J. W. DIXSON & T. McKINLEY.

FLOOR SURFACING AND SANDPAPERING MACHINE.

APPLICATION FILED MAR. 26, 1908.

915,080. **Patented Mar. 16, 1909.**

2 SHEETS—SHEET 1.

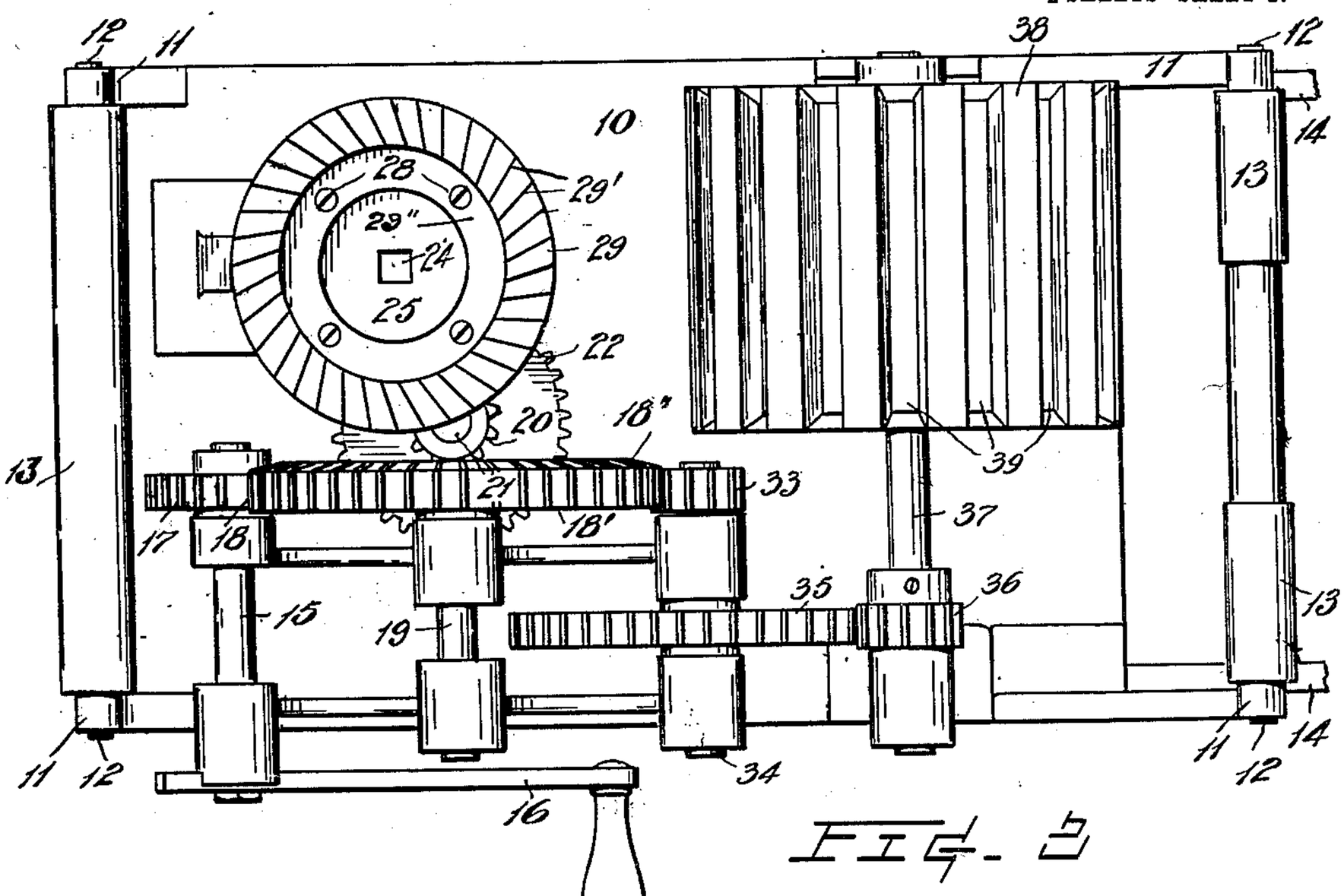

FIG. 2

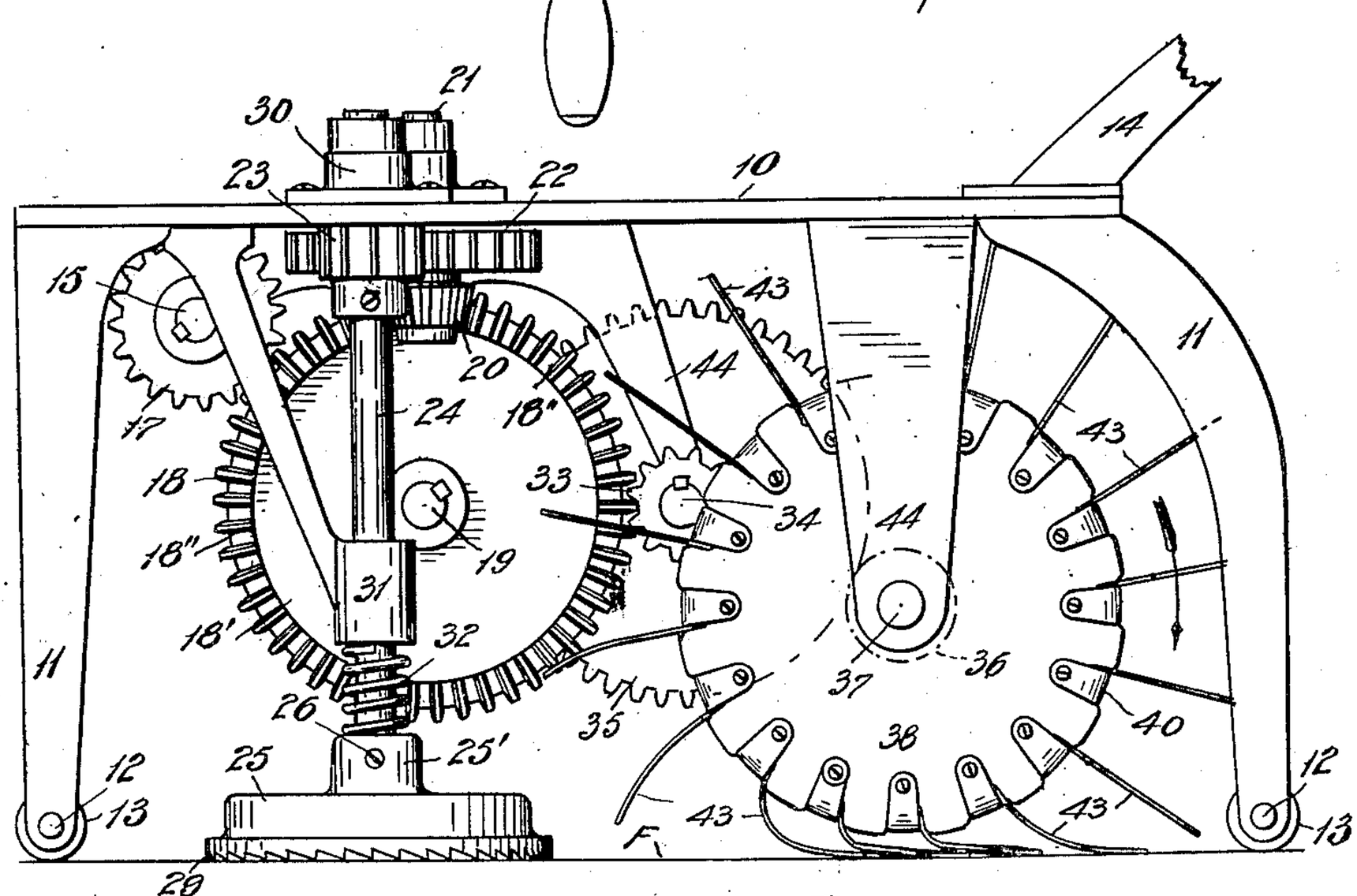

FIG. 1

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John Deady

INVENTORS:

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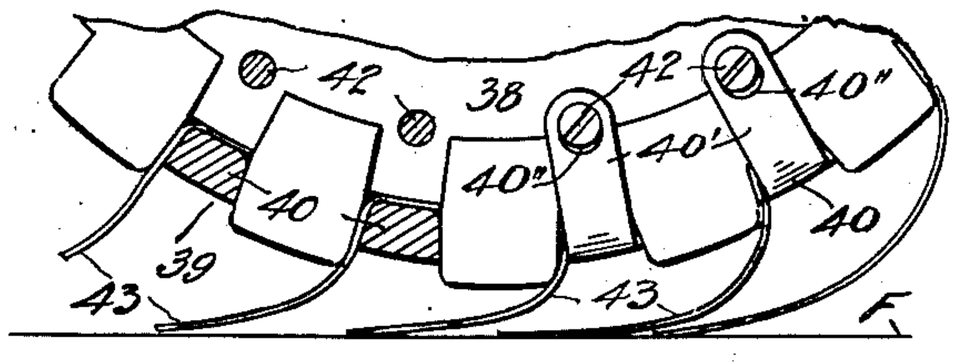

FIG. 5

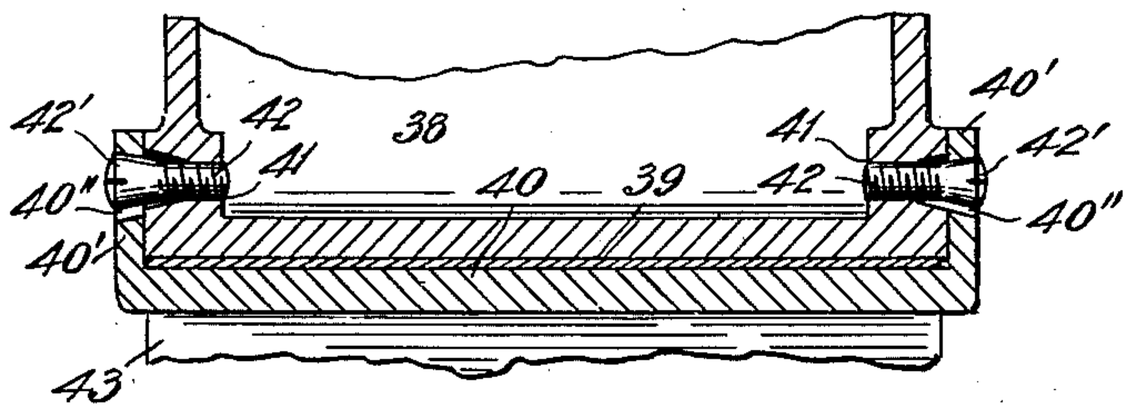

FIG. 6

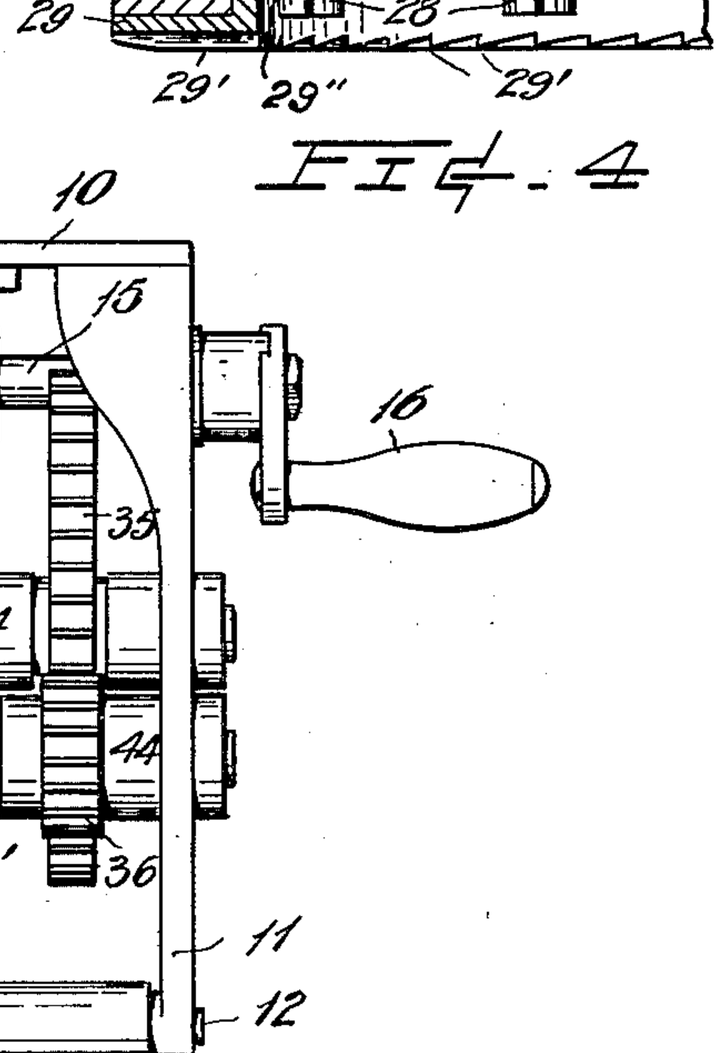

FIG. 4

FIG. 3

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UNITED STATES PATENT OFFICE.

JOHN W. DIXSON AND TRACY McKINLEY, OF SEATTLE, WASHINGTON.

FLOOR SURFACING AND SANDPAPERING MACHINE.

No. 915,080. Specification of Letters Patent. Patented March 16, 1909.

Application filed March 26, 1908. Serial No. 423,415.

To all whom it may concern:

Be it known that we, JOHN W. DIXSON and TRACY MCKINLEY, citizens of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Floor Surfacing and Sandpapering Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to apparatus for dressing floors to uniform surfaces; and its object is the provision of a machine of this character which will be of inexpensive construction, convenient to operate, and efficient in action.

With these ends in view the invention consists in the novel construction, adaptation and combination of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a floor surfacing and sandpapering machine embodying our invention. Fig. 2 is a plan view of the machine, shown inverted. Fig. 3 is an end elevation of the machine. Fig. 4 is a detail view partly in elevation and partly in vertical section of the surface cutter-head and associated parts. Figs. 5 and 6 are fragmentary detail views, in side elevation and transverse vertical section, respectively, of the rotary drum and devices for attaching the sandpaper thereto.

The reference numeral 10 designates a frame which is provided with legs 11 having journaled in their lower ends the axles 12 of supporting and traction rollers 13. Rigid with said frame are suitable handles, indicated by 14, whereby the machine is manually propelled during the progress of the work.

15 is a shaft which is herein shown with a crank 16 at one end for rotating the same, though it may be otherwise driven, and carries a pinion 17 which meshes in the peripheral teeth 18 of a gear-wheel 18′ which is mounted upon a shaft 19. This wheel is also provided with bevel teeth 18″ which mesh with a bevel gear-wheel 20 upon a shaft 21 having thereon a gear 22 which meshes with a gear wheel 23 carried by a vertical arbor 24. At the lower end of the arbor 24 it has connected thereto a cutter-head 25 in such a manner as to rotate therewith but movable to a limited extent axially upon the arbor, as by the provision of a polygonal socket in the hub 25′ of the head to receive a corresponding shaped end of the arbor and employing a stud 26 to extend through the hub into a way 27 formed in the arbor. Detachably secured to the under face of the head, as by screws 28, or an equivalent, is an annulus 29 forming the cutter proper which is constructed of hardened tool steel and provided upon its underside with cutting teeth 29′ formed by serrations extending obliquely with respect to radial lines projected from the arbor axis. The arbor is journaled at its top in a bearing 30 in the frame 10 and also in a bracket box 31 which is located at some distance above the hub of the cutter-head so as to afford a space for a helical spring 32 serving to hold the cutter yieldingly against the work.

Meshing with the teeth 18 of the aforesaid gear-wheel is another gear-wheel 33 upon a shaft 34 which carries a gear-wheel 35 which in turn meshes with a gear-wheel 36 upon a shaft 37. This shaft has mounted thereon a drum 38, having longitudinally disposed grooves 39 in its periphery. A bar 40 is provided for each of the drum grooves and are formed at their ends with rectangularly directed lugs 40′ which are apertured with elongated slots 40″. In planes radially with each of the grooves 39 and in the ends of the drum are screw-threaded holes 41 to take the screws 42 whereby the bars 40 are adjustably secured in the respective drum-slots.

The screws 42 are made with conical heads 42′, see Fig. 6, which are adapted to engage the outer ends of the slots 40″ and with a wedge-like action cause the bars to be drawn toward the axis of the drum with the object of clamping the sheets 43 of sandpaper in the grooves 39.

The sheets of sandpaper are each connected from one end to the drum by being clamped in the grooves 39 of the latter, as clearly shown in Figs. 1 and 5, and as they revolve, as represented by the arrow in Fig. 1, they will successively wipe against the surface F of the floor and smooth the same by the attrition of the gritty faces of the sandpapers.

The various aforesaid shafts are journaled in suitable supports, such as 44, depending from the frame.

In operation, the drum 38 and the cutter-head 25 are caused to rotate at a relatively high velocity from motion derived from the driving shaft, while the machine is moved forwardly over the work, resulting in the cutters 29 dressing down the floor to an even

surface and the polishing of the same by the sandpapering devices as the latter are progressively brought thereover by the onward travel of the machine.

What we claim, and desire to secure by Letters-Patent, is—

1. In a machine of the type set forth, a frame, a vertical arbor carried by the frame, means to rotate said arbor, said arbor having a polygonal shaped lower end, a cutter head having a hub formed with a polygonal socket to receive the lower end of said arbor, said lower end of the arbor being formed with an elongated groove, a set screw projected through said hub and extending in said groove, a cutter secured to said cutter head, and a coil spring surrounding said arbor and engaging said hub and a part of the frame to yieldingly hold the cutter to its work.

2. In a machine of the type set forth, a frame, a vertical arbor journaled in the frame, means to rotate the arbor, a cutter head yieldingly mounted on said arbor, and rotating therewith, said arbor being formed with a longitudinal groove, and a set screw carried by the cutter head to engage in said groove.

3. In a machine of the type set forth, an arbor, a cutter head carried thereby, and a cutter composed of an annulus secured to said cutter head and a second annulus of greater diameter than the first annulus connected to the latter and disposed in a different horizontal plane therefrom, said second annulus having cutting teeth on its under face.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN W. DIXSON.
TRACY McKINLEY.

Witnesses:
HORACE BARNES,
B. S. ALBRIGHT.