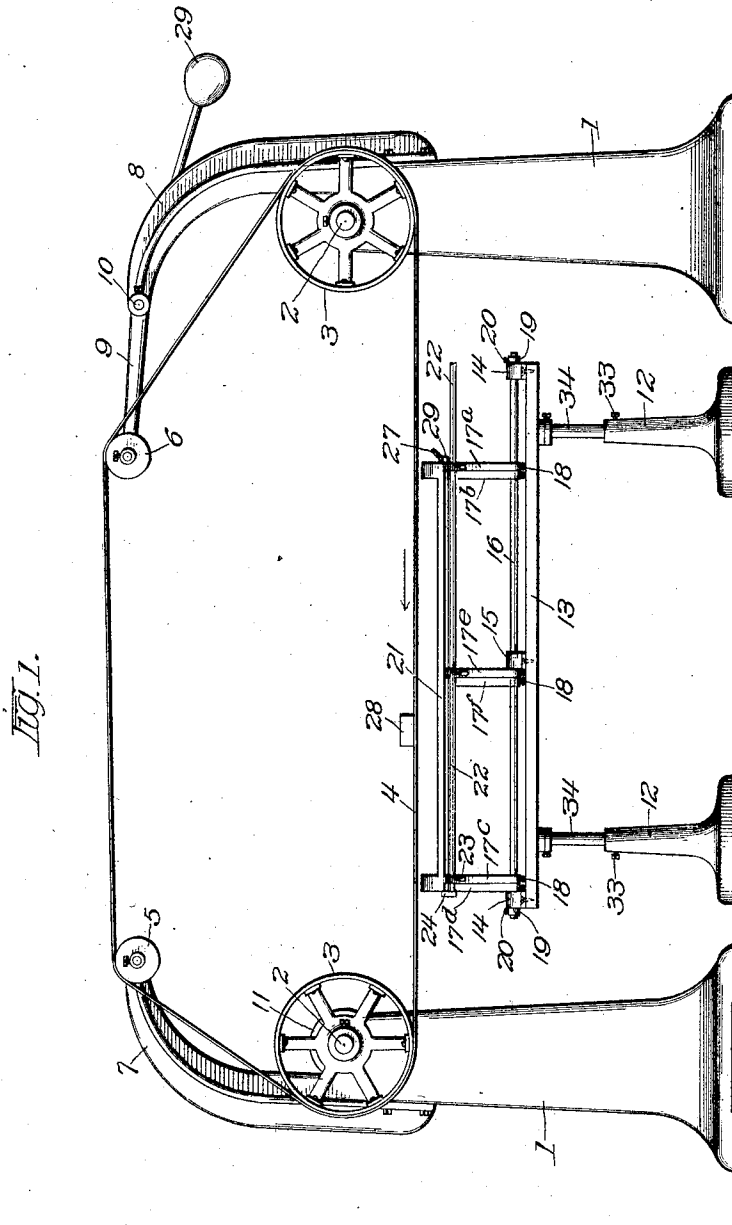


A. LINDQUIST.
BELT SANDING MACHINE.
APPLICATION FILED DEC. 21, 1911.

1,059,055.

Patented Apr. 15, 1913.

2 SHEETS—SHEET 1.



Witnesses:
Robert H. Weir
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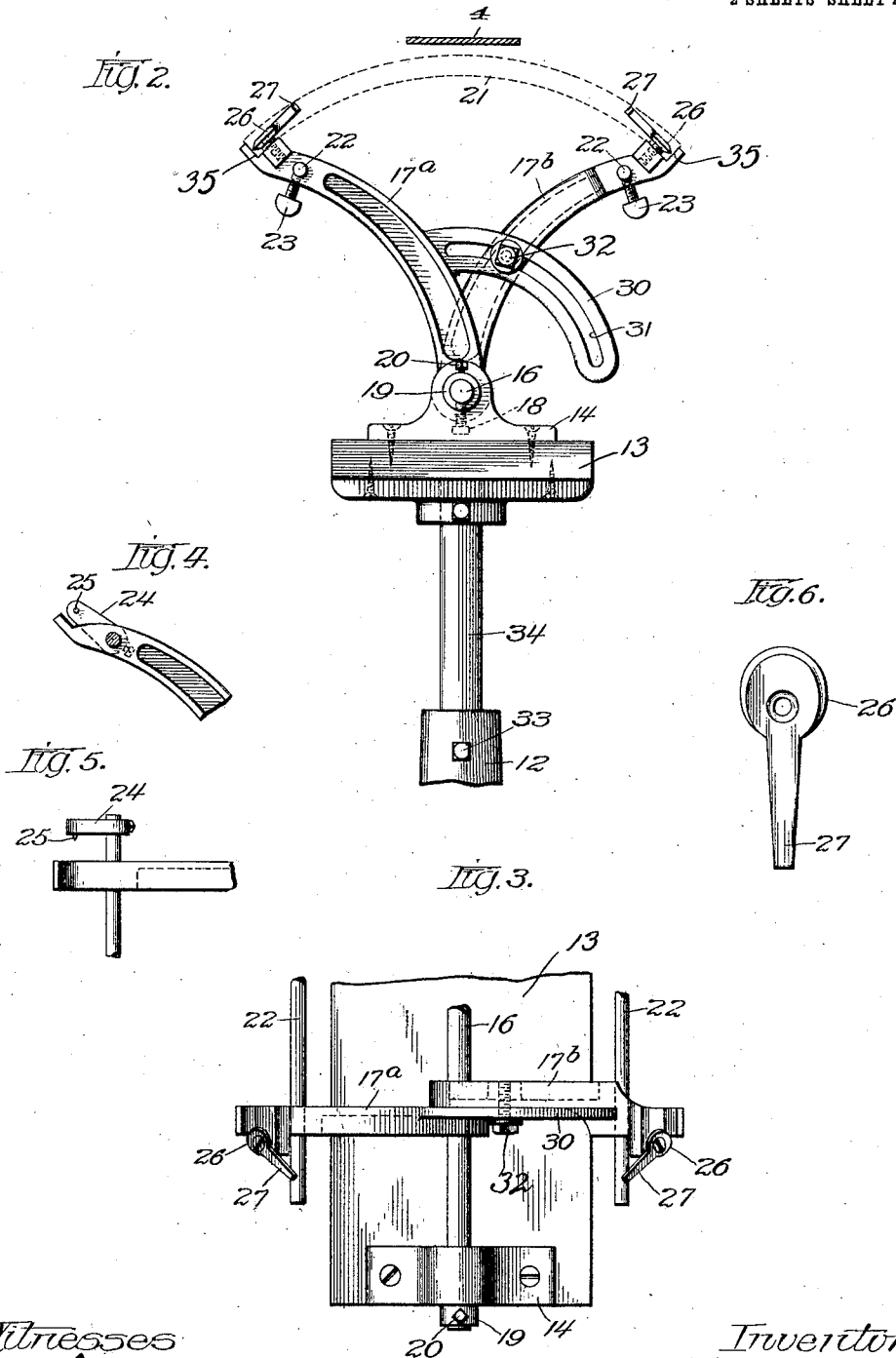
Inventor
Alexander Lindquist.
By Luther L. Miller, Atty.

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att'y.

UNITED STATES PATENT OFFICE.

ALEXANDER LINDQUIST, OF ROCKFORD, ILLINOIS, ASSIGNOR TO C. MATTISON MACHINE WORKS, OF BELOIT, WISCONSIN, A CORPORATION OF WISCONSIN.

BELT-SANDING MACHINE.

1,059,055.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed December 21, 1911. Serial No. 667,143.

To all whom it may concern:

Be it known that I, ALEXANDER LINDQUIST, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Belt-Sanding Machines, of which the following is a specification.

In constructing veneered curved china-closet frames and other curved frames, the veneer upon the rails is "cross-banded", that is to say, it is arranged to extend transversely of the rails, so that the grain of the veneer on the rails shall extend parallel with the grain of the veneer upon the stiles. It has heretofore been impracticable to sandpaper such a frame by machine, and hence it has been necessary to sandpaper the stiles and rails separately, thereafter secure the stiles and rails together, and subsequently remove the exuded glue and inequalities at the joints by hand.

The object of this invention, generally stated, is to obviate the necessity for such hand-work, with its attendant expense, and to provide an apparatus capable of sanding a completed cross-band-veneered curved frame or other curved object.

A specific object of the invention is to provide means capable of supporting a curved frame or other curved object in operative relation to a sanding belt, and adapted to be swung or rocked to bring the different portions of the article into position to be contacted by the belt.

Figure 1 is a side view of one embodiment of my invention showing the supports and framework for the belt and for the object to be operated upon. Fig. 2 is an end view of the mechanism for supporting the frame or other object as it is being smoothed. Fig. 3 is a plan view of one end of the frame-supporting mechanism. Figs. 4 and 5 are detail views of the means for clamping the object to the support. Fig. 6 is an enlarged view of a portion of the clamping means.

The sander shown in Fig. 1 comprises the standards 1 carrying in suitable bearings the shafts 2 upon which are mounted the pulleys 3 which carry the abrasive belt 4. The belt also passes over the loose pulleys 5 and 6 which are carried by the supports 7 and 8. Pulley 6 is carried by the support 8 by means of a lever of the first class pivoted to the support 8 at the point 10, one

end of the lever carrying the pulley and the other end carrying an overbalancing weight 29, which maintains at all times sufficient tension on the belt. Power is applied to the belt by means of the drive wheel 11.

Under the lower run of the belt is placed the supporting and operating mechanism for the china-closet frame, or other object, which is to be sanded. The support comprises the standards 12 which support the base 13. Attached to the base at each end is a bearing 14 and a similar bearing 15 positioned substantially midway between the end bearings. These bearings are all alined and rotatably carry the shaft 16. Slidably and rotatably attached to this shaft are the brackets 17^a, 17^b, 17^c, 17^d, 17^e, 17^f in pairs. These brackets may be fixed rigidly to the shaft by means of the set screws 18. The shaft 16 is rotatably maintained in position in the bearings by means of the collars 19 and set screws 20. The brackets may be shifted horizontally along the shaft to accommodate objects of various lengths. Ordinarily the brackets 17^a and 17^b are shifted, the others remaining fixed in position. Rods 22, parallel with the shaft 16, pass through perforations in the brackets 17 and are attached to the brackets on the respective sides by means of the thumb screws 23.

It has been shown that the frame supporting means may be adjusted for varying lengths of frames by sliding the brackets longitudinally, and provision is made for adjustment to varying width of frames. An arcuate arm 30 forms an integral part of each of the brackets 17^a 17^c 17^e. It is evident, however, that these arms may be attached to said brackets in any other suitable or desired manner. Each arm has a slot 31 into which passes a bolt 32 threaded into one of the other brackets. By loosening these bolts the brackets may be set to any desired angle, thus accommodating frames of any ordinary width. And the respective brackets may then be rigidly fixed together by tightening the bolts. The frame 21 to be operated upon is supported by these brackets in the following manner: The frame rests in the notches 35 in the brackets with its convex side upward as indicated by the dotted lines in Fig. 2. A stop arm 24 is fixed to one end of each of the rods 22 adjacent to and outwardly from the brackets 17^c and 17^d. From each of these arms, point-

ed pins 25 project inwardly. The end of the frame is pushed against these pins, a sufficient indentation being made by the pins to hold the end of the frame in place. As the direction in which the belt runs is such as to cause the belt to push the frame against the arms 24, ordinarily no fastening means are required. But when desired, for any reason, the frame may be clamped in place by means of the eccentric cam 26 which is attached to each of the brackets 17^a and 17^b adjacent the rods 22. These brackets are pushed inwardly so that the cams come in contact with the end piece of the frame. The brackets are then fixed in place and the cam edges are forced by means of the arms 27 firmly against the woodwork. The frame is thus held rigidly in place whether locked in place by means of the cams, or merely pressed against the pins 25, it may be oscillated with the bracket framework on the shaft 16, so that all points of the surface to be sanded may be brought into convenient operative relation with the belt.

In the operation of the machine the frame support is located immediately under the moving belt as indicated in Fig. 2, the pivot 16 being therefore in the vertical plane of the belt. The belt being held downwardly against the object to be operated upon by means of a hand block 28, or by any other suitable means, the supporting framework is oscillated forwardly and backwardly around the shaft 16, carrying with it the object, until all portions are finished as desired. When oscillating the work support, the operator grasps one of the rods 22, sliding his hand along said rod as he changes his position in reaching all portions of the work. The supporting framework is so made that when the frame is in place with its convex surface upward, the center of curvature of the frame is approximately at the center of the shafts, but, as the belt is pressed downward on the woodwork by the block 28, it is evident that considerable variations between the center of the shaft and the center of curvature of the door-frame are allowable. Ordinarily, as stated, these curved frames are veneered with the grain of the veneer on all of the pieces running longitudinally with reference to the frame, and by the use of this machine, as the belt runs longitudinally with reference to the frame, the marks caused by the abrasive material on the belt have the appearance of being due to the grain of the wood. By the use of this machine also, the joints are more perfectly finished than by hand work.

It will be seen that the weight 29, which gives suitable tension to the belt, will allow the belt to be easily pushed downwardly more or less by the block 28 without varying the tension of the belt, so that the

height of the object operated upon may vary materially. But provision has also been made for adjusting the height of the supporting framework. The rods 34 passing into the standards 12 may be raised to any desired height and sustained in the desired position by means of the set screws 33.

It is evident that the standard and framework support for the frame may be used with other belt-supporting means than those specified herein, and also that the framework support may be used without the standards specified, by placing the base of the framework on any suitable support. It will thus be seen that the machine may be adjusted to suit any ordinary shape or size of frame, and will very expeditiously and perfectly sand the object as desired. It is evident, however, that modifications may be made in the machine by those skilled in the art without departing from the spirit of the invention, and I therefore do not wish to limit myself to the details set forth.

I claim as my invention:

1. In a sanding machine, the combination of an abrasive belt; pulleys supporting said belt; pivot means extending longitudinally of one reach of said belt and in the plane of both reaches of the belt; and a support for curved frames, said support being mounted to swing on said pivot means.

2. A sanding machine support comprising pivot means; a plurality of pairs of brackets, each bracket being connected at its lower end to said pivot means, and the two brackets composing each pair being arranged to swing toward and away from each other to accommodate articles of different widths; means for locking the two brackets of each pair in adjusted position with relation to each other; and means connecting the pairs of brackets to swing in unison on the axis of said pivot means.

3. In a sanding machine, the combination of an abrasive belt; means for supporting said belt; means for operating said belt; a supporting framework; clamping means for attaching to said framework an object to be operated upon by the said belt, said clamping means comprising pins at one end of said framework; and eccentrics at the other end of said framework, said eccentrics adapted to press said object against the pins.

4. In a sanding machine, the combination of an abrasive belt; means for supporting and operating said belt; a framework, said framework comprising a plurality of brackets slidably mounted upon a rotatable shaft; two rods, one of said rods slidably connected to the outer ends of one series of said brackets, and the other rod slidably connecting the outer ends of the other series of said brackets; clamping means for attaching an object to be sanded to said brackets; and means for securing each of

said brackets immovably to its respective rod and to the said shaft.

5. In a sanding machine, the combination of an abrasive belt; means for supporting and operating said belt; standards; a framework supported by said standards for vertical adjustment, said framework comprising a plurality of brackets slidably mounted on a rotatable shaft; two rods, one of said rods connected to one series of said brackets, and the other rod connected to the other series of brackets, the two series of brackets being connected to form an angle with each other; means for adjusting said angle; and means for clamping an object to be sanded to said brackets.

6. In a sanding machine support, standards, a framework supported by said standards, said framework comprising a plurality of brackets slidably mounted upon a rotatable shaft, two rods, one of said rods connected to the outer ends of one series of said brackets, and the other rod connecting the outer ends of the other series of said brackets, clamping means for attaching an object to be sanded to said brackets, and means for securing each of said brackets immovably to its respective rod and to the said shaft.

7. In a sanding machine support, a framework, said framework comprising a plurality of brackets slidably mounted on a rotatable shaft, two rods, one of said rods slidably connected to one series of said brackets, and the other rod slidably connected to the other series of brackets, the two sets of brackets being connected to form an angle with each other, means for adjusting said angle, and means for clamping an object to be sanded to said brackets.

8. A sanding machine support comprising a shaft, brackets adjustably mounted on said shaft to swing toward and away from each other, and clamping means on said brackets for attaching an object to be sanded to said brackets.

9. In a sanding machine support, a framework, standards supporting said framework, clamping means for attaching to said framework an object to be sanded, said clamping means comprising pins at one end of said framework, and eccentrics at the other end of said framework, said eccentrics adapted to press said object against said pins.

10. In a sanding machine support, standards, a pivoted work-carrying framework

supported for vertical adjustment upon said standards, said framework comprising a plurality of brackets mounted on a rotatable shaft, two rods, one of said rods connecting the outer ends of one series of said brackets, and the other rod connecting the outer ends of the other series of said brackets, the series of brackets being connected to form an angle with each other, means for adjusting said angle, and clamping means for attaching said object to said brackets comprising pins adjacent to the brackets at one end of said framework, and eccentrics adjacent the brackets at the other end of said framework, said eccentrics adapted to press said object against said pins.

11. In a sanding machine support, a base, a shaft mounted on said base, brackets rotatably mounted on said shaft, said brackets having notches therein for supporting an object to be sanded, rods connecting said brackets, and a stop member attached to one end of each of said rods preventing longitudinal motion of said object.

12. In a work-support for a sanding machine, a rock shaft, a plurality of brackets on and projecting upwardly from said shaft, said brackets being relatively movable along the shaft to accommodate articles of varying lengths, means for securing said brackets in adjusted position on the shaft, said brackets being shaped to support a curved article, said shaft and securing means serving to connect the brackets together for synchronous oscillation on the axis of the shaft.

13. In a work-support for a sanding machine, a rock-shaft, a plurality of brackets on and projecting upwardly from said shaft, said brackets being relatively movable along the shaft to accommodate articles of varying lengths, means for securing said brackets in adjusted position on the shaft, said brackets being shaped to support a curved article, said shaft and securing means serving to connect the brackets together for synchronous oscillation on the axis of the shaft, and rods also serving to connect the brackets, said rods being arranged for use as hand-holds in manually oscillating the brackets.

In testimony whereof I affix my signature in the presence of two witnesses.

ALEXANDER LINDQUIST.

Witnesses:

SWAN LINDSKOLD,
EMMA SANDELL.