

J. WEINER.
COMBINED ENGINE AND TOOL OPERATING MECHANISM.
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950,759.

Patented Mar. 1, 1910.

Fig. 1.

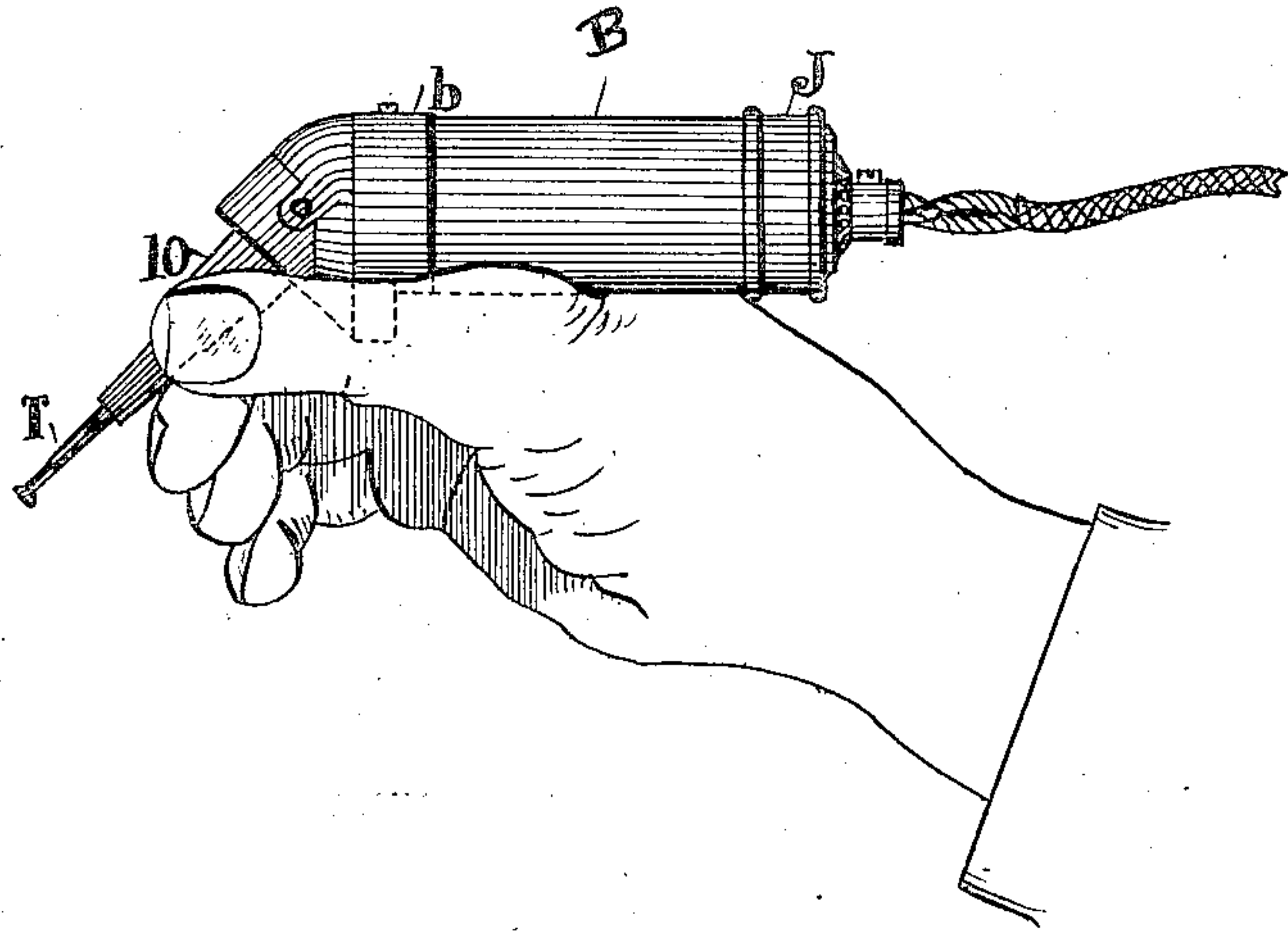
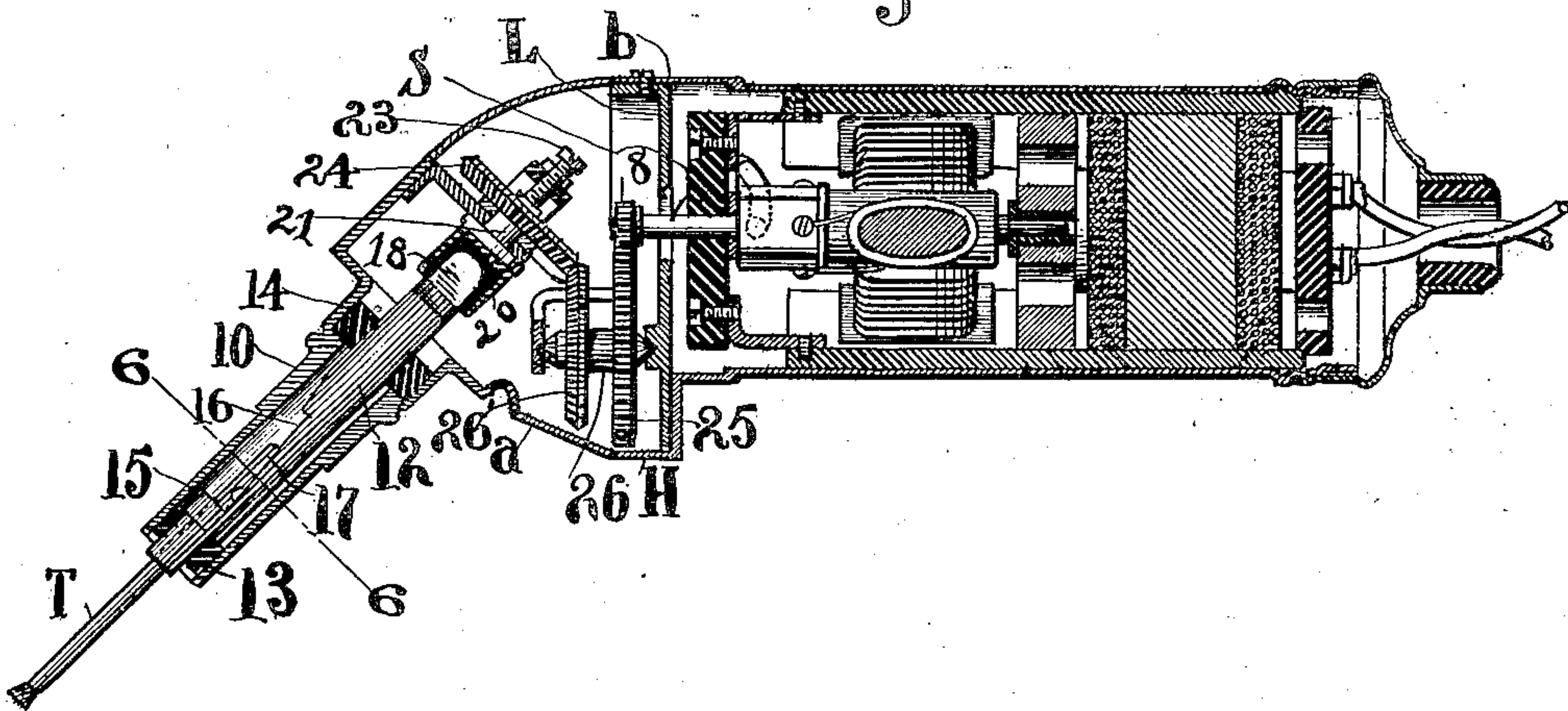


Fig. 3.



Fig. 2.



ATTEST
E. M. Fisher
J. C. Musser.

INVENTOR
Jardo Weiner.
BY Fisher & Moser, ATTYS

UNITED STATES PATENT OFFICE.

JARDO WEINER, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO AUGUST LARSON
AND ONE-HALF TO JOHN J. CASSIDY, BOTH OF CLEVELAND, OHIO.

COMBINED ENGINE AND TOOL-OPERATING MECHANISM.

950,759.

Specification of Letters Patent.

Patented Mar. 1, 1910.

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To all whom it may concern:

Be it known that I, JARDO WEINER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in a Combined Engine and Tool-Operating Mechanism, of which the following is a specification.

My invention relates to a combined dental engine and tool operating mechanism, and the invention consists in the construction and combination of parts substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the invention with a human hand by which it is supported and held for use and serving to illustrate the manner of use. Fig. 2 is an enlarged longitudinal sectional elevation of the entire device complete for use. Fig. 3 is a cross section on line 6—6, Fig. 2.

As thus shown the invention comprises a barrel B of tubular form in which an electric motor and magnet and pole pieces are located, and which is so small, relatively, as are also the several parts therein, that the operator can rest the said barrel and its contents upon the hand with which he also grasps and controls the instrument. The said barrel may be insulated from the parts within to avoid magnetic loss, or a non-magnetic barrel or cylinder may be used.

The plan of the invention is to have an exceedingly light running motor, say not exceeding six volts, or three dry batteries for all ordinary purposes, although no limitation as to source of power is intended. This enables a dentist to have a complete operating equipment in such small compass that he can readily carry it from place to place as above suggested, but of course leaving it equally available for all local or office work.

The barrel B is preferably of non-magnetic sheet metal, such as brass, and is covered in by cap J at one end and disk L fixed on the other end of the barrel. The

shaft S of the motor projects out beyond this disk and carries a relatively small pin-ion 8 on its end.

The drill or other dental tool T is operated from shaft S through a line of intervening mechanism seen clearly in Fig. 2. Thus, I employ a housing H of sheet metal which is supported at an angle of substantially 45 degrees to the axis of the motor and which comprises an annular head *a* having tubular extension 10 of less diameter thereon. Head *a* is rigidly secured through ears at its ends to band shaped extension *b* on the end of barrel B and is provided with a depressed portion or enlargement at its bottom conforming in outline at its edge to said band extension. This extension 10 forms a support for tool T and driving spindle 12 and has bearings 13 and 14, respectively, for said tool and spindle mounted within opposite ends thereof. Spindle 12 has a bored head 15 and a flattened side adapted to accommodate a correspondingly flattened shank 17 of the tool, said parts coming together with a wedging action and thus holding the tool in working position. Said spindle also has a tang end 18 adapted to enter and lock in hub 20 on short shaft 21. Said shaft is rotatably mounted in a suitable bracket within housing H, in which is a bearing screw 23 for one end of said shaft, and a bevel gear 24 is fixed on this shaft. Power is transmitted to this gear from the motor shaft by gear 25 on short shaft 26, and bevel gear 26' on said shaft meshing with gear 24 at an angle as shown, said shaft 26 being suitably supported at its ends upon a disk or diaphragm L secured within housing H and band extension *b*.

What I claim is:—

1. The combination with the barrel and the motor therein, of a housing on the end of said barrel having a downwardly and outwardly inclined tubular extension, a tool driving spindle having bearings in said arm, a shaft constructed at one end to rotatably engage said spindle, and gear connections between said shaft and the motor shaft.

2. A barrel and a motor and shaft axially
therein, a housing on the end of said barrel
having a portion thereof dropped below the
bottom of the barrel and provided with an
5 annular head and a tubular extension pro-
jecting downward and outward therefrom, a
tool driving member having bearings in
the ends of said arm and constructed to en-
gage a tool rotatably therewith, and oper-

ating connections from said tool driving
member to the motor shaft.

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

JARDO WEINER.

Witnesses:

E. M. FISHER,
F. C. MUSSUN.