

(No Model.)

2 Sheets—Sheet 1.

H. PRUD'HOMME.
SCRUBBING MACHINE.

No. 438,561.

Patented Oct. 14, 1890.

FIG. 1.

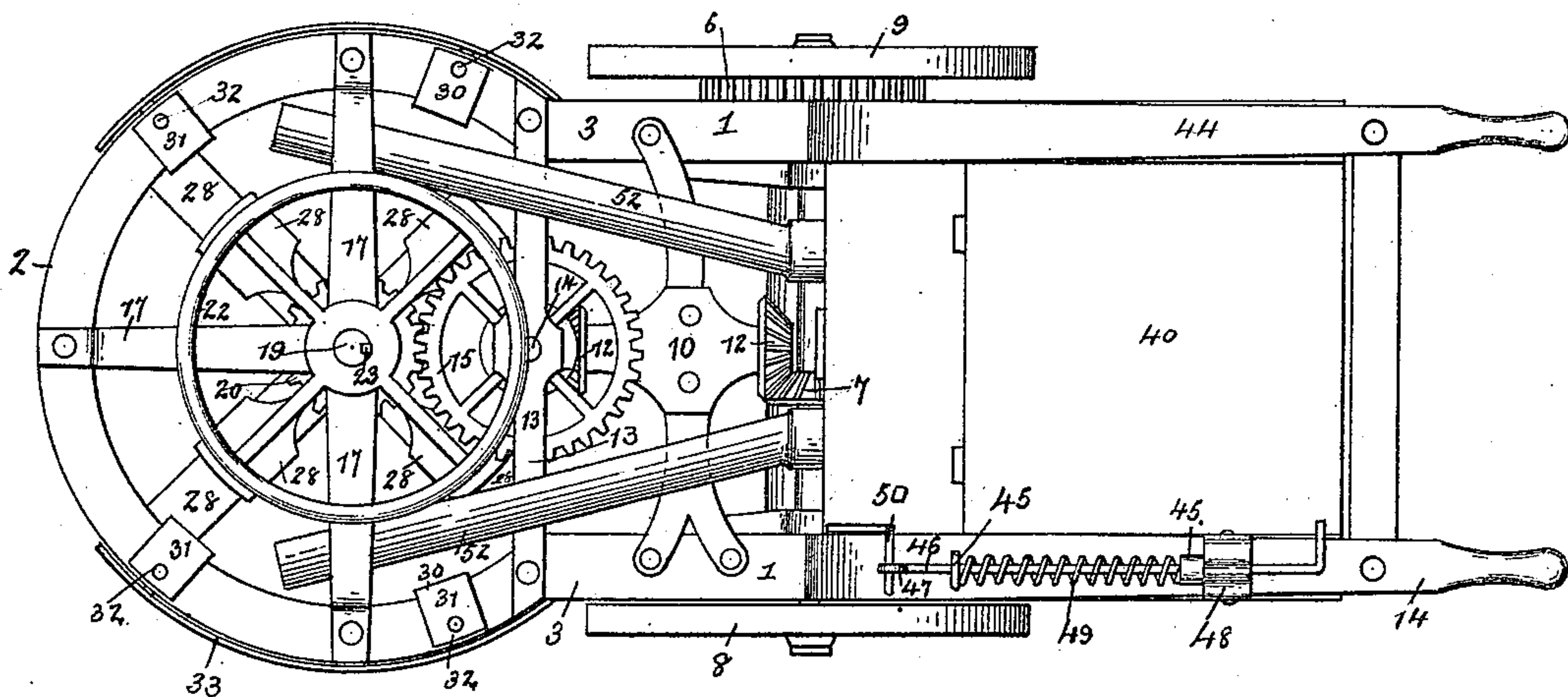
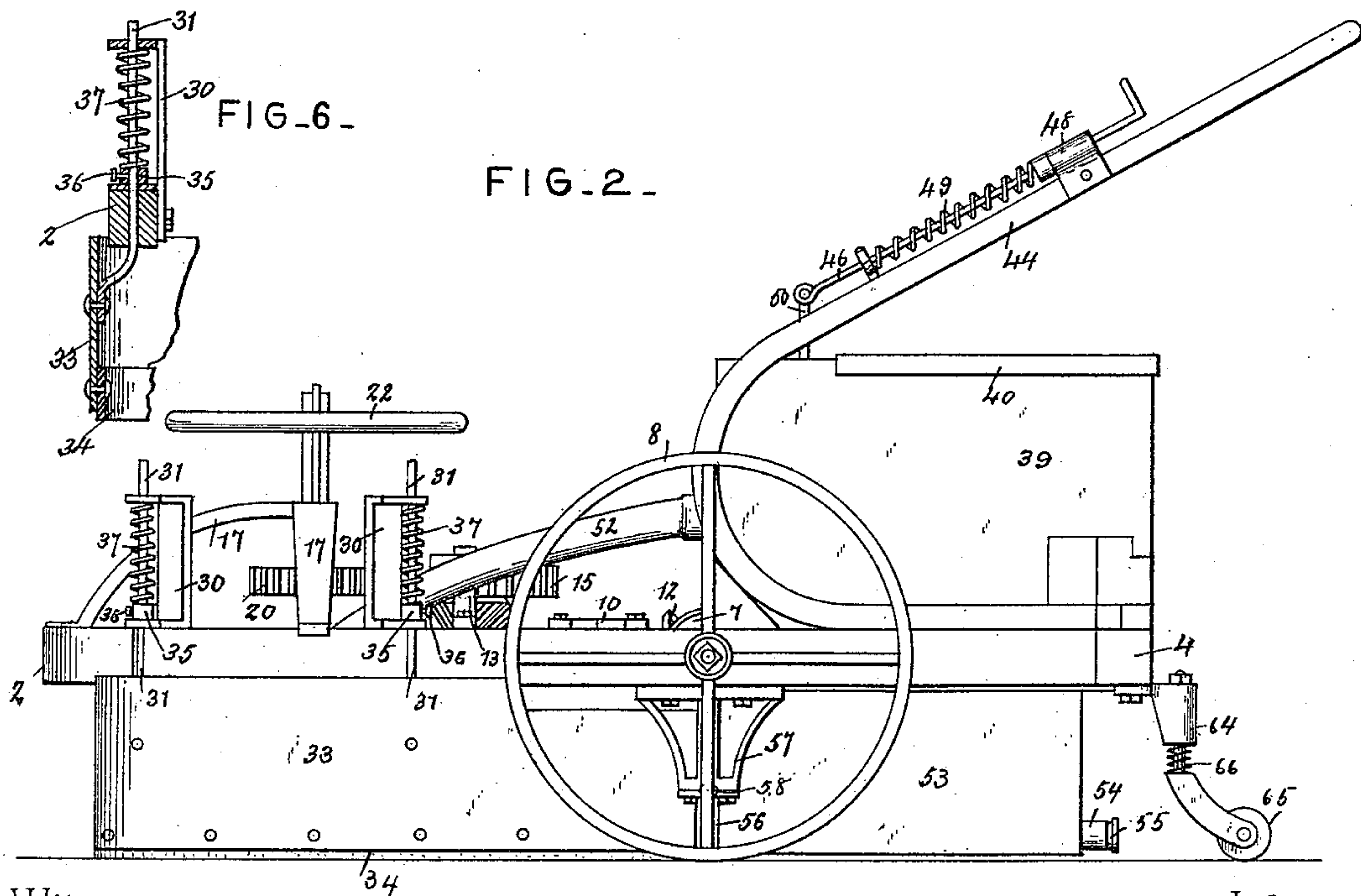


FIG. 6.

FIG. 2.



Witnesses:

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(No Model.)

2 Sheets—Sheet 2.

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FIG. 3.

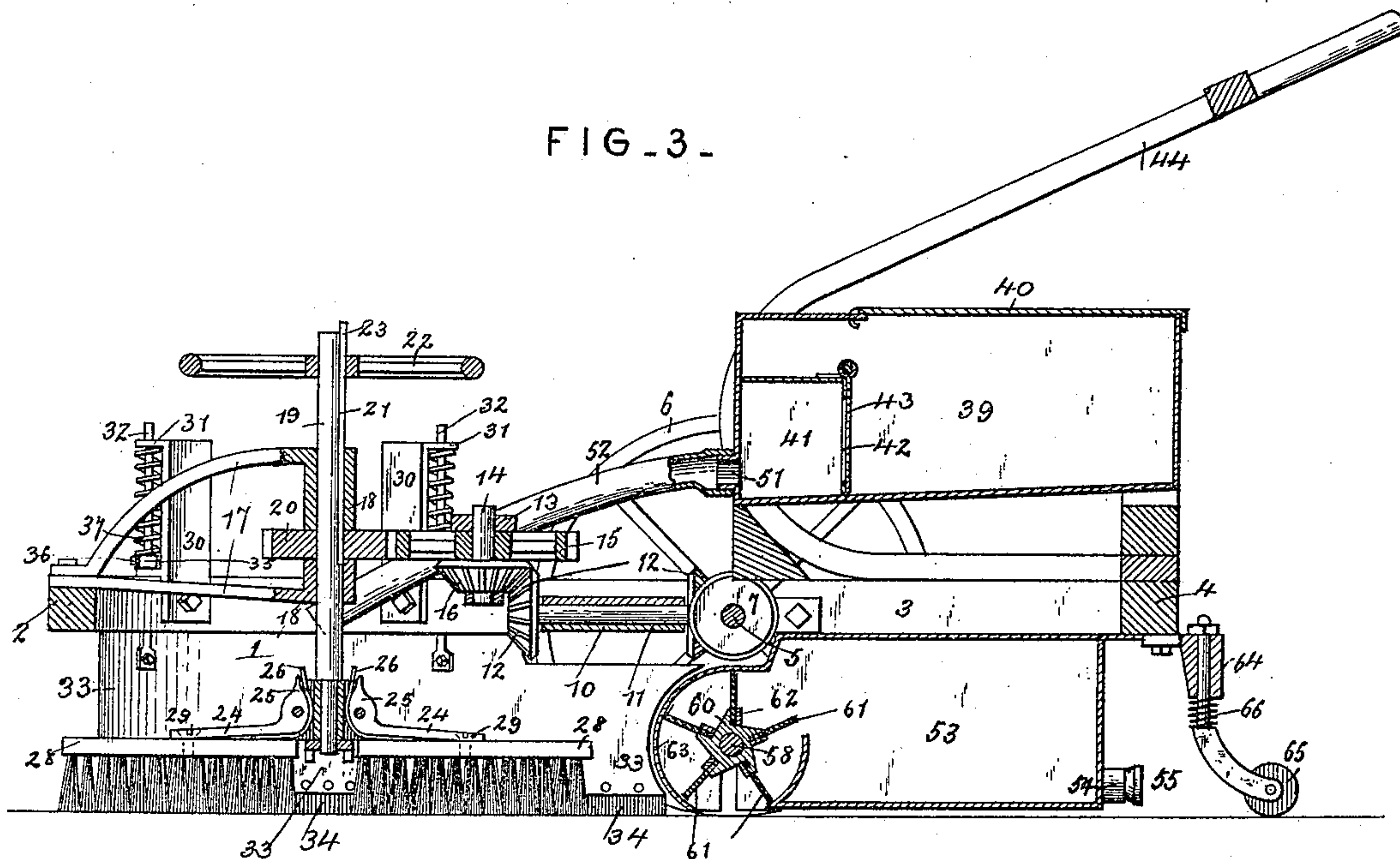


FIG. 4.

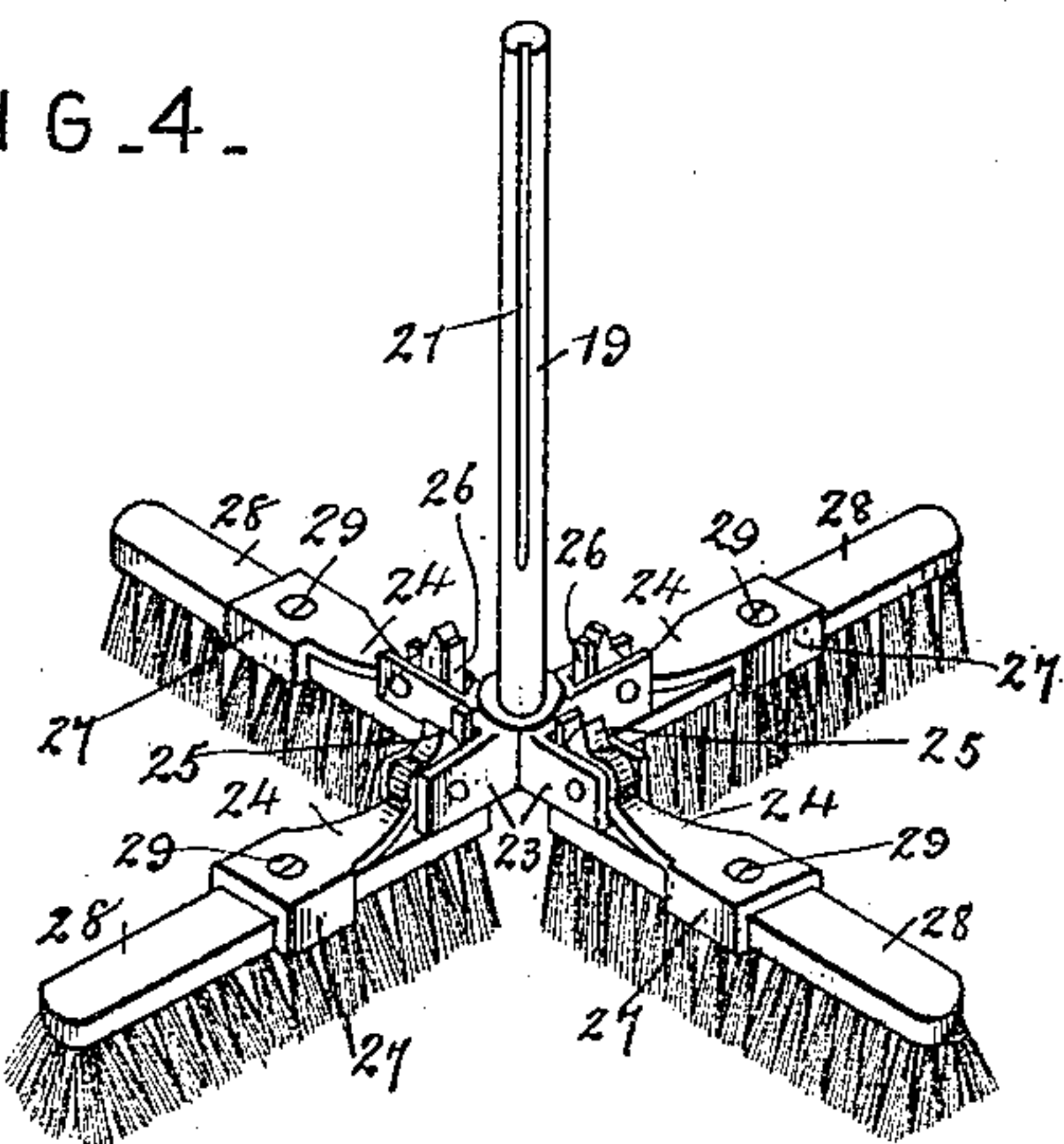
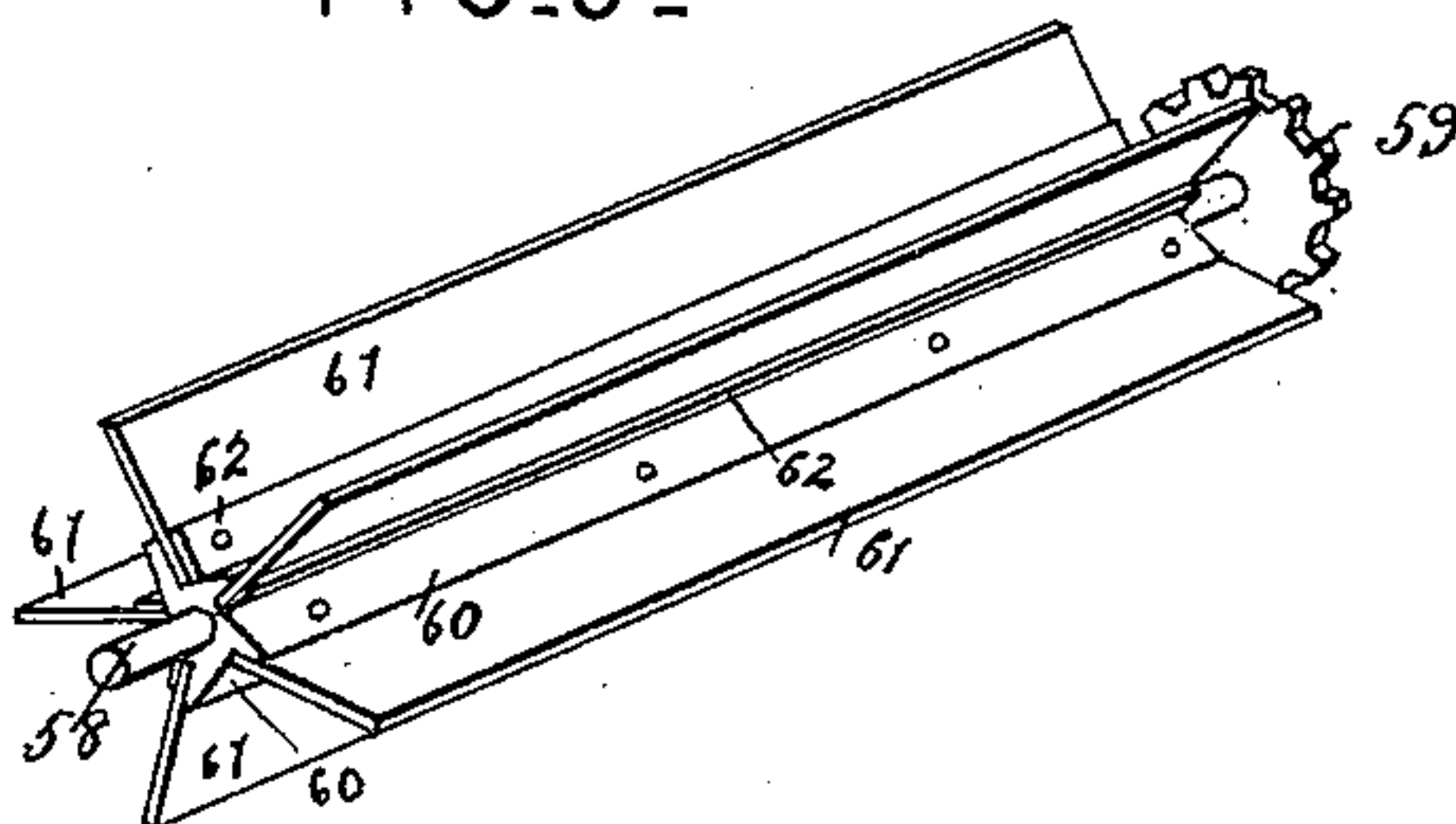


FIG. 5.



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UNITED STATES PATENT OFFICE.

HECTOR PRUD'HOMME, OF TOMAHAWK, WISCONSIN.

SCRUBBING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 438,561, dated October 14, 1890.

Application filed May 22, 1890. Serial No. 352,739. (No model.)

To all whom it may concern:

Be it known that I, HECTOR PRUD'HOMME, a citizen of the United States, residing at Tomahawk, in the county of Lincoln and State of Wisconsin, have invented a new and useful Scrubbing-Machine, of which the following is a specification.

This invention has relation to a machine for scrubbing floors, and among the objects in view are to provide a cheap and simple machine adapted to be moved about over floors by hand and to thoroughly scrub said floors by reason of such movement; to provide against splashing the furniture, mop-boards, and other objects and against marring the same by contact therewith; to provide for a supply of water to the scrub-brushes, and for taking up the same after dirtied by use, and for a confinement of the water within the space being scrubbed.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a plan. Fig. 2 is a side elevation. Fig. 3 is a vertical longitudinal section. Fig. 4 is a detail in perspective of the brush-standard and its head. Fig. 5 is a detail in perspective of the combined drier and dirty-water elevator. Fig. 6 is a section taken through one of the guards and its supporting means.

Like numerals of reference indicate like parts in all the figures of the drawings.

The horizontal frame 1 of the machine is provided at its front with a circular portion 2 and at its rear half with opposite side bars 3, connected at their rear ends by the transverse bar 4.

5 designates an axle mounted in the side bars and provided at one side of the frame with a loose wheel 8 and at the opposite side with a fast wheel 9, which turns with the axle, said loose wheel being designed to facilitate the turning of the machine. At the side of the fast wheel there is secured to the axle a drive-gear 6, and between the bearings the shaft is provided with a centrally-located fast bevel-gear 7. A cross-bar 10 spans the side bars of the frame in front of the axle and is provided with a longitudinal central bearing 11, in which is mounted a stub-shaft

12, provided at each end with small pinions 12^a, the rear one of which meshes with and is driven by the central bevel-pinion of the axle. In front of the transverse bar is mounted a yoke 13, in which is vertically journaled a shaft 14, carrying a gear-wheel 15 and a small pinion 16, which is engaged and driven by the front one of the pinions 12^a.

17 represents a double spider-frame consisting of upper and lower sections bolted to the circular portion 2 of the frame of the machine, each of said sections being provided with a vertical bearing 18, aligning with a similar bearing of the opposite section. In said bearings is mounted the vertical brush-shaft 19, which is provided with a small gear 20 intermediate the sections, which gear meshes with and is driven by the large gear 15, before mentioned. The brush-shaft is provided with a groove 21 and with a wheel 22, keyed as at 23 and adjustable up and down upon the shaft, so as to raise or lower the same vertically within its bearings. The lower end of the shaft is provided in this instance with four pairs of lateral perforated lugs 23, and in each pair is pivoted a brush-arm 24. The brush-arms 24 have their rear ends extended above the pivots, as at 25, and between the same and the shaft are inserted small springs 26, whereby the arms are maintained normally depressed. The outer ends of the arms are provided with opposite depending flanges 27, which receive the backs of brushes 28, which are maintained in position by means of screws 29, passing through the arms into the backs of the brushes.

From the above description it will be seen that the machine being set in motion said motion will be transmitted by the train of gearing described to the brush-shaft, which will be rapidly rotated with the brushes, which brushes are yieldingly held in contact with the surface being cleaned.

At each side of the circular portion of the frame opposite the brushes are located pairs of standards 30, provided with upper and lower laterally-projecting flanges 31, which flanges are oppositely perforated to receive vertical rods 32. The rods 32 are connected at their lower ends by means of semicircular depending guards 33, the lower edges of which are provided with strips or facings of

rubber 34. Collars 35 are mounted upon each of the rods, and are rendered adjustable by means of set-screws 36, and above the collars and below the upper flange of the standard a coiled spring 37 encircles each of the rods, said springs exerting a tendency to force the standards down, which tendency is limited by means of the collars, which form stops for the rod.

By reason of the spring-pressed rods the guards are maintained snugly upon the surface being cleaned, and the water is prevented from being thrown by the brushes outside of the surface covered by the guards and is maintained directly under the brushes, or rather in the path that they travel.

Upon the side bars at the rear end of the machine is mounted the water-tank 39, having a removable lid 40, and at its front end a valve-chamber 41, communicating with the tank by an opening 42, over which is pivoted or hinged a valve 43.

44 designates a pair of handles, the lower ends of which are curved and secured to the side bars and the upper ends of which extend rearwardly beyond the machine and are adapted to be grasped by the operator in the act of moving the machine. A pair of guide-eyes 45 is mounted upon one of the hangers, and in the same is mounted for reciprocation a rod 46, the rear end of which is bent to form a handle and the front end of which to form an eye 47. A collar 48 is mounted upon the rod between the eyes and a coiled spring 49 also upon said rod between the collar and the front eye, so that said rod is pressed to the rear.

50 designates a crank-arm, which forms the pintle for the valve, the upper end of the crank passing through the top of the valve-chamber and connecting loosely with the eye of the operating-rod. By manipulating the operating-rod it will be apparent that the valve may be opened, and when pressure is removed from the rod the spring of the rod will serve to retract the same and close the valve. A pair of nipples 51 project from the front wall of the valve, and to each is connected a rubber or other hose section 52, said sections being disposed toward the front of the machine over the yoke 13 and terminating directly over the brushes. In this manner it will be observed that water in desired quantities may be fed to or discharged over the rapidly-revolving brushes.

Below the water-supply tank there is secured to the frame, and depends below the same, a dirty-water receptacle 53, provided at its rear end with a discharge-opening 54, having a stopper 55. The side walls of the tank are extended beyond the front wall thereof, and are provided with openings 56. Depending from the side bars of the frame to a point below the openings in the side walls of the tank are a pair of bearing-standards 57, in which is journaled a shaft 58, provided at one side beyond its bearing with a small gear 59,

which meshes with the drive-gear 6. Between its bearings and within the side walls of the receptacle the shaft is provided with a series of longitudinal ribs 60, to which are secured rubber or other flexible blades 61, clamped in position by clamping-strips 62, riveted to the ribs and rubber blades.

It will be apparent that the machine in motion will, through the medium of the drive-gear 6 and the small pinion of the shaft just described, serve to rotate said shaft rapidly, and the blades, being in contact with the floor, will serve to dry the same and will take up and elevate the water with which they come in contact, which water, it will be observed, has been used and will be thrown by the blades to the rear over the front wall of and into the dirty-water receptacle. To facilitate this collection of dirty water, the sides of the dirty-water receptacle at their extended portions are connected by a curved conducting-plate 63.

A caster-bracket 64 is secured to the rear end of the frame, and in the same is loosely swiveled a caster 65, which supports the rear end of the machine and is free to rotate in any direction in which the machine may travel. A coiled spring 66 is mounted upon the spindle of the caster and below the bracket and serves to yieldingly connect the same with the bracket.

The operation of my invention need not be described in detail, as it will be apparent from the description thereof heretofore given in connection with the description of the construction.

Having thus described my invention, what I claim is—

1. In a machine of the class described, the combination, with the frame, of a brush-shaft vertically journaled therein and terminating at its lower end in radiating arms independently pivoted for vertical motion to the shaft, springs for pressing the arms downwardly, brushes secured to the outer ends of the arms, and mechanism for rotating the shaft, substantially as specified.

2. In a machine of the class described, the combination, with the frame, of a brush-shaft vertically journaled therein and terminating at its lower end in a series of pairs of radiating perforated lugs, a series of arms pivoted in the lugs and terminating at their front ends in pairs of opposite flanges adapted to receive the backs of brushes and extended in rear of their pivots, springs inserted between the extensions and the shaft, and mechanism for rotating the shaft, substantially as specified.

3. In a machine of the class described, the combination, with a spider and a supporting-frame for the same, of a brush-shaft journaled vertically in the spider and provided at its lower end with a series of brushes and above the same with a groove, a wheel mounted loosely on the shaft, a key for keying the same to the shaft at any point of ad-

justment, and mechanism for operating said shaft, substantially as specified.

4. In a machine of the class described, the combination, with a frame, a brush-shaft carrying brushes, and means for operating said shaft mounted in the frame, of a dirty-water receptacle secured to the frame in rear of the brush-shaft and provided with a shaft having a series of blades adapted for contact with the floor and with a curved plate in front of said blades, and means for operating said shaft in a direction opposite to the line of travel of the machine, substantially as specified.

5. In a machine of the class described, the combination, with the frame, of a brush-shaft vertically journaled therein at its front portion, a dirty-water receptacle having a curved plate at its front end secured to the frame in rear of the brush-shaft, a shaft located in rear of the curved plate and having a series of flexible blades mounted longitudinally thereon, and mechanism for simultaneously rotating said shaft in a direction opposite to the line of travel of the machine and for horizontally rotating the brush-shaft, substantially as specified.

6. In a machine of the class described, the combination, with the frame, a brush-shaft journaled at the front end of the same, and means for operating said shaft, of a pair of handles located at the rear end of the machine, a water-supply tank mounted between the handles and provided with a valve-chamber, a crank-arm pivoted above an opening in the chamber and carrying a valve, and a spring-pressed rod mounted upon one of the handles

and having its front end terminating in an eye and loosely connected with the upper end of the crank-arm, substantially as specified.

7. In a machine of the class described, the combination, with the frame, of opposite pairs of brackets provided with vertically-opposite flanges bolted to the sides of the frame, rods mounted for reciprocation in the brackets, coiled springs encircling the rods and serving to depress the same, and curved guards connecting each pair of rods and depending at the sides of the frame, substantially as specified.

8. In a machine of the class described, the combination, with the frame, of opposite pairs of standards terminating at their upper ends in flanges and near their lower ends in similar flanges and bolted to the frame, collars having set-screws mounted on the rods, coiled springs encircling the rods between the collars and the upper flanges of the standards, guard-plates connecting each pair of standards, and rubber facings or strips connected to the lower edges of the plates, substantially as specified.

9. In a machine of the class described, the combination, with the frame-work, of curved vertically-movable guards depending at the sides of the frame at each side of and around the brush-space, and springs for keeping the guards in contact with the floor, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

HECTOR PRUD'HOMME.

Witnesses:

A. H. WOODWORTH,
FELIX MARCONILLER.