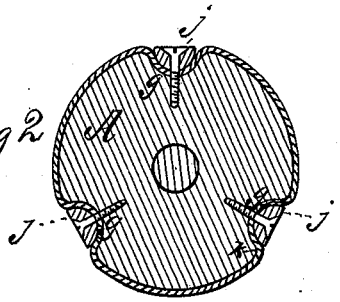
A. BRIDGMAN.

Sand-Papering Machine.

No. 209,648. Patented Nov. 5, 1878.

Fig 2.



Fig, 1.

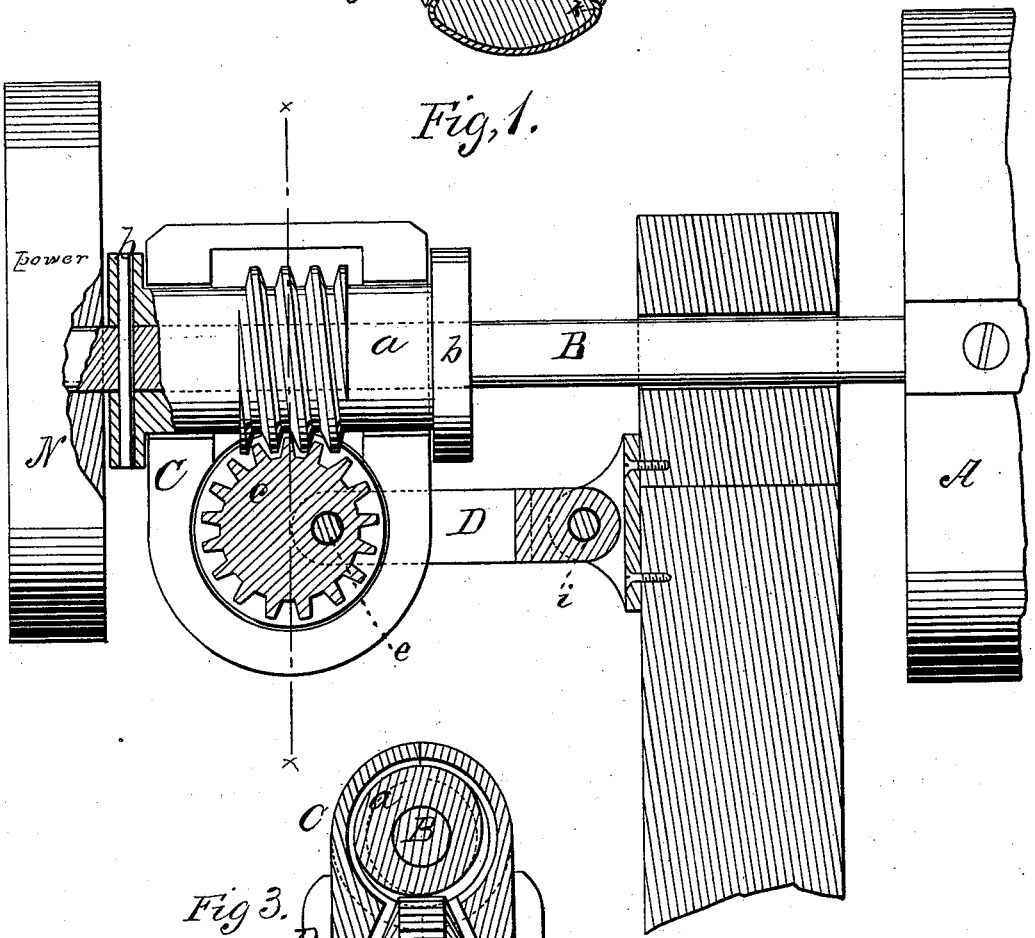
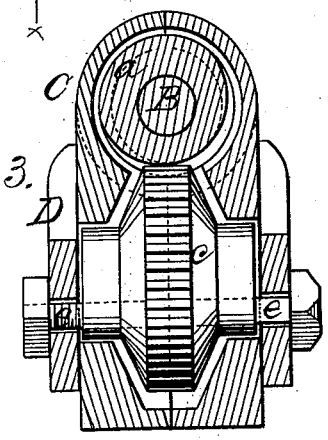


Fig 3.



WITNESSES

Villette Anderson

F. J. Masi.

INVENTOR

Almon Bridgman,

by E. W. Anderson.

ATTORNEY

UNITED STATES PATENT OFFICE.

ALMON BRIDGMAN, OF BERLIN, WISCONSIN, ASSIGNOR OF ONE-HALF HIS RIGHT TO JAMES L. PERRY, OF SAME PLACE.

IMPROVEMENT IN SANDPAPERING-MACHINES.

Specification forming part of Letters Patent No. **209,648**, dated November 5, 1878; application filed April 2, 1878.

To all whom it may concern:

Be it known that I, ALMON BRIDGMAN, of Berlin, in the county of Green Lake and State of Wisconsin, have invented a new and valuable Improvement in Wood-Polishing Machines; and do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal vertical section of my improved wood-polishing machine. Fig. 2 is a transverse section of the roller, and Fig. 3 is a cross-sectional view of the operating parts through the line *x x*.

This invention has relation to improvements in wood-polishing machines.

The object of the invention is to give the polishing-roller an endwise as well as rotary movement, so as to prevent the surface of the wood from being channeled by imperfections in the sand-paper.

The nature of the invention consists in combining, with a polishing-roller mounted in bearings in a frame, and having endwise motion relative thereto, and its shaft, having a worm-gear and collars formed thereon, a boxing suspended between the collars from the said shaft, a gear arranged loosely in the said boxing and engaging the worm, and a pitman connecting the said gear with the frame, as will be hereinafter more fully set forth.

In the annexed drawings, the letter A designates a roller, having its bearings in a suitable frame, and capable of endwise motion between the said bearings. The shaft B of the said roller is provided at one end with a worm, *a*, having at each extremity a collar, *b*. Upon this shaft, between the collars *b*, is clamped loosely a depending bracket or boxing, C, having journaled therein a gear, *c*, that meshes with the worm *a* upon the roller-shaft aforesaid.

The gear *c* has enlarged journals projecting through the sides of the boxing C, and a pitman, D, is secured to it by means of a pin, *e*, extending through an eccentric perforation in the said journals parallel to their longitudinal axes, and registering perforations in the forked end of the pitman D. This pitman is pivoted at its remaining end to the frame, as shown at *i*, Fig. 1.

Rotary motion is communicated to the polishing-roller through the medium of a pulley, N, and an endless belt, or through a system of gearing, as may be most expedient. This motion causes the gear *c* to revolve, and its hanger or boxing C being held immovable by the collars *b* aforesaid, and the pitman being pivoted to the frame, an endwise reciprocating movement is communicated to the polishing-roller aforesaid. By this means the surface to be polished is prevented from being unevenly cut by the sand-paper, owing to any imperfections in its surface.

The polishing-roller is provided with a number of longitudinal grooves, *g*, of semicircular contour in cross-section, having rounded edges *k*, over which the paper is carried in such a manner as not to break the same, and secured by means of holding-strips *j*, of corresponding form, but of less dimensions.

The ends of the paper are placed in one of the grooves *g*, being first wrapped loosely around the roller, and secured by the strip *j* and suitable screws passed through it into the roller. The paper is then securely fastened to the roller by means of the remaining strips and screws. In position the outer edges of the strips *j* are below the level of the perimeter of the roller, and do not come in contact with and deface the wood being polished.

I am aware that it is not new to let holding-strips into the roller for the purpose of securing the abrasive covering, and that the strip-channels have been made with rounded edges and angular bottoms; but this only transfers the breaking-place from the edge to the bottom of the strip-channel, whereas in my strip-channel the edges and bottom form a continuous curve, and the strip is also rounded on its bottom, so that while the sand-paper is held securely, there is no breaking edge in the channel or strip.

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

1. In a wood-polishing machine, the combination, with the roller A and its shaft B, having worm *a* and collars *b*, of the suspended boxing C, its gear *c*, and pitman D, substantially as specified.

2. In a sand-paper roller, A, having semicircular grooves *g*, with rounded edges *k*, the sunken fastening-strips *j*, of semicircular form in cross-section, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ALMON BRIDGMAN.

Witnesses:

C. A. PECK,

E. G. BLACKMAN.