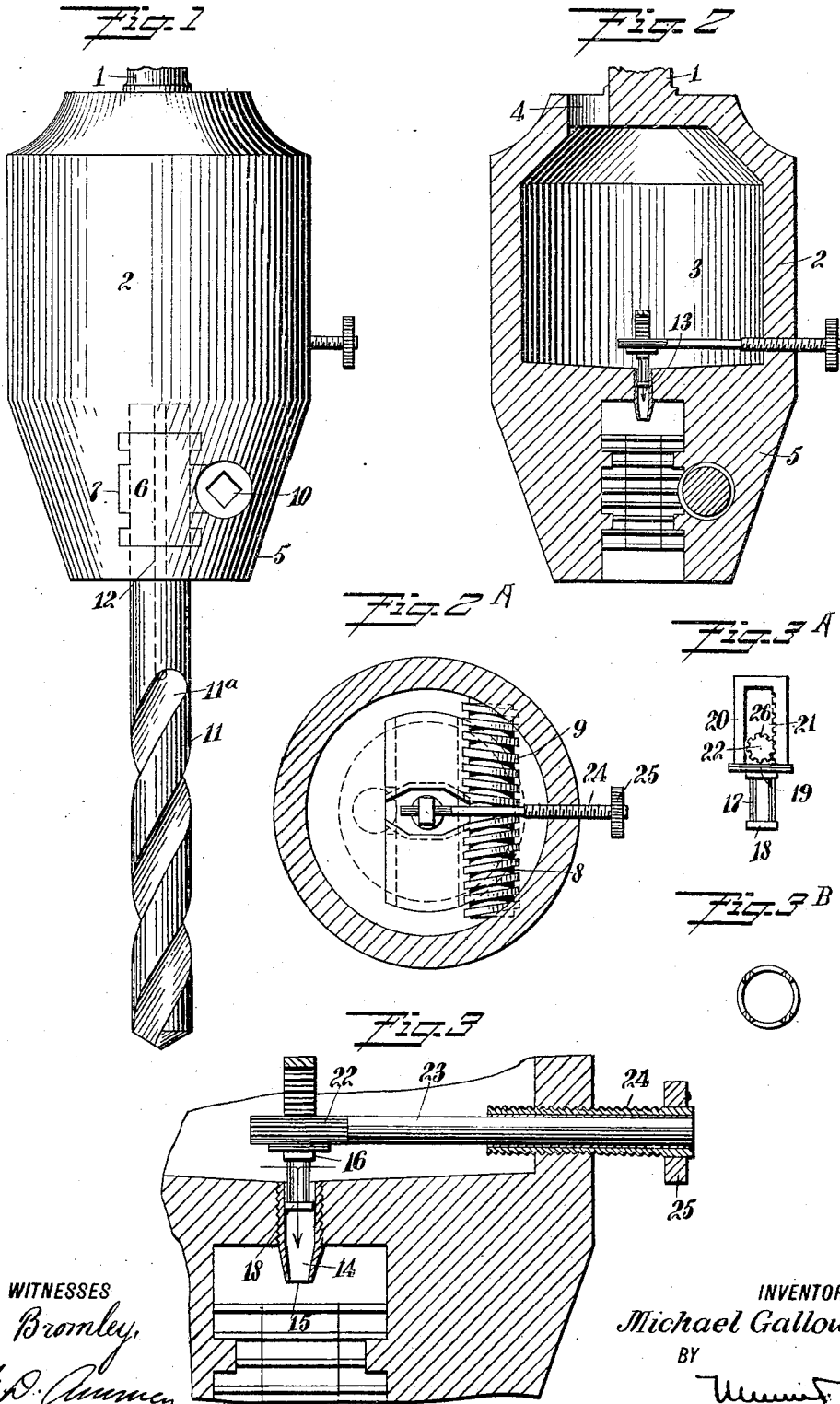


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OIL FEED FOR DRILLS.
APPLICATION FILED MAR. 5, 1909.

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Patented Sept. 28, 1909.



WITNESSES
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OIL-FEED FOR DRILLS.

935,484.

Specification of Letters Patent. Patented Sept. 28, 1909.

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To all whom it may concern:

Be it known that I, MICHAEL GALLOWICS, a subject of the Emperor of Austria and King of Hungary, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Oil-Feed for Drills, of which the following is a full, clear, and exact description.

This invention relates to drills such as used in machine shops for drilling metals.

The object of the invention is to provide means for feeding oil through the bit of the drill to its cutting point.

More specifically the device embodies an oil head which is formed above the drill chuck, and this oil head is provided with means for controlling the flow of oil from the reservoir through the oil duct which is formed longitudinally in the drill.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation showing the lower end of a drill spindle together with its oil head, and showing a drill attached in the head; Fig. 2 is a vertical section through the oil head and the lower end of the spindle and illustrating the details of the construction; Fig. 2^a is a horizontal cross section; Fig. 3 is a vertical section upon an enlarged scale showing the lower portion of the oil reservoir and showing the feed regulating device; Fig. 3^a is a side elevation of the oil plug; and Fig. 3^b is an end view of the oil plug viewed from the lower extremity.

Referring more particularly to the parts, 1 represents the lower end of a drill spindle which is extended so as to form an enlarged head 2, having a reservoir 3 for oil formed therein. This reservoir is provided with a filling opening 4 through the upper wall thereof. The lower end of the head 2 is formed into a tapered nose 5 having a drill chuck formed of two jaws 6 which are mounted to slide in transverse guides 7 formed in the nose. The sides of these jaws are in mesh with adjusting screws 8 and 9 which are formed with right and left-hand

threads, respectively, as indicated in Fig. 2^a. These screws are formed rigid with each other, and the screw 8 is formed at its extremity with a square socket 10 to receive a wrench for tightening up the jaws on the drill or drill bit 11. The drill bit is of common form except that it is provided with a longitudinal central duct 12, which extends to the point 11^a where it emerges.

The butt end of the drill bit is disposed directly under a feed opening 13 formed in the bottom wall of the reservoir 3, as shown in Fig. 2. This feed opening is provided with a sleeve 14, as indicated in Fig. 3, and the lower end of this sleeve is formed into a downwardly projecting nipple 15, the lower end of which is adapted to direct the oil into the duct 12 at the butt end of the drill, as will be readily understood. The amount of oil which feeds through this feed opening is regulated by means of a plug or valve 16. This plug presents four longitudinally disposed bars 17, the lower ends of which are attached to a ring 18. The upper ends of these bars are attached to a head 19, and when the plug is inserted to its greatest extent, the head 19 forms a closure for the upper end of the feed opening. Above the head 19, a yoke 20 is provided which is attached to the plug, and this yoke is of substantially rectangular form, presenting a rack 21 on one side, while the other side of the opening is plain, as shown. The teeth of this rack 21 are in mesh with a bar pinion 22 which is formed on the extremity of a stem 23. This stem 23 is provided with screw threads 24 which are mounted in the side wall of the reservoir, as shown. The projecting portion of the stem is provided with a thumb head 25 by means of which the stem may be rotated.

As indicated in Fig. 3^a, the bar pinion 22 extends through the opening in the yoke and when the stem is rotated it moves the plug 16 up or down. When the plug is raised the oil feeds in from all sides and passes down into the sleeve 14, as indicated by the arrow in Fig. 3. Of course, as the stem 23 rotates it moves longitudinally on account of its being mounted on the threads 24, but as the bar 22 is elongated its ribs or teeth 26 are maintained in mesh with the rack. It will be evident that the amount of movement of the plug will be proportionate to the longitudinal movement of the

stem 23, so that the amount of projection of the stem becomes an index of the condition of the amount of opening of the feed device.

5 With a feed device constructed as described, the oil is admitted from the bottom of the reservoir into the butt end of the drill, and passes down by gravity through the duct and down the side of the drill, which is in contact with the work. Whenever it
10 is desired to stop the oil feed, it is only necessary to rotate the stem in the proper direction to set the head 16. The yoke not only forms a rack but it constitutes a guide for guiding the plug when it is raised or lowered in the sleeve 14.

Having thus described my invention, I claim as new and desire to secure by Letters Patent,—

20 1. A self-oiling drill-head having an oil reservoir, a drill chuck below said reservoir, said reservoir having a feed opening leading to said chuck, a plug mounted in said feed opening, and a stem arranged substantially at right angles to said plug, passing
25 through the side wall of said head into said reservoir, engaging said plug and affording means for advancing the same.

2. A self-oiling drill-head having a reser-

voir with a feed opening leading therefrom, a plug mounted in said feed opening and
30 having a rack formed thereupon, and a stem passing through the wall of said reservoir and having a threaded engagement with said wall, said stem having a bar pinion
35 formed thereupon meshing with said rack and affording means for raising and lowering said plug.

3. A self-oiling drill-head having a reservoir with a feed opening leading therefrom, a plug mounted in said feed opening having
40 an elongated open yoke formed at the upper end thereof, said yoke having a rack formed on the inner edge thereof, and a stem rotatably mounted in the side of said reservoir and having a bar pinion meshing with said
45 rack and passing through said yoke, and affording means for raising and lowering said plug, said yoke affording means for guiding said plug in said feed opening.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MICHAEL GALLOWICS.

Witnesses:

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