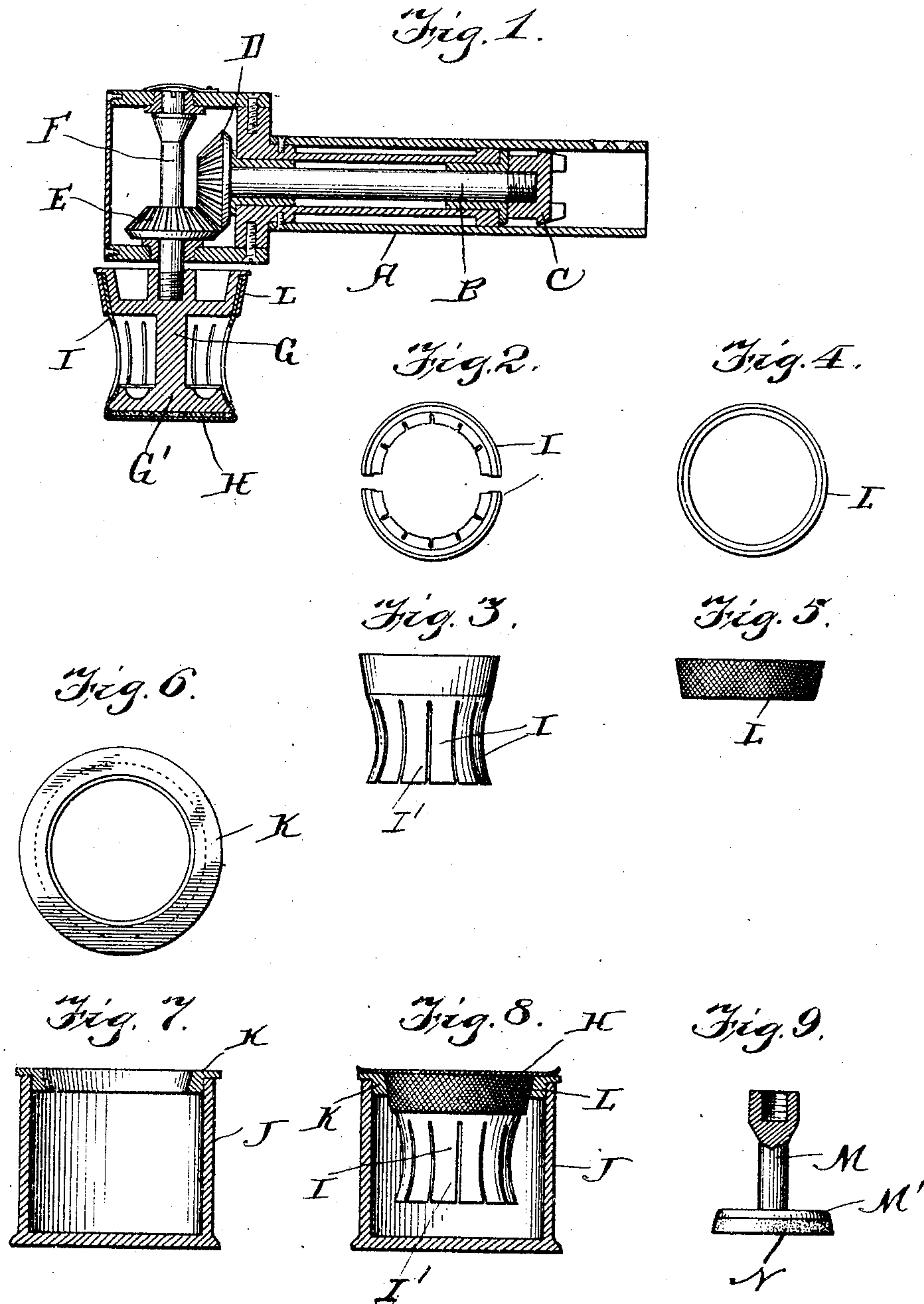


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F. URBAN.
SANDING OR POLISHING MACHINE.
APPLICATION FILED MAR. 15, 1904.



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UNITED STATES PATENT OFFICE.

FRANK URBAN, OF BELVIDERE, NEW JERSEY.

SANDING OR POLISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 779,630, dated January 10, 1905.

Original application filed May 16, 1903, Serial No. 157,504. Divided and this application filed March 15, 1904. Serial No. 193,310.

To all whom it may concern:

Be it known that I, FRANK URBAN, a citizen of the United States, residing at Belvidere, county of Warren, and State of New Jersey, have invented a certain new and useful Improvement in Sanding or Polishing Machines, of which the following is a specification.

My invention relates to a new and useful improvement in sanding and polishing machines, and has for its object to provide a machine designed to be run by power for sandpapering or polishing surfaces by means of a rotating flat disk, and this application is a division of an application filed by me May 16, 1903, Serial No. 157,504, for sanding and polishing machines.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a longitudinal section through my improved machine; Fig. 2, a plan view of the two-part spring-jacket; Fig. 3, a side elevation of the spring-jacket; Fig. 4, a plan view of the ring which holds the two parts of the spring-jacket in place; Fig. 5, a side elevation of the ring; Fig. 6, a top view of the case used in securing the sandpaper in place; Fig. 7, a vertical section through the case; Fig. 8, a vertical section through the case, showing the spring-jacket and ring inserted therein and the sand or emery paper lying across the top ready to be attached to the holder; Fig. 9, a side elevation of an attachment adapted to be attached to the machine for polishing, the upper portion of the stem being shown in section.

A represents a suitable framework for inclosing the operating parts of the machine, and in this framework, journaled in suitable bearings, is a shaft B, to the outer end of

which is secured a clutch C, which is designed to be attached to a suitable source of power carrying the other member of the clutch. The power is designed, preferably, to be communicated through a flexible shaft, so that the machine may be moved from place to place in its operation. Upon the other end of the shaft B is secured a beveled gear D, which meshes with a beveled gear E, secured upon a vertical spindle F, journaled in the framework. The spindle F projects a slight distance below the frame and is threaded upon its lower end, and upon this threaded end is designed to be secured the holder G, the lower end of which consists of a flat disk G', upon which the sandpaper or polishing material H is designed to be secured.

I is a jacket of spring material divided vertically into two parts. The lower end of each part of the jacket I is slit vertically, so as to form the spring-fingers I', and these fingers are designed to hold the sandpaper or polishing material to the holder, and the polishing material is attached to the holder in the following manner: J is a cylindrical case open at its upper end. K is a ring adapted to fit into the open end of the case, and the ring is provided with a flange resting upon the upper edge of said case. The inner edge of the ring is beveled from the top downward and inward. The upper end of the spring-jacket is inclined at the same angle as the inner edge of the ring K, and to hold the two parts of the spring-jacket together I provide a collar L, the walls of which are inclined at the same angle as the upper end of the jacket, and this collar L is adapted to fit around the jacket to hold the two parts together, and then the jacket, with the collar surrounding the same, is adapted to be inserted within the case, the collar L fitting within the ring K, and on account of the inclined surfaces of the ring K and collar L the upper surface of the jacket and collar L will remain flush with the upper surface of the ring K when the jacket is inserted in the case. Then the sandpaper or polishing material is laid flat upon the top of the case, as shown in Fig. 8, and then by

pushing the holder G downward into the spring-jacket the polishing material or sandpaper will be pressed downward with it, and the edges of said polishing material will be bent upward around the disk G', and when the holder has been pressed downward until it fits tightly within the jacket the lower ends of the spring-fingers I' will hold the turned-up edges of the polishing material tightly against the disk G', as shown in Fig. 1. The purpose of the rings K is to allow the case to be used for different size holders and jackets by providing different size rings.

In Fig. 9 I have shown a holder designed to be used solely for polishing. This holder consists of a stem M, adapted to be threaded upon the lower end of the spindle F, and to the lower end of this stem is secured a disk M', to the lower face of which is secured by cementing or otherwise felt or other polishing material N.

The advantage of a machine of this character employing a revolving disk is that the machine can be used on any article made from wood that requires smoothing or polishing, whether in parts or together and also during the process of finishing, such as sanding on varnish and rubbing or polishing. The advantage of this motion communicated to the polishing material is that it can be used around carvings and such places where horizontal reciprocating movement could not be used, and the advantage of securing the polishing material as I do is that it allows the polishing material to come close up to any shoulders or projections on the surface of the article being polished or sanded, and the means that I employ for securing the sandpaper to the holder allows the same to be secured or removed in a rapid and simple manner.

Of course I do not wish to be limited to the exact construction here shown, as slight modifications could be made without departing from the spirit of the invention.

Having thus fully described my invention, what I claim as new and useful is—

1. In a sanding or polishing tool, a vertically-revolving holder, a spring-jacket surrounding said holder, the lower end of the jacket being slit vertically so as to form spring-fingers, the abrading material adapted to pass underneath the holder and be clamped between the periphery of the same and the spring-fingers, means for securing the abrading material to the holder consisting of a cylindrical case open at its upper end in which the spring-jacket is adapted to fit and rest upon the upper edge, the abrading material adapted to be placed over the upper edge of the spring-jacket and the holder forced downward therethrough, as and for the purpose specified.

2. In combination with a revolving holder in a sanding and polishing machine of the character described, a spring-jacket divided vertically into two halves, the lower end of the spring-jacket slit vertically so as to form spring-fingers, a collar adapted to slip around the outside of the upper end of the two halves of the jacket to hold them together, means for securing the abrading material to the holder consisting of a cylindrical case open at its upper end, interchangeable rings adapted to fit upon the upper end of said case, the spring jacket and collar adapted to be inserted through the ring and held flush with the upper surface thereof, the abrading material adapted to be laid across the upper surface of the ring and jacket, the holder adapted to be forced downward through the spring-jacket carrying the abrading material with it, as and for the purpose specified.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

FRANK URBAN.

Witnesses:

OSCAR KIMENOUR,
EDWARD ELY.