E. J. LOWE.

DRILL ROD COUPLING.

APPLICATION FILED APR. 14, 1915.

**1,148,977.** Patented Aug. 3, 1915.

Fig. 1.

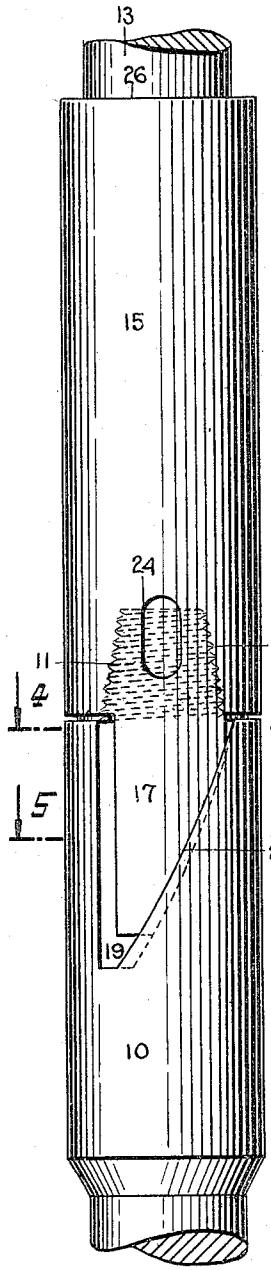



Fig. 2.

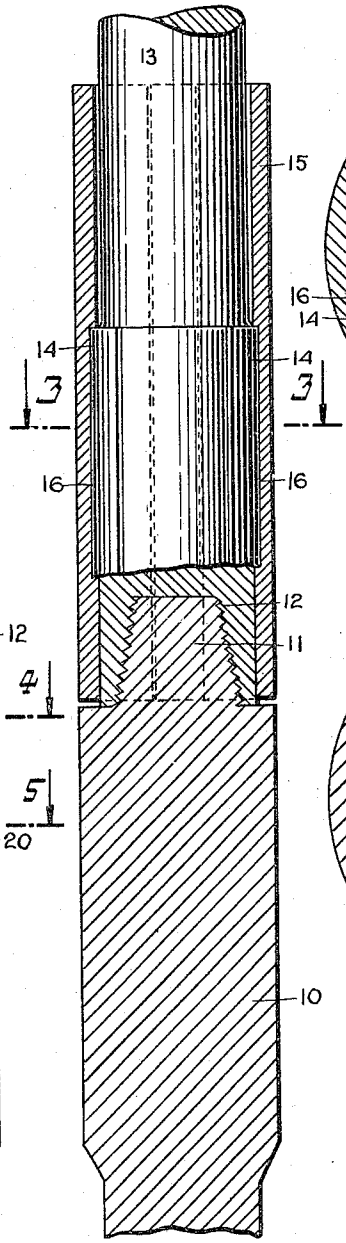



Fig. 3.

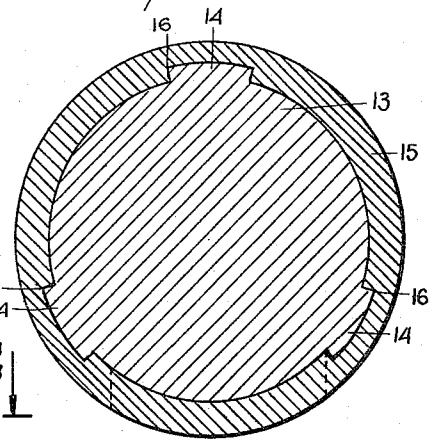



Fig. 4.

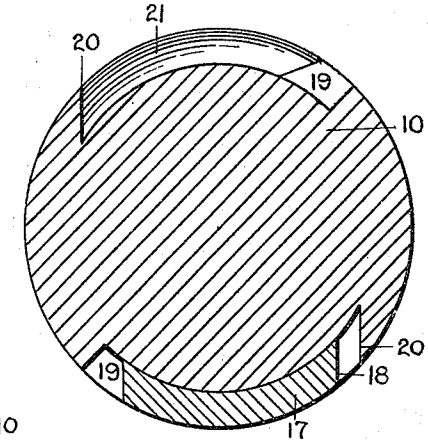



Fig. 5.

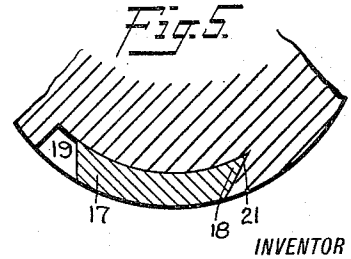
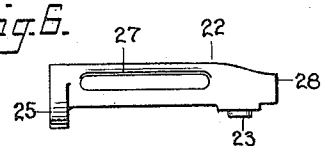



Fig. 6.




WITNESSES

George L. Blume.

E. B. Marshall

INVENTOR

Euclid J. Lowe

BY Munn & Co

ATTORNEYS

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

EUCLID JEROME LOWE, OF BALBOA, CANAL ZONE.

## DRILL-ROD COUPLING.

1,148,977. Specification of Letters Patent. Patented Aug. 3, 1915.

Application filed April 14, 1915. Serial No. 21,289.

*To all whom it may concern:*

Be it known that I, EUCLID JEROME LOWE, a citizen of the United States, and a resident of Balboa, Canal Zone, Panama, have invented a new and Improved Drill-Rod Coupling, of which the following is a full, clear, and exact description.

My invention has for its object to provide a drill rod coupling in which a rod has one or more recesses extending through an end, one side of each of these recesses being disposed obliquely for engagement by an obliquely disposed side of a tongue extending from a sleeve which is keyed to another rod which has screw connection with the first rod, it being possible to move the sleeve longitudinally of the first rod beyond the keys so that the sleeve may be rotated on the first rod to position the tongue at one of the recesses and with its oblique side disposed against the oblique side of the said recess. When so positioned the tongue will be driven into the last named recess with the operation of the drill and this will turn one of the rods relatively to the other to take up any slack occasioned by wear. In view of the fact that the keys are spaced equal distances apart and are greater in number than the recesses, the sleeve may always rotate to position the tongue at the entrance of one of the recesses so that it will move into the said recess to rotate one rod relatively to the other and take up all slack.

Additional objects of the invention will appear in the following specification in which the preferred form of my invention is disclosed.

In the drawings similar reference characters refer to similar parts in all the views in which

Figure 1 is a view showing the fragments of two rods which are connected by my coupling; Fig. 2 is a view similar to that shown in Fig. 1 but in section; Fig. 3 is a sectional view on the line 3—3 of Fig. 2; Fig. 4 is a sectional view on the line 4—4 of Fig. 1; Fig. 5 is a fragmentary sectional view on the line 5—5 of Fig. 1; and Fig. 6 is a view on a smaller scale and illustrating the key used with the coupling.

By referring to the drawings it will be seen that the rod 10 has a projecting threaded stud 11 at one end which is adapted to screw in the threaded opening 12 in the end of the rod 13. The rod 13 has three keys 14 which are spaced equal distances apart and longitudinally of the rod 13, the said keys 14 being disposed adjacent the end of the rod 13 having the threaded opening 12 and extending a distance from the said end of the rod. The said keys 14 are adapted to engage a sleeve 15 at inner keyways 16, the said keyways being spaced equal distances apart for receiving the keys 14. This sleeve 15 which is mounted on the rod 13 has a depending tongue 17 having an obliquely disposed side 18, this tongue 17 being adapted to be disposed in one of the recesses 19 in the rod 10, there being two of the said recesses 19, one disposed at each side of the said rod 10. Each of the recesses 19 has one of its walls 20 obliquely disposed for engagement by the obliquely disposed side 18 of the tongue 17, the said side 18 of the tongue 17 being substantially V-shaped in cross section, the said side 20 of the recess 19 having an opening 21 substantially V-shaped in cross section to correspond with the V-shaped side of the tongue.

It will be understood that when the rods 10 and 13 are screwed together and the sleeve 15 is moved away from the keys 14 on the rod 13 so that it may be rotated to a position where the tongue 17 will enter one of the recesses 19 a short distance with the operation of the drill the tongue 17 will act as a wedge to further rotate one of the rods relatively to the other to take up all slack occasioned by wear. When the tongue 17 reaches the bottom of the recess 19, the sleeve 15 may be again raised away from the keys 14 on the rod 13 so that the sleeve 15 may be given a third of a rotation to start the tongue 17 in one of the recesses 19 after it has worked down to the bottom of the other recess 19.

To remove the tongue 17 from a recess 19 a tool 22 is disposed with its stud 23 in the opening 24 in the sleeve 15 and with its shoulder 25 disposed over the sleeve 15 at 25 the handle 27 making it convenient to hold the tool in this position. When in position the tool is struck with a hammer at 28 which starts the tongue, making it readily possible to move the sleeve 15 as desired.

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

1. In a drill rod coupling, a rod with a screw and having one or more recesses extending through an end, one side of each of

the recesses being disposed obliquely, another rod having a screw meshing with the first screw, and a sleeve mounted on the second mentioned rod and having a tongue with one of its sides disposed obliquely for engaging the oblique side of the recess in the first rod, the sleeve being keyed to the second mentioned rod when the tongue is disposed in one of the recesses, but being movable beyond the key for rotation on the second mentioned rod for the purpose specified.

2. In a drill rod coupling, a rod with a screw and having two recesses disposed one at each side of the rod, one side of each of the recesses being disposed obliquely, another rod having a screw meshing with the first mentioned screw, and a sleeve mounted on the second mentioned rod and having a tongue with one of its sides disposed obliquely for engaging the oblique side of either one of the recesses in the first mentioned rod, the sleeve being keyed to the second mentioned rod at three spaces disposed equal distances apart when the tongue is disposed in a recess, the sleeve being movable beyond the key for rotation on the second mentioned rod for the purpose specified.

3. In a drill rod coupling, a rod with a screw and having one or more recesses extending through an end, one side of each of the recesses being disposed obliquely and having a V-shaped opening in cross-section, another rod having a screw meshing with the first screw, and a sleeve mounted on the second mentioned rod, and having a tongue with one of its sides disposed obliquely and V-shaped in cross-section for engaging the oblique side of a recess in the first rod, the sleeve being keyed to the second mentioned rod when the tongue is disposed in a recess, but being movable beyond the key for rotation on the rod for the purpose specified.

4. In a drill rod coupling, a rod with a screw and having one or more recesses extending through an end, one side of each of the recesses being disposed obliquely, another rod having a screw meshing with the first screw and a sleeve mounted on the second mentioned rod and having a tongue with one of its sides disposed obliquely for engaging the oblique side of a recess in the first mentioned rod, a longitudinally extending key on the second mentioned rod, the sleeve having a plurality of longitudinally extending inner keyways, one of which is adapted to receive the key when the tongue is disposed in a recess, the sleeve being movable beyond the key for rotation on the second mentioned rod for the purpose specified.

5. In a drill rod coupling, a rod with a screw and having one or more recesses extending through an end, one side of each of the recesses being disposed obliquely, another rod having a screw meshing with the first screw, and a sleeve mounted on the second mentioned rod and having a tongue with one of its sides disposed obliquely for engaging the oblique side of the recess in the first rod, the sleeve being keyed to the second mentioned rod when the tongue is disposed in one of the recesses, but being movable beyond the key for rotation on the second mentioned rod for the purpose specified, there being an opening in a side of the collar, and a tool having a stud for disposal in the opening in the sleeve's side, and an end which may be struck to free the tongue from the recess.

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

EUCLID JEROME LOWE.

Witnesses:
A. V. DUZCENT,
JAMES F. MINERV.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."