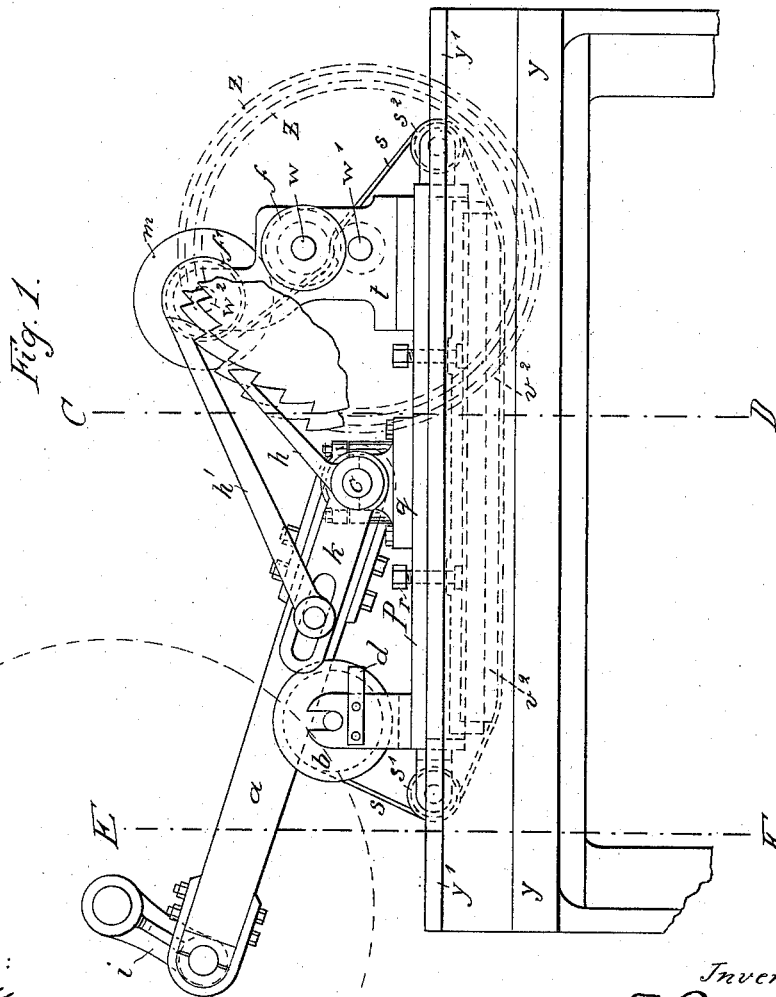
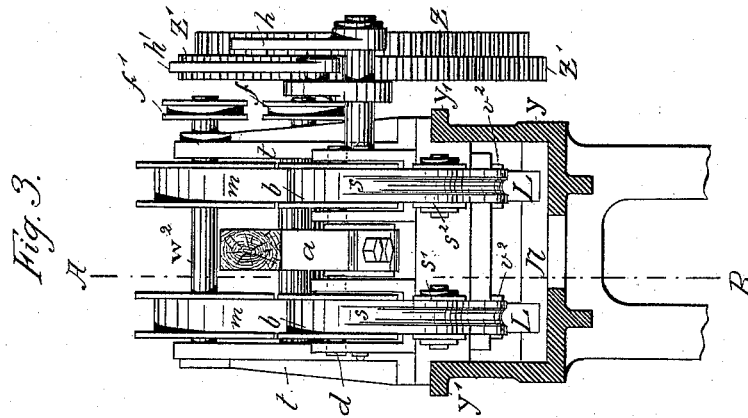


T. DAVIDS.

POLISHING APPARATUS FOR WOOD, &c.

No. 385,171.

Patented June 26, 1888.



Witnesses:
G. Richter
G. Mitzel.

Inventor:
Th. Davids.
by
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Fig. 1.

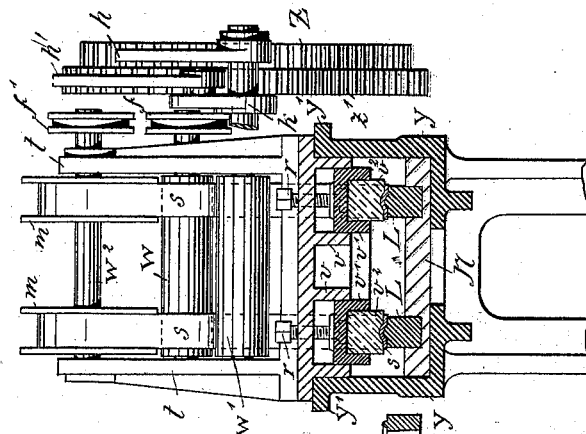
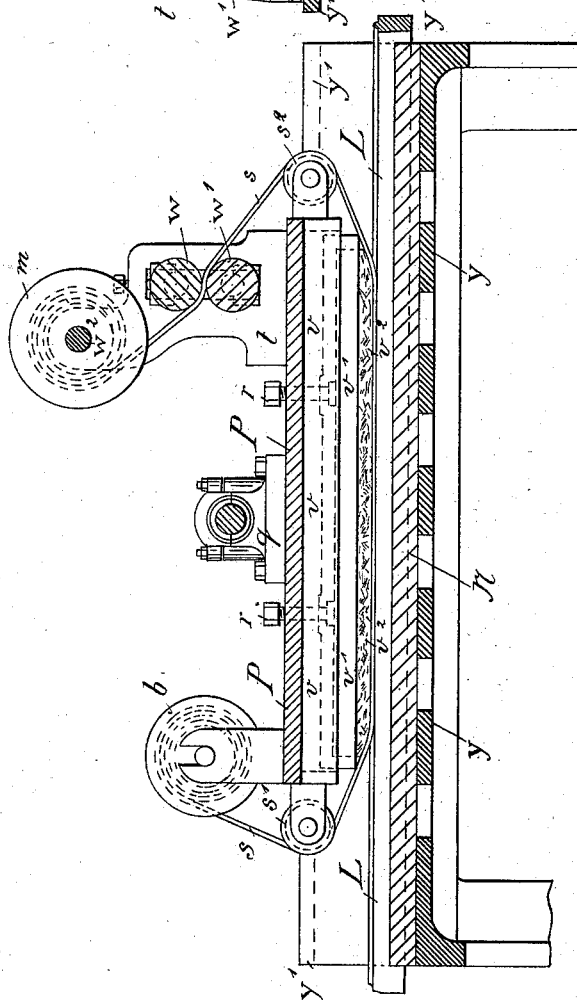


Fig. 2.



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UNITED STATES PATENT OFFICE.

THEODOR DAVIDS, OF HANOVER, PRUSSIA, GERMANY.

POLISHING APPARATUS FOR WOOD, &c.

SPECIFICATION forming part of Letters Patent No. 385,171, dated June 26, 1888.

Application filed February 2, 1887. Serial No. 226,993. (No model.) Patented in Germany January 29, 1885, No. 32,299; in Austria-Hungary September 28, 1885, No. 35,462 and No. 67,366; in Sweden October 7, 1885, No. 313, and in Norway October 13, 1885.

To all whom it may concern:

Be it known that I, THEODOR DAVIDS, a subject of the King of Prussia, German Empire, a resident of Hanover, Prussia, Germany, manufacturer, have invented a new and useful Improvement in Polishing Apparatus for Wood and similar Materials, (for which I have obtained patents in Germany, No. 32,299, January 29, 1885; in Austria-Hungary, No. 35,462 and No. 67,366, September 28, 1885; in Sweden, No. 313, October 7, 1885, and in Norway October 13, 1885,) of which the following is a specification.

These improvements relate to an apparatus for polishing smooth or grooved moldings of wood or other materials, and are characterized by the use of a sledge moving to and fro and provided with a grinding-cloth. This grinding-cloth runs over two rollers, so that the attrite part of it may be removed from the grinding-surface and a new piece be rolled off the store-roller and brought under the grinding-surface of the carriage (sledge.)

The other improvements consist in the automatic replacing of the attrite grinding-cloth.

Figure 1 shows a side view of the apparatus with so much of the driving-machine as is necessary to illustrate the operation. Fig. 2 is a longitudinal section on the line A B of Fig. 3. Fig. 3 represents a cross-section on the line E F of Fig. 1, and Fig. 4 shows a cross-section on the line C D of Fig. 1.

The apparatus P rests on a frame and moves to and fro in the guide $y' y'$. This to-and-fro motion is caused by the connecting-rod a , fastened to the shaft o and driven by a machine. The shaft o rests on the bearings g , which are fastened to the apparatus P.

The apparatus P is on its lower side provided with the moldings v , between which is a wooden frame, v' , that may be moved up and down, and fixed as desirable by means of screws r . Any desirable number of these wooden frames v' can be placed beside and parallel to one another, the number of them being dependent on the size of the machine. In the accompanying drawings two frames, v' , are represented. These wooden frames are provided with a filling-block, v^2 , which may be made of some elastic material. The lower side of this

filling-block v^2 is shaped to correspond in its whole length with the groove of the wood or metal molding that has to be ground. The grinding-cloth lies upon the lower side of the filling-block, and is stretched by means of the rollers $b s' s^2 w w' m$, as described hereinafter. The molding L to be ground rests upon a suitable bearing, N, and is supported by the frame Y, so that during the to-and-fro motion of the grinding-cloth s with the filling-block v^2 the molding is not liable to give way.

On the upper side of the apparatus are the following mechanisms: The store-rollers $b b$, on which the grinding-cloth s is rolled, and which may be of paper, leather, woven material, &c., to which glass, emery, sand, &c., is applied in the well-known way. A small spring, d , pressing against the roller b , prevents the grinding-cloth from winding off prematurely, and the grinding-cloth is always kept stretched toward this side.

The grinding-cloth s runs from the roller b over the roller s' , then along the filling-block v^2 to the rollers s^2 , and from the latter to the upper side of the sledge P. On this sledge P I provide the support t for the rollers $w w'$ and shaft w^2 . The attrite grinding cloth runs between the rollers $w w'$ and is wound up on the roller or drum m .

There is further to be described the mechanism by which the attrite grinding-cloth is automatically wound up and the new grinding-cloth is conducted to the filling-block v^2 . This mechanism consists of two cog-wheels, z and z' , mounted rigidly on the projecting end of shaft or roller w' (see Figs. 3 and 4) of the drums $m m$, mounted on shaft w^2 , resting in standards $t t$, and of two pawls, $h h'$. Pawl h is loosely guided in a slot of an arm, k , connecting pivot o of pawl h' with said pawl h , that engages with cog-wheel z' , serving as a check, as will be hereinafter more fully described. Pawl h' is pivoted to rod a at o and gears into cog-wheel z . To the end of drum-shaft w^2 is secured a pulley, f' , and to the end of friction roller or shaft w another pulley, f , being both connected by suitable belting. (Not shown in the drawings.)

The manner in which the attrite grinding-cloth is wound upon drums $m m$ is as follows:

During the forward and backward motion of the apparatus P on frame $y y'$ by means of connecting-rod a the latter oscillates round the fulcrum o , for the other end of the connecting-rod is moved by the crank i of the machine, which sets the polishing apparatus into motion, but which is not shown in the drawings. In consequence of this motion the pawl h' , that gears by its gravity into cog-wheel z , will turn the latter when the apparatus P moves away from said cog-wheel; but it will again ascend and glide over one or more teeth on wheel z when the apparatus P approaches the cog-wheel, as will be plainly understood by looking at Fig. 1. The pawl h that gears into its cog-wheel z' also by its gravity will, since it reciprocates and oscillates in the slotted arm k during the forward and backward motion of apparatus P, only serve as a check and prevent any reverse motion of the axle w' . By this means the roller w is turned and the grinding-cloth between w and w' is transported by the friction between the rollers w and w' . As already stated, the pulley f is mounted on one end of the roller w , and is connected by a belt with pulley f' on the shaft w^2 . On this shaft are also mounted the drums m , and consequently the drums will also turn and wind up the worn-out grinding-cloth.

During the to-and-fro motion of the apparatus P the grinding-cloth will polish the smooth or grooved molding L, which is kept

in its proper position by means of the guide N. The molding may be moved continuously or at intervals, so that always a fresh piece of the molding is subjected to the operation of the grinding-cloth. The molding L moves of course in the longitudinal direction of the apparatus.

The hollow frame v' must every time be fitted to the surface of the molding to be ground.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination of the sledge P and means for moving it to and fro with the adjustable filling-block v^2 , the two grinding cloth rollers b and m , the grinding-cloth s , the spur-wheel z' , with pawl h on the connecting-rod o , the rollers $w' w$, and the strap-gear $f f'$, for the purpose specified.

2. The combination of the sledge P and means for moving it to and fro with the adjustable filling-block v^2 , the adjusting screws r , the grinding-cloth rollers b and m , the guide-rollers $s' s^2$, the transporting-rollers $w' w$, the transporting cog-wheel z' , the pawl h on the connecting-rod o , and the strap gear $f f'$, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

THEODOR DAVIDS.

Witnesses:

A. M. SIMON,
JOHS. KRACKE.