

Feb. 16, 1943.

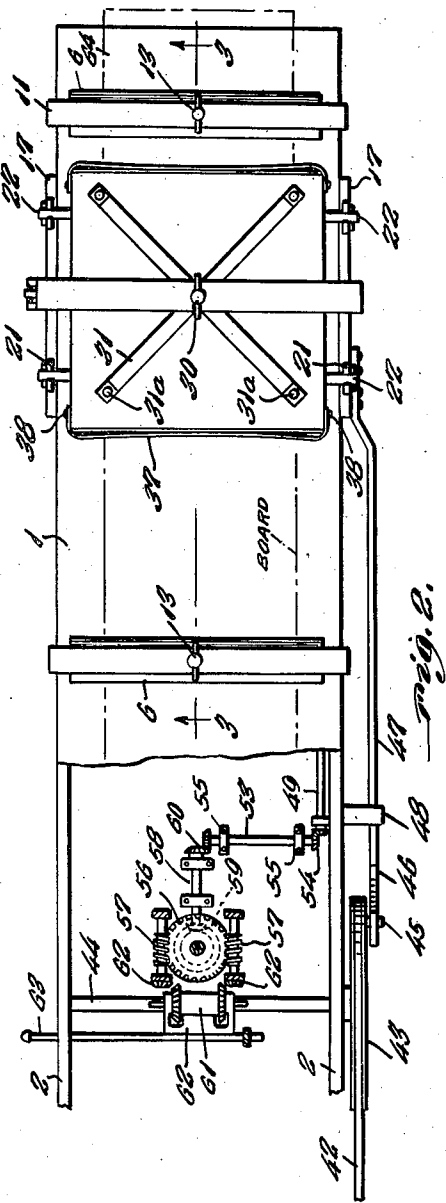
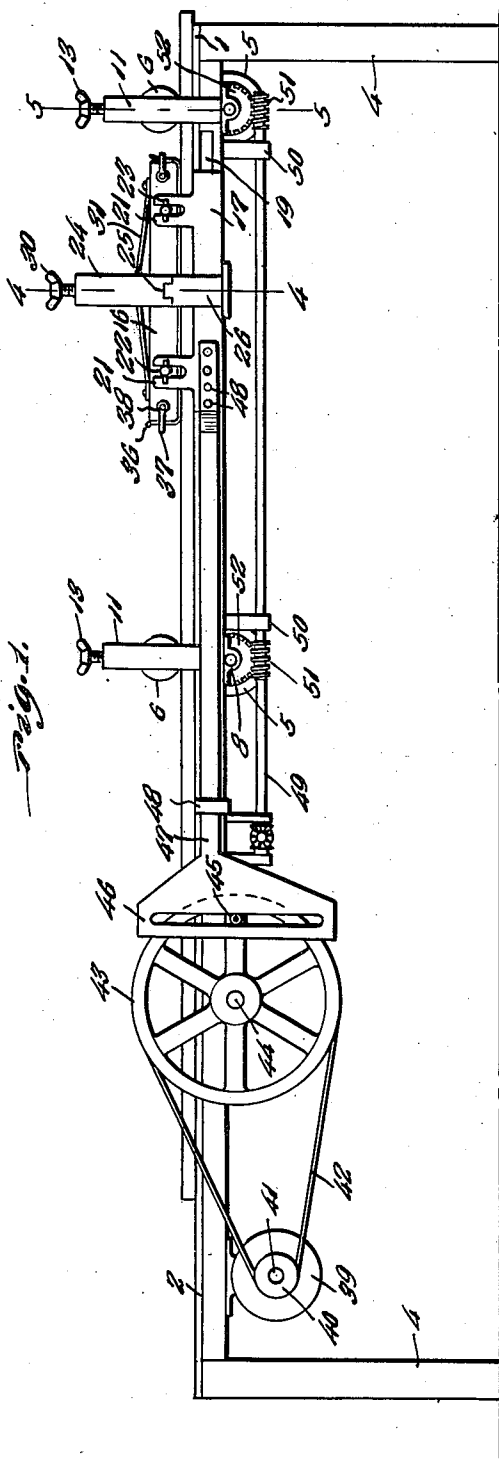
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2,311,346

SANDPAPERING MACHINE

Filed March 26, 1942

2 Sheets-Sheet 1



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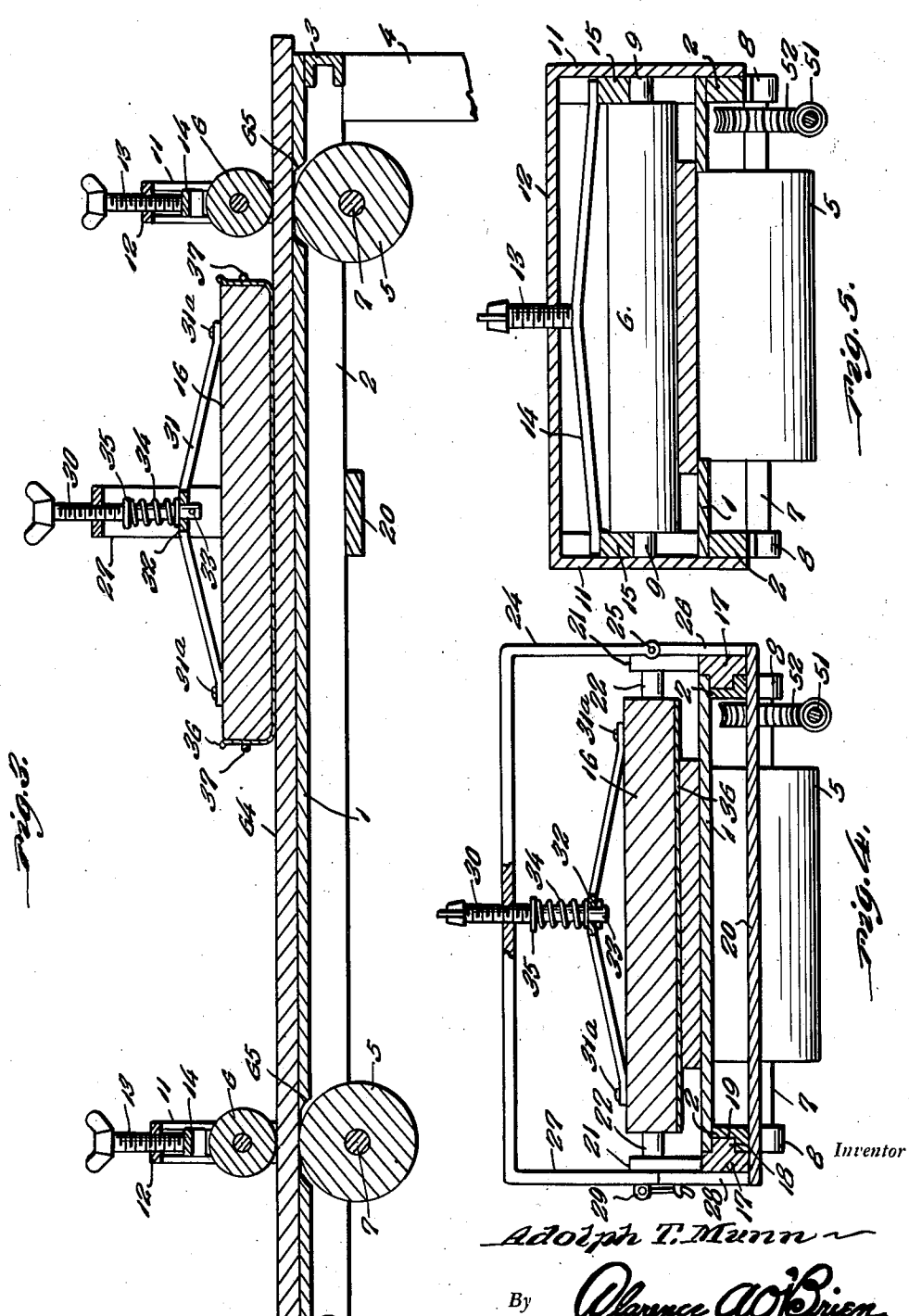


Fig. 3.

Fig. 5.

Fig. 4.

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# UNITED STATES PATENT OFFICE

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## SANDPAPERING MACHINE

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Application March 26, 1942, Serial No. 436,348

3 Claims. (Cl. 51-66)

My invention relates to improvements in sandpapering machines for use in dressing down boards or planks.

The invention is designed with the particular object in view of providing a simply constructed machine equipped for quickly and evenly sandpapering boards, or planks, of different gauge and which is economical to operate, install and service.

To the accomplishment of the above, and subordinate objects presently appearing, a preferred embodiment of my invention has been illustrated in the accompanying drawings, set forth in detail in the succeeding description, and defined in the claims appended hereto.

In said drawings:

Fig. 1 is a view in side elevation of a sandpapering machine embodying my improvements,

Figure 2 is a view in top plan, partly broken away,

Figure 3 is a fragmentary view in longitudinal vertical section, taken on the line 3-3 of Figure 2, and drawn to an enlarged scale,

Figure 4 is a view in transverse section, taken on the line 4-4 of Figure 1, and drawn to an enlarged scale, and

Figure 5 is a similar view, taken on the line 5-5 of Figure 1.

Referring to the drawings by numerals, my improved sandpapering machine comprises an elongated, rectangular bed 1, of any suitable material, supported by side and end frame members 2, 3 forming a rectangular frame beneath said bed 1 and which is in turn supported by corner legs 4.

Adjacent the transverse center of the bed 1 and also one end thereof are pairs of lower and upper transverse rollers 5, 6 for feeding boards or planks endwise therebetween longitudinally of the bed 1. The lower rollers 5 are driven, by means presently described, and fast upon transverse shafts 7 journaled at their ends in bearing brackets 8 depending from the side members 2. The upper rollers 6 are idling pressure members fast upon shafts forming end trunnions 9 on said rollers and which are rotatable and vertically movable in vertically grooved bearing brackets 11 arising from opposite sides of the bed 1 and connected in pairs by upper transverse bars 12. Tension means is provided for each upper roller 6 for urging the same downwardly and comprising a hand screw 13 threaded downwardly through the bar 12 above the roller 6 for turning against an upwardly bowed leaf spring 14 having its ends projecting into the grooves of the bearing brackets

11 and resting upon blocks 15 vertically slidable in said grooves and seated on the trunnions 9 of said roller 6.

Intermediate the described pairs of rollers 5, 6 and surmounting the bed 1 is a substantially rectangular sanding head 16 of flat form mounted, by means presently described, for reciprocation longitudinally of said bed with its sides parallel with the sides of said bed 1. The mounting for the sanding head 16 comprises a carriage including a pair of side rails 17 extending lengthwise along the outer sides of the members 2 and provided with longitudinally extending guides 18 slidable in suitable guideways 19 extending longitudinally along the outer sides of the members 2. A cross-bar 20 extending beneath the members 2 connects the rails 17 in the transverse center thereof. A pair of forked ears 21 arise from each rail 17 adjacent the ends thereof, respectively, and which accommodate therein studs 22 extending laterally from the sides of the sanding head 16, whereby said head is coupled to the rails 17 and vertically movable relative thereto. Cotter pins 23 may be provided in the outer ends of the studs 22 for a purpose which will be apparent.

Tension means for exerting downward pressure on the sanding head 16 is provided as follows: Spanning the sanding head 16 in the transverse center thereof is a bar-like yoke of inverted U form having a vertical side leg 24 pivoted, as at 25, to an upright 26 on the before-mentioned bar 20, and an opposite side leg 27 adapted to rest on an upright 28 arising from the other end of the bar 20. A suitable latch 29 is provided for securing the leg 27 to the upright 28. A hand screw 30 extends through the center of the described yoke in upright position. An upwardly arched spider 31 is secured, as at 31a, to the top of the sanding block 16, said spider having an apertured hub 32 slidable on the lower end of the hand screw 30 and retained on the hand screw by means of a cotter pin 33 passing through the lower end of said hand screw. A coil spring 34 sleeved onto the hand screw 30 between said hub 32 and a collar 35 on said screw tends to urge the spider 31, and hence the sanding head 16, downwardly.

The sanding head 16 is designed to carry a sheet of sandpaper, or the like, 36 stretched across the bottom face of the head with edges turned up alongside the transverse edges of said head. For securing the sheet of sandpaper 36 to the head, a pair of resilient bowed clamping bails 37 are provided to extend alongside said transverse

edges of the sanding head to clamp the upturned edges of the sheet to the head, said bails 37 being pivoted, as at 38, to the sides of the head for vertical swinging to releasing position.

Driving means for reciprocating the described carriage and sanding head is provided and will now be described in detail. Adjacent one end of the bed 1 an electric motor 39 is suitably suspended from one of the members 2 and provided with a belt pulley 40 on the armature shaft 41 thereof which is connected by a belt 42 to a relatively larger pulley wheel 43 fast on one end of a transverse shaft 44 suitably journaled at its ends on the members 2. The pulley wheel 43 is provided with a crank pin 45 coacting with a vertically slotted head 46 on one end of a slide bar 47, the other end of which is fastened, as at 48, to one of the rails 17. The slide bar 47 is suitably guided for endwise movement in bearings, as at 48, provided on one of the side members 2. Obviously, as the pulley wheel 43 is rotated, the slide bar 47 will be reciprocated and similar motion imparted to the sanding head 16 through the medium of the described carriage therefor. Any suitable means may be provided for controlling the motor 39.

Coming now to the drive for the lower rollers 5, extending along one member 2 is a worm shaft 49 suitably journaled in bearing brackets 50 depending from said member and provided with worm sections 51 meshing with a pair of worm wheels 52 fast on the before mentioned shafts 7, respectively. A jack shaft 53 operatively connected to the worm shaft 49 by bevel gearing 54 and suitably journaled in fixed bearings 55 operates said worm shaft 49. Intermediate the shaft 44 and jack shaft 53 is a suitably mounted reverse gearing including a worm wheel 56, a pair of worm shafts 57 upon opposite sides of said wheel 56, and adapted to drive the same in opposite directions, respectively, a shaft 58 driven from the worm wheel 56 by bevel gearing 59 and operatively connected to the jack shaft 53 by bevel gearing 60, and a twin bevel gear unit 61 splined on the shaft 44 for shifting in opposite directions into mesh with bevel gears 62 on the worm shafts 57, respectively. A suitable shifter 62 operative by a slide rod 63 is provided for shifting the unit 61.

The operation of the described machine will be readily understood. A board, or plank, 64 to be sandpapered is inserted between the rollers 5, 6 of either pair and underneath the sanding head 16 to be fed along the bed 1 in either direction by said rollers according to the direction of the drive of said rollers as determined by a setting of the described reverse gearing. As the board is fed, the sanding head 16 is reciprocated over the same, as will be clear. As the sandpapering operation progresses along the board, it is fed in between the next pair of rollers 5, 6 to be fed by said rollers also. By unlatching the described yoke and swinging the same upwardly

on the hinge 25, access may be had to the sanding head 16 to replace the sheet of sandpaper 36 when the latter becomes worn.

As will be understood from an inspection of Figure 3, the rollers 5 extend into transverse slots 65 in the bed 1 to engage the under side of the board, or plank, 64.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention without further explanation.

Manifestly, the invention, as described, is susceptible of modification without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the subjoined claims.

What is claimed is:

1. A board and plank sanding machine of the class described, comprising a bed upon which the work is adapted to be placed for sanding purposes, means on said bed for frictionally engaging and feeding and guiding the work, a carriage structure mounted for reciprocation on said bed, said carriage comprising parallel slidably mounted rails with upstanding notched lugs, a sandpaper block cradled in said lugs, a yoke carried by said rails and spanning said block, and spring tensioning means on the yoke cooperating with the block, together with operating means for said carriage.

2. In a sanding machine, a bed, a reciprocating carriage on the bed comprising a pair of parallel side rails having upstanding notched lugs, a sanding block having members fitting in said notches to support the block on said rails, means on said block for detachably attaching sheets of sandpaper thereto, and means to exert tension downwardly against said block comprising a yoke upstanding from said rails in straddling relation to the block and bed and having a top bar, a hand screw depending through said bar, a spider on said block in which one end of the screw is rotatably and slidably mounted, and spring means urging the spider downwardly of said screw.

3. In a sanding machine, a bed, a reciprocating carriage on the bed comprising a pair of parallel side rails having upstanding notched lugs, a sanding block having members fitting in said notches to support the block on said rails, means on said block for detachably attaching sheets of sandpaper thereto, and means to exert tension downwardly against said block comprising a yoke upstanding from said rails in straddling relation to the block and bed and having a top bar, a hand screw depending through said bar, a spider on said block in which one end of the screw is rotatably and slidably mounted, and spring means urging the spider downwardly of said screw, said yoke being hinged to one of said rails to be swung laterally clear of the bed, and said block, screw and spider being inseparable for swinging of the same with said yoke.

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