

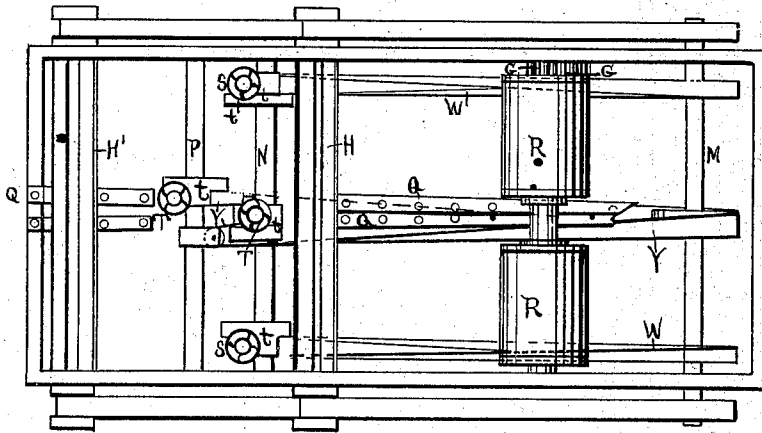
(No Model.)

J. A. ROBERTS.

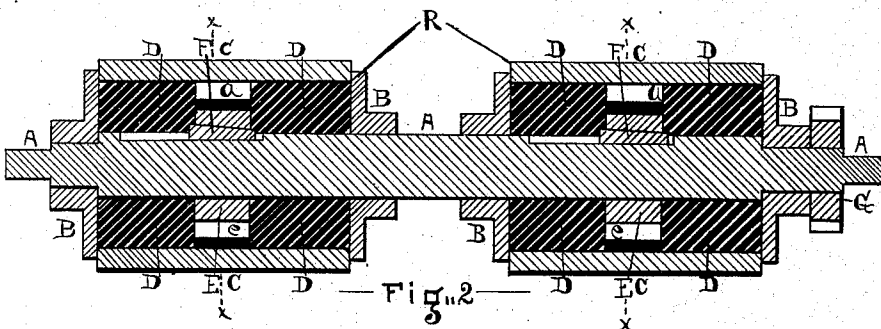
FEED ROLL.

No. 322,324.

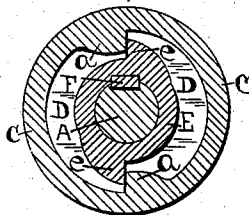
Patented July 14, 1885.



— Fig. 1 —



— Fig. 2 —



— Fig. 3 —

Witnesses:

*Geo. H. Lothrop*  
*Summer Collins*

Inventor:

*James A. Roberts*  
*Geo. H. Lothrop*  
*att'y.*

# UNITED STATES PATENT OFFICE.

JAMES A. ROBERTS, OF DETROIT, MICHIGAN, ASSIGNOR TO THE ROBERTS  
DUPLEX PLANING MACHINE TOOL COMPANY, OF SAME PLACE.

## FEED-ROLL.

SPECIFICATION forming part of Letters Patent No. 322,324, dated July 14, 1885.

Application filed January 10, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES A. ROBERTS, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Planing-Machine Rolls, of which the following is a specification.

This invention relates to improvements in planing-machine rolls; and it consists in a feed-roll composed of a single shaft carrying two separate cylinders supported thereon by an elastic or yielding material, said shaft and cylinders being provided with teeth, whereby the rotation of the shaft is communicated to the cylinders.

The invention is illustrated in the accompanying drawings, in which Figure 1 is a plan view. Fig. 2 is a section on the axis of one of the feed-rolls; and Fig. 3 is a section on the line *x x*, Fig. 2.

The machine is built in the ordinary manner, having two surfacing-cylinders, H H, and two grooving-cutters, S S, carried on spindles driven by belts in the usual manner, and, as usual, set on screw-shafts, by which said grooving-cutters can be adjusted to suit any width of lumber. All the foregoing construction is well known and needs no particular description.

Q Q represent two guides or a single tapering guide, secured to the bed of the machine so that their outer edges will guide the edges of two boards to two tonguing-cutters, T T, which are set on spindles driven by belts, as are the grooving-cutters. The cutters T T are set one forward of the other and nearly on the same line, but not quite, the cutting side of each projecting beyond the idle side of the other, so that neither will touch the board which is to be operated on by the other, while at the same time the cutters occupy the minimum of space across the width of the machine. The cutters T T may be driven by one belt by using the idler-pulley K, as shown in Fig. 1, or may be driven by two belts. The cutters T T are removably secured to the spindles which carry them, and these spindles are secured near their upper ends in collars fastened on shafts P N, which are secured in the frame of the machine, and the spindles do not come up to the surface of the bed, so that when the cutters T T are removed from the spindles the bed of the machine is left clear, except for the

guides Q Q, which are easily removed, when the machine is ready for use as an ordinary surfacer.

W W' represent the belts which drive the grooving-cutters S S, and Y represents the belt which runs the tonguing-cutters T T.

t t t t represent small platforms—one at each cutter—to support the boards while being operated upon, the bed of the machine being partially cut away at the cutters to permit adjustment.

In feeding two boards simultaneously to be tongued and grooved at one operation it is found that an ordinary feed-roll will not always operate upon both boards, owing to differences in thickness; and this difficulty has been obviated in several ways, one of which is to use two separate independent rolls; but this is objectionable, because standards must be provided in the center of the bed of the machine to support the inner ends of the rolls, and this prevents the use of the machine as an ordinary surfacer, unless it is built wide enough to permit such use on each side of said central standards. I obviate these objections by using a roll composed of a single shaft, (whereby only one set of gearing is necessary instead of two, as is the case where independent rolls are used,) upon which are carried two separate shells driven by the shaft, and supported on the shaft by some elastic or yielding material. R represents this roll complete.

A represents the shaft, driven by a gear-wheel secured to one end thereof, as shown at Z, Fig. 2.

E E represent two collars, secured to shaft A by keys F F, and each having one or more projecting teeth, *e*.

C C represent two shells or cylinders surrounding shaft A, and kept in place thereon by collars B B, secured to the shaft by set-screws or in any other suitable manner. On the inside of each cylinder C are one or more projecting teeth, *a*, corresponding to and engaging with teeth *e*.

D represents rubber cylinders surrounding shaft A, and furnishing a yielding support to the cylinders C C. It is evident that other material than rubber may be used for this purpose, and that springs of metal may be arranged between the shaft and the cylinders C, to carry out my invention. When two boards

are to be run through the machine at once to be tongued upon their inner edges by the cutters T T and grooved upon their outer edges by the cutters S S, each board is actuated by one of the cylinders C, and any variance in thickness is compensated by the yielding of the rubber D, so that the boards are always properly fed.

The collars B need not reach to the circumference of the cylinders C, and the cylinders may be so placed that their inner ends are close together, instead of being separated, as shown in the drawings, in which case the guides Q Q must be broken away under the roll, or must be of less height than the thickness of the boards to be operated upon.

I do not herein claim the combination of two grooved cutters, two tonguing - cutters, and guides leading to the cutter, with one or more feed-rolls consisting of a single shaft carrying two separate cylinders having on their inner

surfaces one or more teeth adapted to engage with teeth secured to the shaft and supported on the latter by elastic or yielding material. Such combination of devices will constitute the subject-matter of a separate application for Letters Patent.

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

A feed-roll for tonguing and grooving machines, consisting of a single shaft carrying two separate cylinders supported thereon by any elastic or yielding material, said shaft and cylinders being provided with teeth, whereby the rotation of the shaft is communicated to the cylinders, substantially as and for the purposes set forth.

JAMES A. ROBERTS.

Witnesses:

CYRUS E. LOTHROP,  
SUMNER COLLINS.