No. 700,642. Patented May 20, 1902.

O. A. HANFORD.

BURNISHING OR POLISHING MACHINE.

(Application filed Aug. 12, 1901.)

(No Model.)

FIG. 4.

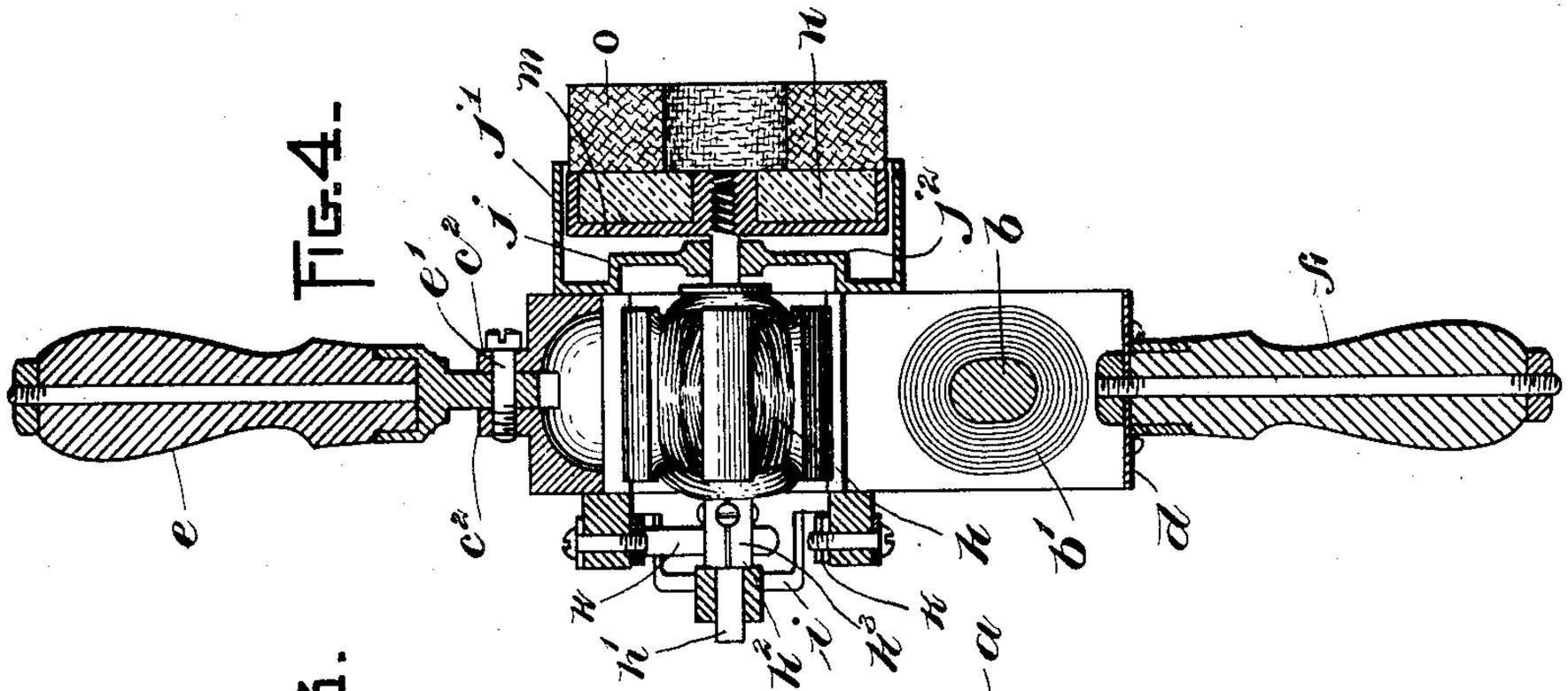


FIG. 3.

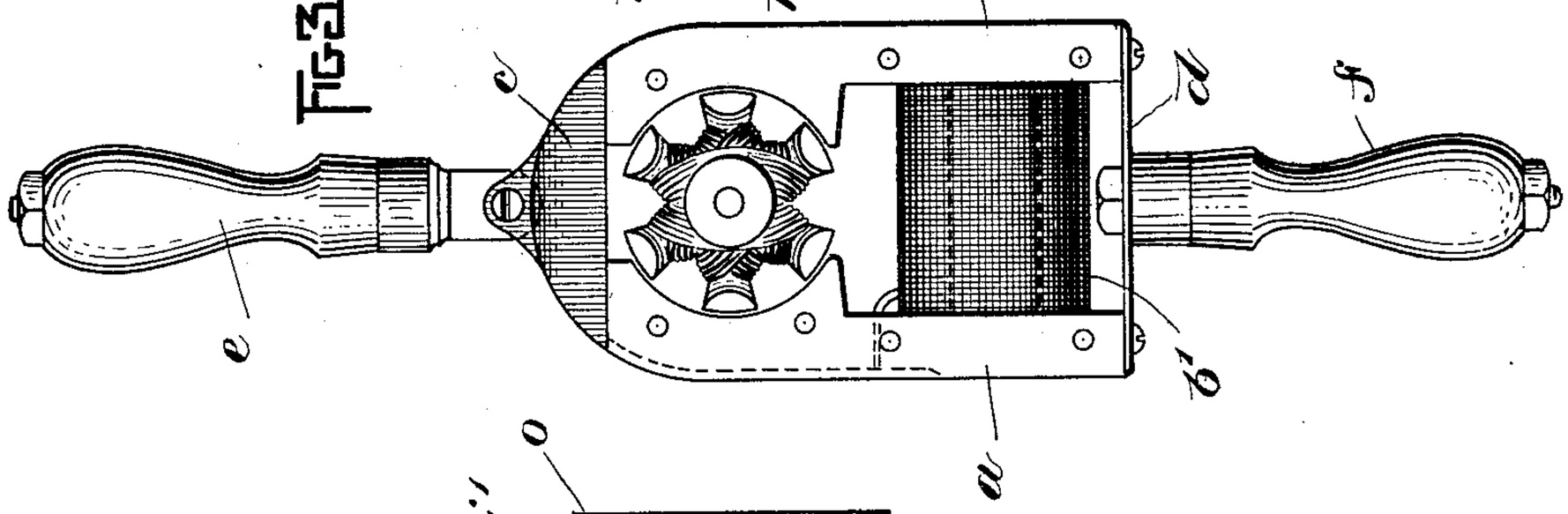


FIG. 2.

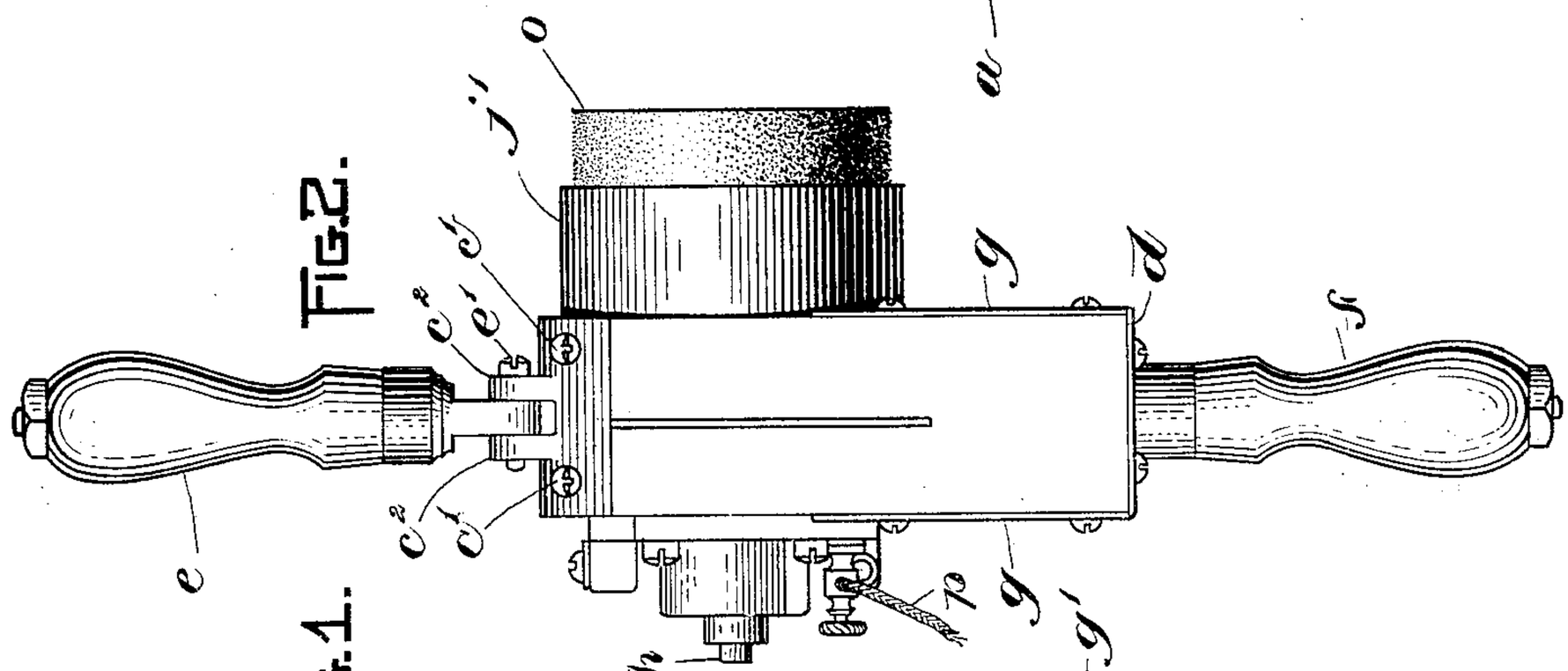
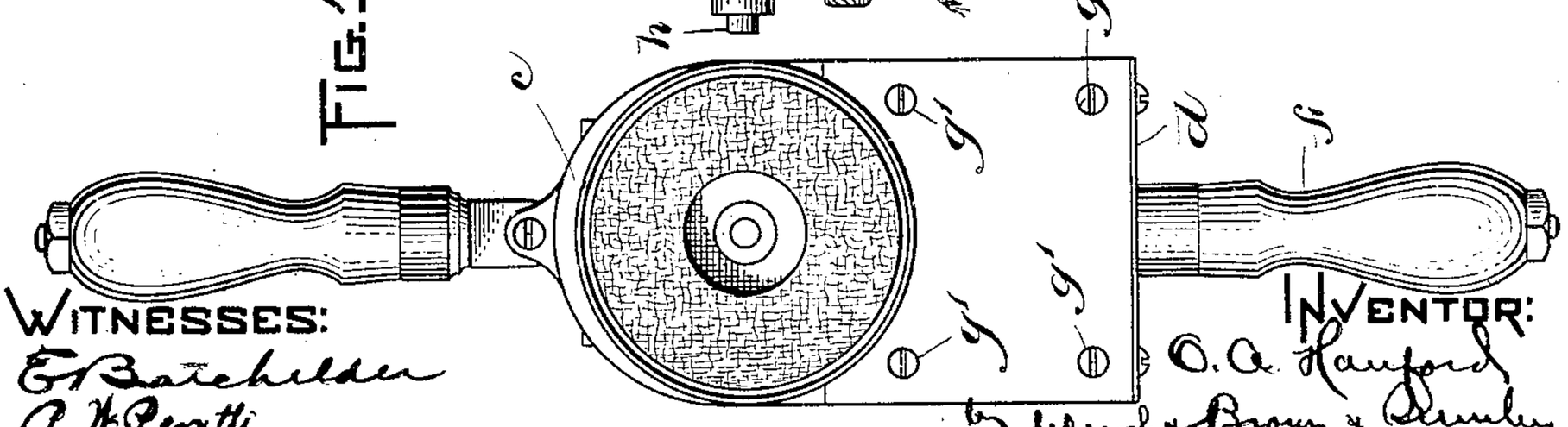


FIG. 1.



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UNITED STATES PATENT OFFICE.

ORIN A. HANFORD, OF WOBURN, MASSACHUSETTS, ASSIGNOR TO CHARLES A. GRIDLEY AND GEORGE BERNARD, OF BOSTON, MASSACHUSETTS.

BURNISHING OR POLISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 700,642, dated May 20, 1902.

Application filed August 12, 1901. Serial No. 71,813. (No model.)

To all whom it may concern:

Be it known that I, ORIN A. HANFORD, of Woburn, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Burnishing or Polishing Machines, of which the following is a specification.

This invention has relation to polishing or burnishing machines, having for its object to provide an apparatus which can be used to impart a high polish to metallic surfaces with the least possible effort on the part of the operator.

In carrying out the invention I employ an electric motor the framing of which is provided with handles, whereby it can be readily used, and polishing or burnishing material secured in a chuck attached to the armature-shaft.

Referring to the accompanying drawings, Figure 1 represents in front elevation a burnishing-machine embodying my invention. Fig. 2 represents a side elevation of the same. Fig. 3 represents a front elevation with a portion of the casing removed. Fig. 4 represents a longitudinal section through the machine.

On the drawings is illustrated a buffing-machine consisting of an electric motor, a buffing or polishing device mounted upon the armature-shaft of the motor, and handles whereby the apparatus may be easily manipulated.

Any suitable form of motor may be employed, although for all general purposes I have found the one which I have illustrated to be best adapted for my purpose. This motor consists of the two pole-pieces *a a*, connected by the core *b*, around which are the coils *b'*. The pole-pieces *a a* form the ends of a casing, the sides of the casing being formed by the plates *g g*, which are bolted or screwed thereto, as shown at *g'*. The bottom of the casing consists of the plate *d*, which is secured to the ends of the pole-pieces which project beyond the coils *b'*. Thus the coils are inclosed within a comparatively tight casing. A cross-bar *c*, which may be of diamagnetic and non-conducting material, is secured to the free ends of the poles by screws *c' c'*, so as to brace them and to form means of attachment for a pivoted handle *e*. The cross-bar *c* is provided with the lugs c^2, to which is attached a handle *e* by means of a pintle *e'*. Preferably the body of the handle is formed of wood; but it is obvious that any other suitable non-conducting material may be employed. A handle *f* is rigidly attached to the cross-plate *d*, said handles *e* and *f* normally extending at opposite directions, so as to be grasped by the two hands.

The armature-shaft for the motor is indicated at *h'*, and it carries the armature *h* and also the commutator, (indicated more or less conventionally at h^3.) At one end the armature-shaft is journaled in a bracket *i*, attached to the rear face of the pole-pieces, this bracket forming an end-thrust bearing for said shaft, the said shaft being provided with a shoulder h^2 for this purpose. Suitable brushes to bear against the commutator are attached to the bracket *i*, said brushes being indicated conventionally at *k*. The other end of the armature-shaft is journaled in an annular shell *j*, attached to the front face of the pole-pieces. This shell has the outer annular flange *j'* and the boss j^2. The end of the shaft is threaded to receive a chuck consisting of the flanged disk *m*, in which is forced a ring *n*, as shown in Fig. 4. The buffing or polishing pad *o* may be secured to the ring end in any desired way. Usually I have formed the ring of wood and glue or cement the pad to it; but it may be understood that I may employ any other form of chuck which may be found suitable for the purpose.

The boss j^2 is adapted to receive pressure from the rear faces of the chuck, so that the said boss j^2 assists the brackets *i* in holding the armature-shaft against longitudinal displacement. I have not indicated conventionally or otherwise the electric circuit, since the motor, so far as general features and connections are concerned, does not differ from those hitherto employed. So far as I am aware, however, I believe that I am the first to provide a portable motor carrying upon its armature-shaft a chuck for the reception of buffing or polishing material and handles attached to the motor in such way that the latter may be easily manipulated, so as to press the buffing-blade against the material to be buffed or polished.

In Fig. 2 I have shown a flexible conductor *p*, of which there may be two for supplying the motor with current. The conductor on its end is equipped with a member which may be inserted in an electric-light socket, the said member not being shown. The conductor is preferably long enough so that the motor may be connected to the most convenient socket, whereby the apparatus may be employed for burnishing and polishing brass signs or plates at the front of stores, offices, or dwellings.

By hinging the handle *e* the apparatus may be more readily manipulated than if the two handles were rigid, and it is thereby possible to reach surfaces comparatively inaccessible much more readily than if the handles were incapable of movement relatively to each other.

Having thus explained the nature of the invention and described a way of constructing and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, I declare that what I claim is—

1. A portable buffing or polishing apparatus, comprising an electric motor, a buffer carried and operated by said motor, and a handle pivotally attached to said motor whereby the buffer may be manually pressed against the material to be buffed or polished.

2. A portable buffing or polishing apparatus, consisting of an electric motor, oppositely-disposed handles attached to said motor whereby it may be easily manipulated, one of said handles being pivotally connected, and a chuck carrying a buffer and carried by the armature-shaft of said motor, substantially as described.

3. A portable buffing or polishing apparatus consisting of an electric motor having cross-bars attached to the pole-pieces at opposite sides of the armature of the motor, handles attached to said cross-bars, and a chuck carrying a buffer and carried by the armature-shaft of said motor, substantially as described.

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

ORIN A. HANFORD.

Witnesses:
M. B. MAY,
C. C. STECHER.