C. BRÜCKNER.

Sandpapering-Machine.

No. 210,988. Patented Dec. 17, 1878.

Fig. 1

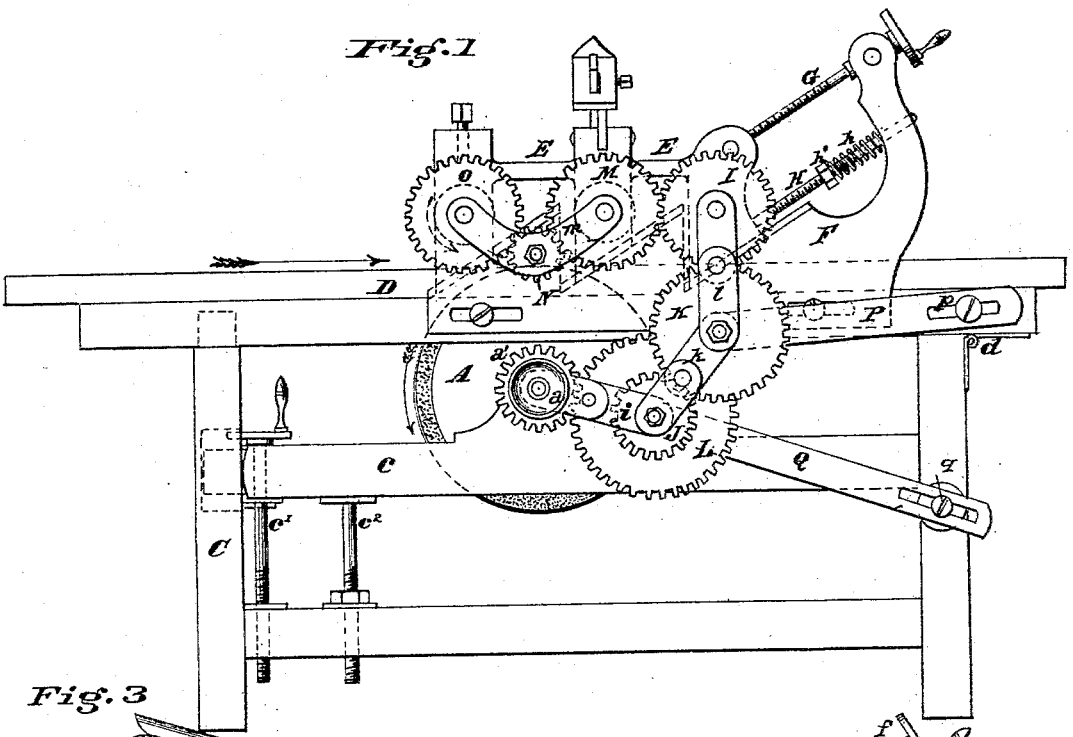
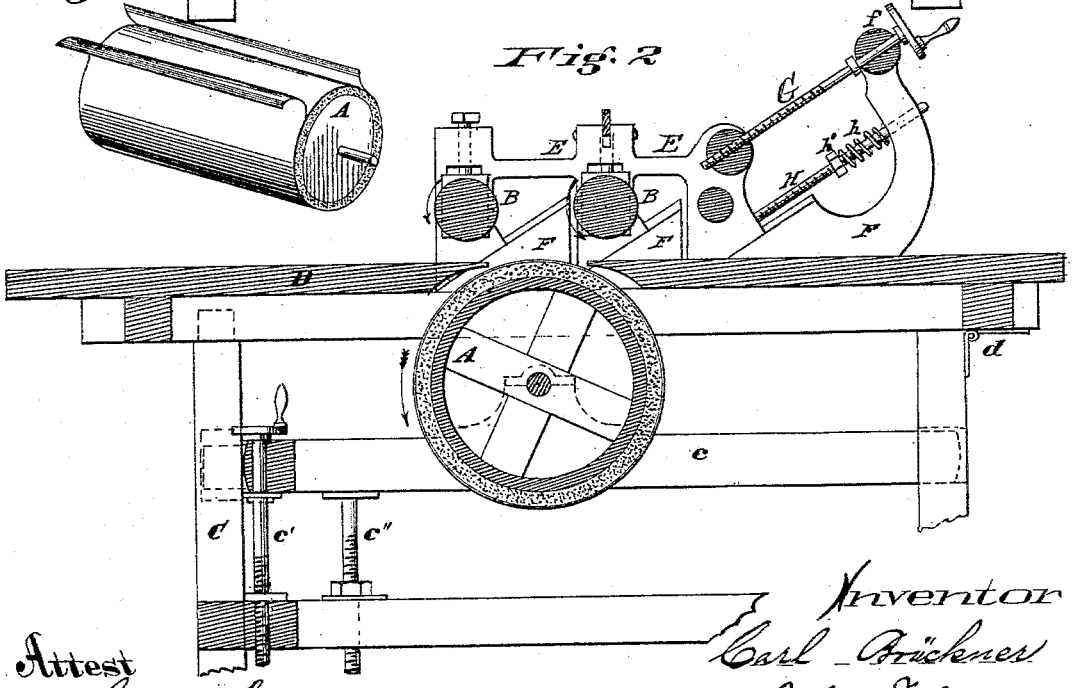


Fig. 3

Fig. 2



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CARL BRÜCKNER, OF CINCINNATI, OHIO, ASSIGNOR TO J. A. FAY & CO., OF SAME PLACE.

IMPROVEMENT IN SANDPAPERING-MACHINES.

Specification forming part of Letters Patent No. **210,988**, dated December 17, 1878; application filed April 22, 1878.

To all whom it may concern:

Be it known that I, CARL BRÜCKNER, of Cincinnati, Hamilton county, State of Ohio, have invented an Improvement in Sandpapering-Machines, of which the following is a specification:

My invention relates in general to a sandpapering-machine having a revolving drum, upon which is secured the sheet or sheets of sand-paper, and which drum revolves beneath a table over which the stuff to be sandpapered is passed or drawn by feed-rolls; and it refers more particularly to the manner of constructing the drum and the feed-rolls, and the adjustment of the various parts necessary to accommodate the polishing of differing thicknesses of stuff.

My invention consists, in the first part, in providing the drum that carries the sand-paper with a peripheral coating of a soft and sensitively-flexible nature, composed of a proper admixture of glue and glycerine, over which to secure the sand-paper, the said covering to act as an accommodating force in keeping the sand-paper against the surface to be polished without crushing and destroying it.

My invention consists, in the second part, in order to enable the use of single feed-rolls, located only above the table, and thus avoid expensive construction, in providing said rolls with a roughened surface, preferably a coating of emery, but, if desired, a coating of pulverized glass, sand, or other like inexpensive material. From this manner of constructing the feed-rolls they can feed the stuff along a stationary supporting-surface, and at the same time avoid disfiguring the surface of the stuff, as would be the case if notched or toothed rolls were used.

My invention consists, in the third part, in the provision, in connection with the hand-screw for adjusting the position of the feed-rolls, and which connects centrally with the frame of the rolls, of spring-buffers located to press against the roll-frame near its extremities, and in the line of its adjustability, so that their impelling force will overcome all tendency in the frame to stick or bind, and thus enable the adjusting-screw to properly adjust the roll-frame.

My invention consists, in the fourth part, in the provision of a series of links binding together the train of gearing that connects the feed-rolls with the shaft of the sand-paper drum, and a series of adjustable supports to secure the links in rigid positions, the whole enabling the adjustment of the feed-rolls without severing the driving-connection, or enabling the throwing back of the table when fitting the drum with sand-paper.

Referring to the accompanying drawings, Figure 1 is a side elevation of the machine embodying my improvements. Fig. 2 is a sectional elevation of the same. Fig. 3 is a perspective view of the polishing-drum, showing the sand-paper partly in position.

The main features of a sandpapering-machine are a roller, A, having a covering of sand-paper, and feed-rolls B B, to carry the stuff up to the roll A, which revolves against the direction of the passing stuff. The drum A is journaled in a frame, C, and upon an adjustable support, *c*, made so by the presence of the adjusting-screws *c' c''*, so that the drum may be made to assume the right position relatively to the top surface of the table D, over which the stuff passes.

The drum A is made, preferably, with a wooden frame, to which is secured a continuous periphery of wood in small strips. Over this is wound a covering of cord, which forms a suitable surface for the elastic external covering of the drum to adhere to, it being molded thereto in a liquid state and allowed to set. This covering must be thoroughly and sensitively elastic, so that, while it will have sufficient power to keep the sand-paper which is secured over it up to its work, it will not be so unyielding as to bruise the sand-paper. Therefore it will not do to make the said covering of rubber, which, although being elastic, is too tough and unyielding under moderate pressure. Hence I have employed an admixture of glue and glycerine, the former having a body which the latter renders elastic; and the whole may be easily molded upon the drum, while possessing that sensitive elasticity so essential in keeping the sand-paper to its work without crushing and destroying the surface of the said sand-paper before it has been consumed legitimately in polishing.

The sand-paper is secured to the roller by being lapped around it snugly until the opposite edges meet, when these edges are glued to an underlying piece of paper. The table D is hinged at *d*, so that it may be thrown back, in order to enable the securing of sand-paper upon the drum A when the latter is in position, this feature being convenient, owing to the frequent necessity of applying the sand-paper.

The feed-rolls B B are equal in length to the width of the table, and are journaled above the table in sliding boxes in an adjustable frame, E. They are preferably made of wood and coated with pulverized emery, which surface enables them to gripe the stuff to be polished and carry it along the stationary supporting-surface of the table D, as well as past the oppositely-revolving polishing-drum A; and thus they are enabled to perform the functions of a toothed feed-roll without the same tendency to mar the surface of the stuff, while also dispensing with a traveling table-support or under rolls, which would be much more expensive.

In order to secure the proper space between table D and the feed-rolls B B for varying thicknesses of stuff, the frame E is secured upon dovetailed inclined slides F F. These, in turn, are made horizontally adjustable upon the table-frame D, to permit the location of the rolls in the right position over the drum A, which would be disturbed in arranging the space between the rolls and table.

The adjusting-screw G is secured in the cross-piece of the slide-frame F F, and connects with the cross-piece of the feed-roll frame E. Secured to move in openings in the slide-frame F F, and press against the roll-frame E near its extremities, and in the line of its adjustment, are buffer-rods H H, having springs *h h*, to exert their power between collars *h' h'* upon the rods and the slide-frame F F, and thus act to force the said roll-frame along the slides. By this means the roll-frame is subject to an impelling force, which will overcome any tendency to bind or stick on the slides, and the single adjusting-screw is enabled to properly adjust the frame. The collars *h' h'* upon the rods H H are made adjustable, to enable the proper tension to be given to the springs.

The drum-shaft is provided with a pulley, *a*, to receive power from the counter-shaft, and a gear-wheel, *a'*, which, with the gear-wheels I J K L, form a "speeded-down" driving-connection from said drum-shaft to the feed-rolls.

The wheel I is secured upon frame E to mesh with wheel M upon one of the feed-roll shafts, and also with wheel K, to which it is secured by link *l*. The wheel K is, in turn, secured to mesh with wheel J by the link *k*, and the wheel L, being fastened rigidly to wheel J, so as to revolve with it, is secured to mesh with wheel *a'* on drum-shaft by link *i*. The wheel M upon one of the feed-rolls is connected by link *m* to mesh with pinion N, which, in turn, meshes with wheel O upon the other feed-roll shaft.

It will readily be seen that by means of this driving-connection the distance between the drum-shaft and feed-roll shaft may be increased or decreased at pleasure without severing the connection, which is chain-like in nature, and thus the position of the rolls may be varied at will in providing for the feeding of varying thicknesses of stuff; or the table may be tilted back to enable the adjusting of sand-paper upon the drum A.

In order to steady the linked driving-connection above mentioned, I provide adjustable supports P Q, which support the shafts of the wheels L, J, and K. By means of tightening the set-screws *p q*, these supports may be made rigid when the machine is running, and by loosening said set-screws the position of the feed-rolls or the table may be varied.

I claim—

1. In a sandpapering or polishing machine, a polishing-roller having a peripheral coating of glue rendered sensitively elastic by proper admixture of glycerine or kindred substance, the whole to act as a yielding surface upon which to secure the sand-paper.

2. In a sandpapering or polishing machine, the feed-rolls provided with a surface of pulverized emery, glass, or similar material, to serve the purposes substantially as described.

3. The combination, with the feed-roll frame, slideways, and adjusting-screw, of spring-buffers arranged to press against the roll-frame, in the direction of its adjustability, with power sufficient to overcome any tendency in the slide-connection to bind, whereby the adjusting-screw is enabled to accurately accomplish its office.

4. In a sandpapering or polishing machine, the feed-roll-driving connection from thence to the shaft of the polishing-drum, composed of intermeshing gear-wheels hung permanently together by links and adjustable supports upon the frame, whereby the links may be rendered rigidly stationary or at will released, to enable the adjustment of the rolls without severing the driving-connection.

In testimony of which invention I hereunto set my hand.

CARL BRÜCKNER.

Witnesses:
JOHN E. JONES,
SAMUEL HUMPHREYS.