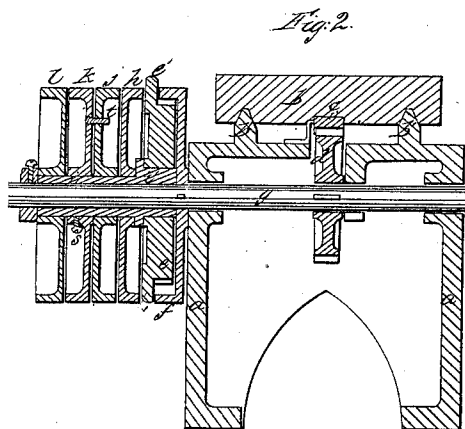
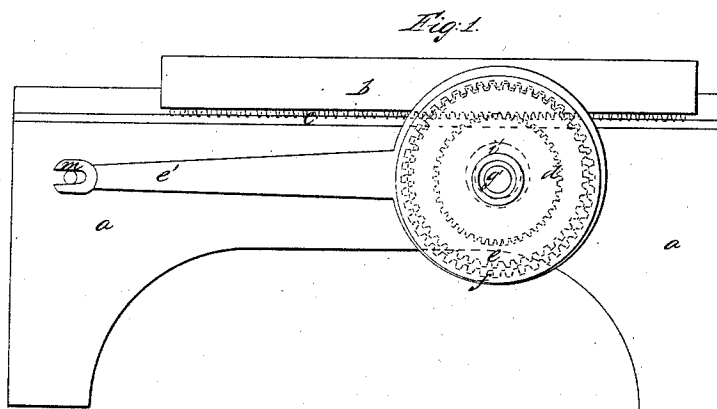


No. 81,953.

PATENTED SEPT. 8, 1868.

H. F. SHAW.

MECHANISM FOR OPERATING BEDS OF PLANING MACHINES.



Witnesses:

N. S. G. Wilde

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by *J. H. Adams*
att'y

United States Patent Office.

HENRY F. SHAW, OF WEST ROXBURY, ASSIGNOR TO JAMES A. WOODBURY
AND SOLOMON S. GRAY, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 81,958, dated September 8, 1868.

IMPROVED MECHANISM FOR OPERATING THE BEDS OF PLANING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

Be it known that I, HENRY F. SHAW, of West Roxbury, in the county of Norfolk, and State of Massachusetts, have invented a new and useful Improvement in Machines for Planing Metals, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a side elevation of a machine embodying my invention.

Figure 2 is a transverse vertical section of the same.

My invention relates to the application, in such machines, of a differential gear, in connection with an eccentric-shaft or sleeve, operating together upon the principle described in the patent, No. 64,915, granted to me on the 21st May, 1867.

In my present improvement, a cylinder, having a spur-gear upon its internal surface, is fixed to the shaft which moves the bed of the planing-machine, upon which spur-gear rolls a second cylinder, with a spur-gear upon its external surface, and hung upon a sleeve arranged eccentrically on the shaft which carries the first-named cylinder. The cylinder with the external gear is prevented from rotating, but is allowed an oscillating movement by means of an arm attached to it, and, extending a short distance, is provided with a slot, at its end, which plays upon a pin attached to the side of the frame of the machine. The rotation of the eccentric-sleeve imparts a motion to the cylinder having the external gear, and the teeth of the latter, engaging with the internal gear, impart a motion to the latter, the amount of motion depending upon the difference of the relative diameters of the two pitch-lines of the spur-gears.

Referring to the drawings, *a a* represent the frame of a planing-machine, of any suitable construction; *b* represents the travelling-platform, supported upon any suitable ways *b b*; *d* is a gear-wheel, secured to the shaft *g*, and engaging with the toothed rack *c*, on the under side of the platform *b*, all constructed and operating in the usual manner.

Firmly secured to the shaft *g*, and rotating with it, outside of the frame, is a cylinder, *f*, provided with an internal spur-gear.

Upon the shaft *g* is placed a loose sleeve, *i i'*, the portion *i'* forming an eccentric, upon which is hung loosely the external gear-cylinder *e*.

l and *h* are loose pulleys on the sleeve *i*, and *k j* are the driving-pulleys, secured, respectively, to the sleeve *i*, and to each other, by the screws *s s*.

Motion being imparted to the driving-pulleys *k j*, by means of a belt, from any suitable power, the sleeve *i i'* will be correspondingly rotated. The eccentricity of the portion *i'* of the sleeve imparts an oscillatory motion to the external gear-cylinder *e*, causing a portion of the teeth of the same to engage successively and constantly with the corresponding teeth of the internal gear-cylinder *f*, as indicated by the dotted lines in fig. 1, thus imparting to the latter a slow, steady, and powerful movement, and, being firmly fixed on the shaft *g*, communicates a corresponding motion to the travelling-platform *b*, upon which the article to be planed is placed.

The pulleys are operated by means of two belts, one for effecting the forward motion of the bed, and the other, the backward movement; in the latter case the belts being crossed.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with the bed of a planing-machine, the rack *c*, pinion *d*, and shaft *g*, or their equivalents, and the internal and external gears *f e*, eccentric-sleeve *i i'*, and the fast and loose pulleys, when arranged and operating substantially as specified, and for the purpose set forth.

2. The arrangement, on the shaft *g*, of the fast and loose pulleys, the eccentric-sleeve *i i'*, and the internal and external gears *e e'*, substantially in the manner shown, and for the purpose set forth.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY F. SHAW.

Witnesses:

J. H. ADAMS,
E. L. DYER.