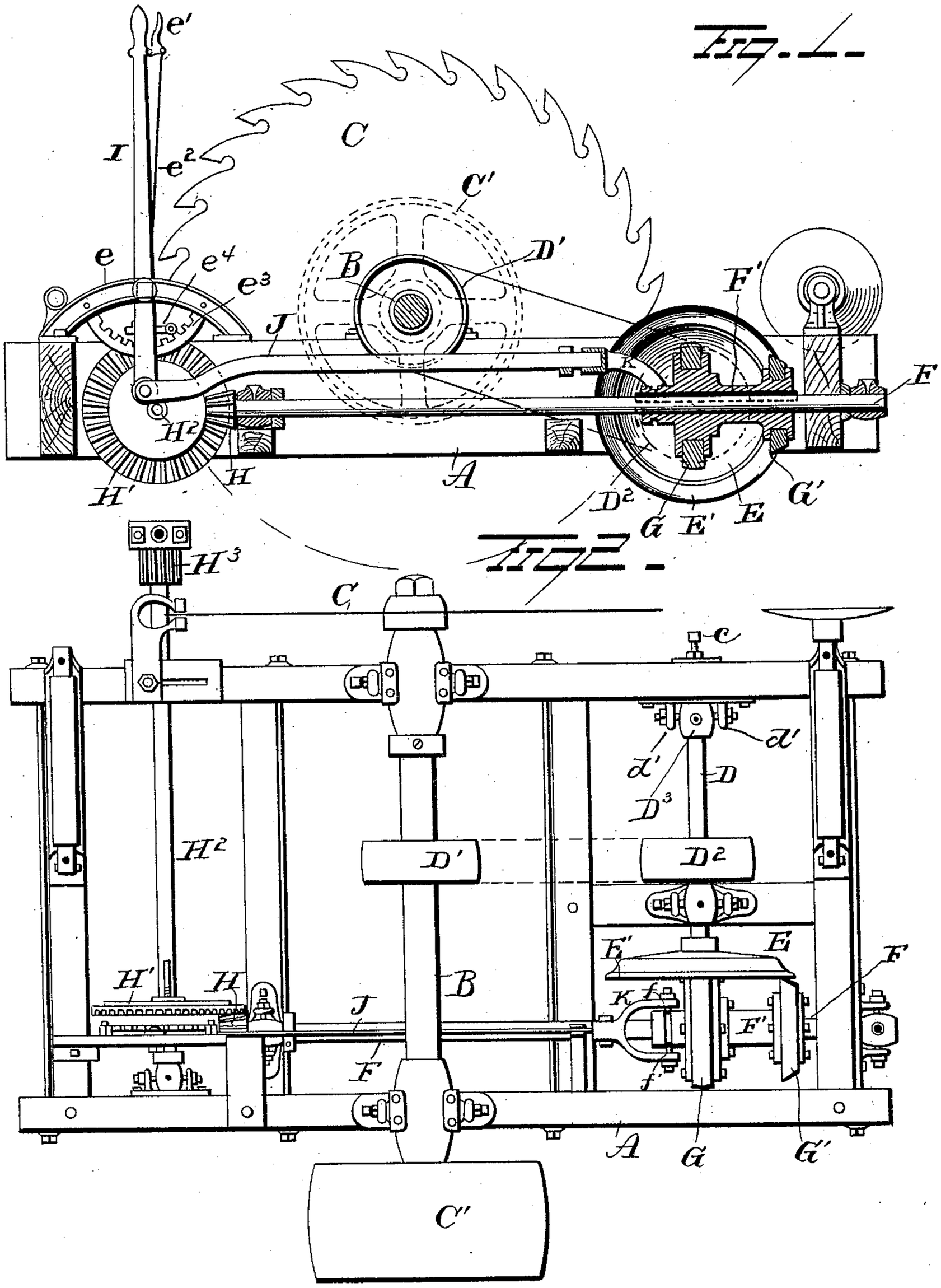
(No Model.) 2 Sheets—Sheet 1.

S. HAUCK & G. S. COMSTOCK.

MACHINE FEED MECHANISM.

No. 507,496. Patented Oct. 24, 1893.



Witnesses
E. L. Nottingham
Sly. Nottingham

Inventors
Saml Hauck.
Geo S Comstock
By H C Simmons.
Attorney

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

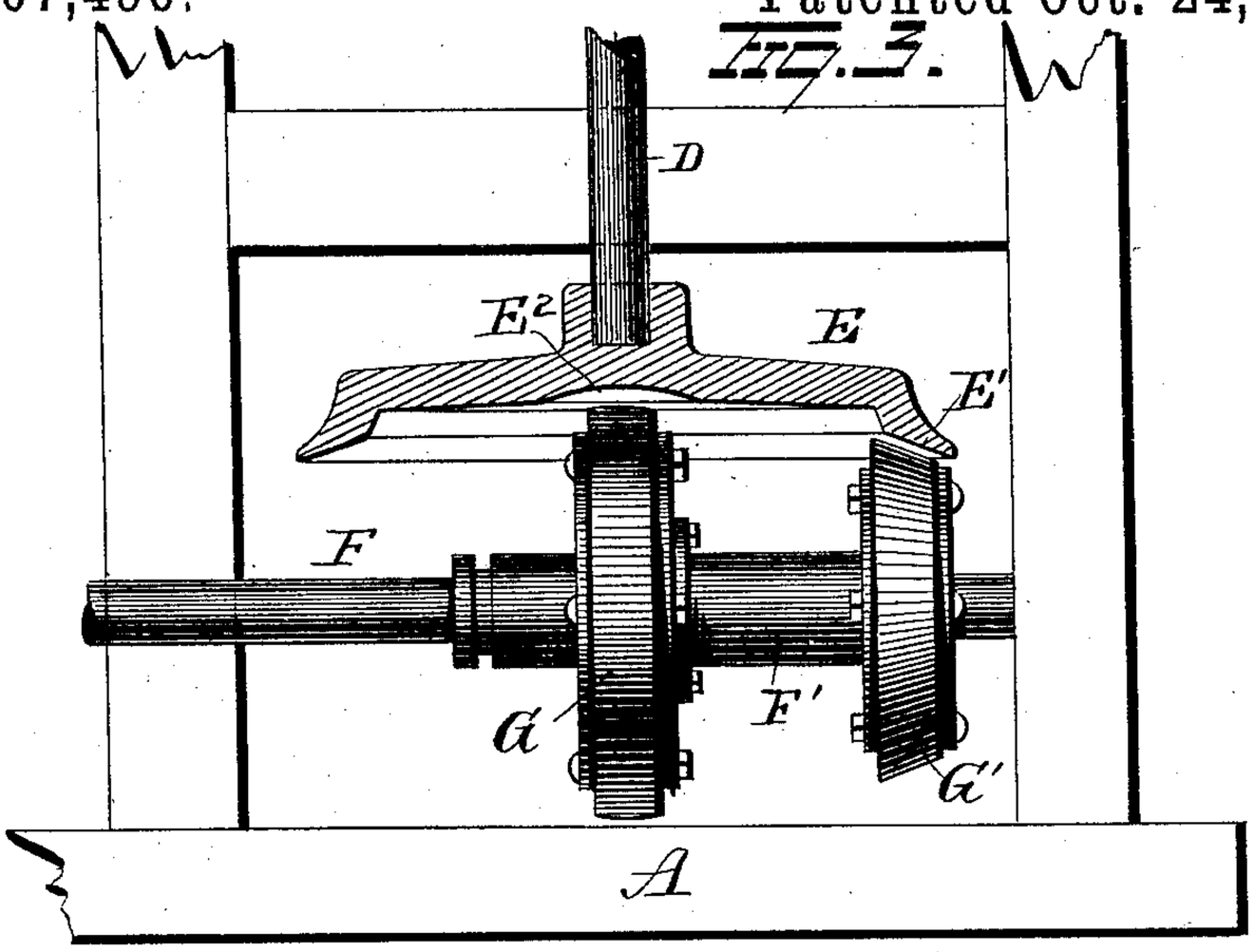


Fig. 6.

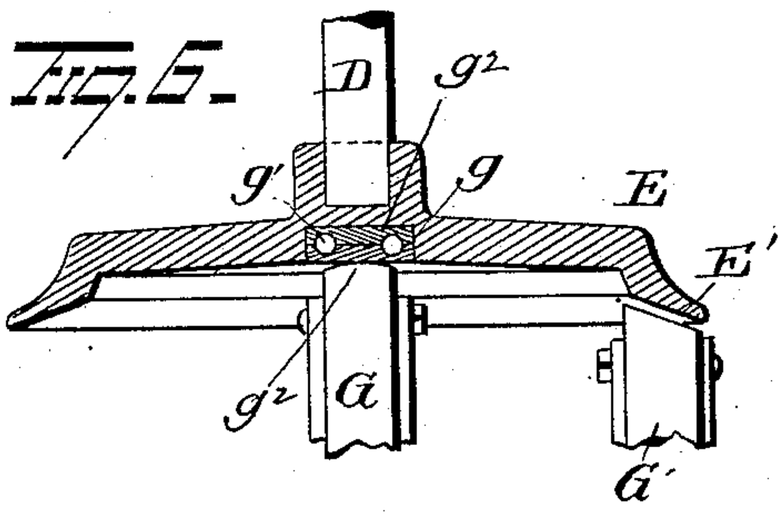


Fig. 5.

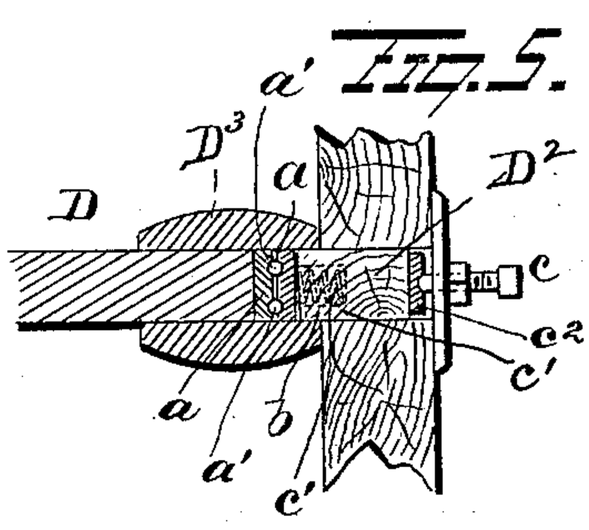
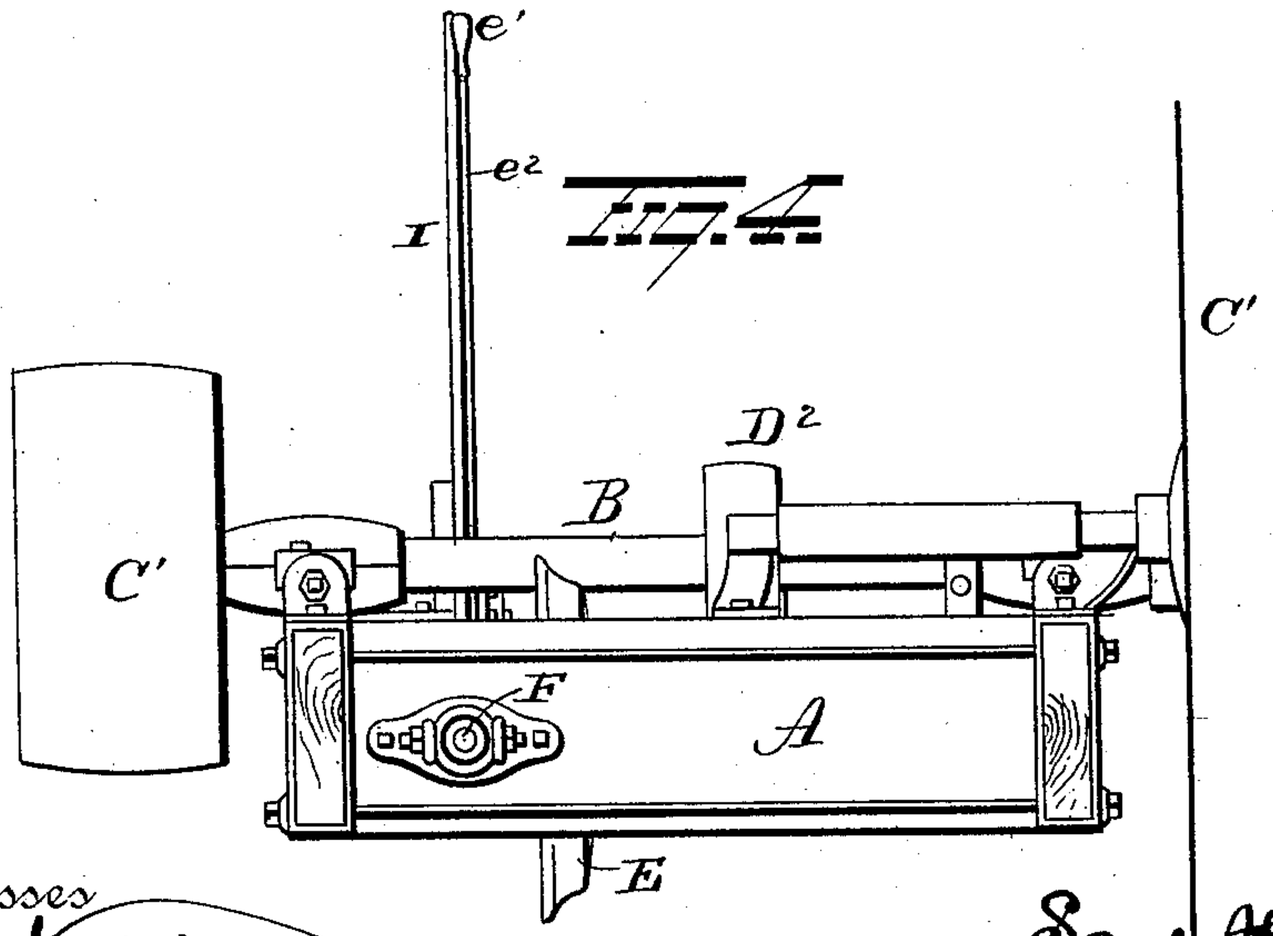


Fig. 4.



Witnesses
E. L. Nottingham
S. H. Nottingham

Inventors
Saml Hauck.
Geo S Comstock.
By H A Dumont. Attorney

UNITED STATES PATENT OFFICE.

SAMUEL HAUCK AND GEORGE S. COMSTOCK, OF MECHANICSBURG, PENNSYLVANIA; SAID HAUCK ASSIGNOR TO SAID COMSTOCK.

MACHINE FEED MECHANISM.

SPECIFICATION forming part of Letters Patent No. 507,496, dated October 24, 1893.

Application filed September 9, 1892. Serial No. 445,449. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL HAUCK and GEORGE S. COMSTOCK, of Mechanicsburg, in the county of Cumberland and State of Pennsylvania, have invented certain new and useful Improvements in Machine Feed Mechanism; and we 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.

Our invention relates to an improvement in machine feed mechanism, the object of the invention being to provide simple and efficient means whereby to regulate the speed of the carriage or other part to be moved and also to regulate, by the same devices, the direction of travel of said carriage or other part.

A further object is to provide mechanism for regulating the speed and direction of movement of the carriage, said mechanism comprising a small number of parts and being effectual in the performance of its functions.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, showing the application of the device to a saw mill carriage, Figure 1 is a sectional view illustrating our improvements. Fig. 2 is a plan view. Fig. 3 is an enlarged detail view of the friction gearing. Fig. 4 is an end view of the machine. Fig. 5 is a separate view of the end bearing of the counter-shaft. Fig. 6 is a view of a modification of the friction gearing.

A represents the husk or framework, made of wood or other suitable material, and mounted on this husk or frame at or near its center, is the main shaft B, carrying at one end a saw C and at its other end, a pulley C′ over which a band from any convenient source of power is adapted to run. A countershaft D is mounted in the frame A near one end, and carries a pulley D^2, which pulley is connected with a pulley D′ on the main shaft B by means of a suitable strap. At one end of the countershaft a friction disk E is secured, said disk being made with a peripheral flange E′, and at its center said disk is made with a depression E^2. Mounted in the frame A at right angles to the axis of the countershaft D, is a shaft F, at one end of which a hub F′ is mounted, said hub being connected with the shaft by means of a spline whereby the hub is caused to rotate with the shaft but permitted to have a sliding movement thereon. The hub F′ carries two friction wheels G, G′, the wheel G being preferably somewhat larger than the wheel G′. The wheels G, G′, are preferably made with paper peripheries adapted to run on and receive motion from the disk E by frictional contact therewith. In order to keep the disk E and wheels G, G′, in proper relation to each other, we provide an end pressure, as shown in Fig. 5, where the end thrust is carried upon a ball or other suitable bearing *a*. In the form of end bearing shown in Fig. 5 the end of shaft D is supported in a sleeve D′. A plug D^2 extends from the frame into the opposite end of the sleeve and interposed between the adjacent ends of shaft D and plug D^2, are disks *a*, *a*, having balls *a′*, *a′*, between them. A spiral spring *c′* in a socket *b* in plug D^2 bears yieldingly against the outer disk. The plug D^2 is forced inward by means of a set screw *c*, the latter bearing upon a washer c^2. By means of this construction end wear upon the shaft or wear in the bearings may be easily compensated for, but of far greater importance is the fact that the screw is employed for forcing the entire shaft D endwise to compensate for the concavity in the disk E when wheel G is adjusted to different points radially thereof. At the end of the shaft F, opposite to that which carries the wheels G, G′, a pinion H is secured and adapted to mesh with a bevel gear H′, carried by a shaft H^2, which latter is mounted in the frame A and extends beyond the side thereof, where it is provided with a pinion H^3 adapted to mesh with a rack bar or other gearing carried by a saw-mill carriage (not shown). Secured to the frame A at the end thereof in which the shaft H^2, is mounted, is a bracket *e*. Pivotally connected at a point between its ends to the bracket *e*, is a lever I, carrying a finger bar *e′* and rod e^2, which latter is connected with a dog e^4

adapted to engage the notches of a segment e^3, which latter is secured at its ends to the bracket *e*. Pivotally connected to the lower end of the lever I, is a rod J adapted to extend to a point in proximity to the hub F′ on the shaft F, where it is provided with a yoke K, having pins *f* in the arms thereof, adapted to enter an annular groove in the periphery of the hub F′. Now it will be seen that when the wheel G shall have been moved to the center of the disk E, by means of the operating lever I, said wheel will be directly in line with the depression E^2 and the wheel G′ will not be in contact with the peripheral flange E′ of said disk. Consequently no motion will be transmitted from the friction disk E to the friction wheels G, G′. By now operating the lever I to slide the hub and wheels carried thereby toward the left in Figs. 1 and 3, the wheel G will be made to engage the face of the friction disk E and receive motion therefrom, the speed being regulated by the distance of said wheel G from the periphery of the disk E. Thus it will be seen that the carriage may be run at any degree of speed or it may be stopped entirely by moving the wheel G toward the right so as to bring its periphery opposite the recess E^2 in the disk E. When the wheel G is in the center of the recess E^2, the beveled wheel G′ will be in proximity to the peripheral flange E′ of the disk E and a slight movement farther toward the right will bring the wheel G′ into engagement with the flange, without permitting the wheel G to move out of line with the recess or depression E^2. The shaft F will now be made to rotate in the reverse direction to that above described, and the carriage will consequently be run back to the starting point. As the wheel G′ engages the disk E at its periphery, the rotation of the shaft F will be rapid, and consequently the backward or return movement of the carriage will be correspondingly rapid.

Instead of providing the disk E with a recess in the center, whereby the feed mechanism may be stopped, the construction shown in Fig. 6 may be adopted, in which case the depression or recess in the disk has inserted therein loose disks *g* and g^2 running upon balls *g′* or other bearing with small friction similar to the construction shown in Fig. 5 and described in connection therewith.

The feed mechanism constructed as above set forth is very simple, comprises a small number of parts, and is effectual in the performance of its functions, and it is applicable to saw mills, but also may be used with most any variety of machinery, such as iron lathes, planers and, in fact, any mechanism requiring a variable feed.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a machine feed mechanism, the combination with a pair of shafts, of a disk secured to the end of one shaft, said disk provided with a frictional flange at the periphery and a slightly concave face encircled by said frictional flange, a pair of friction wheels connected together and capable of sliding back and forth, one wheel constructed and adapted to engage the peripheral flange and the other the face of the disk between the center and flange and means for shifting the disk in the direction of its axis, substantially as set forth.

2. The combination with a pair of shafts substantially at right angles to each other, one having a friction disk secured on its end, said disk provided with a slightly concave outer face and an inwardly inclining frictional flange at the periphery, of a pair of friction wheels connected together and adapted to be slid on the other shaft, one of said friction wheels adapted to engage the disk between its center and frictional flange and the other having a beveled edge adapted to engage the beveled face of the frictional flange and means for shifting the disk in the direction of the axis, substantially as set forth.

3. In a machine feed mechanism, the combination with a revoluble friction disk and means for shifting the latter in the direction of its axis, of a shaft, a hub carried by said shaft and adapted to rotate therewith and have a sliding movement thereon, friction wheels, carried by said hub and adapted to engage the friction disk and receive motion therefrom, an operating lever, a rod connecting said operating lever and the revoluble sliding hub whereby to change the positions of said friction wheels relatively to the friction disk to increase or decrease the speed of the shaft, to stop the same or reverse the motion thereof, means for locking said operating lever and gearing for connecting said shaft with part of machine to be moved, substantially as set forth.

4. The combination with a frame, and shaft, of an end thrust for the shaft consisting of a sleeve in which an end of the shaft is supported, a slide bolt extending through a portion of the frame into the sleeve, and a screw located in the frame and adapted to turn therein and bear upon the slide bolt, substantially as set forth.

5. The combination with a frame, and shaft, of a sleeve for the support of an end of the shaft, disks located in the sleeve, balls between said disks, a slide bolt between which and the shaft the disks are placed, and a screw in the frame adapted to bear against the slide bolt, substanially as set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

SAMUEL HAUCK.
GEO. S. COMSTOCK.

Witnesses:
AGNES Q. BOBB,
W. O. NEIDIG.