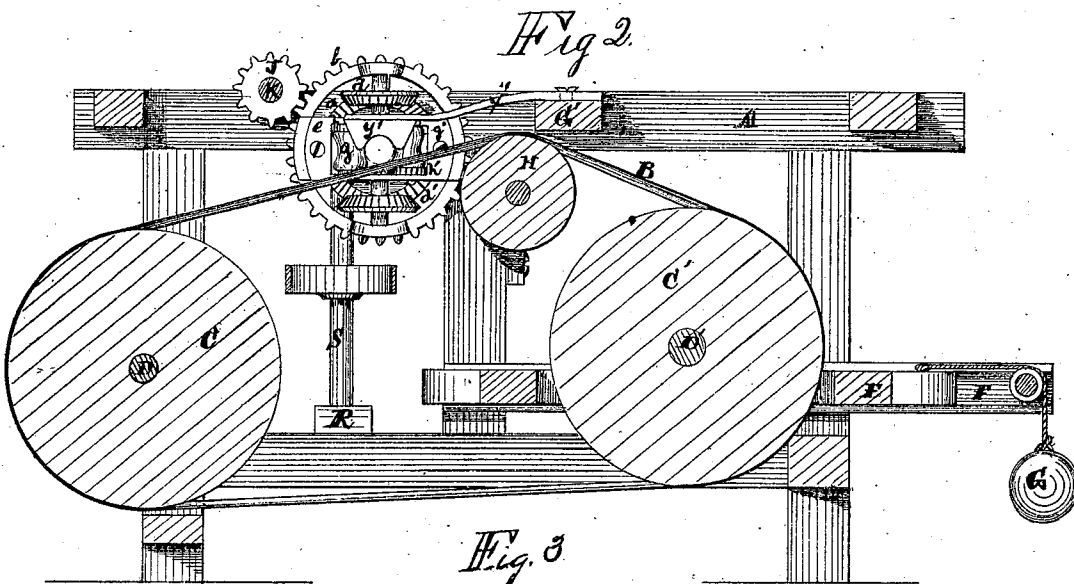
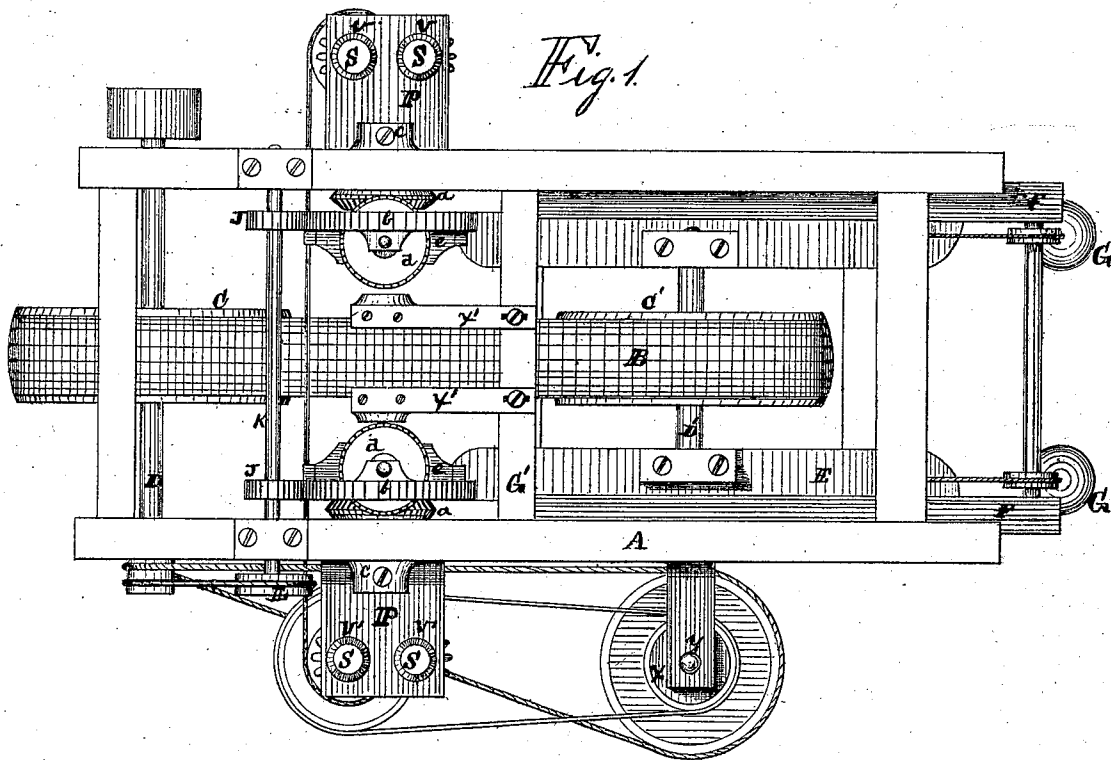
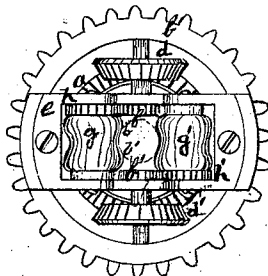


Patented March 10, 1874.



La Scauzobage  
M. A. Prodie



John C. Fish.

# UNITED STATES PATENT OFFICE.

JOHN C. FISH, OF GENESEO, NEW YORK.

## IMPROVEMENT IN MACHINES FOR POLISHING WOOD.

Specification forming part of Letters Patent No. **148,437**, dated March 10, 1874; application filed March 5, 1874.

*To all whom it may concern:*

Be it known that I, JOHN C. FISH, of Geneseo, in the county of Livingston and State of New York, have invented certain Improvements in Machines for Polishing Wood, of which the following is a specification:

My invention consists in combining certain feeding devices with a belting-machine to render it automatic, as hereinafter more particularly specified and claimed.

In the drawings, Figure 1 is a top view. Fig. 2 is a longitudinal section. Fig. 3 is a side elevation of the feeding devices detached.

I make a frame, A, to carry the machinery, of any suitable shape, such as shown in Figs. 1 and 2. The belting device, consisting of a sanded belt, B, and pulleys C and C', is old, and heretofore, in machines of this character, the articles to be polished are held and operated by the hands of the operator. My invention consists in adding certain devices that render the operation automatic, and give the piece of wood the necessary movements as it passes over the belt B to polish it. The pulley C is on a shaft, D, that runs in boxes fixed to the frame A, so that the shaft has only a rotary motion. The pulley C' is on a shaft, D', that runs in boxes bolted to a sliding frame, E. The frame E is held in place by guides or slides F, and is drawn toward the rear of the machine by weights G. These weights keep the belt B stretched, and, at the same time, if any unusual strain comes upon the belt, allow the frame E to yield to such strain and relieve the belt. The sanded belt B runs over a pulley, H, Fig. 2, which latter, as well as pulleys C C', has a rounded face, so that the center of the belt will be higher than the edges. To the frame A bevel-wheel *a* is rigidly attached, having a hole through its center to admit the projecting hub of the spur-wheel *b*, which extends through the frame, as shown at *e*, Fig. 1. On the end of this hub a washer is fixed by a set-screw, that holds it in place. The hub of wheel *b* is also hollow to allow the pieces to be polished to pass through over the belt B. The wheel *b* is formed of a rim and an open cross-bar, *e*, which latter is so arranged as to admit beveled wheels *d* and *d'* between it and the rim, as shown in the drawing. The wheels *d d'* are fixed on shafts having the bearings of one end in the cross-bar *e*,

(extending through the sides of the cross-bar,) on which are fixed spur-wheels *f f'*, and their other ends are journaled in a projection on the side of the rim of the wheel *b*. The wheels *d d'* mesh into wheel *a*, and get a planetary movement from the motion of the wheel *b* as they revolve around wheel *a*. These spur-wheels *f* and *f'* mesh with and give a rotary motion to spur-wheels *h h'*, Figs. 2 and 3. The wheels *h h'* are on shafts in the open part of cross-bar *e*, having their bearing in its sides, as shown. *g g'* are feed-rollers on these shafts, made of rubber, so as to allow for differences in size of the articles to be fed to the polishing-belt. This feeding device is placed on the inside of the frame and duplicated, one being placed directly opposite the other, so that the pieces will pass through the one into the other, one having a motion that will push the piece over the belt B, and the other receiving and drawing it through until it passes out at the other side. The spur-wheel *b* receives motion from a wheel, J, on shaft K, which is placed on top of the frame A. On the end of shaft K a pulley, L, is placed, which is driven by a belt on shaft D. To the frame A there are attached projecting pieces P, Fig. 1, and below them others, R, partially shown in Fig. 2, which carry upright shafts S. On the upper end of the shafts S are conical rubber pulleys *v*. The shafts are driven by belts running around pulley *x* on shaft *y*, which latter is sustained in the same manner as are shafts S. The shaft *y* is driven by a belt running from shaft D. There are two sets of conical feed-rollers. Those represented by letters *v v* on one side of the frame feed the pieces into feed-rollers *g g'*, and through them to rollers *v' v'* on the other side, which draw them away. To a cross-bar, G', placed on top of the frame A, there are attached two projecting arms, *x' x'*, one on each side of the belt B. On the outer ends of these arms projections are formed, either of metal or wood, (shown in Fig. 2 at *y'*), which are concaved at the bottom to receive and guide and press the pieces to be polished on the belt B.

The operation is as follows: The piece of wood to be polished is laid in between the feed-rollers *v*, and carried by them through the hub of spur-wheel *b* until it enters between the feed-rollers *g g'*, as shown in dotted lines in Figs. 2 and 3. These, being of rubber, press it so that it will

not rotate between them. At the same time the rollers  $g$   $g'$ , rotating on their axes, feed the piece along over the belt B, and revolving around one another—on account of the planetary motion of wheels  $d$   $d'$ —give a rotary motion, as well as an end movement, to the piece to be polished, and presents all the parts to the sanded sheet. When the piece has passed to the opposite feed-rollers  $g$  and  $g'$ , they receive it and draw it along, at the same time give it all the movements imparted by the other rollers, and pass it to the other conical rollers  $v$   $v'$ . The sanded belt is caused to run at a high rate of speed, and as the piece of wood passes over it, it is polished. The pulley H, having a rounded periphery, and being under the belt near where the piece to be polished passes over, raises the center of the belt, and prevents the piece of wood from passing under, and, at the same time, presses the belt against the wood to be polished.

What I claim is—

1. The spur-wheel  $b$  and bevel-wheels  $a$  and  $d$   $d'$ , in combination with the spur-wheels  $f$   $f'$  and feed-rollers  $g$   $g'$ , for the purpose set forth.

2. The automatic rotating feeding mechanism herein shown and described, in combination with the sanded belt B, as and for the purpose set forth.

3. The conical feed-rollers  $v$  and  $v'$ , in combination with the automatic rotating feeding mechanism, constructed and arranged as herein described.

4. The pulley H and projecting guiding-arms  $x$   $x'$ , in combination with belt B, when constructed and operating as and for the purpose set forth.

JOHN C. FISH.

Witnesses:

JAS. LORENZO GAGE,  
WM. A. BRODIE.