April 28, 1925. 1,535,489

C. A. MAYS

SANDER OR SURFACING MACHINE

Filed Feb. 19, 1923. 2 Sheets-Sheet 1

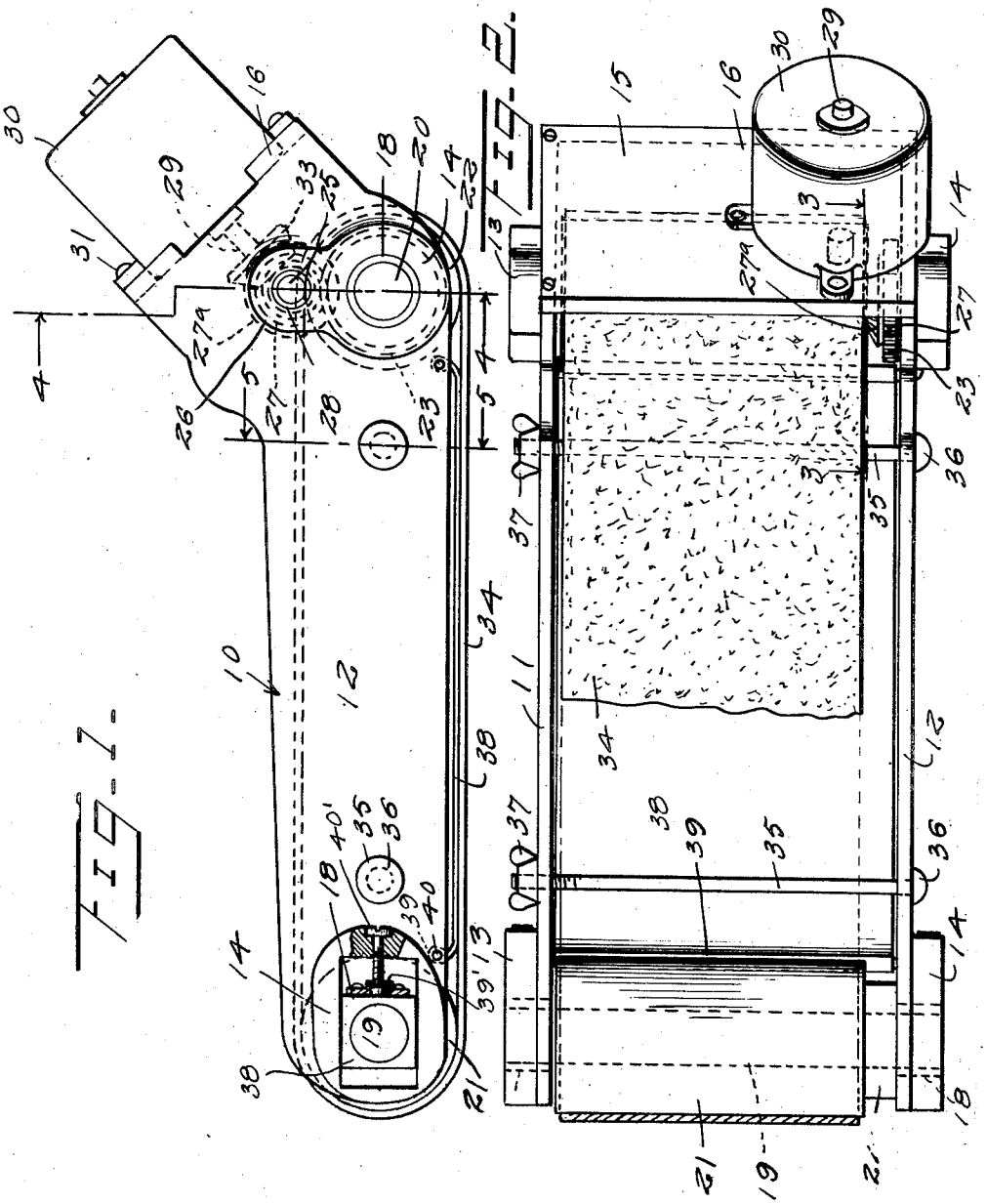


FIG. 1.

FIG. 2.

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Fig. 4.

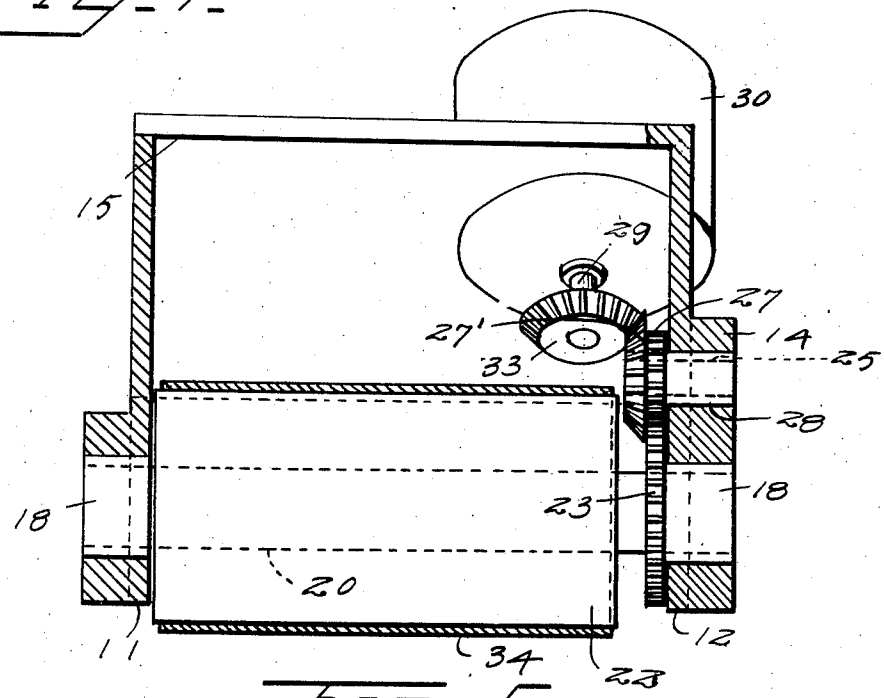


Fig. 5.

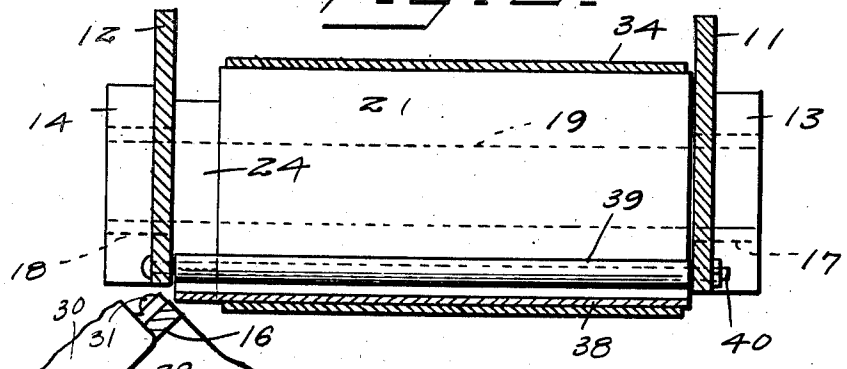
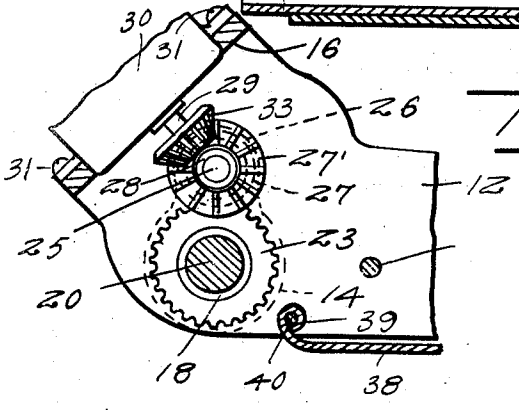


Fig. 3.



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By J. Randolph Jr. Attorney

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UNITED STATES PATENT OFFICE.

CECIL A. MAYS, OF EAST AKRON, OHIO.

SANDER OR SURFACING MACHINE.

Application filed February 19, 1923. Serial No. 619,977.

To all whom it may concern:

Be it known that I, CECIL A. MAYS, a citizen of the United States, residing at East Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Sander or 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.

This invention relates to a sander or surfacing machine.

It is aimed to provide a novel, inexpensive, handy, convenient and generally improved construction of the type which is power driven and movable as an entirety with respect to the work.

It is further aimed to provide a construction which may in a novel and more expeditious manner accommodate endless surfacing belts for operation, removal and replacement.

A third object is to provide a construction employing a novel frame in separable parts which mount the sanding or surfacing belt, a driving motor, novel power transmission mechanism between the motor and the belt, and preferably a presser plate for the belt.

Various additional objects and advantages will become apparent from a consideration of the description following taken in connection with accompanying drawings.

In said drawings:—

Figure 1 is a side elevation of the machine;

Figure 2 is a plan view;

Figure 3 is a rear elevation;

Figure 4 is a cross sectional view on the line 4—4 of Figure 1, and

Figure 5 is a cross sectional view on the line 5—5 of Figure 1.

Like reference characters designate like or similar parts in the different views.

Referring specifically to the drawings, a frame is employed as at 10 which may consist of side plates 11 and 12, enlarged and forming bearings, respectively at 13 and 14. Integral with and extending at a right angle from one of the bearings 14 and rearwardly and downwardly inclined is a cross head 15 which overlaps the rear bearing 13. Cross head 15 as at 16 is enlarged to form a bearing having its axis disposed at a right angle to that of the adjacent bearing 14. Side plate 11 and bearings 13 are preferably a metallic casting while the side plate 12, bearings 14 and 16 and cross head 15 are preferably another metallic casting.

Removably journaled in the bearings 13 and 14 as in bushings 17 and 18, respectively, are shafts 19 and 20. On said shafts, rollers 21 and 22 are fixed. Also fixed on the shaft 20 is a spur gear wheel 23 which is located intermediate one end of roller 22 and the adjacent bearing 14. A spacing disk or washer 24 surrounds the shaft 19 and is located in line with the gear wheel 23.

A stub shaft 25 is journaled in an extension 26 of one of the bearings 14 and has a spur gear wheel 27 rigid thereon which meshes with the gear wheel 23. Also a beveled gear wheel 27^a rigid with the shaft 25, may be directly and removably disposed in a bushing 28 similar to the bushings 17 and 18.

An inclined drive shaft is shown at 29 which may be the main shaft of or driven from an electric motor 30, preferably angularly disposed as shown and fastened as at 31 to the cross 15 and suitably fastened on shaft 29 is a beveled gear wheel 33 which meshes with the bevel gear wheel 23. It will thus be seen that the motor 30 through the medium of the shaft 29, bevel gear wheels 33 and 27^a and gear wheels 27 and 23 rotate the roller 22. Due to the particular disposition of the gear wheel 33, gear wheels 27 and 27^a and shaft 25 are mounted in place against displacement.

It will be noted that the rollers 21 and 22 are of such size as to project below the side plates 10 and 11. Trained about said roller is an endless sander or surfacing belt 34. This belt may be of any suitable construction or material. For instance it may be sand paper, sand cloth or a rubber sheet provided with an abrasive surface. The abrasive surface is of course outermost on

the belt 34 and said belt is driven by the motor 30 due to the tractive force between the belt and the rollers 21 and 22.

The parts are detachably held in position by means of bolts 35 which are removably passed through the side plates 10 and 11 and have heads 36 overlapping one of the side plates and which are screw threaded at the opposite ends so as to receive detachable nuts, preferably of the wing type as at 37.

Provision is made for tightening belt 34. To this end shaft 19 is directly journaled in sliding blocks 38 adapted to be moved by followers 39 under urgency of screws 40 threaded in the adjacent bearing frames 13 and 14.

In use, the device is grasped by the hand engaging the same adjacent the cross heads or spanning and gripping the side plates 10 and 11 and moved over the surface to be sanded or polished. With the motor 30 in operation, the shaft 29 drives gear wheels 33, 27ª, 27, 23, shaft 25 and roller 22. The tractive force of the roller is imparted to the belt 34 which passes over and drives roller 21 as an idler.

In order that the lower run of the belt will effectively engage the surface being polished or sanded, a presser plate 38 is provided which spans the plates 10 and 11, is removable, and has curled cylindrical extremities or tubes at 39 through which bolts 40 removably pass and also which removably pass through the side plates 10 and 11. Such plate 38 is of metal and bears directly on the top of the lower run of the belt.

In the event the belt 34 is to be inspected, moved or replaced, the bolts 35 and 40, or the nuts thereof are removed so that the plate 11 may then be removed and the rollers 21 and 22 thereafter removed or the belt 34 while the rollers are in place. The new belt or repaired one is then positioned on the rollers 21 and 22, plate 11 returned to normal position and the nuts or bolts 35 and 40 tightened.

As merely one practical embodiment has been illustrated and described, it is to be understood that changes in the details may be resorted to provided they fall within the spirit and scope of the invention.

What is claimed is:—

1. A machine of the class described having a frame, polishing means mounted on said frame, said polishing means including a gear wheel, a relatively short stub shaft, means to drive said gear wheel from said stub shaft, a gear wheel on the stub shaft overlapping the inner surface of said gear wheel to prevent displacement thereof and of the stub shaft, a gear wheel disposed at an angle to and in mesh with the latter gear wheel, and means on the frame to drive the last mentioned gear wheel.

2. A machine of the class described having a frame, polishing means mounted by said frame including a driving roller, a relatively short stub shaft removably mounted on said frame, a gear on said stub shaft to drive said roller, driving means for the stub shaft, said gear wheel being located intermediate said driving means and the frame and said stub shaft and gear wheel being thereby held against displacement.

3. A machine of the class described having a frame, a polishing element, a driving roller for said element mounted by said frame, said frame having an upward and rearward extension adjacent one end, a stub shaft removably journaled in said extension, a gear wheel on said stub shaft to drive said roller, another gear wheel on said stub shaft, the first mentioned gear wheel being located intermediate the frame and the last mentioned gear wheel and thereby holding the last mentioned gear wheel and stub shaft against displacement, an angularly disposed cross head on said frame, a driven shaft mounted by said cross head, and the gear wheel on said driven shaft meshing with the last mentioned gear wheel.

4. A machine of the class described having a side bar, a second side bar, an upward and rearward extension integral with one of said side bars, an inclined cross head integral with said extension and extending toward the other side bar, rollers intermediate the side bars, shafts on which said rollers are mounted journaled in the side bars, bolts detachably connecting the side bars together, a gear wheel on one of said shafts, a relatively short stub shaft journaled on one of the side bars, a gear wheel on said stub shaft in mesh with said gear wheel, a bevel gear wheel on said stub shaft overlapping the inner surface of the first mentioned gear wheel whereby the latter and stub shaft are held in place, a driven shaft angularly disposed with respect to and journaled in said cross head, a bevel gear wheel on said driven shaft and in mesh with the first mentioned bevel gear wheel, a polishing belt trained over said rollers, a presser plate engaging the lower run of the belt, said presser plate having terminal cylinders, and securing bolts for the presser plate extending through the side bars and said cylinders.

5. A machine of the class described having a side bar, a second side bar, said second side bar being removable with respect to the first side bar, sander means located between and supported by the side bars, said side bars extending above the sander means to guard against the hand contacting therewith, a crosshead extending from one of the side bars and angularly disposed, extensions on the side bars extending above the remainder thereof and between which the crosshead is disposed, a gear wheel on said

sander means, a relatively short stub shaft journaled in the first side bar having a gear wheel in mesh with said gear wheel, a bevel gear wheel on said stub shaft overlapping the inner surface of the first mentioned gear wheel, a motor having a casing fitted into said crosshead, a shaft driven by said motor and disposed at a right angle to the crosshead, and a gear wheel on said shaft in mesh with said bevel gear wheel and preventing displacement thereof and of the stub shaft.

In testimony whereof I affix my signature in presence of two witnesses.

CECIL A. MAYS.

Witnesses:

LENA FRY,

CHAS. H. SMITH.