(No Model.) 2 Sheets—Sheet 1.

A. E. HOFFMAN.

FEED MECHANISM FOR SAW MILL CARRIAGES.

No. 409,464. Patented Aug. 20, 1889.

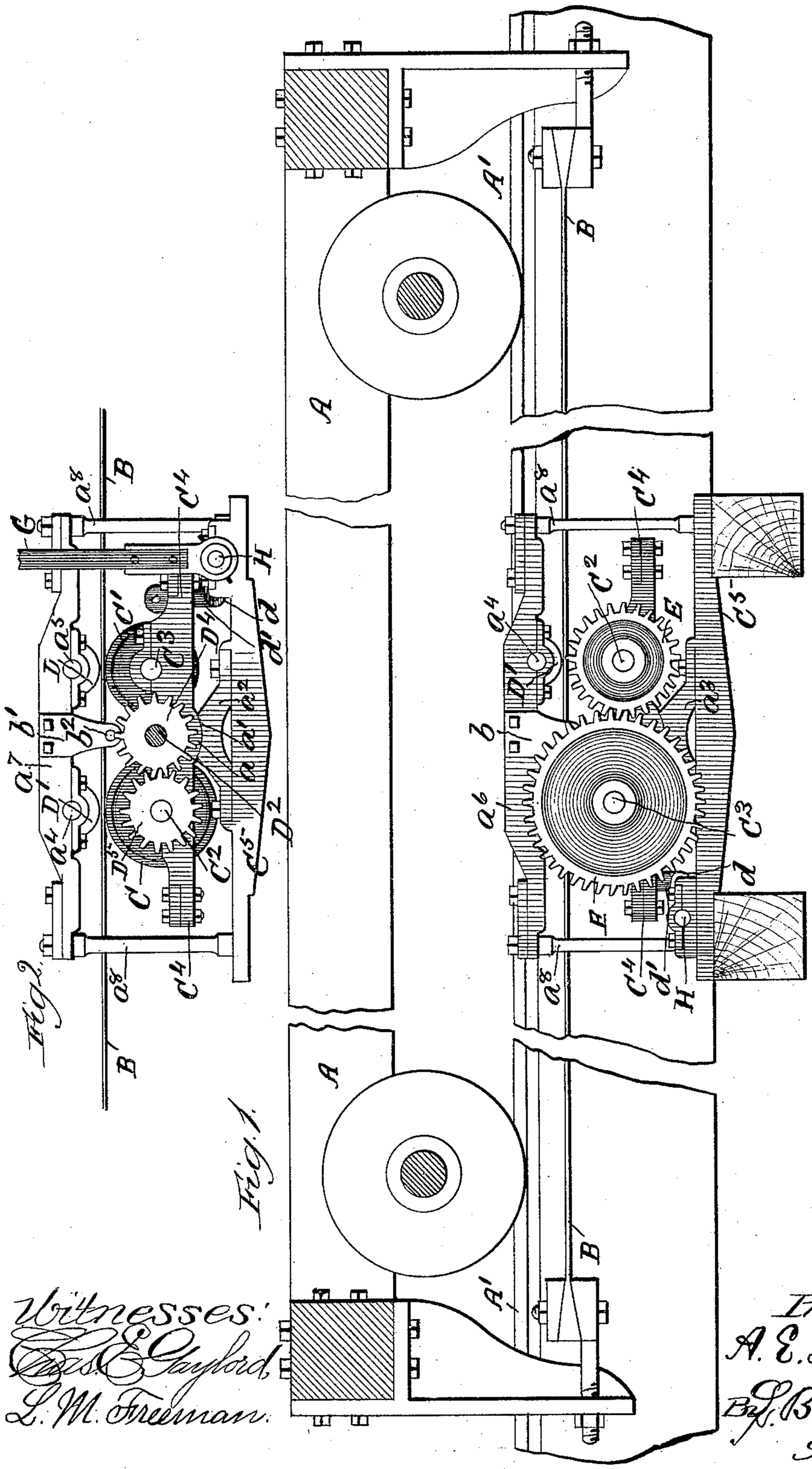

Fig. 1.

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

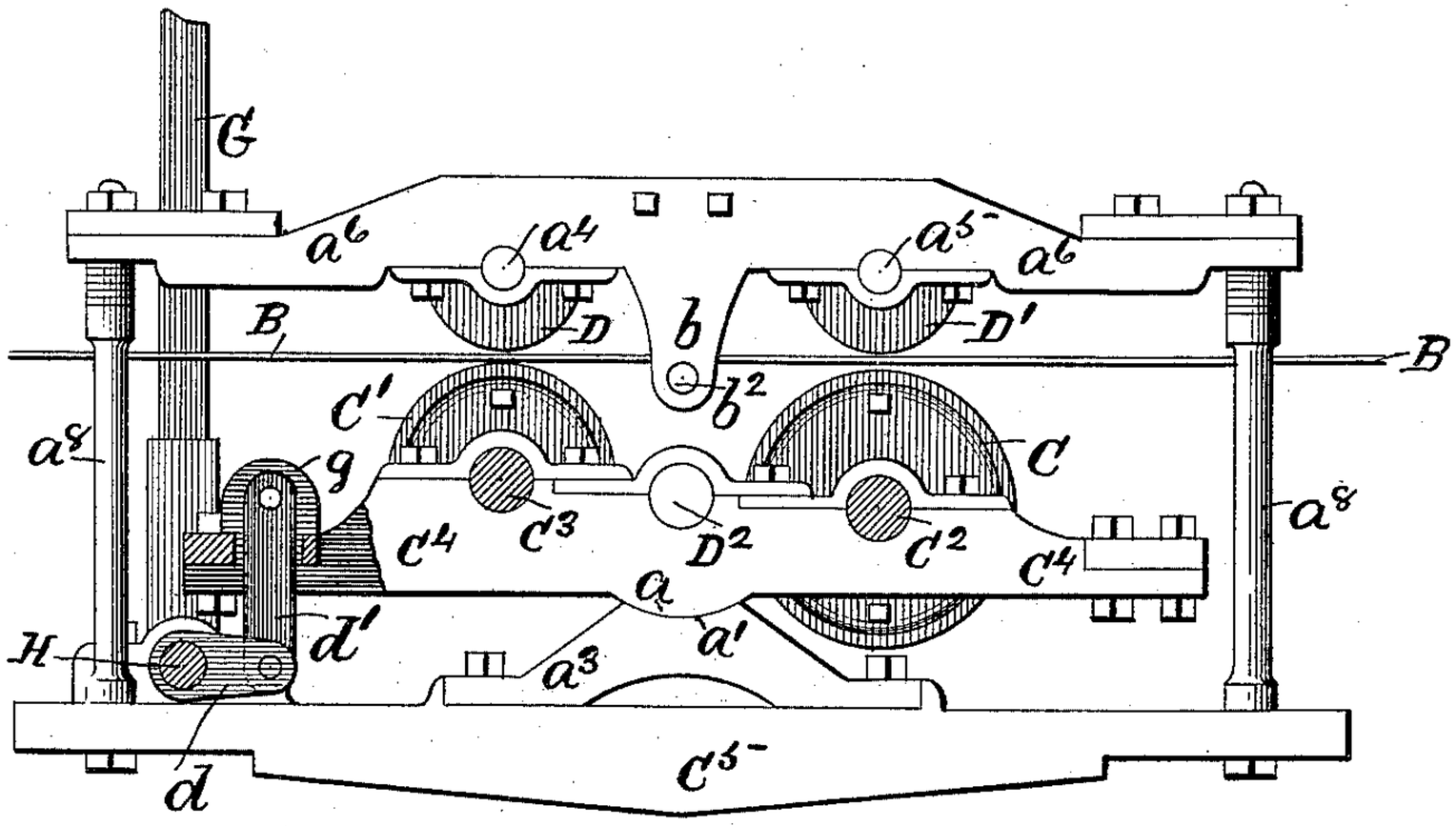
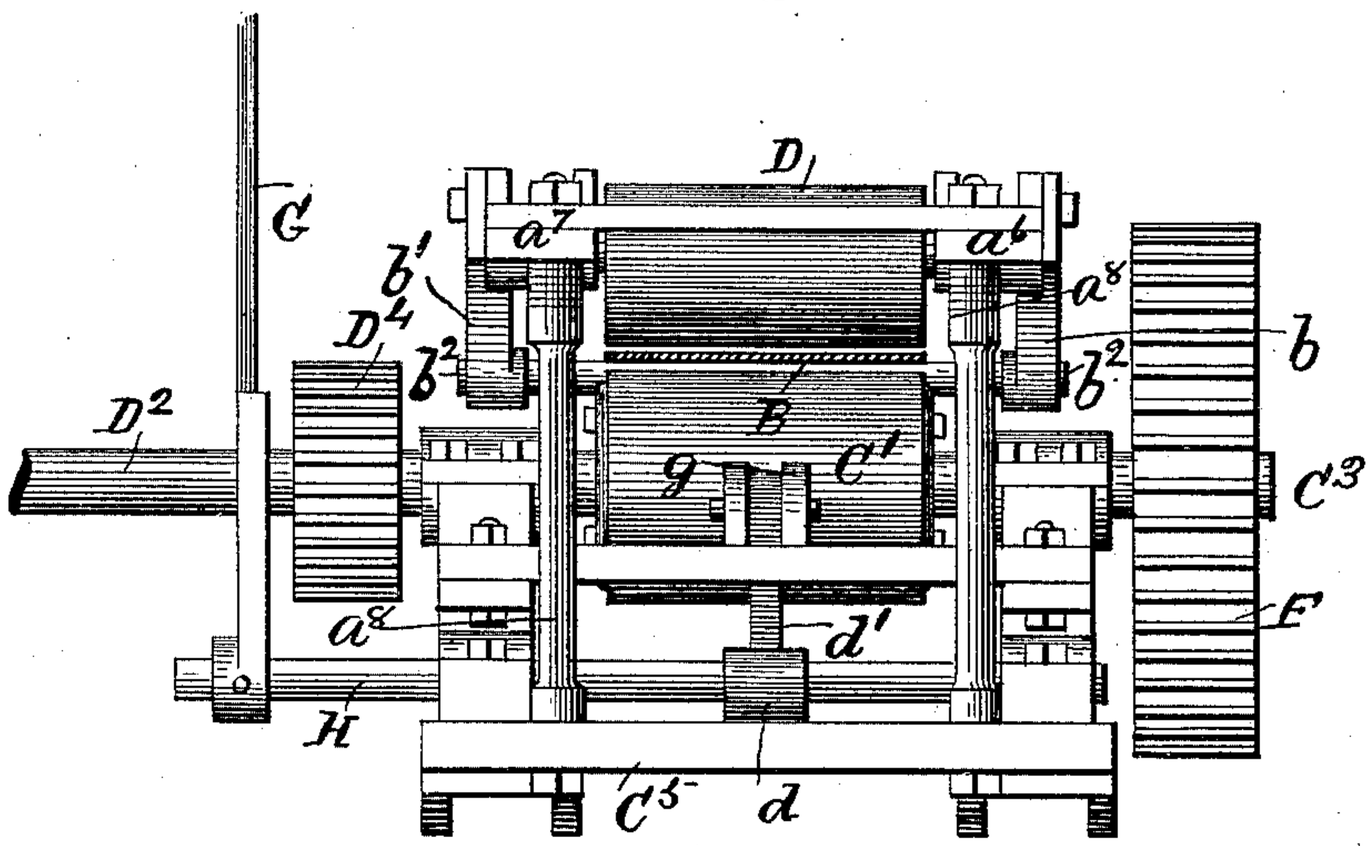


Fig. 4.



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UNITED STATES PATENT OFFICE.

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FEED MECHANISM FOR SAW-MILL CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 409,464, dated August 20, 1889.

Application filed April 2, 1889. Serial No. 305,675. (No model.)

To all whom it may concern:

Be it known that I, ANDREW E. HOFFMAN, a citizen of the United States, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Feed Mechanism for Saw-Mill Carriages, of which the following is a full, clear, and exact description, that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to an improvement in feed mechanism for operating saw-mill carriages, and is of a similar character to that of the devices set forth in Letters Patent Nos. 370,944 and 379,163, granted to me, and dated October 4, 1887, and March 6, 1888, respectively.

The present improvement relates more especially to the arrangement and operation of the rolling frictional bodies for gripping the feed-ribbon, as will be hereinafter set forth.

Figure 1 is a side elevation of the feed mechanism and a longitudinal section of the log-carriage, showing the relative position of these parts; Fig. 2, a side elevation of the feed mechanism, showing the opposite side from that illustrated in Fig. 1. Fig. 3 is a part elevation and part section of the feed mechanism, looking at the side shown in Fig. 1, but in a reversed position; and Fig. 4, an end elevation showing the feed-ribbon in transverse section.

Referring to the drawings, A represents the log-carriage, A′ one of the track-rails upon which the same moves, and B the friction propelling-ribbon, located underneath and secured to the respective ends of said carriage, as shown in Fig. 1.

The companion friction-drums or lower rollers C C′ are rigidly mounted on the shafts C^2 C^3, having journal-bearings in the tilting frame C^4. These drums revolve in opposite directions relative to each other, and are placed just under and in the pathway of the friction feed-ribbon B, and are adapted to have an alternate and intermittent frictional contact therewith.

The tilting frame C^4 is provided near its longitudinal center and under side with the rounded or convex bearing-surface *a*, which part seats into the corresponding concave surface *a′*, formed in the step-brackets a^2 a^3, bolted to the upper side of the bed-plate C^5. This arrangement provides for the tilting or rocking of the frame C^4 for the purpose of alternately bringing the drums C C′ in contact with the under side of the feed-ribbon. The drum C is of a greater diameter than the companion drum C′, whereby the carriage may be run or "gigged" back at a much higher rate of speed than on the forward or feed side, thus saving a great deal of valuable time that is now lost under the ordinary arrangement.

The companion gripping-rollers D D′ are located above and in line with reference to the friction driving-drums. These rollers are rigidly mounted on the shafts a^4 a^5, journaled in the cap framing-bars a^6 a^7, which are supported in position with reference to the base-plate by means of the corner-posts a^8.

In former patents the upper gripping-rollers were adjustable—that is, they had a rocking movement and pressed the feed-ribbon down on top of the friction-drums. In the present case this order or operation is reversed. The upper rollers are stationary with reference to a horizontal plane, and the drums journaled in a rocking frame and, in operation force the ribbon upward against the under side of the rollers in imparting the required movement to the log-carriage.

The bracket-plates *b* *b′* are bolted to and project downwardly from the cap framing-bars a^6 a^7, and support the guide-roller b^2 journaled in the lower ends of the same. The feed-ribbon has a light contact with this roller, which prevents the ribbon from sagging and having contact with the friction-drums when the carriage is at rest and the gripping mechanism in its normal position, thus preventing the possibility of the carriage moving when left standing, and also avoiding considerable wear on the drums and adding to their durability. The driving-shaft D^2 is journaled in the tilting or rocking frame between the friction driving-drums. A gear-wheel D^4 (see Figs. 2 and 4) is mounted on the driving-shaft and engages with the companion gear-wheel D^5, (see Fig. 2,) mounted on the shaft C^2 of the larger drum C. On the opposite end of the

shaft C^2 is mounted the gear-wheel E, which in turn engages with the gear-wheel F, mounted on the shaft C^3 of the smaller drum C′, as shown in Fig. 1. By this arrangement the required motion is transmitted to the friction driving-drums. The operating-lever G is mounted on the outer end of the rock-shaft H, journaled on the bed-plate. One end of the horizontal rocker-arm *d* is mounted on the lever-shaft near its longitudinal center and in line with the center of the tilting frame, as shown in Fig. 4. The other and inner end of the rocker-arm *d* is pivoted to the lower end of the link *d′*, the upper end of which is in turn pivoted to the bifurcated lug *g* formed on the end of the tilting frame. When the operating-lever is in a perpendicular position, the feed-ribbon is out of contact with the gripping and driving rollers and the log-carriage is at rest. Now a slight movement of the lever in one direction will tilt the frame and throw one pair of rollers into a gripping position, and the carriage is put in motion in one direction. Shifting the lever in the opposite direction throws the companion pair of rollers into a gripping position and the movement of the carriage is reversed. It will be observed that by this arrangement but very little more space is left between the upper and lower rollers than is represented by the thickness of the ribbon. Thus the gripping mechanism is very sensitive and responds instantly to the slightest movement of the operating-lever, and the carriage put under full speed at once, and is always under complete control, and may be checked, stopped, or reversed with equal facility.

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

1. In a friction device for transmitting motion to log-carriages, the combination, with a bed-plate, of a tilting or rocking frame mounted thereon, the companion driving-drums journaled in the tilting frame, the feed-ribbon placed just above and normally out of contact with said drums and having its ends secured to the respective ends of the log-carriage, the companion rollers journaled just above the ribbon and in line with the driving-drums, and means, substantially as described, for rocking said frame, whereby the friction-drums may be thrown up alternately against the ribbon and the same gripped between either drum and its corresponding roller, thereby imparting a reciprocating movement to the carriage, substantially as and for the purpose set forth.

2. In a friction-feed for log-carriages, the combination of the feed-ribbon, the driving-drums, the companion gripping-rollers, and the guide-roller located underneath said ribbon and supporting the same normally out of contact with the driving-drums, substantially as and for the purpose set forth.

3. In a friction-feed device of the character described, the combination of the bed-plate, the step-brackets bolted thereon and provided with a concave bearing-surface, the tilting or rocking frame provided with a convex bearing-surface and nesting in said brackets, the rock-shaft, the operating-lever mounted thereon, the rocker-arm, the link connecting the tilting frame and rocker-arm, the driving or feed drums, and their companion gripping-rollers, substantially as and for the purpose set forth.

4. In a friction-feed of the character described, the combination of the supporting-frame, the tilting frame having a rocking bearing therein, the friction driving-drums journaled in the tilting frame, the gear-wheels mounted upon the respective shafts of said drums and engaging with each other, the feed-ribbon, the log-carriage to which the respective ends of said ribbon are secured, the companion gripping-rollers located above said ribbon in line with the driving-drums, the driving-shaft journaled in the tilting frame, the gear-wheel mounted upon said driving-shaft, and the companion gear-wheel mounted upon one end of the shaft C^2, and with which the gear-wheel mounted on the driving-shaft engages, substantially as and for the purpose set forth.

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