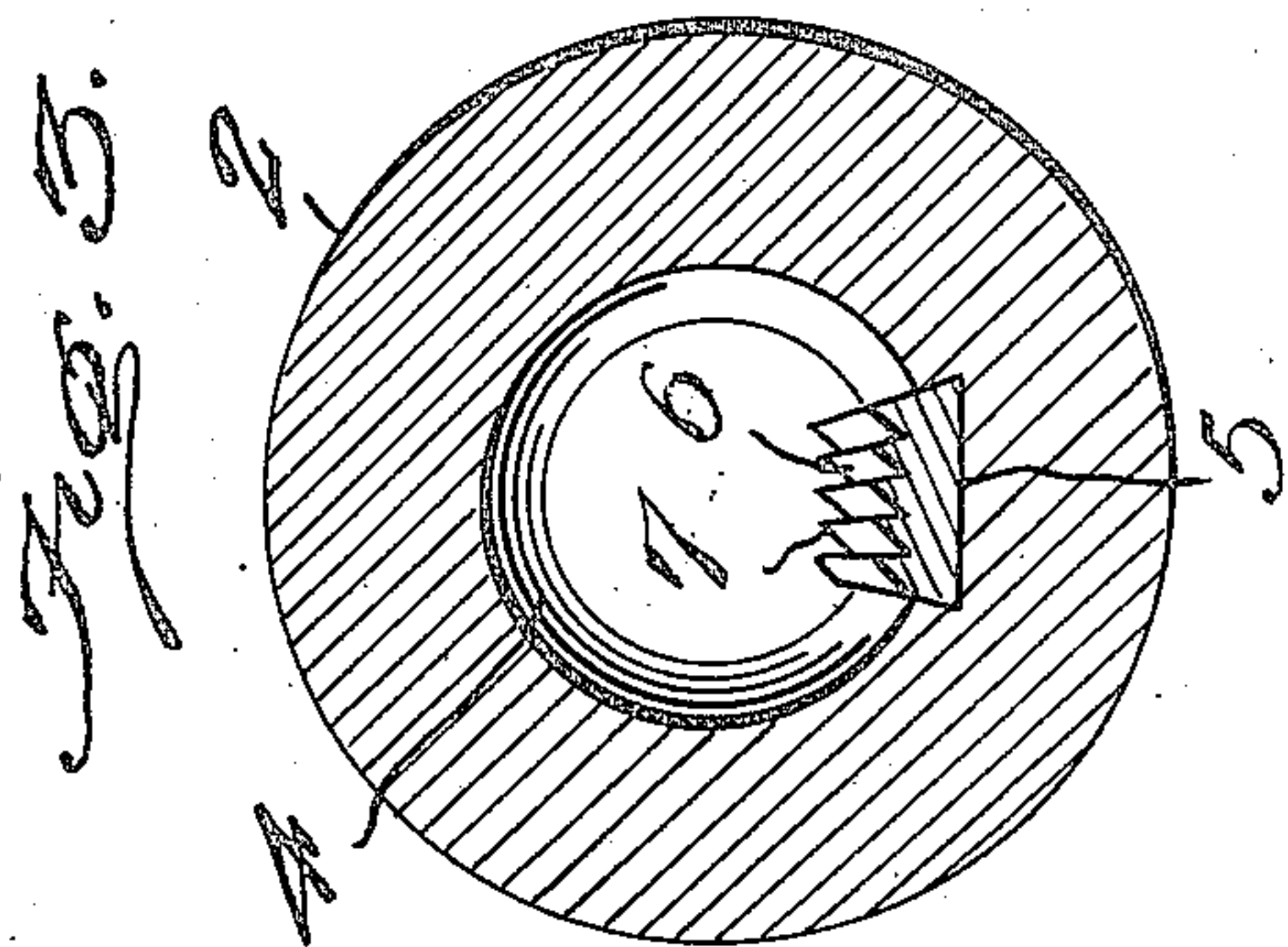
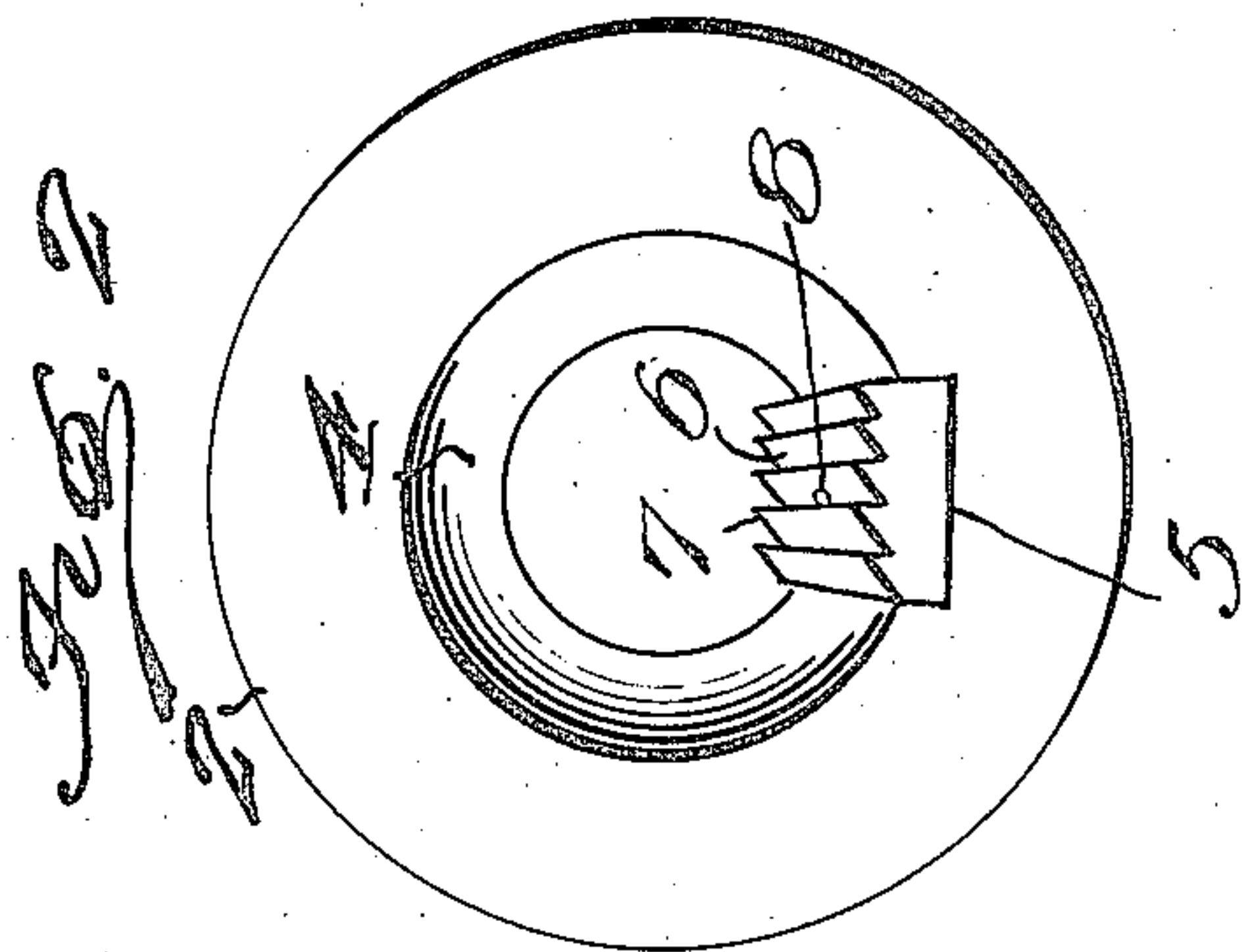
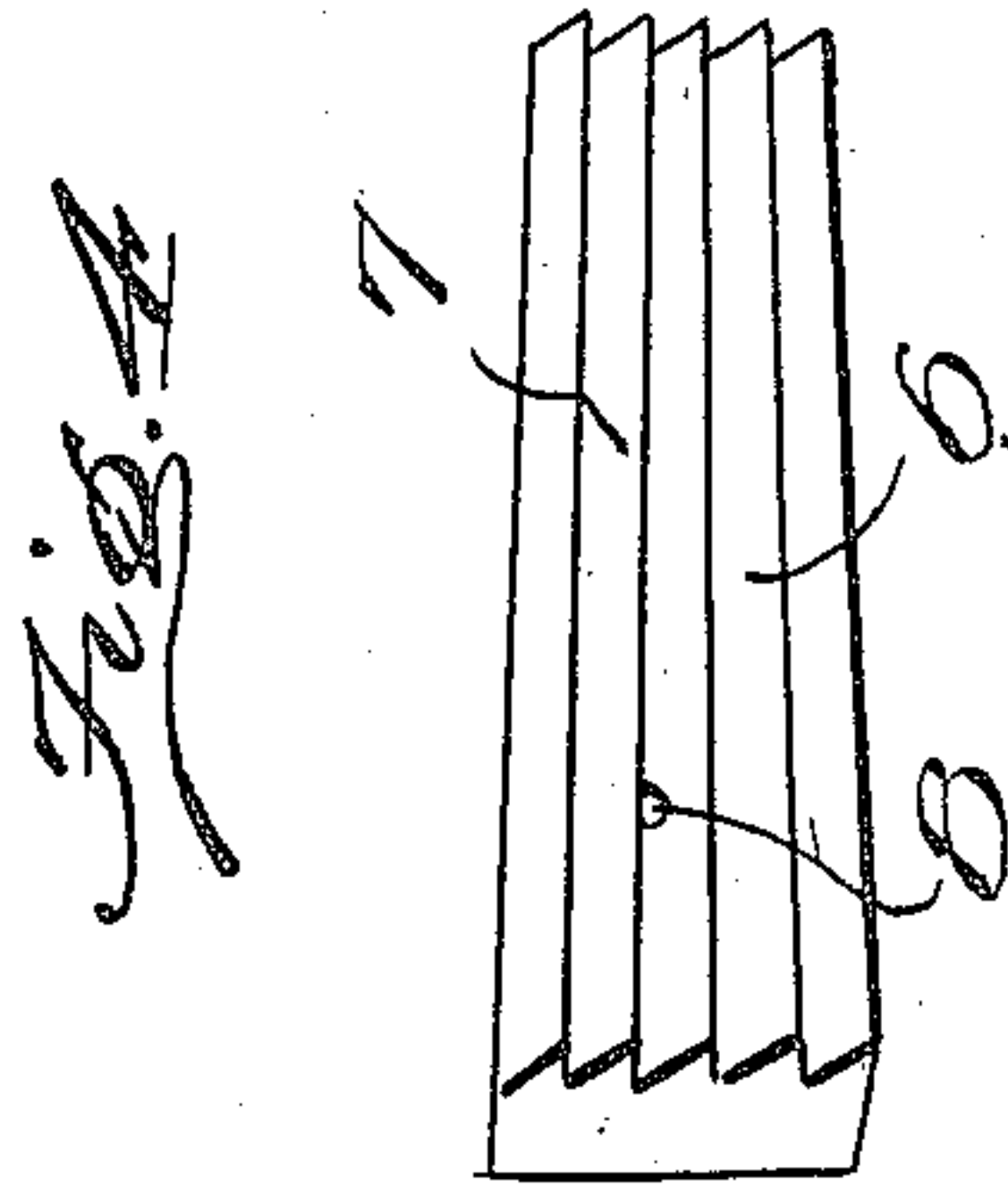
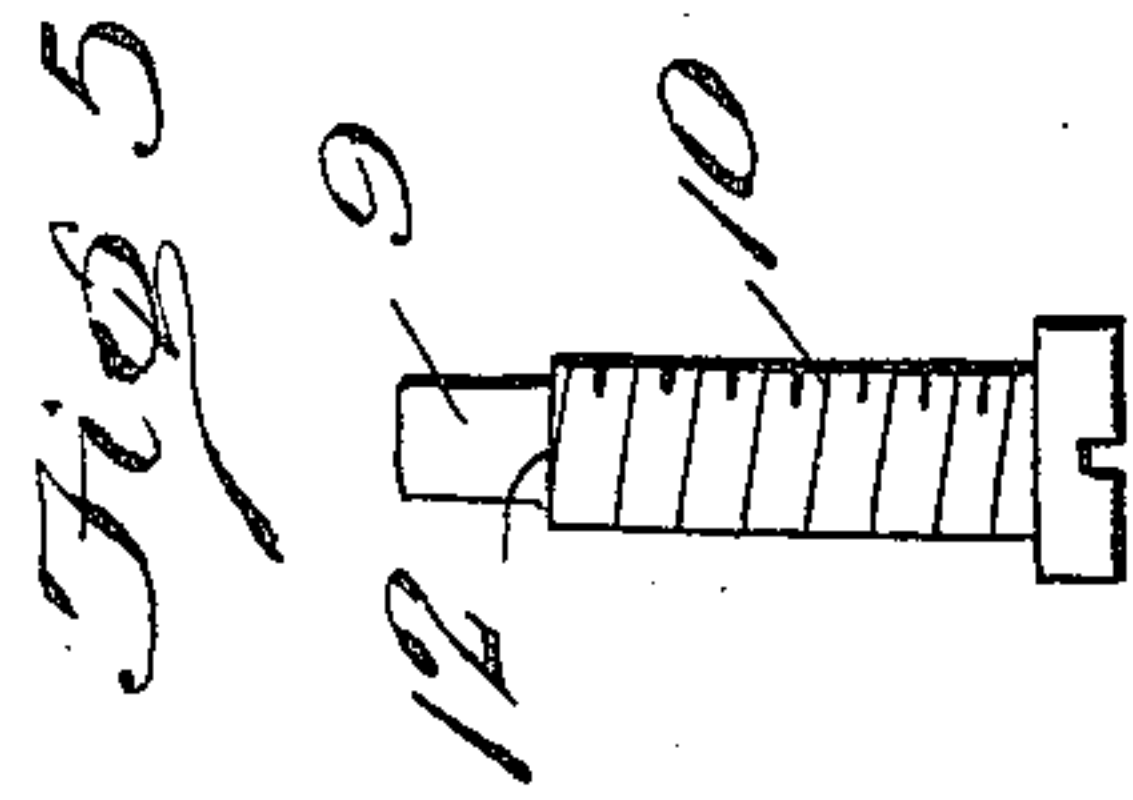
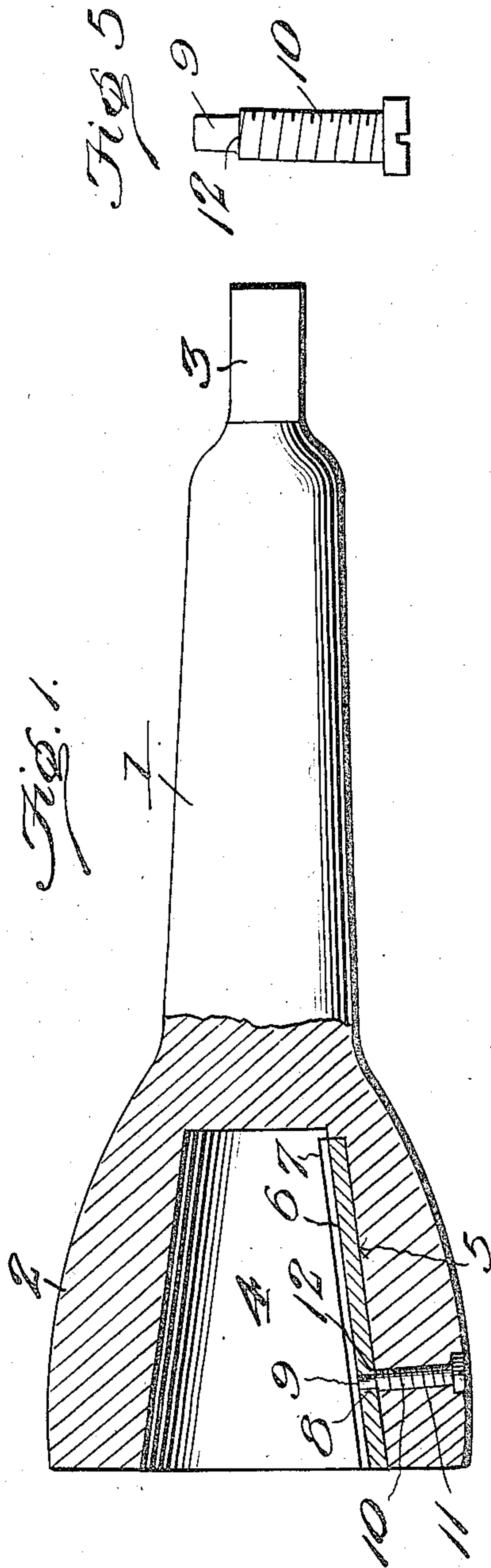


No. 861,030.

PATENTED JULY 23, 1907.

V. HANSEN.
WRENCH.

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No. 861,030.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, VICTOR HANSEN, a citizen of the United States of America, residing at Sparks, in the county of Washoe and State of Nevada, have invented
5 new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to improvements in wrenches of the socket type designed to be operated by hand or power, and its object is to provide a wrench especially
10 adapted for turning stay bolts in steam boilers and gripping and handling other similar articles, the construction being such as to secure a firm grip upon the article to be manipulated without injury thereto.

The invention is illustrated in the accompanying
15 drawing, in which:—

Figure 1 is a sectional elevation of the improved wrench. Fig. 2 is a bottom plan view of the same. Fig. 3 is a horizontal cross section through the wrench head. Fig. 4 is a detail view of the gripping jaw. Fig.
20 5 is a detail view of the retaining screw.

Referring to the drawing, 1 designates the shank of the wrench which is provided at one end with a frusto-conical head 2 and at its opposite end with a stem or tang 3, which is polygonal in form for connection with
25 a tool brace or motor driving appliance of any kind.

The head 2 is formed with a receiving socket 4 adapted to be fitted over an end of the article to be gripped and turned. The wall of this socket is cored out at one side to form a dovetailed longitudinal groove or recess
30 5. The groove 5 is adapted to receive a tapered dovetailed jaw 6, provided with a longitudinal series of parallel gripping spurs or teeth 7, which are beveled and inclined in one direction to firmly engage the inserted surface of the article to be turned.

The jaw is formed with an opening 8 to receive a retaining pin or dowel 9 on the end of a securing screw 10, working in a transverse threaded bore 11 in one of the side walls of the socket, said screw being provided
40 at the point of junction of its threaded body with a shoulder 12 bearing against the rear side of the jaw and

forcing its beveled surfaces against the undercut side walls of the groove 5. The pin 9 holds the jaw from outward movement, while the clamping action of the shoulder 12 relieves the pin from overstrain and assists the same in fastening the jaw from movement. 45

In use, the head 2 is placed over the end of the bolt or article to be turned, which enters the recess 4, so that upon turning the wrench the article will be gripped by the teeth of the jaw 6, thus firmly engaging the wrench therewith. Owing to the form and construction of the jaw the teeth will grip the article without sliding thereon and, consequently, without mutilating the same. By the use of jaws with teeth inclining in opposite directions the bolts may be turned either in or out, and by simply partially retracting the screw to withdraw the pin, the jaw may be removed and another substituted in its place and any one of a number of interchangeable jaws of the construction shown may be employed to suit different conditions of service. 50 55 60

Having thus described the invention, what is claimed as new, is:—

A wrench having a receiving socket and a tapered longitudinal dovetailed groove formed in the side and opening through the base thereof and having an inner stop wall, and provided with a transverse threaded opening communicating with said groove, a tapered dovetailed jaw adapted to fit within the groove and limited in inward movement by said stop wall and provided with a transverse opening to coincide with said threaded opening, and a screw arranged at right angles to the jaw and working in said threaded opening and having a reduced smooth-surfaced end forming a pin to engage the opening in the jaw to retain the same in position, said screw being also formed with a shoulder to clamp the jaw against the side walls of the groove. 65 70 75

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

VICTOR HANSEN.

Witnesses:

G. ED C. TRAVERS,
S. G. PORTIERES.