

(No Model.)

J. F. WELCH.

FEED MECHANISM FOR WOOD PLANING MACHINES.

No. 461,557.

Patented Oct. 20, 1891.

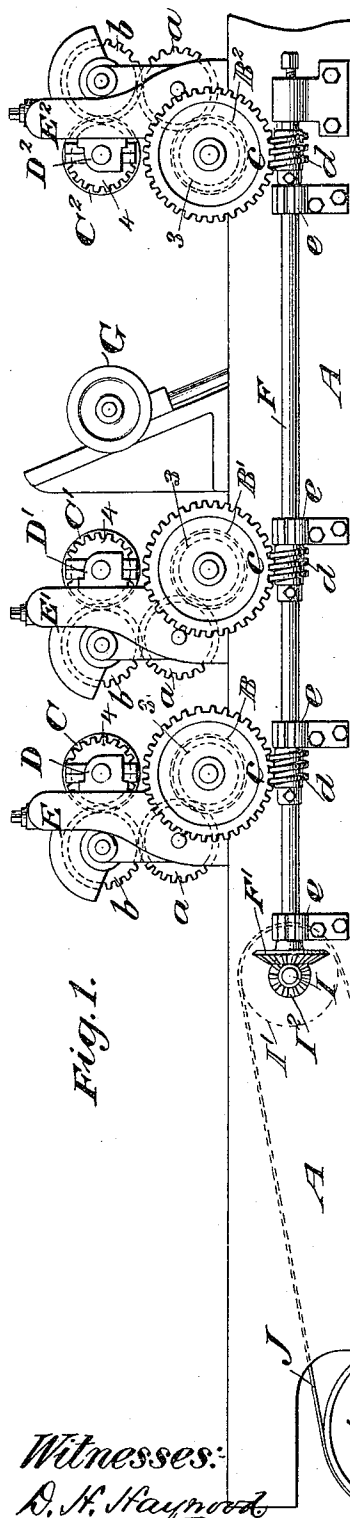


Fig. 1.

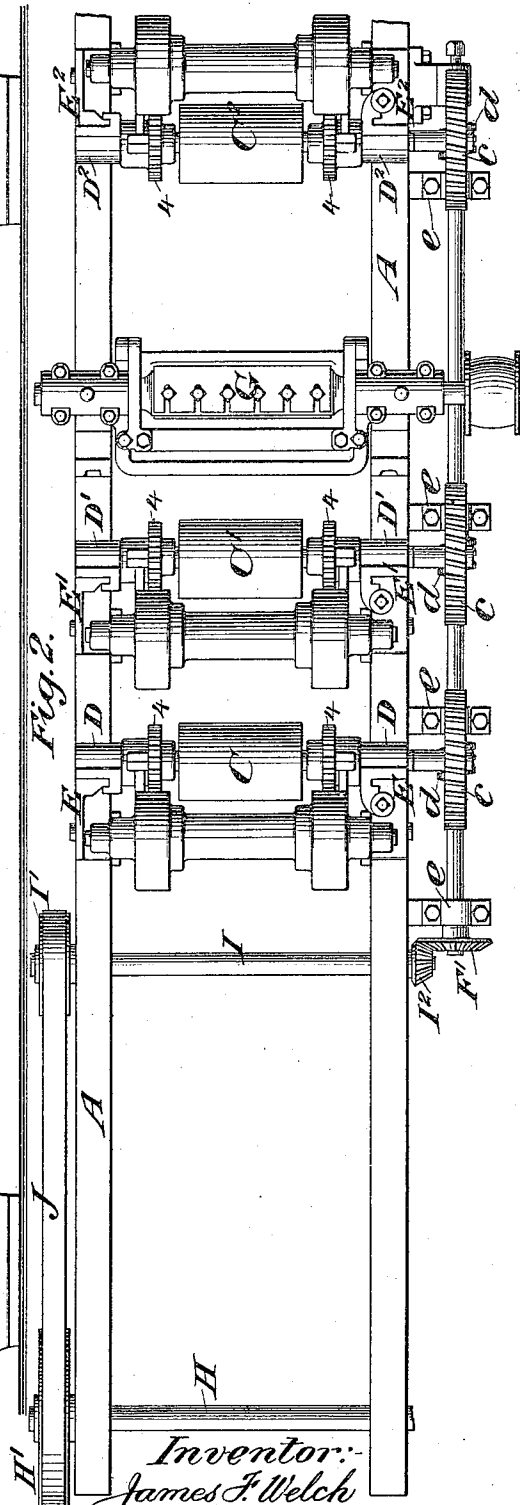


Fig. 2.

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JAMES F. WELCH, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE GLEN COVE MACHINE COMPANY, LIMITED, OF SAME PLACE.

FEED MECHANISM FOR WOOD-PLANING MACHINES.

SPECIFICATION forming part of Letters Patent No. 461,557, dated October 20, 1891.

Application filed July 18, 1891. Serial No. 399,927. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. WELCH, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Feed Mechanism for Wood-Planing Machines, of which the following is a specification.

My invention relates to planing-machines in which a surfacing-cutter is employed as distinguished from a saw or routing-cutter, the object being to obtain a very smooth surface with a very rapid feed.

I will proceed to describe my improvement with reference to the accompanying drawings, and afterward point out its novelty in claims.

Figure 1 is a side view of the feed mechanism of a wood-planing machine embodying my invention, and Fig. 2 is a plan of the same.

Similar letters and numerals of reference designate corresponding parts in all the figures.

A designates the main framing of the planing-machine, in or on which are provided fixed bearings for the lower rollers B B' B², of three pairs of feed-rollers B C, B' C', B² C². The upper rollers of each of these pairs of feed-rollers are journaled in boxes D D' D², which are adjustable on standards E E' E², erected on the main framing A, according to the thickness of the lumber to be planed. The rollers of each pair are geared together by means of gears 3 4, provided upon them, and intermediate gears a b, which may be supported in any suitable manner—as, for instance, in the manner described in the patent of Gray, No. 339,877, dated April 13, 1886, or in the manner described in the patent of Autenrieth, No. 405,390, dated June 18, 1889—that they may accommodate themselves to the varying relative positions of the upper feed-rollers relatively to the lower ones. The lower feed-rollers B B' B² of each of the several pairs are each furnished with a worm-gear c, the said several worm-gears being all on one side of the machine and all of the same pitch.

Below the worm-gears c there is a shaft F,

arranged parallel with the sides of the planing-machine and at right angles to the axes of the feed-rollers. This shaft is supported in fixed bearings e, secured to the main framing A, and is furnished with endless screws d of the same pitch, one for each worm-gear c, and gearing therewith. It is obvious that instead of the separate endless screws on the said shaft there may be continuous screw-threads or a series of screw-threads gearing with the said gears. This shaft F may be driven in any suitable manner, but is represented as deriving motion from the main shaft H of the machine through a second shaft I, parallel with the said shaft H, the said shaft I receiving motion from the said shaft H through pulleys H' I' and a belt J and transmitting motion to the actuating-shaft F and its endless screws d through a bevel-gear I² on the said shaft I and a bevel-gear F' on the said shaft F.

The surfacing-cutter is represented by G, and is intended to plane the surface of the material fed thereto. It is a surfacing-cutter as distinguished from a saw, routing, or other deep-cutting tool commonly employed where the smoothness of the bottom of the cut is not an important feature.

It is found in practice that by this system of gearing for driving the feed-rollers the chattering of the gearing is avoided and a so much steadier feed is obtained that I am enabled to obtain a smooth surface with a much faster feed than in machines in which the power is transmitted to the first or lower feed-rollers by other systems of gearing. Hence a machine having my improved feed is capable of doing a greater quantity of good work.

What I claim is—

1. In a wood-planing machine, the combination, with a surfacing-cutter, a pair of feed-rollers, and a worm-gear on one of the rollers, of gearing independent of the worm-gear, by which the rollers are caused to rotate in unison, a shaft and bearings therefor arranged on one side of the machine, and an endless screw on said shaft gearing with said worm-gear, substantially as herein set forth.

2. In a wood-planing machine, the combina-

tion, with a surfacing-cutter, a plurality of feed-rollers arranged in pairs, and a worm-gear on one roller of each pair, of gearing for each pair of feed-rollers independent of the
5 worm-gear, whereby they are caused to rotate in unison, an actuating-shaft arranged on one side of the machine and common to all of said pairs of feed-rollers, and screw-threads on said shaft engaging with theseveral worm-gears, substantially as herein set forth.

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Witnesses:

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