F. SCHIMMEL.

SANDPAPERING MACHINE.

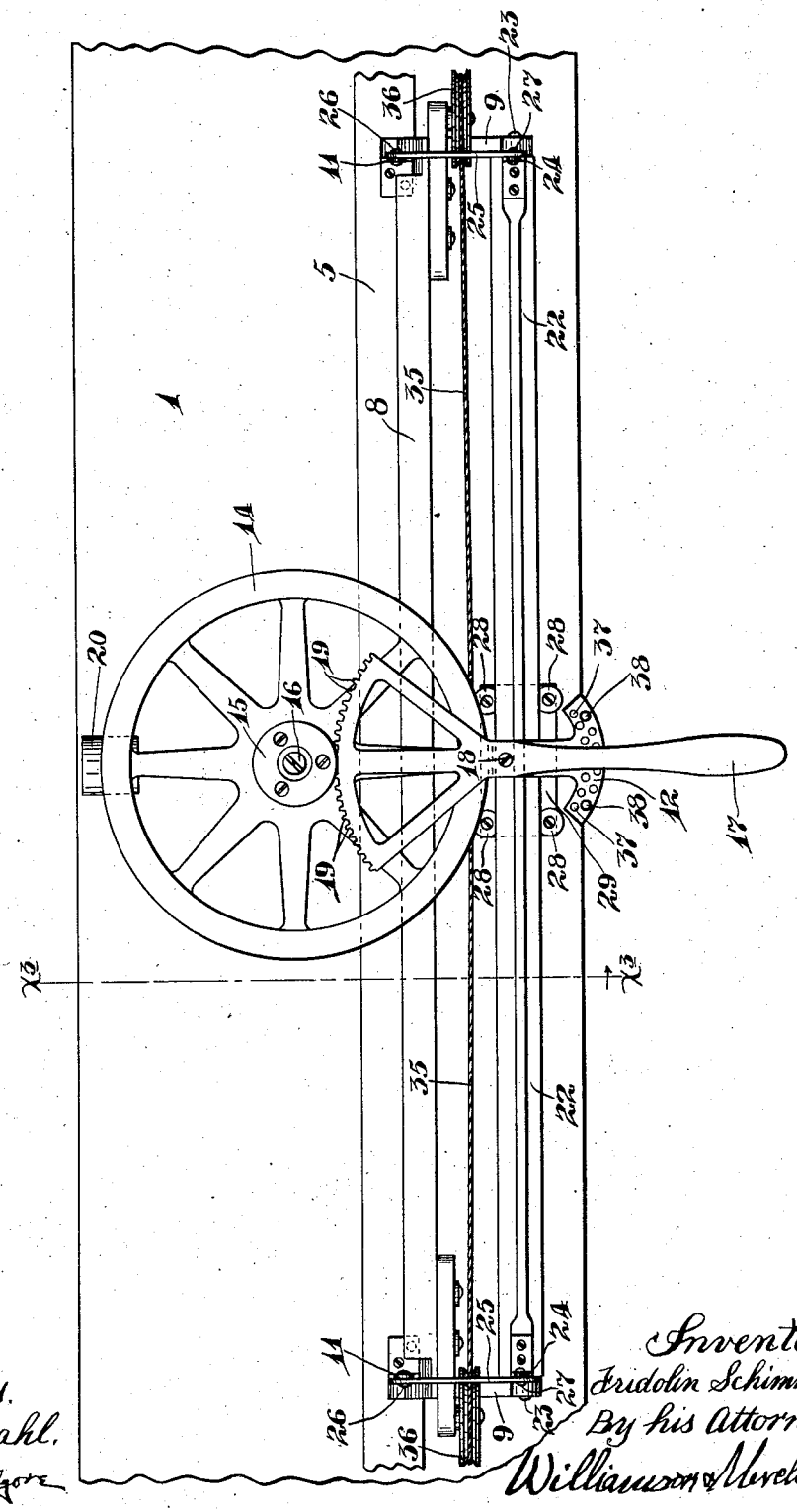
APPLICATION FILED OCT. 7, 1910.

1,027,439.

Patented May 28, 1912.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses.
Harry Opsahl.
Harry D. Kilgore

Inventor.
Fridolin Schimmel.
By his Attorneys.
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3 SHEETS-SHEET 2.

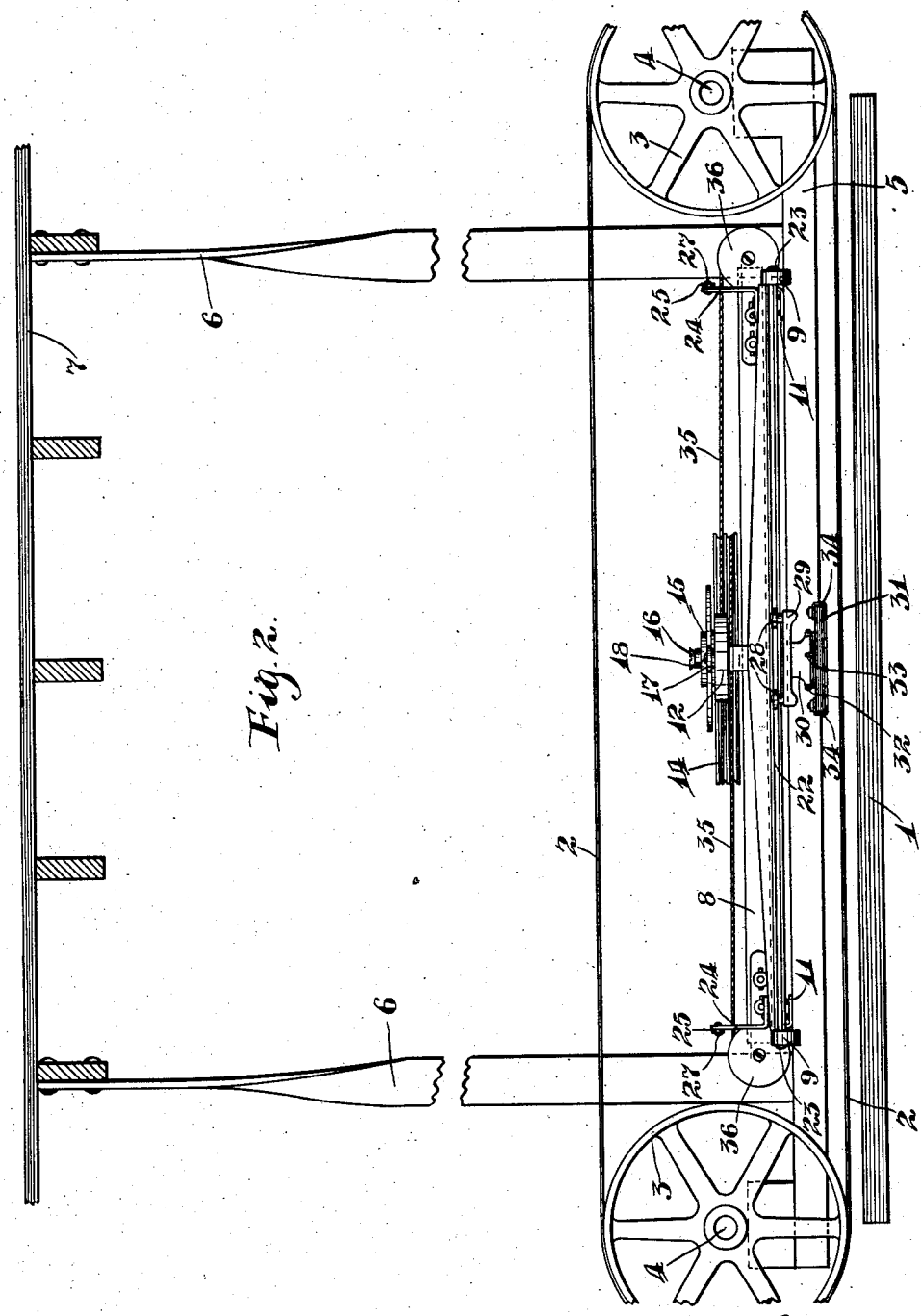

Fig. 2.

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3 SHEETS—SHEET 3.

Fig. 3.

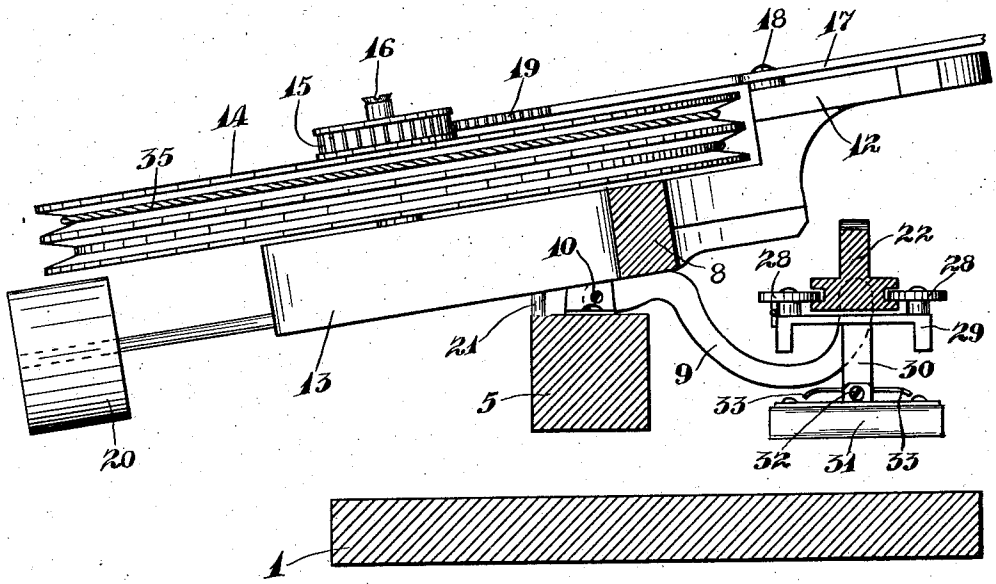
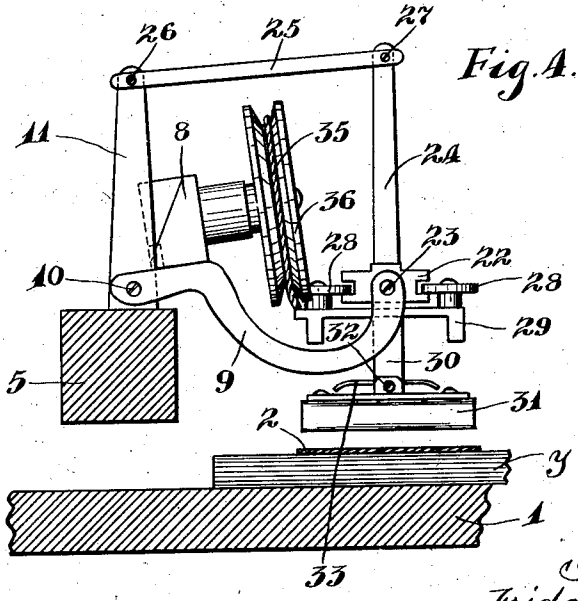


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRIDOLIN SCHIMMEL, OF FARIBAULT, MINNESOTA.

SANDPAPERING-MACHINE.

1,027,439. Specification of Letters Patent. Patented May 28, 1912.

Application filed October 7, 1910. Serial No. 585,813.

To all whom it may concern:

Be it known that I, FRIDOLIN SCHIMMEL, a citizen of the United States, residing at Faribault, in the county of Rice and State of Minnesota, have invented certain new and useful Improvements in Sandpapering-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention has for its object to provide an improved sanding and polishing machine and is in the nature of an improvement on, or modification of the machine disclosed and claimed in my prior Patent No. 959,614, of date, May 31st, 1910, entitled Sandpapering machine.

The invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings: Figure 1 is a plan view of the improved machine; Fig. 2 is a front elevation of the same; Fig. 3 is a transverse vertical section taken on the line x^3 x^3 of Fig. 1, some parts being removed; and, Fig. 4 is an end elevation with some parts sectioned and some parts broken away, and with some parts removed.

A board y to be sanded, polished or otherwise finished, is placed upon a table 1 which latter, in practice, will usually be supported by means, not shown, with freedom for horizontal movements in a direction from the front toward the rear of the machine and vice versa. A sanding or polishing belt 2, herein designated broadly as a working belt, is, as shown, arranged to run over pulleys 3, the shafts 4 of which are journaled in suitable bearings on a horizontally extended frame beam 5, which latter may be supported in any suitable way, but, as shown, is supported from hanger brackets 6 secured at their upper ends to an over-head floor or ceiling 7. One of the pulleys 3, in practice, will be driven by suitable means, not shown. The mechanism so far described is shown as similar to that illustrated in my said prior patent, but it may take various forms so far as the present invention is concerned.

A rocking supplemental frame 8 is secured to a pair of laterally spaced lower links 9 that are pivoted at 10 to the lower portions of a pair of pedestals 11 rigidly secured on the fixed frame beam 5. The said links 9 are curved to afford clearance for certain coöperating devices presently to be described. At its central portion the supplemental rocking frame 8 is provided with a forwardly extended arm 12 and a rearwardly extended arm 13. A peripherally grooved wheel 14, which carries a spur pinion 15 on its upper hub, is journaled at 16 to the rear arm 13 of the rocking frame 8. An operating lever 17 is intermediately pivoted to the forwardly extended arm 12, at 18, and at its rear end it is provided with a segmental gear 19 that meshes with the pinion 15. The said pinion 15 is preferably provided with projecting flanges located above and below the gear 19 so as to prevent the said gear from being thrown out of mesh with the teeth of said pinion when the lever 17 is used to rock the frame 8. Normally, the frame 8 and parts carried thereby are gravity held, as best shown in Fig. 3, and, preferably, this is insured by a weight 20 secured to the rear arm 13, which gravity holds said arm 13 against a stop 21 on the fixed frame 5.

A long guide rail 22 is pivotally connected at its ends, as shown, by screws 23, to the free ends of the links 9. At its ends the rail 22 is rigidly secured to the lower ends of the arms or pedestals 24. Upper links 25 are pivotally attached to the upper ends of the pedestals 11 and 24 respectively, at 26 and 27. The pivots 11, 23, 26 and 27 are spaced approximately in rectangular or parallel arrangement so that the rail 22, when raised and lowered, by oscillatory movements of the supplemental rocking frame 8, will be held, always, in a horizontal position. In its front and rear edges the rail 22 is grooved to afford guide tracks for small wheels 28 of a traveler or traveling frame 29 located just below the rail 22. As preferably constructed, this traveler 29 is provided with a rigidly secured depending bearing 30 to which a presser head 31 of approximately flat form is pivotally attached at 32. Forwardly and rearwardly projecting prongs 33 on the bearing 30 permit slight lateral oscillatory movements of the presser head 31, but hold the same approximately in a horizontal position.

The lower portion of the working belt 2

runs immediately over the board or work *y* and immediately under the lower face of the presser head 31. The lower face of the presser head 31 is adapted to engage directly with the upper face of the lower portion of the belt 2, to press the same against the work, but usually the said presser head will be provided with a detachably secured sheet 34 of tough material such as sand paper, placed with its smooth back exposed to the smooth surface of the sanding belt.

For imparting traveling movements to the traveler 29 and presser head carried thereby, the former is attached to the intermediate portion of a cable 35, the ends of which are wound upon and secured to the grooved periphery of the wheel 14. This cable 35 also runs over a pair of grooved idle guide wheels or sheaves 36 journaled to the end portions of the rocking frame 8.

The front end of the arm 12 of the rocking frame 8 is preferably made segmental and provided with a multiplicity of perforations 37 into which the stop pins 38 are adapted to be inserted, one on each side of the operating lever 17, to thereby limit the oscillatory movements of the said lever, and hence, the traveling movements of the presser head 31.

The working-belt, to-wit, the sanding or polishing belt 2, may be assumed to be continuously driven in a constant direction with its lower portion normally carried slightly above the work or board which is to be finished. As is evident, by oscillatory movements of the lever 17, the presser head 31 may be carried to any suitable point above the work, and by vertical oscillatory movements of the said lever, the supplemental frame 8 may be rocked so as to press the said head 31 downward on the belt, thereby forcing the latter against the work. Also, as is evident, the traveling movements may be imparted to the presser head either while it is raised above the belt or while it is forced downward so as to press the belt against the work. Thus, by manipulation of a single lever, the working belt may be caused to evenly treat the surface of the board or work, or may be caused to act to any desired greater, or less extent, upon any particular part of the work. Otherwise and briefly stated, the action of the belt is under the complete control of the operator, by manipulation of the operator lever 17. Furthermore, the device is simple and of small cost and is, in all respects, efficient for the purposes had in view.

What I claim is:

1. In a machine of the kind described, the combination with a working belt and means for working the same, of means for pressing the said belt to its work comprising a rail, links supporting the said rail for movements toward and from the work, a presser head mounted to travel on said rail, and a common operating lever connected to said links for moving said presser head toward and from the belt and connected to said head for imparting traveling movements thereto, substantially as described.

2. In a machine of the kind described, the combination with a relatively fixed frame and a supplemental rocking frame pivotally connected thereto, of parallel links pivotally connected to said fixed frame, a rail pivotally connected to the free ends of said links, a presser head mounted to travel on said rail, a lever pivotally connected to said supplemental frame for rocking the same, and connections between said lever and said presser head for causing the latter to travel on said rail, substantially as described.

3. In a machine of the kind described, the combination with a relatively fixed frame and a supplemental rocking frame pivoted thereto, said fixed frame having vertically extended pedestals, of a rail having vertically extended pedestals, lower links connecting said rail to the lower portions of the frame pedestals, upper links connecting the upper ends of the rail and frame pedestals, a traveler mounted to travel on said rail and provided with a presser head, an operative lever pivoted to said supplemental frame for oscillating the same, and connections including a cable causing said lever to impart traveling movements to said traveler and its presser head, substantially as described.

4. In a machine of the kind described, the combination with a working belt and means for moving the same, of a relatively fixed frame, a rail extending parallel to the working portion of said belt, parallel links connecting said rail from said fixed frame and connected for movements with said supplemental frame, a traveler mounted to travel on said rail and provided with a presser head for action on said belt and a common operating lever pivotally connected to said supplemental frame and having connections to said traveler for imparting traveling movements thereto and to the said presser head along the working portion of said belt, substantially as described.

5. In a machine of the kind described, the combination with a working belt and means for moving the same, of a rail extended parallel to the working portion of said belt and supported for movements toward and from the same, a traveler mounted to travel on said rail and provided with a presser head for action on the working portion of said belt, and a common operating lever with connections to said rail for imparting movements thereto toward and from said belt, and having also, connections to said traveler for imparting traveling movements

thereto, and to said presser head, along the working portion of said belt, substantially as described.

6. In a machine of the kind described, the combination with a relatively fixed frame and a supplemental frame pivoted thereto for oscillatory movements, of a rail supported from said supplemental frame, a traveler mounted to travel on said rail and provided with a presser head, and means for oscillating said supplemental frame and for imparting traveling movements to said traveler, substantially as described.

7. In a machine of the kind described, the combination with a relatively fixed frame and a supplemental frame pivoted thereto, of a rail supported from said supplemental frame, a traveler mounted to travel on said rail and provided with a presser head, and an operating lever pivoted to said supplemental frame for imparting oscillatory movements thereto, and having connections to said traveler for imparting traveling movements thereto.

8. In a machine of the kind described, the combination with a relatively fixed frame and a supplemental frame pivoted thereto, of a rail supported from said supplemental frame, a traveler mounted to travel on said rail and provided with a presser head, and an operating lever pivoted to said supplemental frame for imparting oscillatory movements thereto, and having connections to said traveler for imparting traveling movements thereto, and means for adjustably limiting the oscillatory movements of said operating lever in respect to said supplemental frame, whereby the said traveler may be set for movements within predetermined distances.

9. In a machine of the kind described, the combination with a relatively fixed frame and a supplemental frame pivotally connected thereto, of a rail extended parallel to the work, connections supporting said rail from said fixed frame and for movements with said supplemental frame, a traveler mounted to travel on said rail and provided with a presser head, an operating lever pivotally connected to said supplemental frame for oscillating the same, a wheel journaled on said supplemental frame a pinion on the hub of said wheel, a gear on said lever meshing with said pinion, cable guides carried by said supplemental frame, and a cable running over said cable guides and attached to said wheel and to said traveler, substantially as described.

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

FRIDOLIN SCHIMMEL.

Witnesses:

HARRY D. KILGORE,

F. D. MERCHANT.