E. F. BEUGLER.

SANDPAPERING MACHINE.

APPLICATION FILED OCT. 19, 1914.

1,153,479.

Patented Sept. 14, 1915.

4 SHEETS—SHEET 1.

Fig. 1

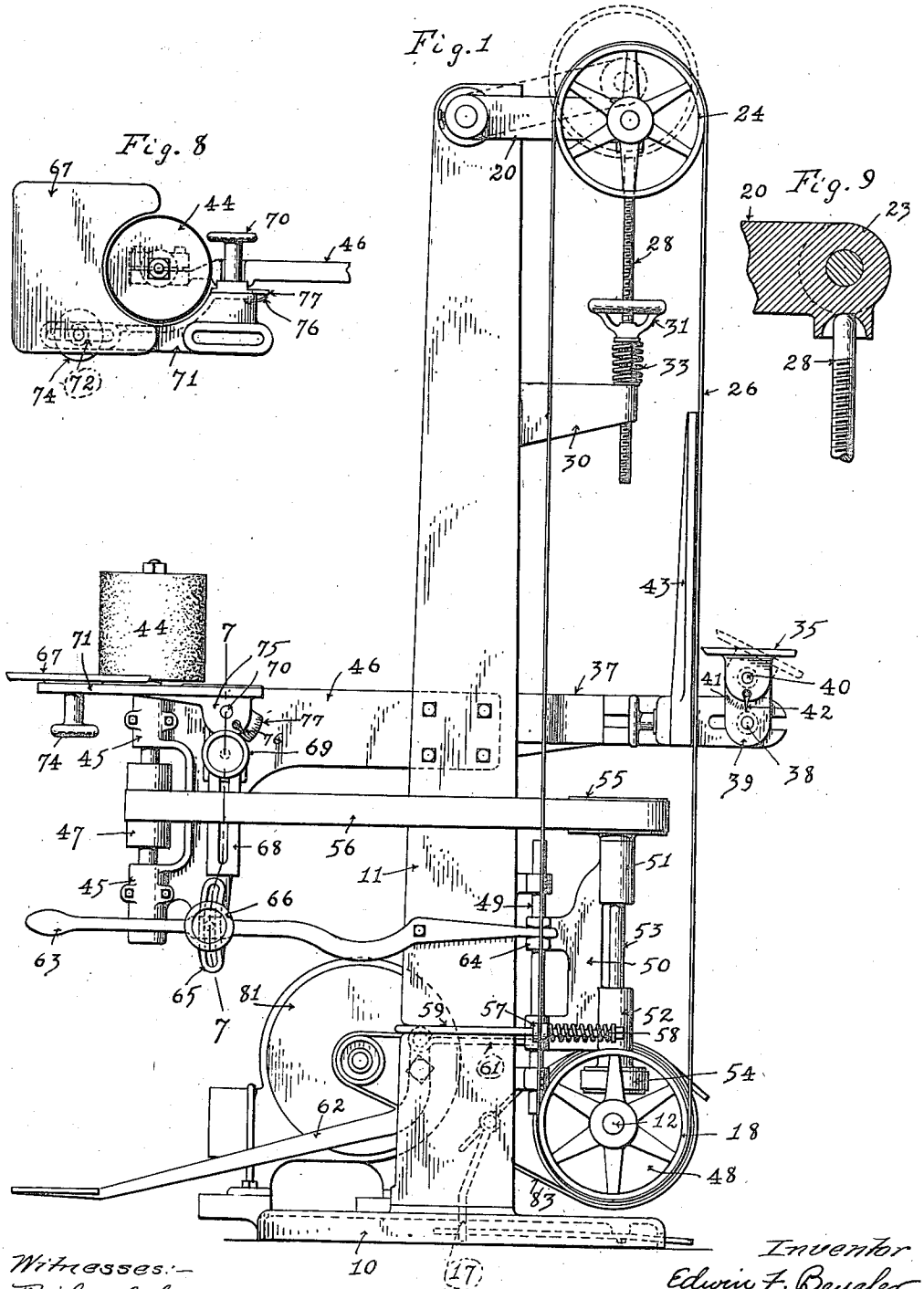


Fig. 8

Fig. 9

Witnesses:—
Richard Sommer
D. H. Harper

Inventor
Edwin F. Beugler
by A. J. Langsler
Attorney

E. F. BEUGLER.

SANDPAPERING MACHINE.

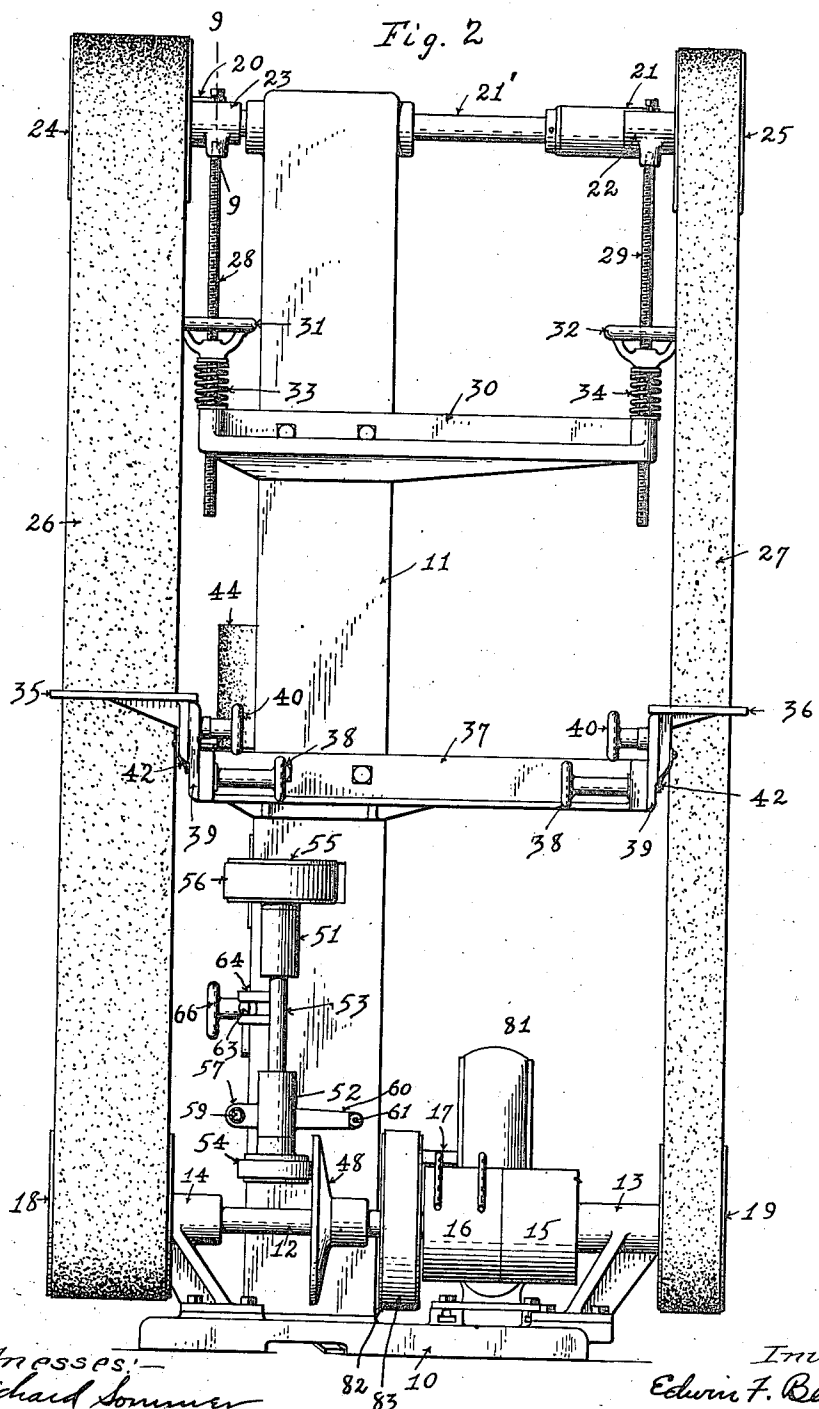
APPLICATION FILED OCT. 19, 1914.

1,153,479.

Patented Sept. 14, 1915.

4 SHEETS—SHEET 2.

Fig. 2



Witnesses:—
Richard Sommer
D. H. Harper

Inventor
Edwin F. Beugler
By A. J. Sangster
Attorney

E. F. BEUGLER.

SANDPAPERING MACHINE.

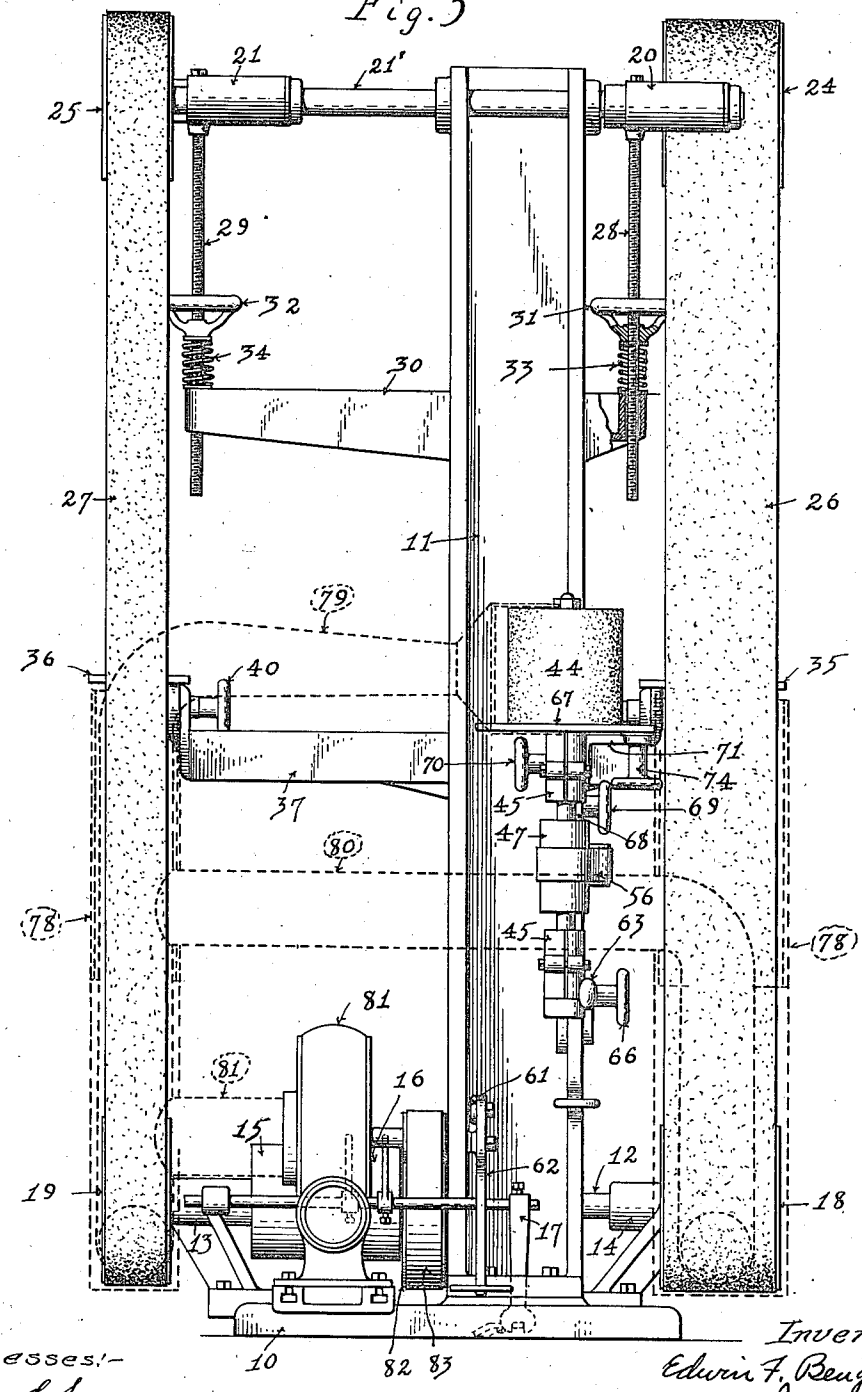
APPLICATION FILED OCT. 19, 1914.

1,153,479.

Patented Sept. 14, 1915.

4 SHEETS—SHEET 3.

Fig. 3



Witnesses:-
Richard Sommer
D. N. Harper

Inventor
Edwin F. Beugler
By A. J. Dangster
Attorney

E. F. BEUGLER.

SANDPAPERING MACHINE.

APPLICATION FILED OCT. 19, 1914.

1,153,479.

Patented Sept. 14, 1915.

4 SHEETS—SHEET 4.

Fig. 4

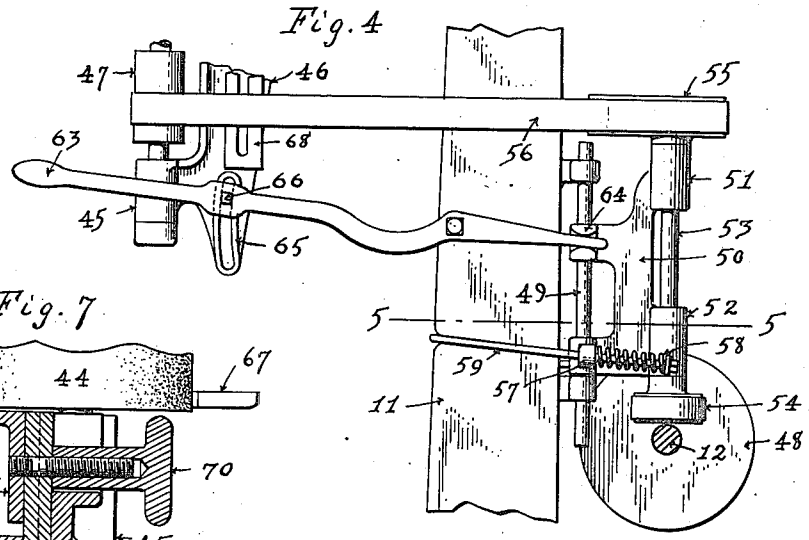


Fig. 7

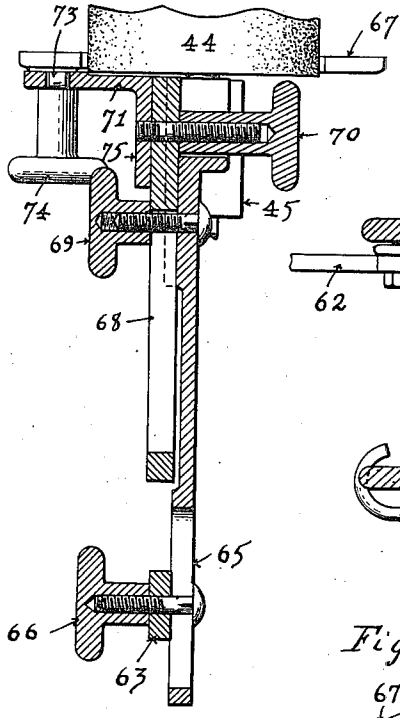


Fig. 5

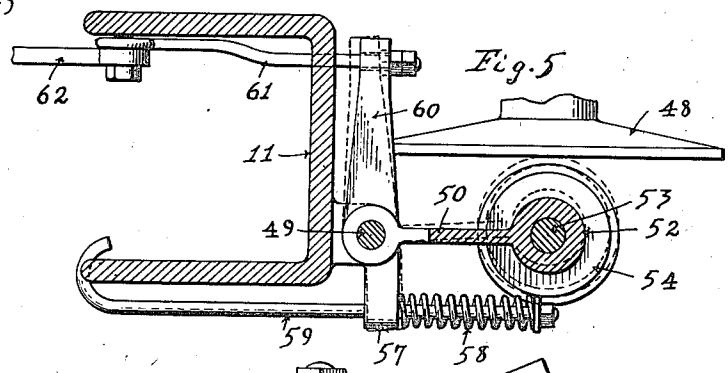
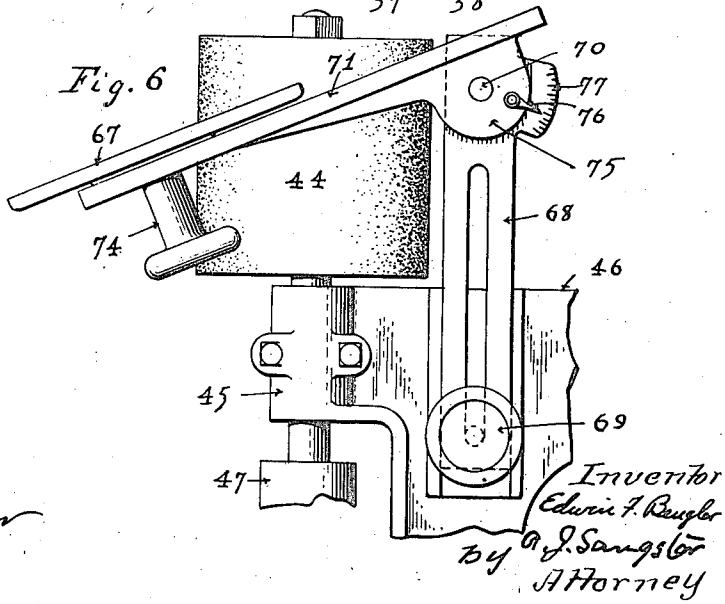


Fig. 6



Witnesses:-
Richard Sommer
D. W. Harper

Inventor
Edwin F. Beugler
by A. J. Sangster
Attorney

UNITED STATES PATENT OFFICE.

EDWIN F. BEUGLER, OF BUFFALO, NEW YORK, ASSIGNOR TO E. & B. HOLMES MACHINERY CO., OF BUFFALO, NEW YORK, A CORPORATION OF NEW YORK.

SANDPAPERING-MACHINE.

1,153,479. Specification of Letters Patent. Patented Sept. 14, 1915.

Application filed October 19, 1914. Serial No. 867,393.

To all whom it may concern:

Be it known that I, EDWIN F. BEUGLER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Sandpapering-Machines, of which the following is a specification.

My invention relates to sandpapering machines, and more particularly to improvements in combined belt- and roll-sandpapering machines.

The objects of my invention are to provide a roll sandpapering device provided with improved means of drive, speed regulation, control, and adjustment, which may be used in conjunction with or independently of a belt sandpapering machine. And I have here shown and described the same with an improved form of belt sandpapering machine which is not herein claimed but which shows the preferable and best form of embodiment of my invention.

Other and further objects and improved features will appear from the following specifications and claims and from the drawings forming a part of the specification, in which,—

Figure 1 is a side elevation. Fig. 2 is an end elevation looking to the left in Fig. 1 and showing the end of the machine at which the belt-sandpapering is performed. Fig. 3 is an end elevation looking to the right in Fig. 1 and showing the end at which the roll-sandpapering is performed. Fig. 4 is a detail elevation of my variable speed mechanism for driving the roll-sandpapering device. Fig. 5 is a detail section on line 5—5 of Fig. 4. Fig. 6 is a detail elevation of the roll-sandpaperer and my improved adjustable table. Fig. 7 is a detail section on the line 7—7, Fig. 1. Fig. 8 is a detail plan view of my roll-sandpaperer and said improved adjustable table. Fig. 9 is a detail section on line 9—9, Fig. 2.

I will first describe my belt sandpapering machine in connection with which my improved roll sandpapering machine is preferably used.

The base, 10, of the machine has cast integral with it or rigidly mounted upon it an upright frame 11. This base and frame together carry the other parts of the machine. The main driving-shaft 12 is journaled in bearings 13 and 14 secured to the base 11. Tight and loose pulleys 15 and 16 are mounted upon the shaft 12, and have the usual belt-shift 17. The machine is belt driven from any desired source of power.

Rigidly secured to the shaft 12 are pulleys 18 and 19. Pivoted to the upper portion of the upright frame 11 are arms 20 and 21, having bearings 22 and 23 at their free ends in which rotate short shafts carrying the pulleys 24 and 25. The arms 20 and 21 are pivoted to the frame 11 by a pivot-shaft 21′. The pulleys 18 and 19 and the pulleys 24 and 25 carry the sand-belts 26 and 27. The sand-belts 26 and 27 may be of any desired width, the said pulleys having the desired width of face; but to adapt the machine to a wide range of work, I prefer to make one of the sand-belts considerably wider than the other.

The means for tightening or adjusting the sand-belts 26 and 27 consist of threaded rods 28 and 29, the upper ends of which are seated in sockets or cups on the under sides of the bearings 22 and 23, as clearly shown in Fig. 9, and the lower ends of these threaded rods 28 and 29 pass freely through holes in a bracket 30 which is bolted to the upright 11. Threaded hand-wheels 31 and 32 engage the threaded rods, and between these hand-wheels and the bracket 30 and about the threaded rods are compression springs 33 and 34. It is evident that turning either of these hand-wheels 31 or 32 will result in swinging its respective arm 20 or 21, and thus put greater or less tension upon its respective sand-belt; and the interposed compression springs give the desired yielding tension.

The work-tables 35 and 36 are each adjustably mounted in the following manner: A bracket 37 is bolted to the upright 11. This bracket has a projecting arm for each work-table, and a description of one will serve for both. The outer end of this arm is slotted, as clearly shown in Fig. 1, to receive a bolt-and-hand-nut 38 to clamp to it a sliding block 39. This block 39 has a web (not shown) which lies in the slot of the arm and limits movement of the block to that in a horizontal plane. The under side of the table, 35 or 36, has a pivot lug and a bolt-and-hand-nut 40 clamps it to said block 39. Upon this pivot the table may be adjusted to any desired angle, as shown in Fig. 1, and to facilitate angular setting of the table I provide the block 39 with a

graduated scale 41 and mount upon the lug upon the under side of the table a pointer 42, which will rotate over the scale 41 with pivotal movement of the table. By these means the tables 35 and 36 may be adjusted horizontally and to any desired angle with the plane of travel of the belt—advantages which will be evident to any person skilled in the art. Each of the sand-belts is provided with an adjustable backing-plate 43, against which the back of the belt bears when work is being done.

Coming now to the part of the invention herein claimed, the roll-sandpaperer 44 is mounted to rotate in bearings 45 on the outer end of a heavy arm 46 which is bolted to the upright 11. The arbor of this roll 44 is provided with a pulley 47, of sufficient face width to permit of the change-speed shift hereafter described.

Mounted rigidly on the driving-shaft 12 is a friction disk 48. Slidably mounted in lugs on the upright 11 is a shaft 49, and rigidly secured to this shaft 49 is a yoke 50 provided with shaft-bearings 51 and 52, in which rotates a shaft 53. Upon the lower end of this shaft 53 is rigidly mounted a friction-pulley 54 which, when thrown into action as hereafter described, engages frictionally with the face of the friction-disk 48. Upon the upper end of the shaft 53 is a pulley 55 which carries the belt 56, which transmits power to the roll 44 through the pulley 47.

The friction-pulley 54 is held normally out of contact with the friction-disk 48 by means of a lug 57 on the yoke 50, a compression-spring 58 and a rod 59, which at one end hooks over the upright 11 and at the other compresses the spring 58 against the lug 57. This tends to swing the yoke 50 upon its pivot-shaft 49 in the direction to carry the friction-pulley 54 away from the face of the disk 48.

Frictional contact between the disk 48 and the friction-pulley 54 is attained by means of a laterally-extending lever 60 on the yoke 50, to the outer end of which is secured a link-bar 61, which is pivoted to a treadle-bar 62. The treadle-bar 62 is pivoted to the upright 11, and the foot-plate on its free end is in position for control when the operator is presenting material to the roll 44. Movement of the lever 60 by the treadle-bar 62 being against the spring 58, as soon as foot pressure is removed the friction contact is broken by the spring 58.

Change of speed of the sandpaper roll 44 is attained by means of a hand-lever 63, which is pivoted to the upright 11, and the inner end of which engages in a bifurcated lug 64 on the yoke 50. Movement of the hand-lever 63 will move the yoke up or down and will thus move the friction-pulley 54 over a radius of the friction-disk 48, which will result in a change of speed in rotation of the friction pulley 54, and consequently the roll 44 driven by it. To maintain any set speed of the roll 44 I provide a segment-slot in an extension 65 of the arm 46 and a bolt-and-hand-nut 66—the bolt taking through said slot in said extension 65 and through said lever 63—by which said lever is clamped to said extension in any desired position.

My improved means for adjustable mounting of the work-table 67 for the sandpaper roll 44 is clearly shown in Figs. 6, 7 and 8. An upright, slotted plate 68 is adjustably secured by a bolt-and-hand-nut 69 to the arm 46. Adjustably pivoted to this plate 68 by means of a bolt-and-hand-nut 70 is a supporting arm or bracket 71, which extends outwardly at one side of the roll 44, and which has a longitudinal slot 72, shown in broken outline in Fig. 8. A threaded stud 73 (see Fig. 7) rigidly secured to the under side of the work-table 67 takes through this slot 72, and a hand-nut 74 clamps the table to the arm or bracket 71 in any desired position. The table 67 is semicircularly recessed at the back, so that it partially surrounds the roll 44, thus giving a larger working surface. The lug 75 which connects the said arm or bracket 71 with the plate 68 is provided with a pointer, 76 (see Fig. 6), which moves over a graduated scale 77 on an extension of the plate 68. By this means the working angle of the table 67 may be easily and accurately fixed. By these two adjustments—a vertical adjustment and an adjustment at any desired angle with the axis of the roll 44—the machine is adapted to a wide range and variety of work; and taken in combination with the two belt-sandpapering means, the machine meets substantially every demand for a power sandpapering apparatus.

To carry away the dust I incase portions of the belts 26 and 27 below the tables 35 and 36 in sheet metal casings 78, shown in broken outline in Fig. 3. A tube 79, also shown in broken outline in said figure, having a receiving end adjacent the roll 44, connects with one of the casings 78. The two casings are connected by the outlined tube 80, and an outline tube 81 leads to the suction side of a blower 81. This blower is driven by a pulley 82 on the driving-shaft 12 and a belt 83, and it discharges the dust at any desired point through a tube in the usual manner.

Having thus described my invention, I claim:—

1. In a machine of the type described, the combination with a base and upright and a driving-shaft of a sandpapering roll carried by said upright, power connecting means between said sandpapering roll and said driving-shaft normally out of connec-

tion, means for throwing the same into connection and means for changing the speed of rotation of said sandpapering roll while the said driving-shaft is in rotation at a constant speed.

2. In a machine of the type described, the combination with a base, upright and driving shaft of a roll sandpaperer and means for driving said sandpapering roll comprising a pulley on the shaft of said sandpapering roll, a friction-disk on said driving-shaft, a friction-pulley for engaging the face of said friction-disk, a shaft for said friction-pulley and a belt-pulley on said shaft and a belt for connecting said last-mentioned pulley with the pulley on the shaft of said roll.

3. In a machine of the type described, the combination with a base, upright and driving-shaft of a sandpapering roll and means for driving said sandpapering roll comprising a pulley on the shaft of said sandpapering roll, a friction-disk on said driving-shaft, a friction-pulley for engaging the face of said friction-disk, a shaft for said friction-pulley, a pivoted yoke carrying the shaft of said friction-pulley, a belt-pulley on said friction-disk shaft and a belt connecting the same with the pulley on said sandpapering roll shaft, and means for throwing said friction-pulley in and out of contact with said friction-disk comprising a spring and rod for normally swinging said yoke to the non-engaging position, a lever-arm on said yoke, a link-rod connected thereto and a treadle-bar pivoted to said upright and having its inner end pivotally connected to said link and having its outer end provided with a treadle-plate in position for control by the operator.

4. In a machine of the type described, the combination with a base, upright and driving-shaft of a sandpapering roll and means for driving said sandpapering roll comprising a pulley on the shaft of said sandpapering roll, a friction-disk on said driving-shaft, a friction-pulley for engaging the face of said friction-disk, a shaft for said friction-pulley and a belt-pulley on said shaft and a belt connecting said last-mentioned pulley with the pulley of said roll, and means for changing the speed of rotation of said sandpapering roll comprising a pivoted lever for moving said friction-pulley axially over a radius of said friction-disk and means for clamping said lever in the desired position of speed adjustment.

5. In a machine of the type described, the combination with a base, upright and driving-shaft of a sandpapering roll and means for driving said sandpapering roll comprising a pulley on the shaft of said sandpapering roll, a friction-disk on said driving-shaft, a friction-pulley for engaging the face of said friction-disk, a shaft for said friction-pulley, a belt pulley on said friction-disk shaft and a belt connecting the same with the pulley on said sandpapering roll shaft, means for throwing said friction-pulley in and out of contact with said friction-disk comprising a spring and a rod for normally swinging said yoke to the non-engaging position, a lever-arm on said yoke, a link-rod connected thereto and a treadle-bar pivoted to said upright and having its inner end pivotally connected to said link and having its outer end provided with a treadle-plate in position for control by the operator, and means for changing and setting the speed in rotation of said roll comprising a hand-lever medially pivoted to said upright, a bifurcated lug on said yoke engaging the inner end of said lever, whereby said yoke may be moved up or down to change the position of said friction-pulley upon a radius of said friction-disk, and means for locking said lever in any determined position for speed regulation.

EDWIN F. BEUGLER.

Witnesses:
RICHARD SOMMER,
D. H. HARPER.