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3,298,701

HAND DRILL

Original Filed Nov. 17, 1958

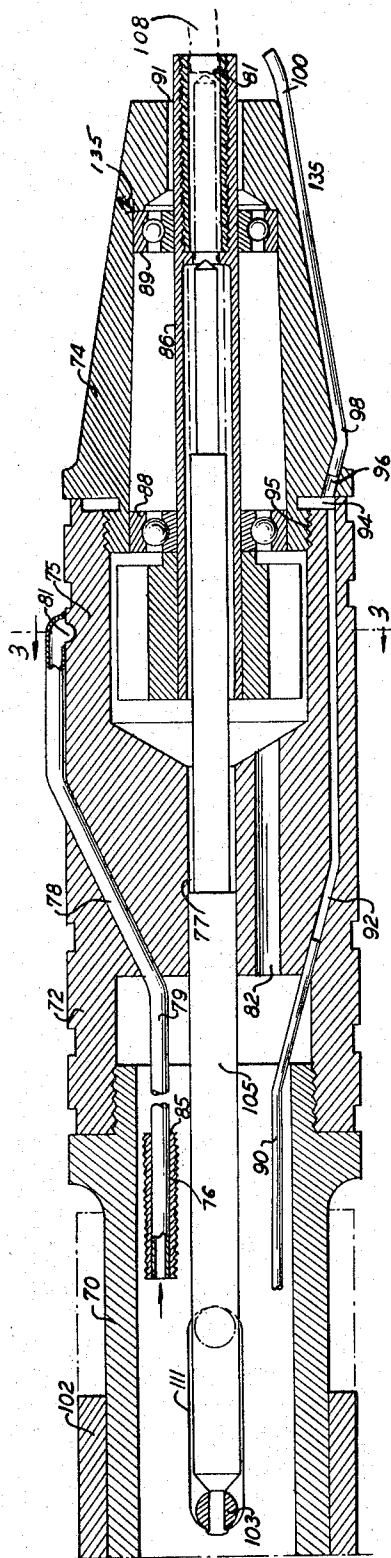


FIG. 1

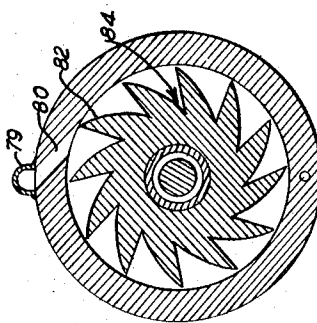


FIG. 3

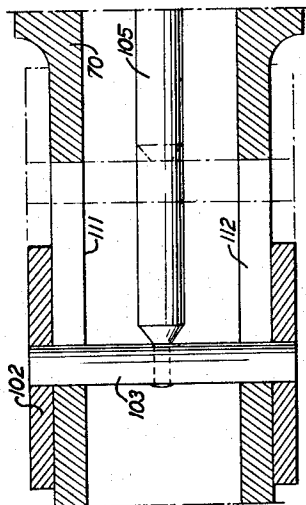


FIG. 2

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3,298,701
HAND DRILL

John Victor Borden, Ranson, W. Va. 25438
Original application Nov. 17, 1958, Ser. No. 774,345. Di-
vided and this application Dec. 20, 1963, Ser. No.
388,969

2 Claims. (Cl. 279—102)

This application is a division of my prior application,
Serial No. 774,345, filed November 17, 1958, now aban-
doned.

An object of one embodiment of this invention is in
the provision of means to eject a drilling bur from a
dental handpiece when the mechanism is not being used.

These and other objects of the invention will become
more readily apparent from a consideration of the fol-
lowing detailed description of the invention taken in con-
junction with the accompanying drawings in which:

FIGURE 1 is a longitudinal cross-section of a portion
of a dental handpiece embodying one form of the pres-
ent invention;

FIGURE 2 is a longitudinal cross-section of a portion
of the handpiece of FIGURE 1 and taken on a plane at
right angles to the plane of FIGURE 1, and;

FIGURE 3 is a cross-section taken on the line 3—3 of
FIGURE 1.

Referring now to FIGS. 1, 2 and 3, there is shown an
embodiment of this invention which is provided with a
water supply means and incorporates a single unitary
housing section. Referring particularly to FIG. 1, there
is shown a handpiece which is comprised of three major
sections; a handle 70, a housing 72 and a nozzle member
74. The housing 72 has at one end thereof a cavity de-
fined by side walls 75. This cavity is adapted to receive
the rotor assembly. The other end of the housing is a
substantially solid block in which exhaust port 82, water
bore 92, air bore 78, and the stem receiving bore 77, are
drilled therein. A water tube 79, preferably of brass, is
inserted in bore 78 and extends to a point without the

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housing 72 for a short distance and re-enters the housing
at a point 81 adjacent an orifice 80 which directs the air
against the rotor vanes 82 of rotor 84.

Air is delivered to the handpiece via tube 76 which is
connected to tube 78 at a point 85. The rotor 84 is
fixedly secured to a hollow shaft 86, and is rotated by air
discharged from orifice 80.

I claim:

1. A bur extraction mechanism for use with a drill
having an elongated straight handpiece housing, a fluid
driven turbine axially positioned within the housing in-
cluding a shaft having one end in alignment with an axial
opening at one end of the housing, said shaft having an
axial passage throughout its length and including means
for frictionally receiving a bur at said one end, an elon-
gated stem axially slidably mounted within said handpiece
housing in alignment with said shaft and freely slidable
in said passage for ejecting a bur, said stem including
a transverse member movable in a longitudinal slot in
said housing, and a ring shaped member encircling the
exterior of the housing connected with said transverse
member.

2. The invention as defined in claim 1, wherein said
means for receiving a bur includes a resilient sleeve posi-
tioned within said shaft.

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