

W. H. STRANGE.

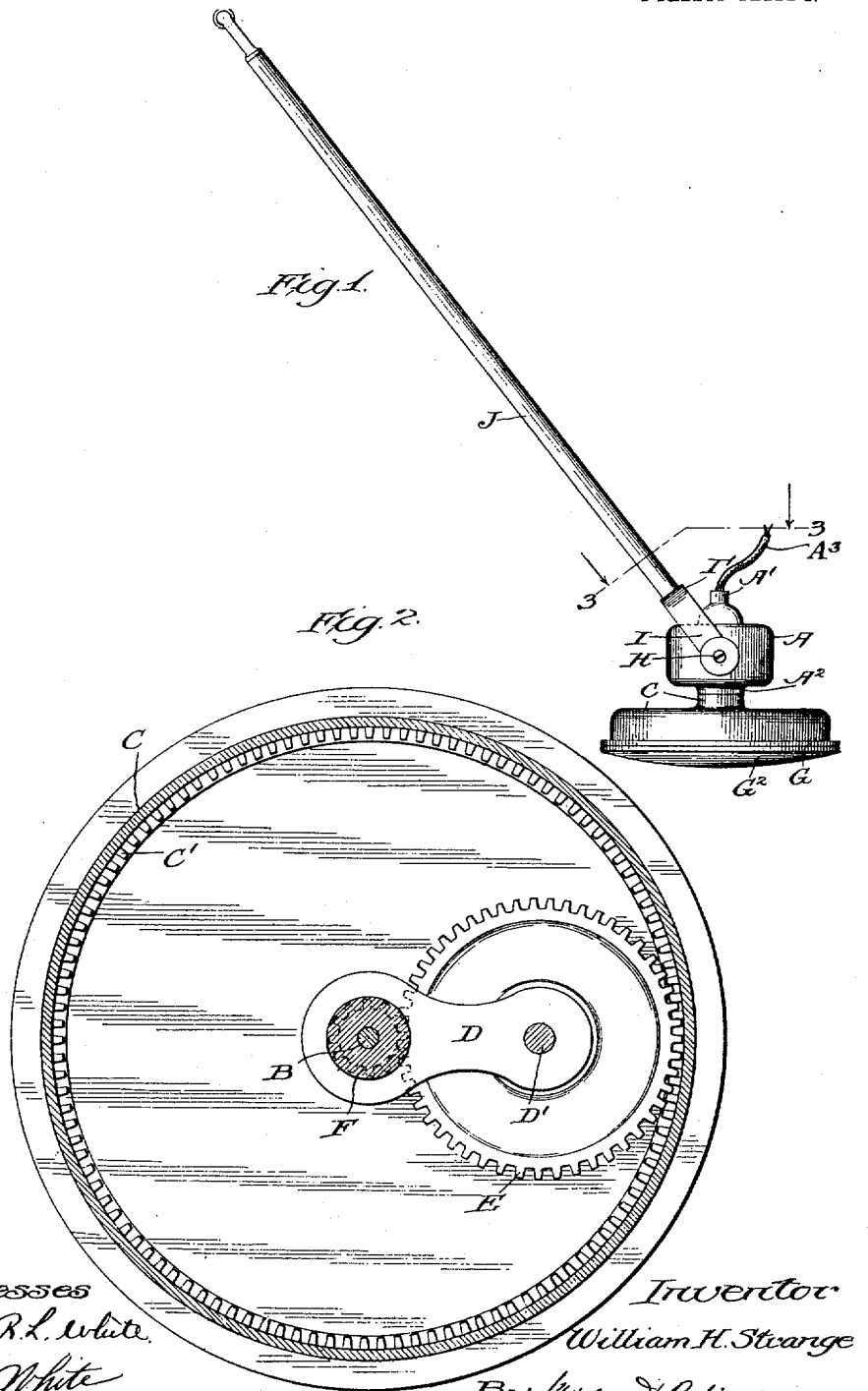
ELECTRIC ROTARY FLOOR SURFACING, SCRUBBING, AND POLISHING MACHINE.

APPLICATION FILED SEPT. 8, 1906.

972,729.

Patented Oct. 11, 1910.

2 SHEETS—SHEET 1.



Witnesses  
Harry R. L. White  
Ray White

Inventor  
William H. Strange  
By Morgan & Rudin's Sons, Attys

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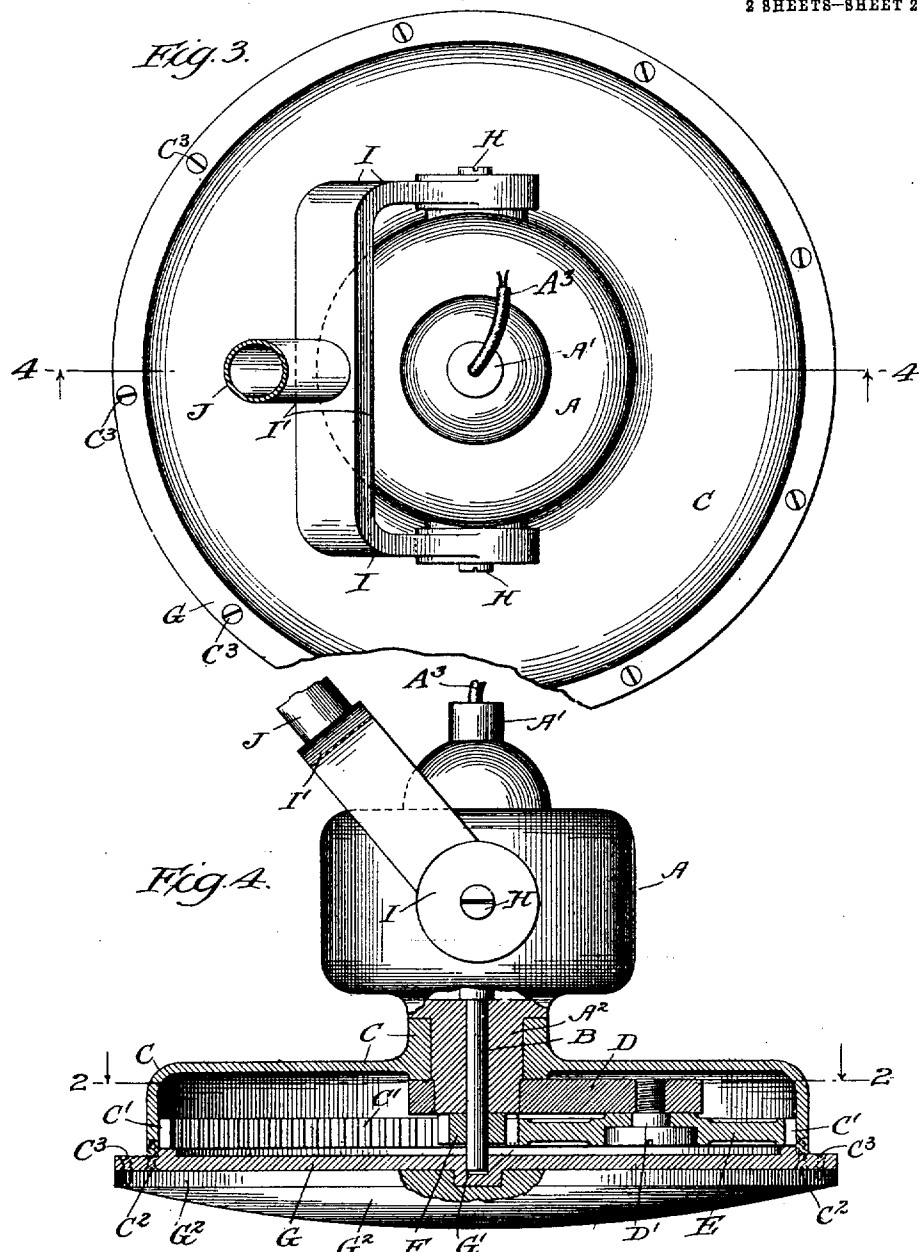
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William H. Strange.  
By Morgan V. Rubinstein, Atty.

# UNITED STATES PATENT OFFICE.

WILLIAM H. STRANGE, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO ROBERT H. LANGSTON AND JOHN P. SULLIVAN, OF CHICAGO, ILLINOIS.

ELECTRIC ROTARY FLOOR SURFACING, SCRUBBING, AND POLISHING MACHINE.

972,729.

Specification of Letters Patent.

Patented Oct. 11, 1910.

Application filed September 8, 1906. Serial No. 333,857.

*To all whom it may concern:*

Be it known that I, WILLIAM H. STRANGE, a citizen of the United States, residing at 3721 Elmwood avenue, in the city of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Electric Rotary Floor Surfacing, Scrubbing, and Polishing Machines, of which the following is a specification.

The object of my invention is to provide a hand propelled machine with a rotatable head driven by an electric current obtained by flexible means from an ordinary incandescent electric light fixture; that can be readily adjusted for scrubbing, surfacing and polishing floors; that has an adjustable handle whereby it can be operated under desks and other fixtures as well as on the open floor spaces; and that is economical in consumption of electrical power and cheap in construction.

The manner in which I accomplish my object is described in the following specification and illustrated in the accompanying drawings in which:

Figure 1 is a side elevation showing the relative positions and connections of the handle, electric motor and rotatable head. Fig. 2 is a horizontal section on the line 2—2 Fig. 4 showing the transmission gear inside the head. Fig. 3 is a top plan view of the motor and head, the handle being shown in section on the line 3—3 Fig. 1. Fig. 4 is a central vertical section of the head on the line 4—4 Fig. 3 the neck of the motor and the handle being broken away.

In the drawings A indicates the motor casing adapted at the top A<sup>1</sup> for connection with an electric cable A<sup>3</sup>. The neck of the motor forms a stationary bearing A<sup>2</sup>. Through the center of this bearing is the motor shaft B, its connection with the horizontally revolving motor within the case A not being shown. Journaled on the bearing A<sup>2</sup> is a rotatable frame C. On the bottom internal periphery of this frame is a gear C<sup>1</sup>. This gear may be an integral part of the frame, or be a separate part affixed therein. Supporting this frame on the bearing A<sup>2</sup> is an arm D. This arm is rigidly attached to said bearing. Vertically supported in the arm D is a pivot stud D<sup>1</sup>. Rotatably supported on this stud is an intermediate gear wheel E adapted to mesh into the internal gear C<sup>1</sup> in the frame C. Affixed

on the rotary motor shaft B below the arm D is a pinion F adapted to mesh into the gear wheel E. Firmly secured to the bottom of the frame C by the screws C<sup>2</sup> and removable therefrom is a base plate G. In the interior center of this plate is a recess G<sup>1</sup> adapted for a bearing for the end of the shaft B. Screwed fast to the base plate G by the screws C<sup>3</sup> is a wood form G<sup>2</sup> to which the scrubbing, polishing and surfacing devices can be attached.

Pivotaly attached to the sides of the motor case A by the pivot studs H is a fork I adapted to clear the motor casing and be lowered to a horizontal position and provided with a socket I—1. Supported in the fork socket I—1 is a handle J by which the machine is pushed or pulled when in use.

When the machine is constructed as described and illustrated, its operation is as follows:—A scrubbing brush, abrading or polishing material being attached to the wood form —G<sup>2</sup>— and the electric cable connected with charged electric fixtures, the rotation of the motor transmitted by the shaft —B—, pinion —F—, gear —E— and frame —C— revolves the material attached thereto by the plate —G— in either direction. The weight of the machine gives the necessary pressure, and it is moved over the floor by hand power applied to the handle —J— the length of the cable —A<sup>2</sup>— being sufficient for the length of the floor operated upon.

What I claim and desire to secure by Letters Patent is:

1. In a machine of the kind described, the combination of an electric motor having a shaft adapted to rotate vertically in a casing; a casing inclosing said motor, its lower extended part forming a fixed bearing; a head rotatably supported on said bearing, the interior periphery of said head forming a gear; an arm rigidly fixed on said bearing below and in contact with said head; a pivot stud supported in said arm; a gear wheel rotatably supported on said stud adapted to mesh in the gear of said head; a pinion rigidly affixed on said motor shaft below said arm, said pinion being adapted to mesh into said gear wheel; a plate secured to said head inclosing said gears, said plate being adapted to support tools for surfacing, scrubbing or polishing as described; and a handle attached to the casing of said motor.

2. The combination of a motor having a vertical shaft provided with a gear wheel and a downwardly extending bearing, an arm extending laterally from said bearing, 5 a head journaled on said bearing above said arm and carrying an internal gear, gearing connecting said gears on said shaft and head and comprising an intermediate gear journaled on said arm, said head being hollow 10 and forming a closed housing for said gearing, and means for attaching surfacing, scrubbing or polishing devices to said head below said gearing.

3. The combination of a motor having a 15 vertical shaft provided with a gear wheel and a downwardly extending bearing, an arm extending laterally from said bearing, a head journaled on said bearing above said arm, gearing between said shaft and head

comprising an intermediate gear journaled 20 on said arm, and means for attaching surfacing, scrubbing or polishing devices to said head below said gearing.

4. The combination of a motor having its shaft vertically disposed and having a 25 downwardly extending bearing, a bell-shaped head journaled on said bearing and arranged to support the motor, gearing operatively connecting said head and shaft and housed within said head, and a plate secured across 30 said head below said gearing, forming a closure for said head and adapted to support surfacing, scrubbing or polishing devices.

WILLIAM H. STRANGE.

Witnesses:

JOSEPH STAAB,  
THOMAS J. MORGAN.

It is hereby certified that in Letters Patent No. 972,729, granted October 11, 1910, upon the application of William H. Strange, of Chicago, Illinois, for an improvement in "Electric Rotary Floor Surfacing, Scrubbing, and Polishing Machines," an error appears in the printed specification requiring correction as follows: Page 2, lines 19-20, the words "gearing between said shaft and head comprising" should be stricken out and the words *and carrying an internal gear, gearing connecting said gears on said shaft and head and* inserted instead; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 1st day of November, A. D., 1910.

[SEAL.]

E. B. MOORE,  
*Commissioner of Patents.*