(No Model.)

C. J. OLSON.

FEED MECHANISM FOR WOOD WORKING MACHINES.

No. 428,284. Patented May 20, 1890.

Fig 1.

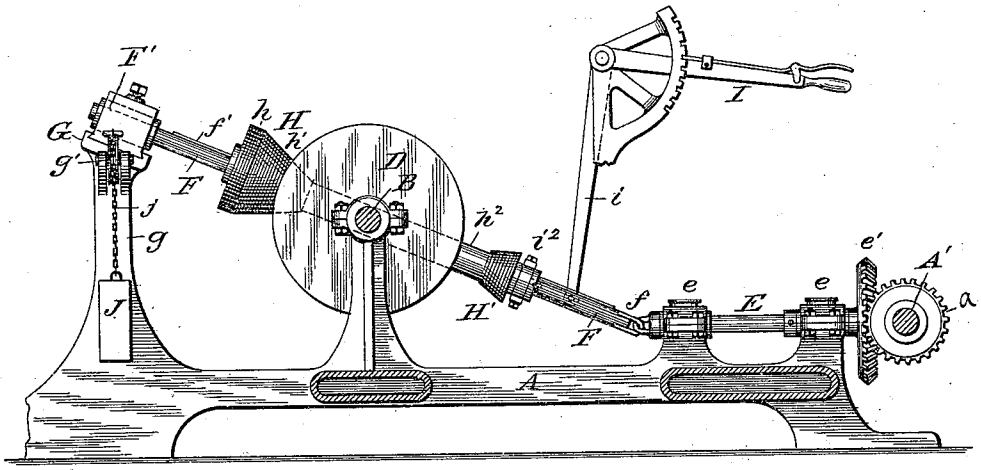
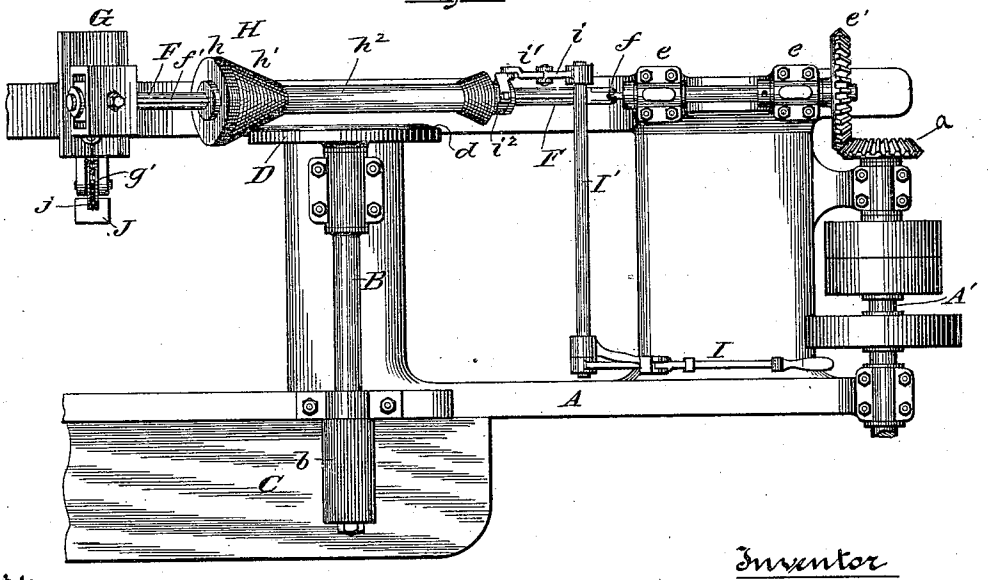


Fig 2.



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UNITED STATES PATENT OFFICE.

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FEED MECHANISM FOR WOOD-WORKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 428,284, dated May 20, 1890.

Application filed December 31, 1889. Serial No. 335,476. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. OLSON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Feed Mechanisms for Wood-Working Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to feed mechanisms of self-feeding wood-working machines, and has for its object to provide a construction whereby the rate of feed may be conveniently changed or varied at the will of the operator, so as to enable the cutters to which the stuff is being fed to work with greater smoothness over cross-grained or knotted places that may be encountered in a molding-strip or board being cut or planed.

In the accompanying drawings my invention is illustrated in connection with portions of a molding-machine, and from the following description of the drawings the nature of the invention will be fully understood.

In said drawings, Figure 1 is a side elevation of an adjustable feeding mechanism embodying my invention, the frame of the machine to which it is applied being shown in vertical section. Fig. 2 is a plan view thereof.

A represents a portion of the frame of a molding-machine, of which A′ is a driving-shaft and B is the feed-shaft, the end *b* of which works over the feed-table C.

D is a flat-faced wheel secured to the shaft B.

E is a shaft mounted in bearings *e e* on a suitable frame, which may be the frame of the planing or molding machine, said shaft E being provided at one end with the beveled gear-wheel *e′*, which meshes with the beveled wheel *a* upon the shaft A′. To the opposite end of the shaft E is connected a shaft F by a universal joint *f*, and the opposite end of said shaft F is mounted in a journal-box F′, which slides laterally on a guide G, provided on the upright *g*, here shown as rising from the machine-frame. On the shaft F is fitted a wheel H, adapted to slide lengthwise on the shaft F, but held from rotation thereon by suitable means—as, for example, a feather. (Seen at *f′*.) The wheel H, as preferably constructed, has a cylindric or practically cylindric portion *h*, adapted to bear against the flat face of the friction-wheel D, and also a conical part *h′*, while said friction-wheel D has a conical or beveled portion *d* at its margin conforming to the inclined surface of the cone *h′*.

By means of a hand-lever I, arranged in convenient reach of the operator, as shown in Fig. 2, or otherwise, and suitably connected with the sliding cone-wheel H, the latter may be moved lengthwise upon the rod F, so as to bring any portion of the cone *h′* into bearing upon the beveled surface of the friction-wheel D, or the cylindric portion *h* of said wheel against any portion of the flat face of said wheel D. The connection by which the lever I engages the cone-wheel H may be varied according to the character of the machine to which the invention is applied. In the present instance said lever is mounted on one end of the shaft I′, to the other end of which is secured an arm *i*, which connects by a link *i′* with the end of a sleeve h^2, that proceeds from the small end of the cone *h′*, the connection of the link *i′* with the sleeve being by means of a strap i^2, fitted to rotate in a groove near the end of the sleeve. In order to cause the cone-wheel H to press against the wheel D in any position of said cone-wheel, the sliding journal-box F′, which runs on the lateral guide G, is supplied with a weight J, connected with the journal-box by means of a chain or cord *j*, trained over a pulley *g′*, located at the end of the guide G. By means of this weight the cone-wheel H imparts motion to the friction-wheel D, against which it bears, and the speed of said friction-wheel and of the feed-shaft B will of course be variable according to the position of the cone-wheel on the shaft F—that is to say, when the cone bears at its smallest diameter against the beveled surface of said wheel D, it will drive said wheel at the lowest speed, and when the cylindric portion *h* of the cone bears on the flat surface of the wheel D nearest the center of the latter the feed-shaft B will be driven at its highest speed. Intermediate speeds of the feed-shaft will be obtained by giving the cone-wheel H

positions intermediate to those mentioned. Thus by the lever I any desired speed may be given to the feed-shaft according to the character of the stuff the operative is cutting or shaping and according to the variations in the grain of a particular piece passing through the machine. By throwing the cone forward on the shaft F far enough to entirely clear the friction-wheel D the feed of course will be stopped.

As an additional improvement, the sleeve h^2 is provided with a second wheel or cone H′, which may be brought into contact with the friction-wheel D at the opposite side thereof from that at which the larger or main cone-wheel H bears, and by means of said second cone the feed-shaft B may be reversed in its direction of motion.

In different machines the details of construction of the feed mechanism described, and particularly the arrangement of its parts with reference to the general elements of the machine to which it is applied, will be varied according to circumstances. In the present instance an arrangement is shown adapted to a common form of molding-cutter. It will be understood that I am not restricted to the particular arrangement of the parts or to the details of construction herein illustrated, inasmuch as I desire to hold the invention in its application to any form of machine to which it may be applied and with such variations as may be necessary in adapting it to machines of different kinds.

I claim as my invention—

1. In a cutting or shaping machine, the combination, with a driving-shaft from which the cutters are to be driven at a uniform speed, of a feed-shaft connected with the driving-shaft through the medium of a friction-wheel driving the feed-shaft, and a revolving wheel having a uniform motion arranged to bear on said friction-wheel and bodily movable radially of the latter, whereby the rate of speed of the feed-shaft may be varied, substantially as described.

2. The combination, with the feed-shaft B, of a laterally-movable revolving shaft F, a cone-wheel H, movable lengthwise on the shaft F and provided with a cylindric portion h, a disk or wheel D, having driving-connection with the feed-shaft and provided with a beveled surface at its margin, and means for holding the cone-wheel in pressure against the disk D, substantially as described.

3. The combination, with the laterally-movable shaft F, the friction-disk D, and the feed-shaft B, of two oppositely-arranged cones H H′, each longitudinally-movable on the shaft F, and placed on opposite sides of the axis of the disk D, substantially as described.

4. The combination, with the feed-shaft and the friction-disk D, driving the said feed-shaft, of a laterally-movable revolving shaft F, a sleeve fitted to slide thereon, two oppositely-arranged cones attached to said sleeve and located on opposite sides of the axis of the friction-disk, and a hand-lever for sliding said sleeve and its cones, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

CHARLES J. OLSON.

Witnesses:
M. E. DAYTON,
TAYLOR E. BROWN.