Oct. 9, 1923. 1,470,162

F. J. GRUSS

SANITARY DENTAL HANDPIECE COVER

Filed Aug. 19, 1922

FIG. 1

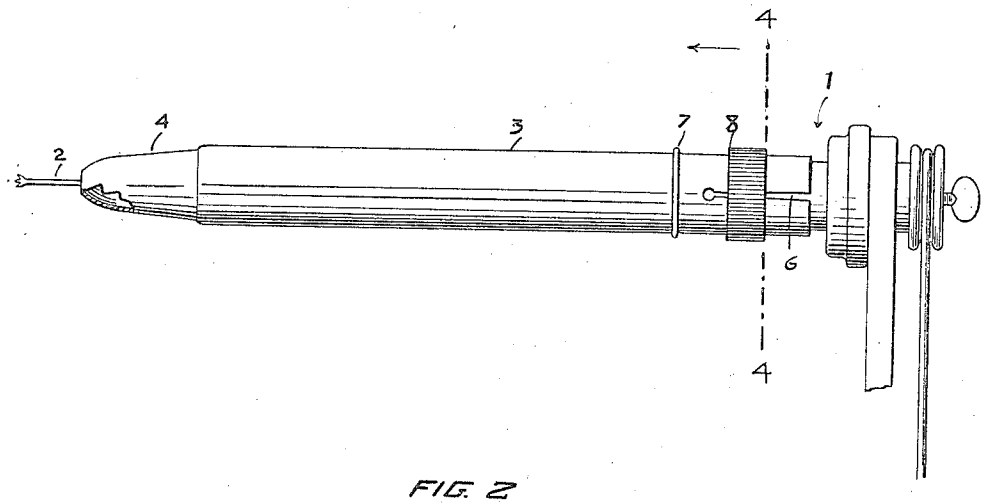



FIG. 2

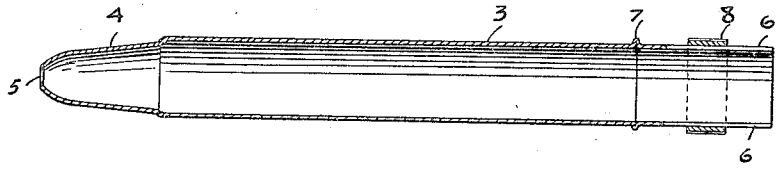



FIG. 3

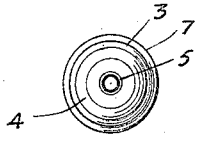
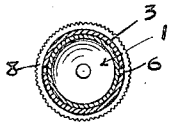



FIG. 4




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# UNITED STATES PATENT OFFICE.

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## SANITARY DENTAL HANDPIECE COVER.

Application filed August 19, 1922. Serial No. 583,009.

*To all whom it may concern:*

Be it known that I, FRANCIS J. GRUSS, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Sanitary Dental Handpiece Covers, of which the following is a specification.

The present invention relates to improvements in dental apparatus and more particularly to drill machines, or dental engines.

The hand pieces of dental drill machines cannot be sterilized and since said pieces are brought into contact with the mouth of the patient, sanitation as regards to said pieces is a source of annoyance, trouble and anxiety in the dental profession.

The hand pieces contain revolving parts, bearings, etc., and require lubrication. If sterilized these pieces may be injured as to the bearings, etc., and would require application of a lubricant which would necessitate disassembling of the pieces after each sterilizing operation. Therefore it has been practically impossible to sterilize the hand pieces and the dentist must depend upon wiping the pieces to keep them clean.

The primary object of my invention is to provide a sanitary shield or cover for hand pieces which shield or cover will encase and conform closely to the hand piece and prevent actual contact of the piece with the mouth of the patient, said shield being removable whereby after each use of the hand piece, it may be removed and sterilized like any other dental instrument.

Another object of the invention is to provide a shield of the character described which will be inexpensive, simple as to construction and made of a durable, light metal whereby it may be used indefinitely, said shield in no way interfering with the operation of the hand piece.

Another object is to provide a simple and effective means for securely attaching the shield to the hand piece which means may be readily operated to secure or release the shield.

The invention possesses other advantages and features some of which, with the foregoing will be set forth at length in the following description where I shall outline in full that form of the invention which I have selected for illustration in the drawings accompanying and forming a part of the present specification. In said drawings I have shown one form of the construction of my invention, but it is to be understood that I do not limit myself to such form since the invention as expressed in the claims may be embodied in a plurality of forms.

Figure 1 represents a side elevation of a hand piece with the shield mounted thereon.

Figure 2 is a longitudinal section of the shield.

Figure 3 is an end view of the hand piece and shield.

Figure 4 is a section on the line 4—4 of Figure 1.

Referring to the drawings wherein I have shown one practical embodiment of the invention, 1 designates the hand piece of a dental drill machine or engine, not shown.

The hand piece contains revolving parts, bearings and a device for holding the shank of a drill 2, which bearings, and so forth are commonly used and need not be illustrated.

The shield or cover of my invention comprises a tubular body portion 3 which is reduced and tapered at one end as at 4 and otherwise so shaped as to conform to the shape of the hand piece. In the tapered end 4 is provided a small opening 5 through which the shank of the drill 2 is inserted to attach the drill to the hand piece. The shield is of a construction that it may be readly slipped over or telescope the hand piece and will completely encase the major portion of the piece.

The inner end of the shield is provided with two longitudinal slots 6 and at a point spaced inwardly from said slots has an annular bead 7. A clamping ring 8 is slidably mounted upon the slotted end of the shield so as to be movable towards and away from the bead and when moved outwardly will press the slotted portions firmly against the hand piece and thereby clamp the cover in place, the slotted portions being slightly thickened so that a wedge action will take place when the ring is moved towards the outer end of the shield.

After using the hand piece with the shield thereon, by loosening the clamping ring, the shield may be readily removed and sterilized as is the ordinary instrument. When the shield is in place it will entirely cover the major portion of the hand piece and prevent actual contact of the hand piece with the mouth of the patient. The shield is prefer-

ably made of some light durable metal so that it will not be ill-effected by being sterilized and may be used indefinitely. By having the shield made of thin light metal and constructed so as to closely conform to the hand piece the operation and use of the hand piece is in no way interfered with.

By the term "sterilizing" is meant placing the object to be strilized in boiling water with or without a disinfectant added thereto.

I claim:—

1. A shield for the hand piece of a dental drill machine comprising a tubular member adapted to encase the entire gripping portion of the hand piece and having an opening at one end through which the drill of the hand piece is extended, said shield conforming to the shape of and engaging the hand piece throughout the portion thereof encased by the shield and having a rounded taper at its forward end and means providing for removably attaching the shield to the hand piece, said shield corresponding in external contour to the external contour of the hand piece.

2. In combination with the hand piece of a dental drill machine, of a tubular shield removably mounted upon and closely conforming to and engaging the entire gripping portion of the hand piece, said shield being reduced and tapered at its forward end in a rounding taper and provided with an opening at said end through which a drill is adapted to extend and means at the opposite end of said sheld for removably securing the shield in place, said shield corresponding in external contour to the external contour of the hand piece.

3. The combination with a hand piece of a dental drill machine, of a tubular shield removably mounted upon and closely conforming to and engaging said hand piece, said shield having one end split, a bead on the shield spaced inwardly from the split end and a clamping ring adjustable on the split end between the bead and adjacent end of the shield, said shield having a drill opening at its other end and having its split end gradually increased in thickness from the bead to the adjacent end.

FRANCIS J. GRUSS.