Sept. 17, 1946. B. STEINHILBER 2,407,939

BELT SANDER

Filed Dec. 19, 1944 2 Sheets-Sheet 1

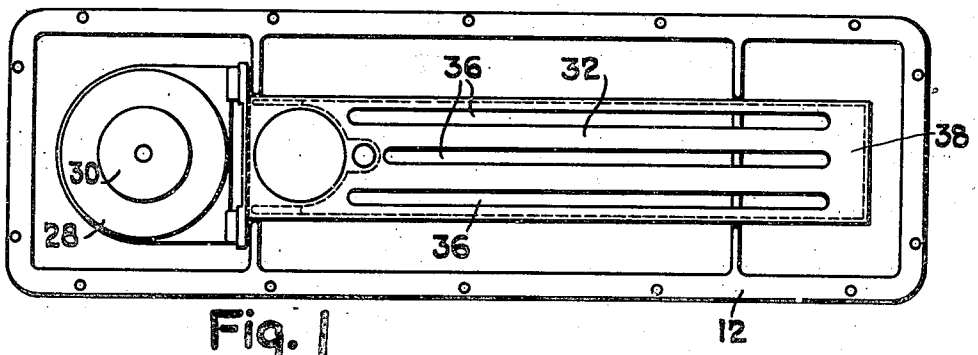


Fig. 1

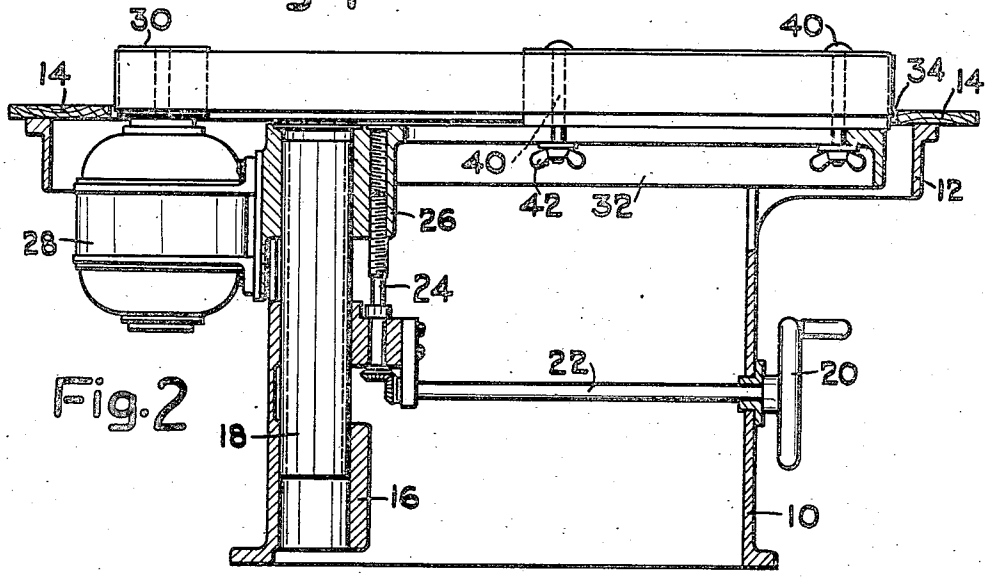


Fig. 2

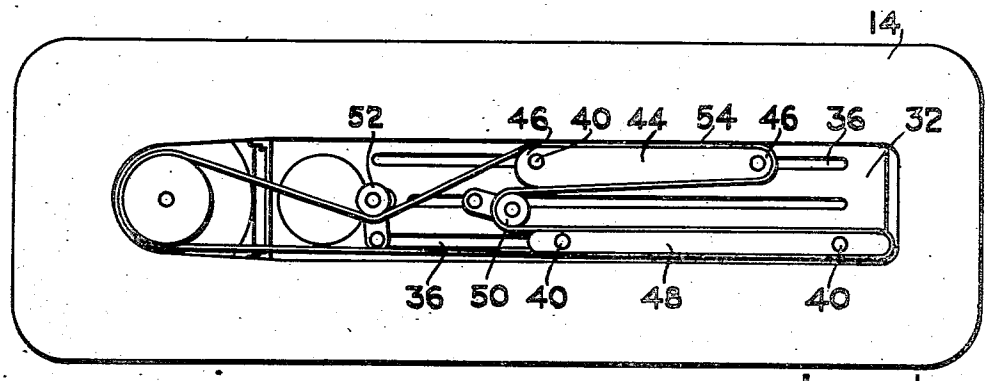


Fig. 3

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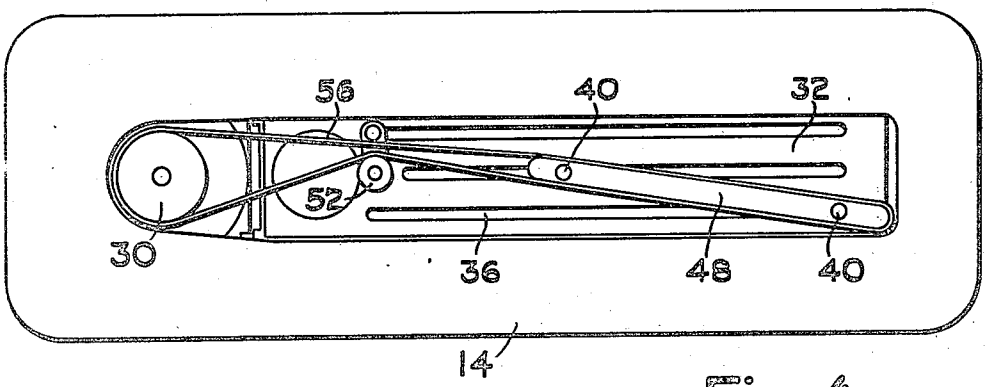


Fig. 4

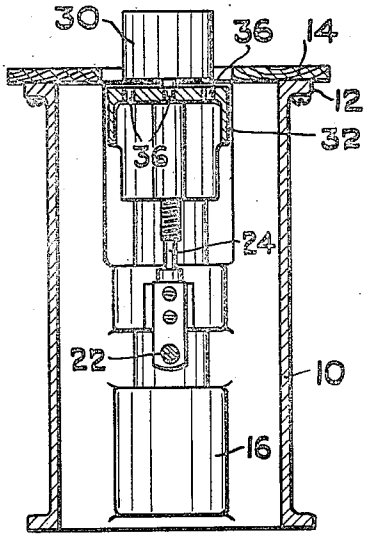


Fig. 5

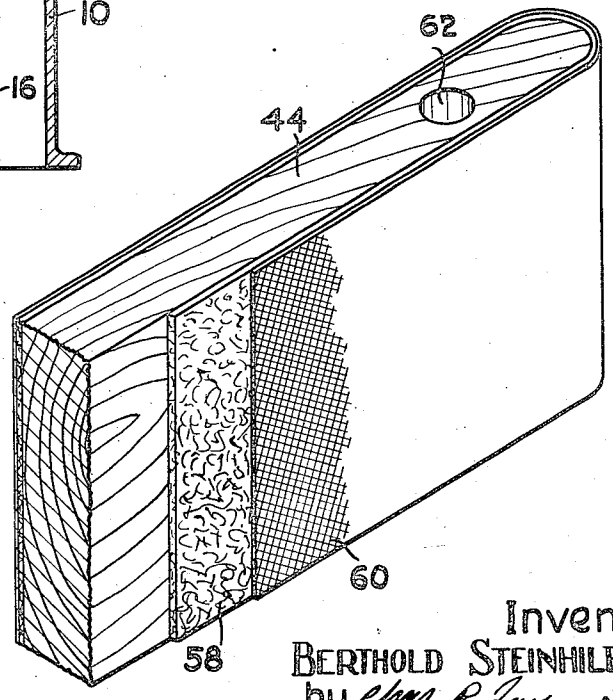


Fig. 6

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UNITED STATES PATENT OFFICE

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BELT SANDER

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Application December 19, 1944, Serial No. 568,851

2 Claims. (Cl. 51—135)

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This invention relates to a belt sanding machine particularly adapted for profiling work and having provision for sanding concave surfaces of various radii whether interior or exterior.

Objects of the invention include the provision of a belt sanding machine comprising a pedestal, a work table thereon, a support movably mounted on the pedestal, said support mounting a sanding device for projection through the work table to varying degrees, said support mounting a driven head or pulley and a bed, said bed being provided with a plurality of longitudinal parallel slots for the purpose of receiving fasteners therethrough to secure a belt guiding block to the bed, said fasteners securing the block to the bed by passing through one slot or selectively through a plurality of slots so that the block may be arranged generally parallel to the slots or at an angle thereto, whereby formed work may be sanded at any desired angle on the work table and also the block may be used for edge sanding if desired.

Further objects of the invention include a profiling belt sanding machine as above described and including a plurality of blocks which may have different working faces for sanding work of different curvatures either separately or simultaneously, all of the blocks being adjustable in the slots to and from the head and also being selectively placed transversely or inclined relative to the slots for accomplishing a greater variety of work; and the provision of belt guiding blocks having their working faces covered with felt and the felt in turn covered with canvas or other durable material impregnated with a soluble glass solution providing a smooth surface for the sanding belt.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

Fig. 1 is a top plan view of the belt sander with the working parts removed;

Fig. 2 is a view in side elevation of the belt sander showing the working parts and with parts in section;

Fig. 3 is a top plan view illustrating one setting of the working parts of the machine;

Fig. 4 is a top plan view illustrating a modified setting;

Fig. 5 is a vertical section through the machine; and

Fig. 6 is a perspective view of a belt guiding block with parts in section.

The reference character 10 indicates a pedestal which may be mounted on the floor or on a bench. The pedestal is provided with an integral member 12 mounting a work table 14. At one end of the pedestal there is a vertical guideway 16 mounting a standard 18 therein. A crank 20 is journaled in the pedestal and is adapted to rotate a shaft 22 having operative engagement with a screw threaded shaft 24, the latter working in a bracket 26 mounting a motor or other prime mover 28 for the purpose of rotating a pulley or head 30.

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The bracket 26 has secured thereto an elongated bed 32 adapted for movement therewith and conforming in general to the outline of a large opening at 34 in the work table 14.

The bed 32 is provided with a plurality of elongated parallel slots 36 as clearly shown in Fig. 1. These slots extend as close as possible to the head 30 from a point adjacent the end of the bed 38 remote from the head 30. Slots 36 are for the purpose of receiving fasteners such as those illustrated at 40, said fasteners being provided with nuts or the like 42 for a purpose to be described.

A belt guiding block 44 having rounded ends of different radii as at 46 carries the fasteners 40 which project down through a slot 36 as illustrated in Fig. 3 to secure the block 44 to the bed. The block is provided with opposite parallel top and bottom surfaces which are flat so that the block rests and is rigidly secured to the flat bed 32. It will be seen that by this construction the block 44 is secured to the bed in such a way as to avoid any vibration or accidental dislocation under working conditions as long as the nuts 42 are tightly secured.

This invention contemplates the use of a plurality of belt guiding blocks of different conformations but all having the flat upper and lower surfaces for rigid securement to the bed. Another form of block is shown at 48 in Fig. 3 and this block has the same fasteners 40 extending through one of the slots 36 in the bed. When the two blocks 44 and 48 are used together a belt tightener or take-up 50 is mounted in one of the slots as shown so that both of the blocks may be used in various adjusted positions either simultaneously on a single work piece or separately to achieve the desired results. Another take-up 52 may be mounted in a different slot as shown in Fig. 3 for the purpose of insuring the correct tension on the belt and also for forming an edge sanding surface as at 54.

The various fasteners 40 may be extended through a single slot or through any two slots as

shown in Fig. 4. The block 48 is shown in position in Fig. 4 but the other block 44 can also be positioned in the angular location, or any other block having any conformation desired may also be so located for convenience in production work or for obtaining angular sanding as desired. The belt is illustrated in the various forms at 56.

One of the blocks is illustrated in Fig. 6 and it will be seen that this block is faced with felt as at 58, the felt in turn having secured thereto a fabric layer 60. The fabric is impregnated with Silex or other soluble silica glass solution for obtaining a slick surface to receive the belt in sliding relation thereon. The block in Fig. 6 is shown as provided with a through aperture 62 to receive a fastener 40.

This invention will be seen to provide an extremely versatile belt sander particularly adapted for profiling work and including a plurality of belt sanding guide blocks for obtaining the curvatures desired both singly and in multiples. For instance, where it is desired to sand a scalloped edge, at least three blocks could be arranged with adjacent surfaces nearly touching to sand three concave surfaces simultaneously; and many other combinations are possible. A plurality of blocks may be so arranged for production work as to profile a plurality of separate and spaced locations on a single piece of work wherein all of the work to be done is of different forms. In addition the entire device may be raised or lowered by means of the crank 20 and edge sanding may be one either parallel with the slot or at an angle thereto as illustrated in Fig. 4.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A belt sanding machine comprising a base, a fixed table thereon, said table having an aperture therein, a vertically adjustable bed located in the aperture, a depending bracket on the bed, said bracket being located within the base, a depending standard on the bracket, a vertically disposed guideway in the base receiving the standard for vertical movement therein, means to vertically move the bracket and standard, a motor on the bracket for movement therewith, a vertical shaft on the motor extending above the bed, a pulley on the shaft, a sanding belt trained over the pulley, said bed having a plurality of longitudinal slots therein, an elongated block having rounded ends disposed in adjustable relation on the bed, a pair of fasteners in the block for selective disposition through one or more slots to hold the block to the bed selectively parallel or at angles relative to the slots, said sanding belt being trained about the block, said bed, motor, and sanding belt being vertically adjustable relative to the table to provide desired heights of exposed sanding areas.

2. The machine of claim 1 including a second block having ends rounded on different radii, said belt being likewise trained over the second block.

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