal position. This will cause the tappet-arm S to strike on the disk P and move the same downwardly, whereby the shaft O will be turned slightly faster and more web will be paid out in a given time by the rollers C, D, and E, as they will thereby be rotated at a faster speed. Suppose again that the rollers C, D, and E paid out more web than is required by the looping-roller G, then the looping-roller G will assume a lower position than is proper, whereby the tappet-arm T will strike on the friction-disk P and will slightly raise the same, whereby the friction-disk will be turned at a slower speed and the web will be drawn out slower by the rollers C, D, and E. Therefore this device will automatically govern and regulate itself, no matter what the demands upon the roller G may be, as after a few movements of the roller G the disk P will assume a proper position and will not be struck by the tappet-arms S and T. The tappet-arms S and T are adjustable, so that any desired degree of adjustment can be given to the disk P. The disk P is made to move a little tightly on the shaft O, whereby the gravity of the same will not tend to cause the same to drop on the shaft O.

This feeding device can be applied to other devices than to printing-presses—as, for example, the same can be applied to envelop-machines and to all machines in which it is desired to intermittently feed forward a continuous sheet or web.

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

1. The combination of a device for continuously unwinding a web from a roll, a looping-roller around which the web passes mounted in arms secured to a shaft, tappets controlling the action of the unwinding device, and means for adjustably securing the tappets upon said shaft, substantially as described.

2. The combination in a web-printing press, of continuously-running rolls for unwinding the web from the web-roll, a looping-roller, a disk, a friction-disk coöperating therewith to continuously turn the unwinding-rollers, and connections whereby the movements of the looping-roller will control the position of the friction-disk, and thereby the speed of the unwinding-rolls, substantially as described.

3. The combination in a web-feeding device of the continuously-running unwinding-rollers, an adjustable friction-disk for imparting motion thereto, a looping-roller, and two tappet-arms moved by the looping-roller, adapted to adjust and control the position of the friction-disk, substantially as described.

4. The combination in a web-feeding device of the unwinding-rollers, the driven disk N, and the adjustable friction-disk P, coöperating therewith, the looping-roller G, mounted in arms I, attached to a shaft J, the tappet-arms S and T secured to said shaft J, and adapted to control the position of the friction-disk P, and gearing whereby the friction-disk P may turn the unwinding-rollers, substantially as described.

5. The combination in a web-feeding device of the unwinding-rollers, and the looping-roller, said looping-roller being mounted in arms fastened to a common shaft, a continuously-driven disk, and an adjustable friction-disk coöperating therewith, gearing whereby said friction-disk may transmit motion to the continuously-running unwinding-rolls, and tappet-arms secured on the shaft to which the looping-roller arms are secured, said tappet-arms being adjustable on the shaft, substantially as described.

6. The combination in a web-feeding mechanism of the unwinding-rollers C, D and E, geared together, the vertical shaft O, and bevel-gears Q and R, whereby said vertical shaft O may drive the unwinding-rollers, a friction-disk P keyed to said shaft O, but mounted so as to be adjustable thereon, a continuously-driven disk N, with which the friction-disk coöperates, a looping-roller and tappet-arms controlled by said looping-roller, said tappet-arms being adapted to cause the friction-disk to assume a position to properly coöperate with the continuously-driven disk, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN H. STONEMETZ.

Witnesses:
LOUIS W. SOUTHGATE,
H. A. WISE WOOD.