No. 758,761. PATENTED MAY 3, 1904.

J. E. LITTLETON.

CLUTCH HEAD FOR ROCK DRILLS.

APPLICATION FILED MAY 26, 1903.

NO MODEL.

Fig. 1.

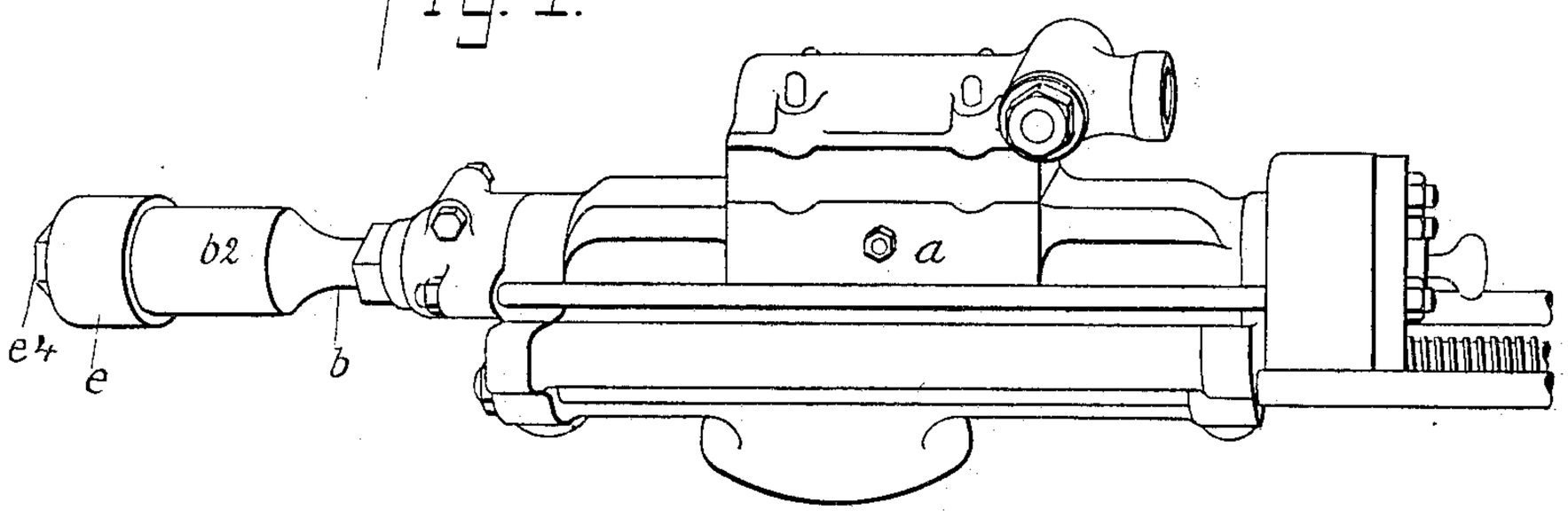


Fig. 2.

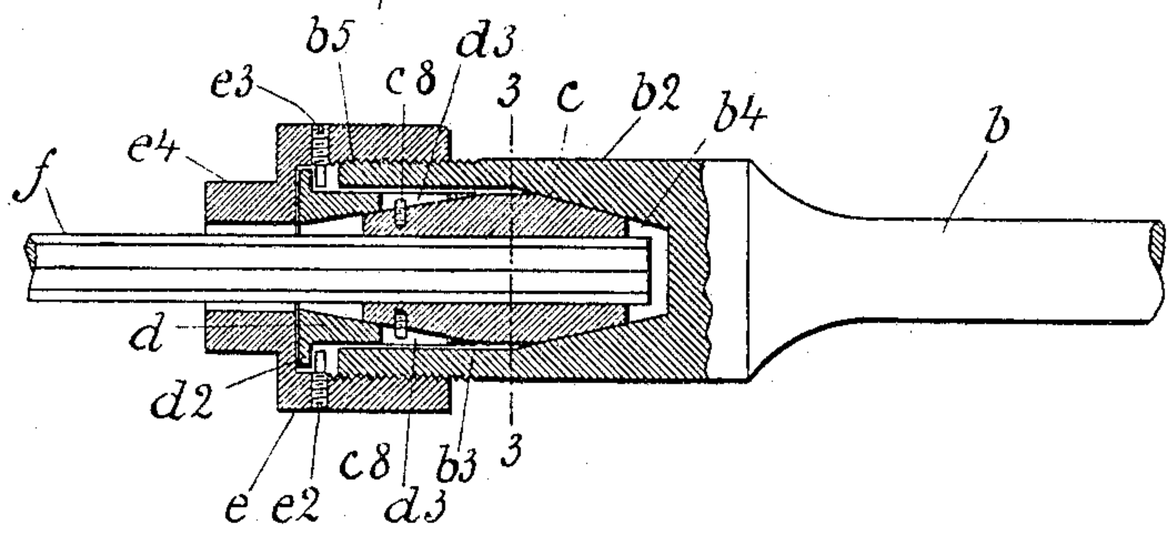


Fig. 3.

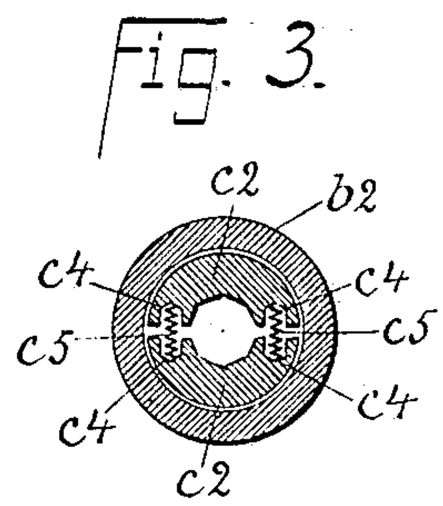


Fig. 4.

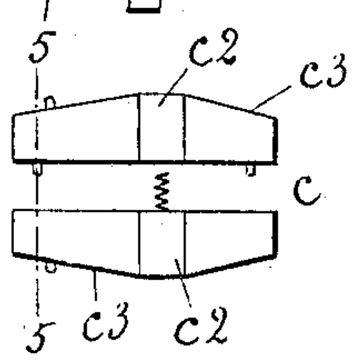
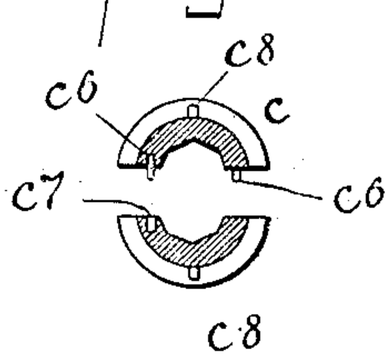


Fig. 5.



WITNESSES

Epic Tidestrom

F. C. Stewart

INVENTOR

BY John E. Littleton.

Edgar Tate & Co

ATTORNEYS

No. 758,761. Patented May 3, 1904.

UNITED STATES PATENT OFFICE.

JOHN E. LITTLETON, OF NORTH TARRYTOWN, NEW YORK, ASSIGNOR OF ONE-HALF TO WILLIAM F. LEARY, OF NORTH TARRYTOWN, NEW YORK.

CLUTCH-HEAD FOR ROCK-DRILLS.

SPECIFICATION forming part of Letters Patent No. 758,761, dated May 3, 1904.

Application filed May 26, 1903. Serial No. 158,787. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. LITTLETON, a citizen of the United States, residing at North Tarrytown, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Clutch-Heads for Rock-Drills, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved clutch-head for holding the drill or tool in what are known as "rock-drilling" machines, whereby the tool or drill is securely and centrally held in the clutch or clutch-head and may be tightened whenever desired; and with this and other objects in view the invention consists in a clutch-head for rock-drilling machines constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a perspective view of an ordinary rock-drilling-machine provided with my improvement; Fig. 2, a longitudinal section of my improved clutch-head; Fig. 3, a transverse section on the dotted line 3 3 of Fig. 2; Fig. 4, a side view of the clutch member and showing the separate parts thereof separated, and Fig. 5 a transverse section on the dotted line 5 5 of Fig. 4.

In the drawings forming part of this specification I have shown at a the body or framework of an ordinary rock-drilling machine, and this machine is provided with a drill-shaft b, which is operated in the usual manner, and the body or framework of the machine and that part of the shaft b which is connected therewith and operated thereby forms no part of this invention.

In the practice of my invention I provide the shaft b with a cylindrical head b^2, having a central longitudinal recess b^3, which is cylindrical in cross-section and the inner portion of which is conical in form, as shown at b^4. Within the recess b^3 of the head b^2 of the shaft b I place a clutch member, which is designated as a whole by the reference character c and which consists of two similar parts c^2. The clutch c is cylindrical in cross-section when the separate parts thereof are connected and is conical in form or tapered at both ends, as shown at c^3, and the separate parts thereof are provided, preferably centrally thereof, with recesses c^4, in which are placed springs c^5, which operate to force said parts c^2 of the clutch member apart, and the said parts c^2 are also provided one with dowel-pins c^6 and the other with corresponding recesses c^7, adapted to receive said pins, and the clutch c or the separate parts thereof are also provided adjacent to the outer end thereof with radially-arranged lugs or projections c^8, which in the form of construction shown consist of screws secured in the separate parts c^2.

Inserted into the outer end of the head b^2 of the shaft b is a sleeve d, having an annular flange or rim d^2, and this sleeve is conical in form on its inner side, so as to correspond with the shape of the end of the clutch c, which enters thereinto, and the said sleeve is provided in its opposite sides with longitudinal slots d^3, through which the lugs or projections c^8 pass to prevent the turning of the sleeve d on the clutch member.

The outer end of the head b^2 of the shaft b is screw-threaded, as shown at b^5, and screwed thereonto is a cap e, through which are passed screws or similar devices e^2, the inner ends of which project inwardly and operate, in connection with the flange d^2 of the sleeve d, to hold said sleeve in position and at the same time permit of the turning of said sleeve, and these screws or similar devices are secured in place after the parts have been assembled.

The cap e is provided with a nut-shaped member e^4, through which the drilling-tool f is passed, and when the said drill or tool f is passed into the clutch-head it enters into or passes through the clutch member proper and is secured therein by turning the cap e.

It will be understood that the tool or drill

f may be removed whenever desired and for any purpose and may be again secured into position shown whenever necessary. It will also be understood that the operation of the machine with my improvement is exactly the same as that of the machine now in use, and by means of my improvement I am enabled to secure the tool or drill in the clutch-head centrally thereof and to always hold it in this position, and whenever it is necessary to tighten the clutch the desired result is accomplished by turning the cap *e*, and the shape of the inner end of the recess b^3 in the head b^2 of the shaft *b* and the shape of the sleeve *d* and of the clutch *c* or the separate parts thereof is such that the tool or drill *f* is always held in the exact center of the clutch-head and is not forced to one side thereof, as is customary with some devices of this class as now constructed.

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

1. A drill-shaft for drilling-machines provided with a cylindrical head having a central longitudinal recess therein the inner end of which is conical in form, a sleeve inserted in the outer end of said recess and the inner surface of which is conical internally at its inner end, a clutch member circular in cross-section and tapered at both ends and composed of a plurality of longitudinal parts and held in said head by said sleeve, and a cap adapted to be screwed on said head and to force said sleeve thereinto, substantially as shown and described.

2. A drill-shaft for drilling-machines provided with a cylindrical head having a central longitudinal recess therein the inner end of which is conical in form, a sleeve inserted in the outer end of said recess and the inner surface of which is conical internally at its inner end, a clutch member circular in cross-section and tapered at both ends and composed of a plurality of longitudinal parts and held in said head by said sleeve, said sleeve being provided with longitudinal slots and the separate parts of the clutch with lugs movable therein, and a cap adapted to be screwed on said head and to force said sleeve thereinto, substantially as shown and described.

3. A drill-shaft for rock-drilling machines, provided with a cylindrical head having a central longitudinal recess therein, the inner end of which is conical in form, a sleeve inserted into the outer end of said recess, the inner end of which is conical internally, a clutch inserted into said recess and held therein by said sleeve and tapered at both ends and composed of a plurality of longitudinal parts, springs placed between said parts of the clutch, and a cap screwed onto the cylindrical head of the shaft for holding said sleeve in position, substantially as shown and described.

4. A drill-shaft for rock-drilling machines, provided with a cylindrical head having a central longitudinal recess therein, the inner end of which is conical in form, a sleeve inserted into the outer end of said recess, the inner end of which is conical internally, a clutch inserted into said recess and held therein by said sleeve and tapered at both ends and composed of a plurality of longitudinal parts, springs placed between the parts of the clutch, and a cap screwed onto the cylindrical head of the shaft for holding said sleeve in position, said sleeve being provided with longitudinal slots, and the clutch members with lugs movable therein, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 25th day of May, 1903.

JOHN E. LITTLETON.

Witnesses:
F. A. STEWART,
LILLY THIEDE.