

E. J. BEIN.
SURFACING MACHINE.
APPLICATION FILED JUNE 3, 1909.

Patented Jan. 25, 1910.

947,491.

2 SHEETS—SHEET 1.

Fig. 1

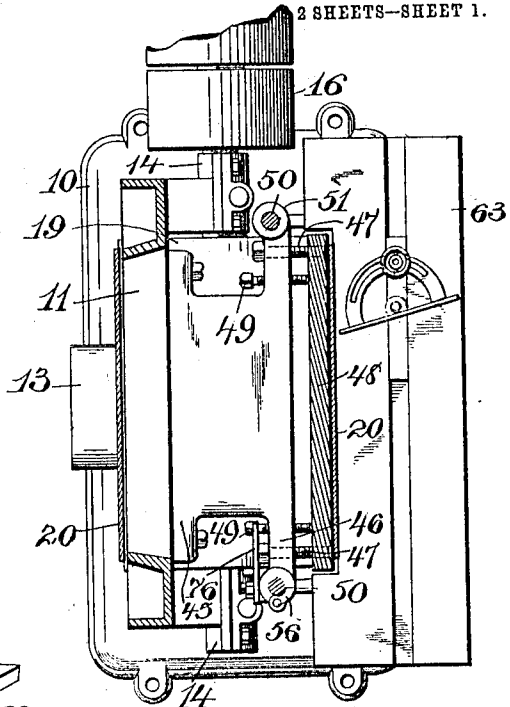
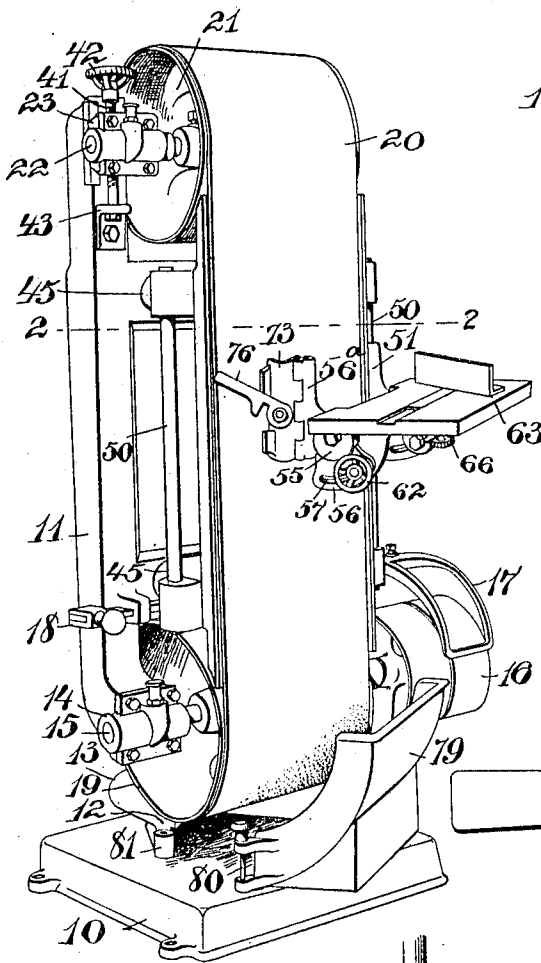


Fig. 2

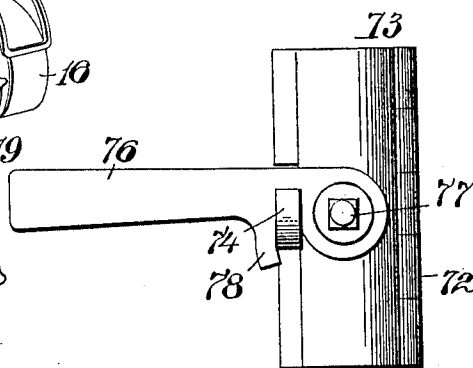


Fig. 3

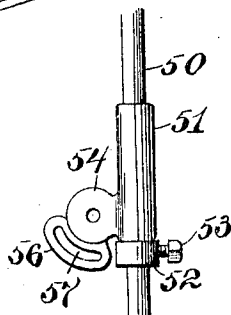


Fig. 4

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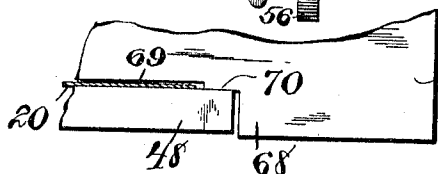
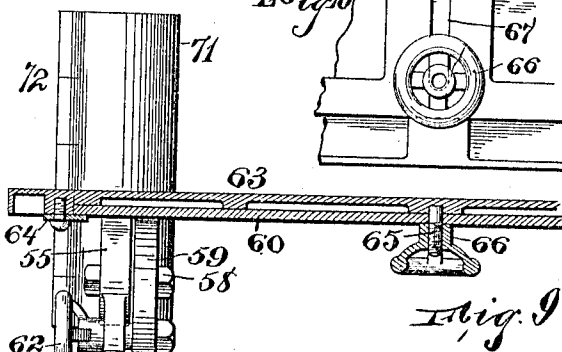
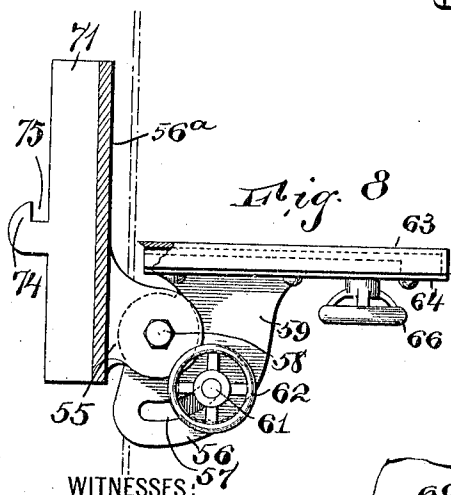
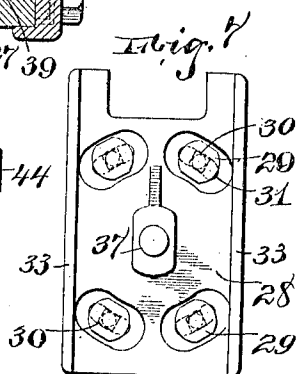
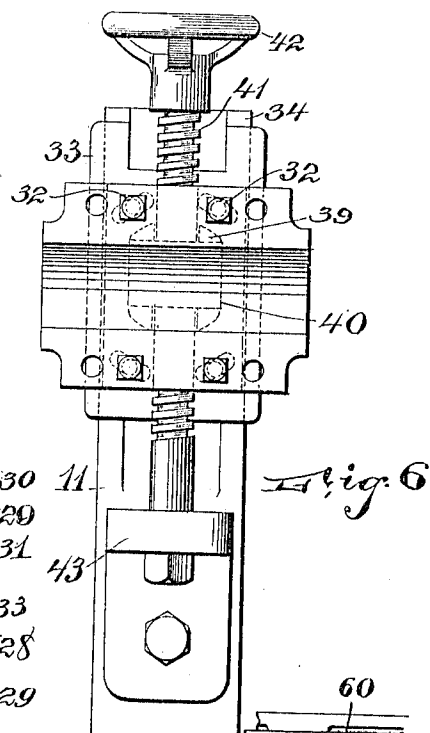
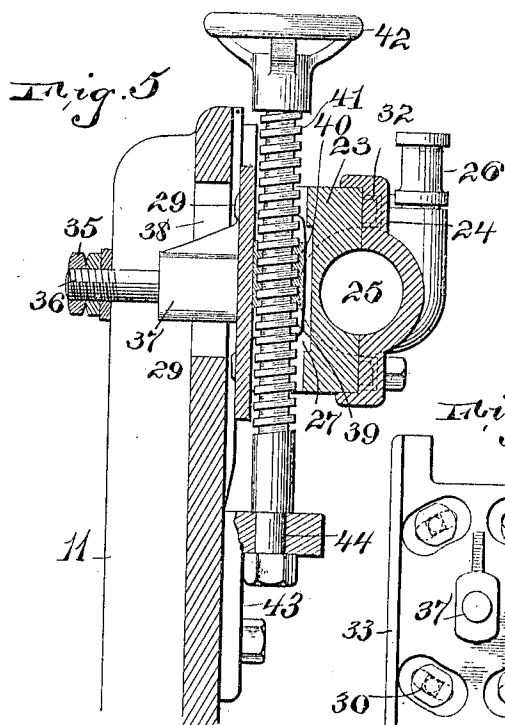
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ATTORNEYS

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

EMILE J. BEIN, OF NEWARK, NEW JERSEY.

SURFACING-MACHINE.

947,491.

Specification of Letters Patent.

Patented Jan. 25, 1910.

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To all whom it may concern:

Be it known that I, EMILE J. BEIN, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Surfacing-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, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to a surfacing machine which is designed to provide means for carrying off the dust, resulting from the friction of the sand-paper or similar abrasive belt against the article operated on, so that the operator is free from annoyance due to this dust.

The invention further provides for a vertically operated belt having a platen behind it and a swinging table on which the work is supported, this table being adjustable vertically and also being adjustable in its angle to the belt, and having means for keeping it tight up against the belt no matter what angle it assumes.

The invention is further designed to provide a table that has portions to fit against the edges of the platen, beyond the edges of the belt, so that there is no danger of cutting the belt by undue pressure of the table against it.

The invention is still further designed to provide means for tightening the belt by moving the pulleys away from each other, the upper pulleys being preferably adjustable and having bearings that allow for a tilting if one edge of the belt is slightly longer than the other.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the machine with the table swung away from the belt. Fig. 2 is a horizontal section taken at line 2 in Fig. 1. Fig. 3 is a face view of a locking sleeve secured to the free end of the table, and Fig. 4 is a detail view showing the means of adjusting the swinging table vertically. Fig. 5 is a section through one of the adjustable bearings. Fig. 6 is a face view with the outer plate of the bearing removed, and Fig. 7 is a rear view of a swinging plate which supports the bearing. Fig.

8 is an end view of the table showing a locking sleeve in section. Fig. 9 is a face view showing the table in section. Fig. 10 is a bottom view showing the adjustment of the table away from and toward the belt, and Fig. 11 is a plan showing the belt in section and being a detail of the table in its relation to the platen and belt when pushed as far as possible toward the belt.

The invention comprises a base 10 which has thereon a frame comprising an upright supporting portion 11 which rests on the base as at 12, the lower portion 12 merging into the upright supporting portion 11 and forming, at the back thereof, an outlet 13 in the shape of a pipe which is adapted to be connected to another pipe or to any means of carrying off dust from the machine, as will be described hereinafter. In the lower portion of the support 11 is arranged a pair of bearings 14, one bearing being arranged on each side of the frame and acting to support the drive-shaft 15 which is driven by suitable pulleys 16 which are adapted to receive a belt not shown, the belt shifter 17 having an operating handle 18, being suitably installed to regulate the operation of the machine. On this drive-shaft 15 is arranged a pulley 19 over which passes an abrasive belt 20, which belt is made of sand-paper or any other material with which a surface can be finished. The abrasive belt also passes over the pulley 21 which is mounted on a shaft 22, the shaft 22 being mounted on each side in an adjustable bearing which can be arranged to be raised or lowered so as to tighten or loosen the abrasive belt, and the belt and its shaft will not bind if it is slightly out of parallel relation with the shaft 15, this being due to a structure which permits a slight rocking of the shaft 22 in its bearings. Each adjustable bearing consists of a block 23 which has a plate 24 which is both recessed in the usual way to form a bore 25 in which the shaft 22 rotates. A suitable lubricator 26 can be installed in any of the usual ways. The block 23 is recessed at the back as at 27, the sides projecting beyond the recess abutting against a plate 28, the rear of which is shown in Fig. 7, and bolts 29, having squared portions 30 to prevent their turning, are adapted to slide in the curved slots 31 in the plate 28, the bolts having nuts 32 shown in Figs. 5 and 6, so that if any strain is put on the shaft 22 the block 23 and the plate 24

are capable of a slight movement on the plate 28 by reason of these slots in which the bolts slide. Each plate 28 has side flanges 33 which fit on opposite sides of ribs 34 on the upright portion 11 of the support of the machine, and the plate 28 is thus adapted to ride against the front of the support, being held thereon by suitable fastening means, preferably nuts 35 on the end of a screw-threaded stud 36 projecting from the boss 37 which rides in a slot 38 in the support, when the bearing is moved vertically.

On the face of the plate 28 are projecting lugs or tongues 39 which are spaced apart to receive a block 40, and are spaced transversely so that a screw 41 can pass between them, the screw also passing through the block 30, this screw-threaded block riding on the screw when the screw is turned by means of its handle 42, the end of the screw resting in the bracket 43 and being prevented from longitudinal movement by reason of the reduced portion 44 within the bracket 43. It will thus be seen that each of these bearings is capable of raising its end of the shaft 22 and also of having the shaft tilted slightly so that if one bearing is raised before the other, or if one has to be raised or lowered a little more than the other to allow for unevenness in the belt, there will be no binding of the shaft. Projecting from the support 11 are the horizontal supporting arms or plates 45 having the flanges 46 thereon, one of these being shown in section in Fig. 2, and these flanges have secured thereto in turn, by means of the bolts 47, the platen 48, the platen being locked by the lock nuts 49, the outer edge of the platen having a face against which the back of the abrasive belt 20 bears.

Arranged on each side and slightly in the rear of the platen, and secured on opposite ends to the arms 45, are the parallel upright supports 50, preferably in the shape of rods. On one of the supports 50 is arranged a sleeve 51 which is vertically adjustable thereon, one of the adjustments being shown in Fig. 4 where a collar 52 with a set-screw 53 holds the sleeve in its position. The sleeve 51 has a perforated disk 54 projecting therefrom which is similar to a disk 55 projecting from the portion 56 of a locking sleeve to be hereinafter described. The disks 54 and 55 each have a web 56 which is slotted as at 57. A pin passes 58 through the disk 55 or 54 and acts as a pivot for a plate 59, one of these plates being secured near each end of the lower portion 60 of the table, and in this way the table can be tilted or swung vertically, the stud 61 passing through the slot 57 and being tightened by the nut 62 to hold the table in its tilted position. It will be understood that there is one of these securing attachments near each end of the table. The lower portion 60 of the table fits

on the under side of the top plate 63 and is held in place by guide-pieces 64 at each end of the bottom portion 60. A screw 65 projects from the top plate 63 through the bottom portion 60 and receives a nut 66 so that the parts can be securely fastened against sliding. The bottom plate is provided with a slot 67, shown in Fig. 10, to permit of the sliding of the top plate 63. The upper plate of the table flanks the platen 48 with the portions 68 and is recessed as at 69 forming an edge which can be slid very close up to the abrasive belt 20, but which cannot touch the same to cause it to be cut by reason of the projection 70 which engages the front of the platen beyond the edges of the belt 20.

The disk 55 is fastened to a sleeve 56^a shown in Fig. 1, which consists of a member 71 which is semi-circular in cross-section and which is hinged, as at 72, to a swinging semi-circular portion 73. A hook 74, shown in Fig. 8, has a recess 75, the recess 75 being engaged by a handle 76 pivoted as at 77 to the swinging semi-tubular member 73 and having a finger 78 to engage the outer edge of the hook 74.

When the table is swung around in its position against the abrasive belt, the member 71 fits against the rod 50 and then the member 73 is swung around and the handle 76 is turned down to lock the parts together. At the bottom of the support 11 is a shield 79 which is pivoted on one end, as will be evident from Fig. 1, so that it can be swung away for cleaning purposes or the installation of a belt, and has means 80 for detachably securing it to an element 81 on the lower part 12 of the support 11. When in position this shield directs all the dust which passes down with the abrasive belt so that it can be conducted off through the pipe 13, and thus passed out to a suitable receptacle or to the outer air.

Having thus described my invention, what I claim is:—

1. A surfacing machine comprising a body portion, a pair of pulleys on the body portion, an abrasive belt on the pulleys, a platen, a pair of supports flanking the platen, a table, means for securing the table in swinging relation to one of the supports, means for vertically adjusting the securing means on the support, an attaching means on the free end of the table for detachably securing the table to the other support, and means for tilting the table on the securing means and the attaching means.

2. A surfacing machine comprising a body portion, a pair of pulleys on the body portion, an abrasive belt on the pulleys, a platen on the body portion, a pair of supports, a table, a sleeve on one end of the table embracing one of the supports, means for vertically adjusting the sleeve, a second sleeve on the free end of the table, the

second sleeve consisting of two members in hinged relation and adapted to clasp the second support, and means for locking the members together.

5 3. A surfacing machine comprising a body portion, a pair of pulleys on the body portion, an abrasive belt on the pulleys, a platen on the body portion, a pair of supports, a table, a sleeve on one end of the
10 table embracing one of the supports, means for vertically adjusting the sleeve, a second sleeve on the free end of the table, the second sleeve consisting of two members in hinged relation and adapted to clasp the
15 second support, means for locking the members together, and co-acting means on the table and sleeves to permit the table to tilt and lock it in its different tilted positions.

4. A surfacing machine comprising a body
20 portion, pulleys on the body portion, an abrasive belt on the pulleys, a platen, a pair of rods, a table, a sleeve on one end of the table and embracing a rod, a sleeve on the other end of the table and consisting of
25 two members, one member being secured to the table and the other member hinged to the first member, the members when swung together being adapted to embrace the second rod, and means for locking the mem-
30 bers together.

5. A surfacing machine comprising a body portion, pulleys on the body portion, an abrasive belt on the pulleys, a platen, a pair of rods, a table, a sleeve on one end of
35 the table and embracing a rod, a sleeve on the other end of the table and consisting of two members, one member being secured to the table and the other member hinged to the first member, the members when swung
40 together being adapted to embrace the second rod, a hook on one member, and a handle pivoted to the other member to enter the hook to lock the members together.

6. A surfacing machine comprising a body
45 portion, a pair of pulleys, an abrasive belt on the pulleys, a pair of supports, a sleeve adjustably arranged on one support, a second sleeve having means for detachably securing it to the other support, each sleeve
50 having a perforated disk thereon, a table having a lower portion with plates thereon, bolts securing the disks and plates in piv-

otal relation so that the table is adapted to tilt, a slotted web on each disk, a pin in each plate passing through the slot of a
55 web, a nut on each pin, an upper portion on the table adapted to slide on the lower portion, and means for locking the two portions of the table together.

7. A surfacing machine comprising a body
60 portion, a pair of pulleys in the body portion, an abrasive belt on the pulleys, one of the pulleys having a shaft therein, a bearing on each side of the shaft and flanking the pulley, each bearing having a piv-
65 otal connection with the body portion, and co-acting means on the bearing and the body portion to adjust the swiveled elements toward and from the other pulley.

8. A surfacing machine comprising a body
70 portion, pulleys in the body portion, an abrasive belt on the pulleys, a shaft on which one of the pulleys is mounted, a bearing on each side of the pulley and receiving the shaft, each bearing comprising a plate
75 adapted to slide on the body portion, means for securing the plate in any of its positions when slid on the body portion, bearing plates for receiving the ends of the shaft, and means for securing the plates
80 for receiving the shaft to the sliding plate so that they can swing thereon.

9. A surfacing machine comprising a body portion, pulleys in the body portion, an
85 abrasive belt on the pulleys, an adjustable bearing on each side of one of the pulleys, the adjustable bearing comprising a plate arranged to slide on the body portion, a screw bearing on the body portion and hav-
90 ing means for its manual manipulation, a screw connection between the screw and the plate whereby the plate is actuated from the screw, a block secured to the sliding plate so that it can rock thereon, and a bearing plate on the block, the block and
95 the bearing plate being recessed to receive the shaft.

In testimony, that I claim the foregoing, I have hereunto set my hand this 1st day of June 1909.

EMILE J. BEIN.

Witnesses:

E. A. PELL,
WM. H. CAMFIELD.