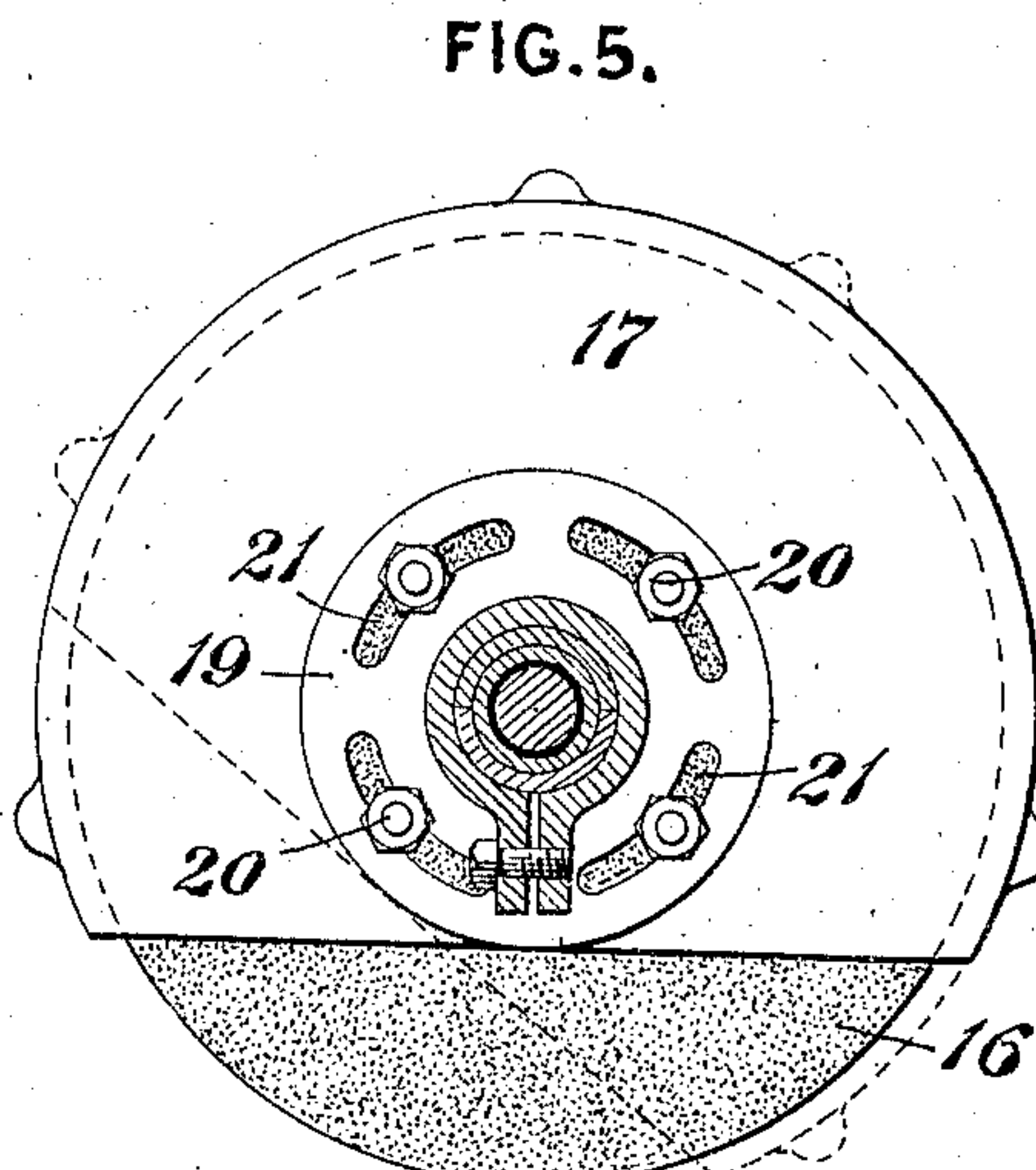
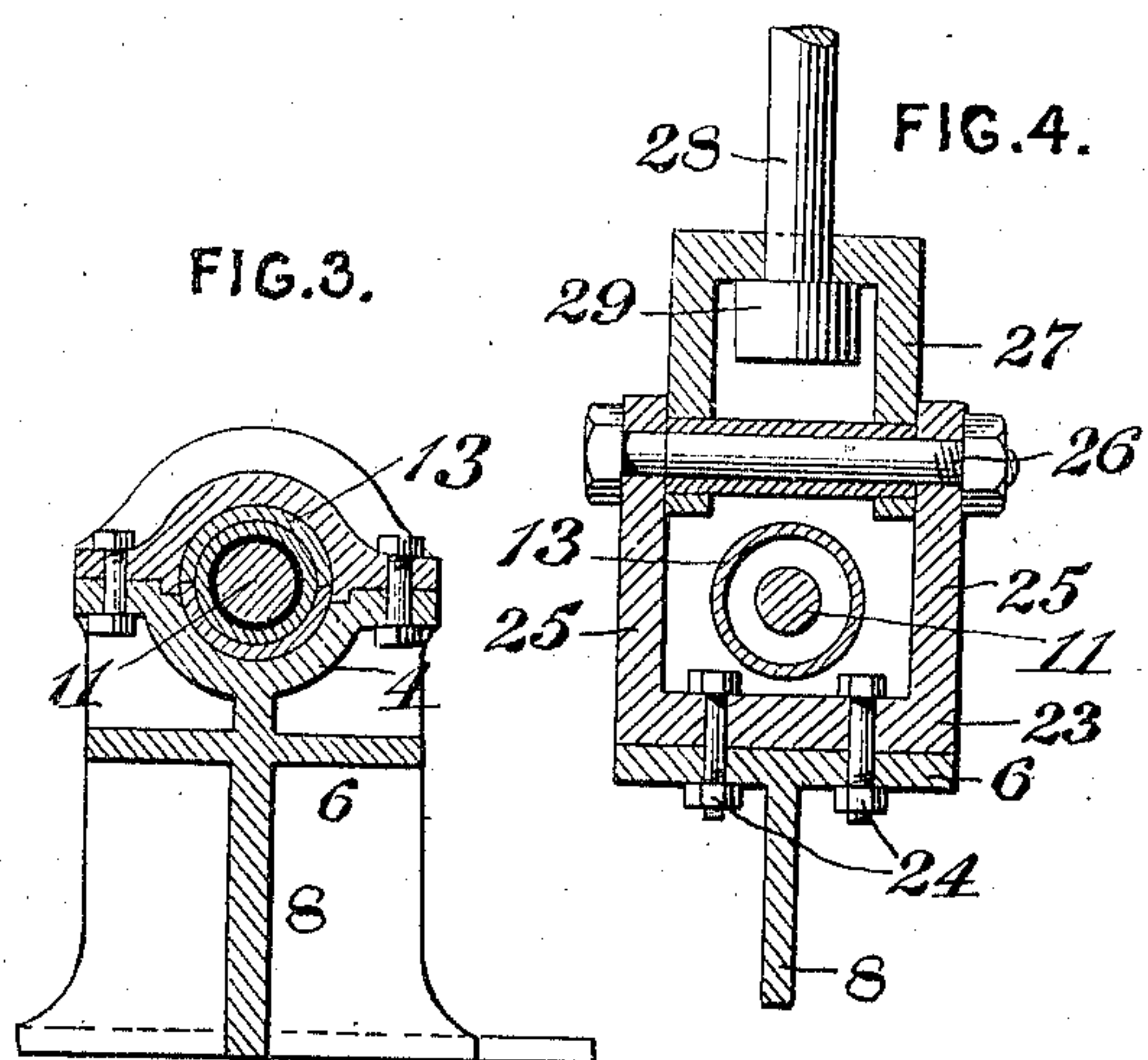
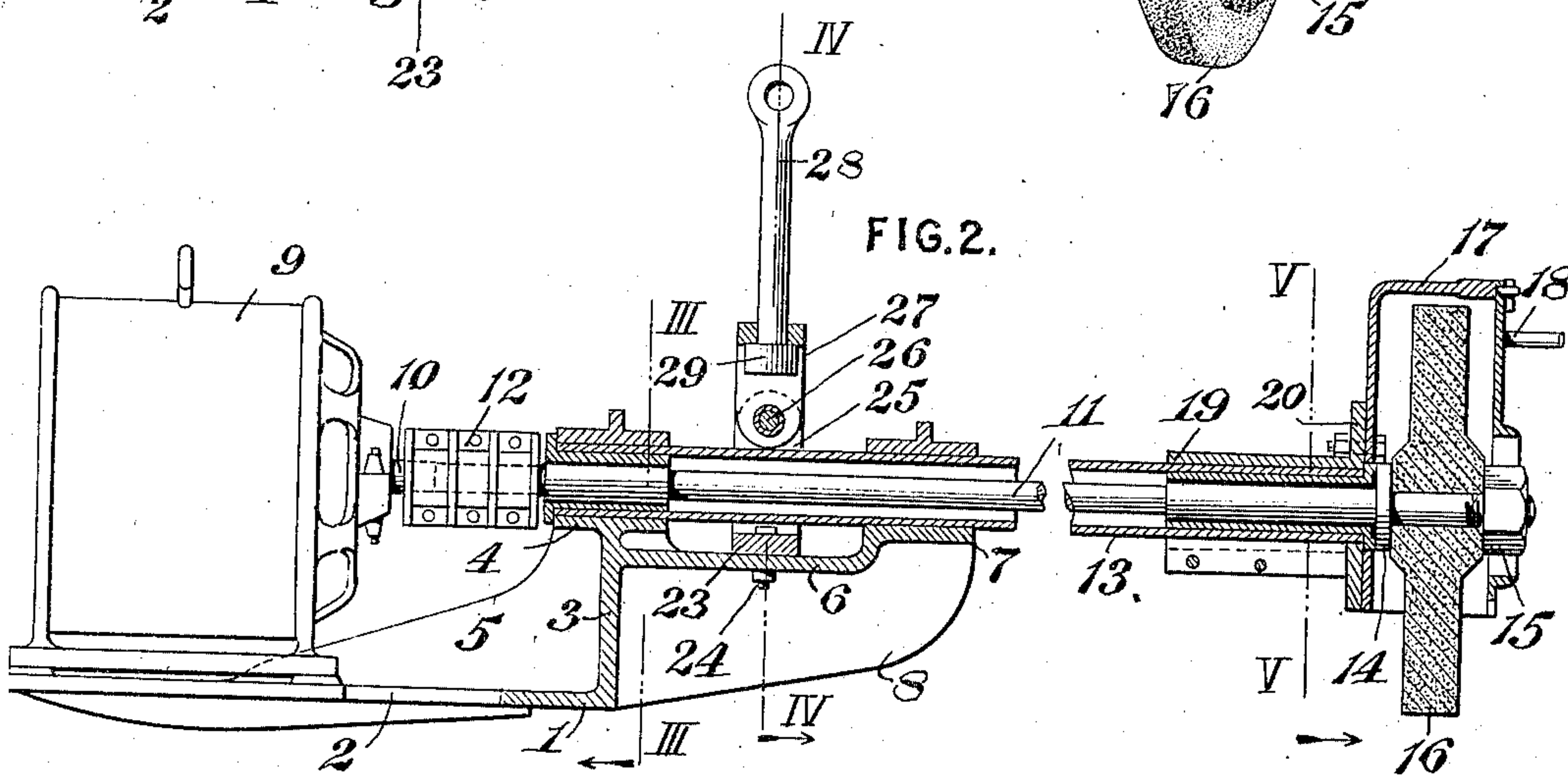
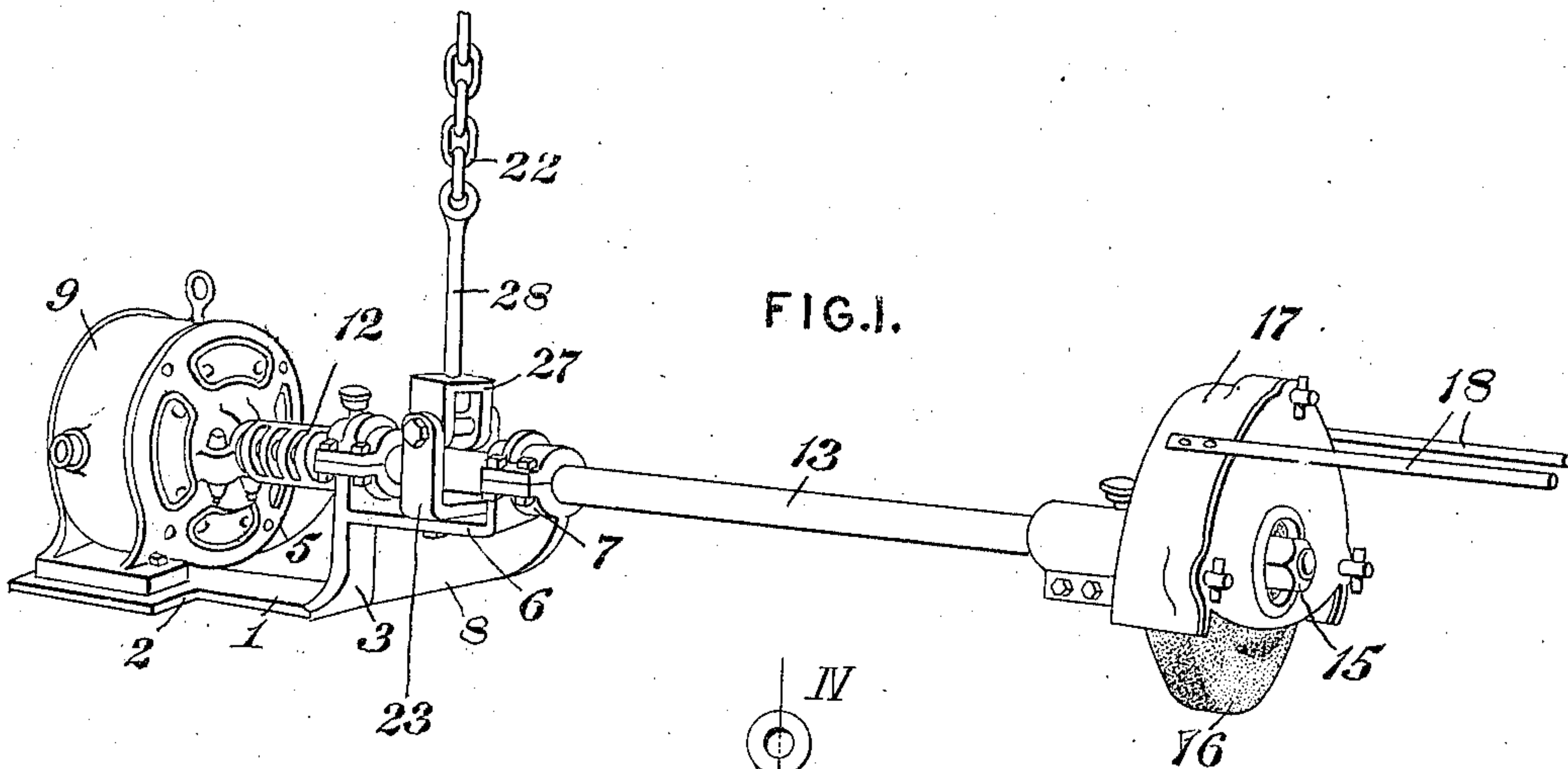


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 ABRADING APPARATUS.  
 APPLICATION FILED DEC. 31, 1909.

963,437.

Patented July 5, 1910.



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# UNITED STATES PATENT OFFICE.

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## ABRADING APPARATUS.

963,437.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, GUSTAV A. HASSEL, a resident of McKeesport, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Abrading Apparatus, of which the following is a specification.

My invention relates to a new and improved abrading apparatus and an object of the present invention is, to provide an apparatus of this class comprising a self-contained suspended or swinging structure or device adapted to be suspended at any desired distance from the ground or floor and capable of being moved at will either in a straight or a curved path.

In the accompanying drawing, which illustrates an application of my invention, Figure 1, is a perspective view of an abrading apparatus embodying my invention; Fig. 2, a part elevational and a part longitudinal sectional view; Figs. 3 and 4 vertical sectional views respectively taken on line III—III and line IV—IV of Fig. 2; and Fig. 5 a part elevational, and a part sectional view, the section being taken on line V—V of Fig. 2.

Referring to the drawing, 1 designates a frame preferably formed as an integral cast-steel structure comprising a bed-plate 2, a vertical member 3 having a horizontal ledge 4, a strengthening member 5, an outwardly projecting horizontal shelf 6 having a bearing member 7, and a strengthening web 8 extending from member 7 and under the shelf 6 to the vertical member 3. While I have shown a simple and convenient frame this frame may be differently constructed. Mounted on and movable with frame 1 is a motor, as illustrated and as preferred, an electric motor, although the motor may be of a different type. This motor 9 having its shaft 10 coupled with an end of a driven shaft 11 by means of a suitable coupling 12. Shaft 11 which is inclosed in a suitable casing 13, projects outwardly from the frame and has mounted on an end thereof between a collar 14 and a nut 15 an abrading wheel 16. Wheel 16 is partially inclosed by a strong safety shield or hood 17 and secured to said hood are operating handles 18. Hood 17 is preferably of the form shown and is adjustably secured to a flanged sleeve 19 by bolts 20 passed through the flanged portion of the sleeve. and the slots 21

formed in the back of the hood. In Fig. 5, the dotted lines indicate how the hood may be shifted when so desired.

The abrading apparatus is designed to be suspended from a suitable support as, for example, a chain 22, at any desired height. The supporting means and the apparatus are connected by a universal joint connection comprising in the construction shown, a saddle member consisting of a base 23 secured to the shelf 6 by bolts 24, and two uprights 25. Extending into the saddle and pivotally secured to the uprights thereof by a pin or shaft 26 is a connecting member 27. Member 27 in turn is secured to the lower end of an eye-bolt 28 by means of a collar 29. This construction provides a simple universal joint or coupling permitting the apparatus to be readily moved at will in any direction.

The parts of the apparatus are so proportioned that when the apparatus is suspended, as shown, it is a substantially balanced structure and may be easily moved to bring the abrading wheel into the desired operative position.

What I claim is:

1. An abrading apparatus comprising a suspended frame, means for supporting the frame, a motor mounted on the frame, a driven shaft coupled with the motor shaft, an abrading wheel mounted on the driven shaft, and a universal joint connection between the frame and the supporting means.

2. A suspended abrading apparatus comprising a frame, a motor mounted on the frame, an incased driven shaft coupled with the motor shaft and projecting from the frame; an abrading wheel carried on the driven shaft, means for supporting the apparatus, a universal joint connection between the frame and the supporting means, and a hood provided with an operating handle.

3. A suspended and substantially balanced abrading apparatus comprising a frame, a motor mounted on the frame, a driven shaft coupled with the motor shaft, an abrading wheel carried on the end of the driven shaft, means for supporting the apparatus, and a universal joint connection between the frame and the supporting means comprising an upright member, a depending member pivotally connected with the upright, and a rod between the depending member and supporting means.



4. A suspended abrading apparatus comprising a frame, an electric motor mounted on the frame, an incased driven shaft coupled with the motor shaft and projecting  
5 from the frame, an abrading wheel mounted on an end of the shaft, an adjustable hood for the abrading wheel provided with an operating handle, means for supporting the apparatus and a universal joint connection

between the frame and the supporting 10 means.

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

GUSTAV A. HASSEL.

Witnesses:

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W. G. DOOLITTLE.