C. McGRANAHAN AND W. H. COTTON.

SURFACING MACHINE.

APPLICATION FILED MAY 9, 1919.

1,321,931.

Patented Nov. 18, 1919.

2 SHEETS—SHEET 1.

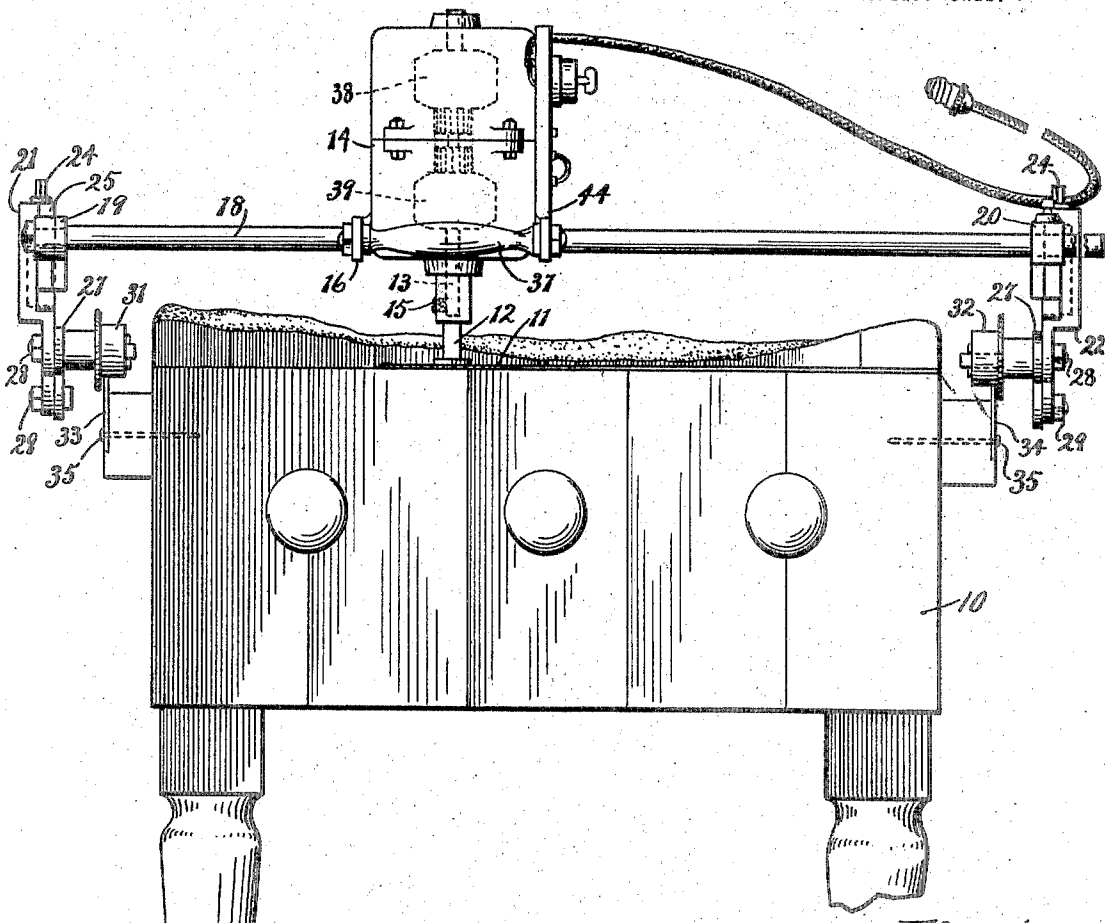


Fig. 1.

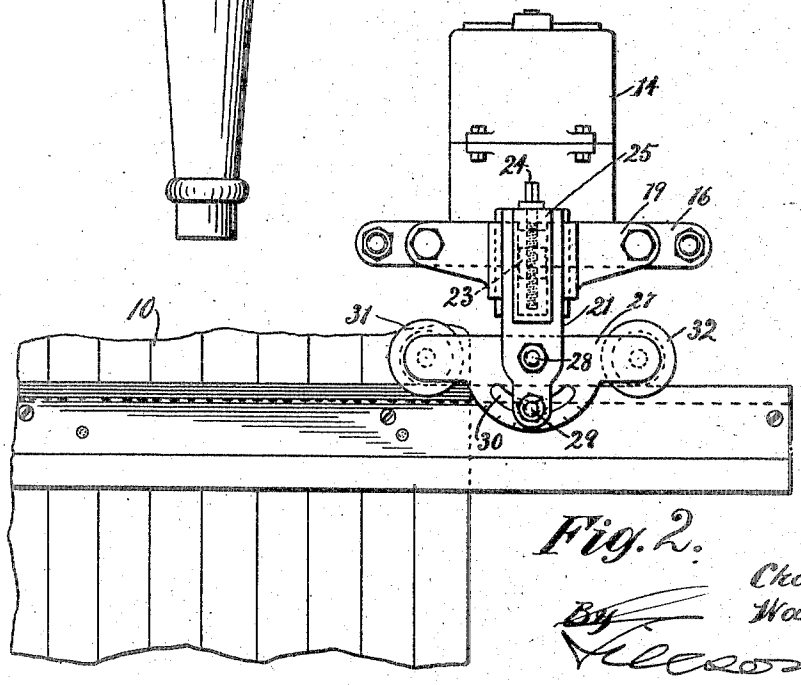


Fig. 2.

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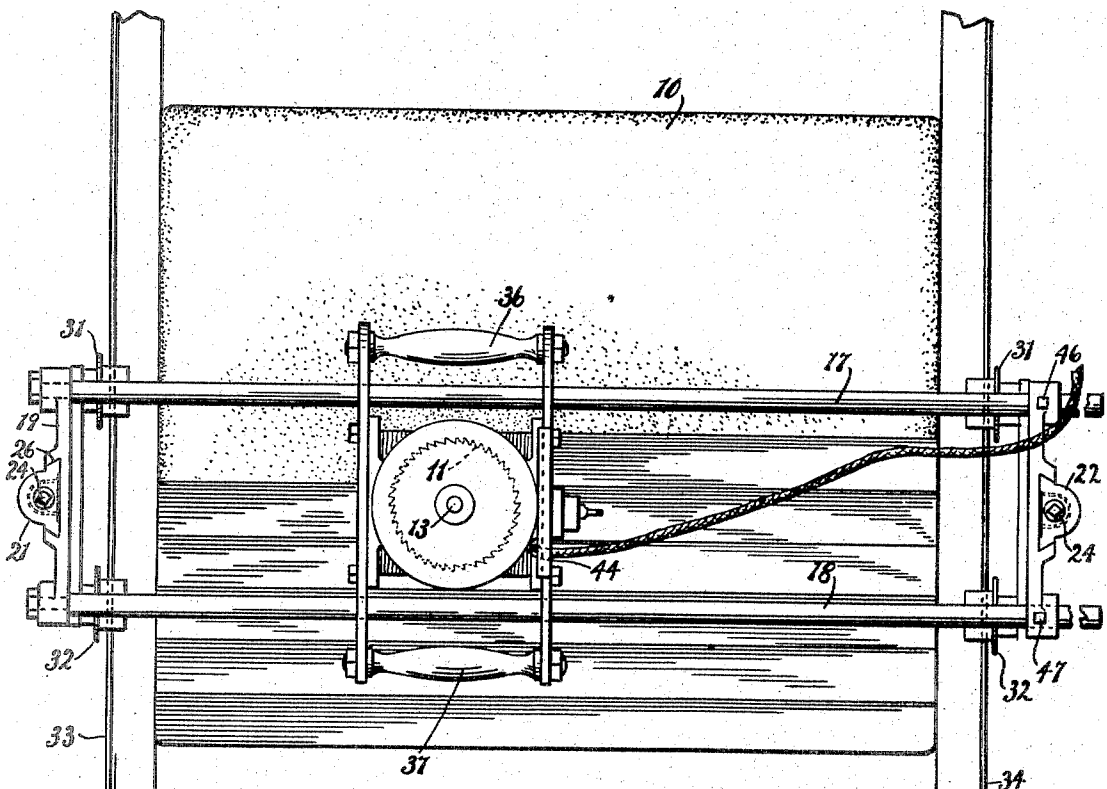


Fig. 3.

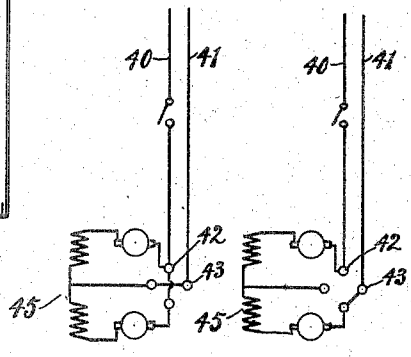


Fig. 4.

Fig. 5.

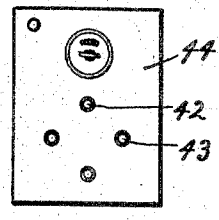


Fig. 6.

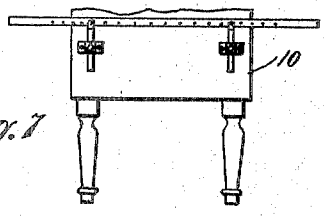


Fig. 7

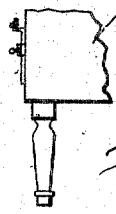


Fig. 8.

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UNITED STATES PATENT OFFICE.

CHARLES McGRANAHAN, OF YOUNGSTOWN, OHIO, AND WALTER H. COTTON, OF CHICAGO, ILLINOIS.

SURFACING-MACHINE.

1,321,931. Specification of Letters Patent. Patented Nov. 18, 1919.

Application filed May 9, 1919. Serial No. 295,871.

To all whom it may concern:

Be it known that we, CHARLES McGRANAHAN and WALTER H. COTTON, citizens of the United States, and residents, respectively, of Youngstown, county of Mahoning, State of Ohio, and Chicago, county of Cook, State of Illinois, have jointly invented certain new and useful Improvements in Surfacing-Machines, of which the following is a specification and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates particularly to machines for resurfacing chopping blocks. The objects of the invention are to provide a highly effective yet simple portable machine that can be quickly placed in position and can be operated by means of an electric motor incorporated into it and capable of using currents of different potential.

The invention is illustrated in the accompanying drawings forming a part of the specification, and in which—

Figure 1 is a side elevation showing the application of the machine to a meat chopping block;

Fig. 2 is a detail end elevation;

Fig. 3 is a detail plan view, some parts being shown in dotted lines;

Figs. 4 and 5 are diagrammatic views of the driving motor, showing different switch positions;

Fig. 6 is a detail of the controlling switch board, and Figs. 7 and 8 are front and side views, respectively, of a modified form of attaching means for the tracks.

A meat block of conventional square form, upon which the apparatus is intended to operate, is shown at 10. In use the surface of these blocks becomes somewhat irregularly concave, and from time to time it becomes necessary to cut away a portion of the upper face in order to again secure a flat surface. The apparatus herein shown is especially adapted for this work of redressing such blocks.

The device comprises a circular saw 11, carried by an arbor 12 attached to the armature shaft 13 of a vertically disposed electric motor 14. As shown, the arbor 12 is socketed to receive the shaft 13, and is secured thereto by means of a set-screw 15.

The motor 14 is mounted upon a frame 16, carried and slidable upon a pair of parallel bars 17, 18. These bars are united at their ends by a pair of cross-heads 19, 20, each of which is adjustably attached to a standard 21, 22; the attachment being by means of a lug 23, formed upon the cross-head, and a screw-bolt 24 setting through the upper end 25 of the standard, and being in threaded engagement with the lug. Each of the standards 21, 22, is fitted within a dove-tailed channel in the cross-head, as shown at 26, and is pivotally attached to a carriage 27, as shown at 28. A binding bolt 29 sets through the lower end of each standard, and is movable within a curved slot 30, concentric with the pivot 28 in the carriage 27, thereby providing means for adjustably tilting the frame carrying the motor and saw for the purpose of bringing the plane of the latter to a strictly horizontal position, and also to permit the adjustment of the saw for beveling the margins of the block.

The carriages 27 are provided with flanged wheels 31, 32, to run on tracks 33, 34, adapted to be secured to opposite sides of the block to be operated upon by any suitable means, spikes, as 35, being shown for this purpose. The frame of the motor may be provided with handles, as 36, 37, by means of which it may be easily moved back and forth upon the rods 17, 18, and the carriages upon the tracks 33, 34.

Inasmuch as the apparatus is intended to be employed at various shops where the blocks to be dressed are in use, and to be driven by current derived from the lighting system found in each shop, and as the current supplied to these systems is not of uniform voltage, a common practice at this time being to supply some lines with a current of 110 volts and in other instances with a current of 220 volts, provision is made for utilizing the motor in connection with either of these commonly used currents.

To this end the motor is provided with two armatures 38, 39, on the shaft 13 common to both, a suitable commutator and the necessary brushes being associated with each armature. There is also provided a local motor circuit and suitable switch to permit the arrangement of the two armatures either in multiple, for the purpose of utilizing the current of the lesser voltage, or in series for the purpose of utilizing the current of the greater voltage.

Such an arrangement is diagrammatically shown in Figs. 4, 5 and 6. The line wires represented at 40, 41, lead to terminals 42,

43, of the switchboard 44. A suitable switch may be mounted upon this board for connecting each of the terminals 42, 43, with a brush associated with each of the armatures, as illustrated in Fig. 4, thereby arranging the armatures in multiple, or for connecting the terminals with the brush associated with one armature only, thereby connecting the armatures with the leading-in circuit in series, as illustrated in Fig. 5, the armatures being cross connected, as shown at 45.

In use the track rails 33, 34, are secured to the block 10, and in being attached are leveled as accurately as the rather rough character of the work will permit. The carriages 27 are mounted upon these rails, being adjusted upon the rods 17, 18, and secured thereto by means of the set-screws 46, 47, and the saw is brought to an exact horizontal plane by such tilting of the motor frame as may be necessary, and to the proper elevation for making a cut of the proper depth. The motor being now actuated successive cuts are made across the top of the block by moving the motor frame back and forth upon the rods 17, 18, and advancing the carriages upon the track rails. This operation having been completed, the motor frame is again tilted to give the saw the desired angular positions to bevel two of the marginal edges of the block. The remaining margins may be beveled by rearranging the rails upon the block.

The rods 17, 18, and rails 33, 34, are made of sufficient length to adapt them for use on the largest size blocks. In fitting the apparatus to a block, the standard 20 is adjusted along the rods to bring the rollers 31, 32, of the carriage with which it is associated to the vertical plane of the track, thereby also adjusting the range of travel of the motor frame to the work to be performed.

As the blocks to be operated upon vary greatly in size and the working conditions are not uniform, it is important that an apparatus of this character have great flexibility. Such adaptability to different conditions is provided for by the construction described.

We claim as our invention—

1. In a surfacing machine, in combination, a pair of track rails adapted for attachment to a block to be surfaced, a pair of carriages running on the rails, an oscillatably adjustable standard mounted on each carriage, a pair of bars secured to the standards, a frame slidable on the bars, and a saw arbor mounted on the frame.

2. In a surfacing machine, in combination, a pair of track rails adapted for attachment to a block to be surfaced, a pair of carriages running on the rails, an angularly adjustable standard mounted on each carriage, a pair of bars secured to the standards, means for adjusting the bars vertically on the standards, a frame slidable on the bars, and a saw arbor mounted on the frame.

3. In a surfacing machine, in combination, a pair of tracks adapted to be secured to an article to be surfaced, a pair of carriages comprising a longitudinal member provided with a wheel at each end adapted to travel on said tracks, an upright pivoted to each member and adjustable about said pivot, a rod support mounted for vertical adjustment on each upright, a pair of rods connecting opposite supports, one of said supports longitudinally adjustable on said rods, a motor casing freely slidable on said rods, a motor in said casing arranged with its shaft perpendicular, and a saw secured to the lower end of said shaft.

4. In a surfacing machine, in combination, a pair of tracks adapted to be secured to an article to be surfaced, a pair of carriages each comprising a longitudinal member provided with wheels adapted to travel on said tracks, an upright pivoted to each carriage and provided with a set screw spaced from the pivot adapted to coact with an arcuate slot provided in the carriage, a rod support mounted for vertical adjustment on the upright of each carriage, spaced rods connecting opposite supports, and a saw, and driving means therefor loosely supported by and slidable upon the rods.

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