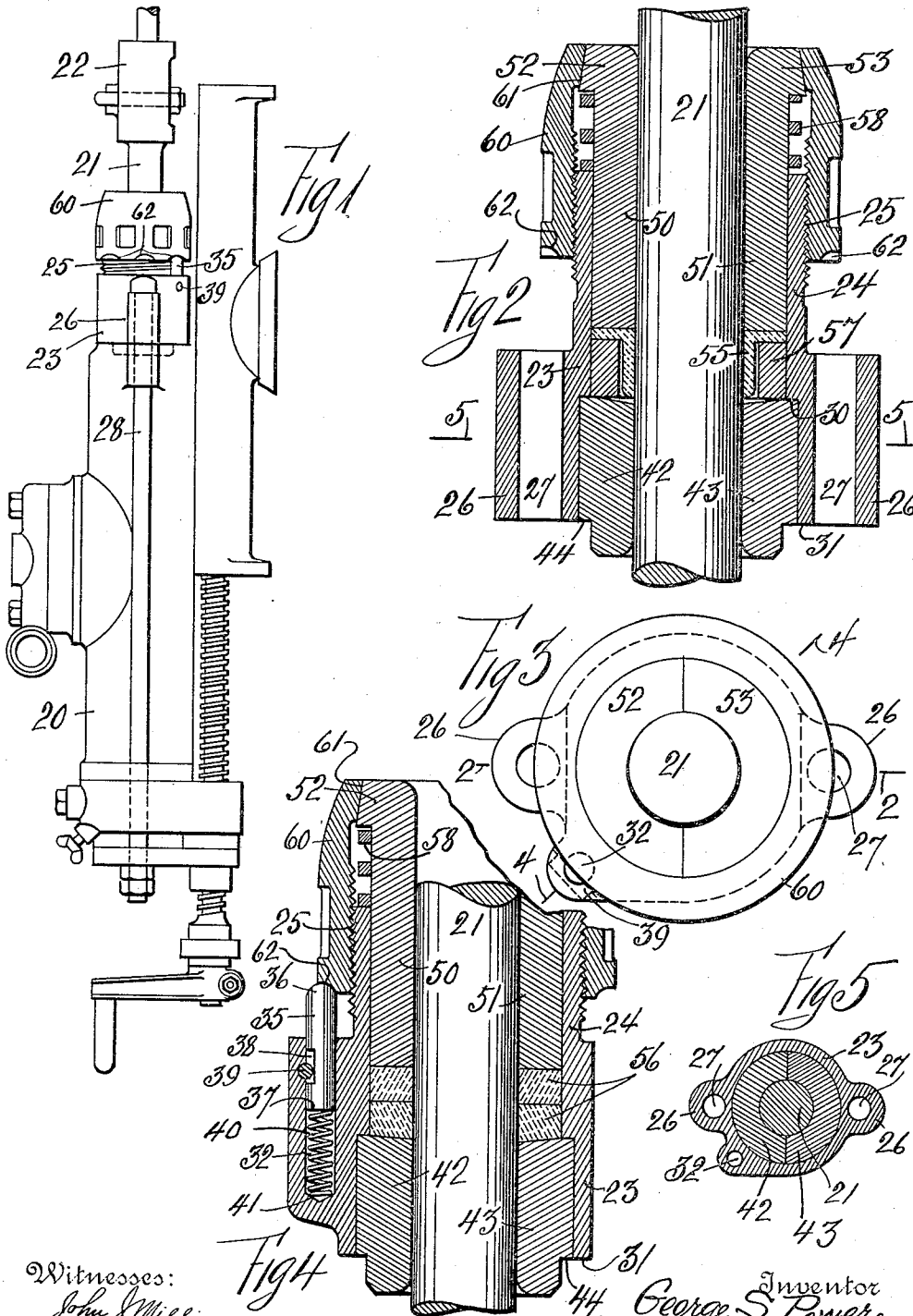


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FRONT HEAD FOR DRILL CYLINDERS.  
APPLICATION FILED DEC. 8, 1910.

1,065,392.

Patented June 24, 1913.



Witnesses:

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# UNITED STATES PATENT OFFICE.

GEORGE S. POWER, OF NUTLEY, NEW JERSEY.

## FRONT HEAD FOR DRILL-CYLINDERS.

1,065,392.

Specification of Letters Patent.

Patented June 24, 1913.

Application filed December 8, 1910. Serial No. 596,202.

*To all whom it may concern:*

Be it known that I, GEORGE S. POWER, a citizen of the United States, and a resident of Nutley, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Front Heads for Drill-Cylinders, of which the following is a specification.

This invention relates to improvements in the front heads of the drill cylinders of rock drills. It is an improvement of my Letters Patent Number 974,823, dated November 8, 1910, entitled Front head for drill cylinders.

It is characterized by a split bushing comprising an upper and a lower half, between which either a steam packing or an air packing can be securely held. A spring coacts with the lower half of the bushing to engage it with the packing nut of the head, and locking means are interposed between the said nut and the body of the head. The locking means prevents said nut from unscrewing.

Referring to the drawings Figure 1 represents a drill cylinder with the improved front head bolted thereto, Fig. 2 shows an enlarged axial section of the front head as on the line 2, 2, of Fig. 3, Fig. 3 is a top view of the head shown in Fig. 2, Fig. 4 shows a section on line 4, 4 of Fig. 3 with a modified packing, and Fig. 5 represents a section on a reduced scale as on the line 5, 5 of Fig. 2.

A drill cylinder 20 is represented with a piston-rod 21 and drill chuck 22. The front end of the cylinder is represented to comprise a head designated commercially as the front head. The said front head includes the body 23, neck 24 with the threads 25 on the outer cylindrical surface of the latter. Lugs 26 with the openings 27 are formed with the said body 23 and bolts 28 hold the said head in place. The body 23 is shouldered at 30 on its inner cylindrical surface for the split bushing to be described and has the lower face 31. A pocket 32 parallel to the longitudinal axis of the head extends from the outer surface thereof. A latch-bolt 35 preferably cylindrical, with the semi-spherical outer end 36 and the flat bottom end 37, is located within the pocket 32. A notch 38 is formed in one side of the bolt 35, and a stop pin 39 held in the wall of the pocket 32 extends through said notch 38. A

spring 40 bears between the bottom end 37 of the bolt 35 and the bottom 41 of the pocket 32.

The upper half of the split bushing comprises the longitudinal members 42 and 43, and a shoulder 44 in each of said members is flush with the lower face 31 of the head, so that the projecting portions of the members 42 and 43 can enter the bore of the cylinder 20 and thereby aline the head. The lower half of the split bushing in said head is shown to comprise, the longitudinal members 50 and 51 which terminate in the tapering shouldered ends 52, 53. Air packing preferably standard flanged leather air packing 55, or steam packing 56 as ordinarily used, is located between the accompanying ends of the upper and lower halves of the split bushing. When the flanged air packing 55 is used, a circular filler 57 of any suitable material is located between the longitudinal portion of the packing 55 and the inner cylindrical surface of the neck 24. A spring 58 bears between the end of the neck 24 of the head and the shoulders of the ends, 52, 53.

A packing nut 60 is in threaded engagement with the threads 25 of the neck 24. The said nut has the tapered opening 61 at one end which registers with the tapered faces of the ends 52, 53 of the lower half of the split bushing, and at the other end of said nut 60 are formed spherical shaped indentations 62 each of which can register with the end 36 of the latch bolt 35. The spring 58 by bearing up against the said shouldered ends 52, 53 locks the packing nut 60 with the threads 25, and the engagement of the latch bolt 35 with one of the indentations 62 constitutes a second locking device for said packing nut. When the packing nut is removed from the neck 24 the spring 58 ejects the members 50, 51 from the front head. When the nut 60 is secured in place against the tension of the spring 58, it is turned so that one of the indentations 62 registers with the semispherical end 36 of the latch bolt 35. When the head is located in place by means of the bolts 28, the halves 42 and 43 are held in place between the end of the cylinder 20 and the shoulder 30 of the head. It will be noted that the packing between the halves of the bushing is interchangeable and that it can be either a steam packing or an air packing.

Having described my invention what I desire to secure by Letters Patent and claim is:

5 1. In a front end for a cylinder the combination of a head, a threaded neck formed with said head, a packing nut having a tapered opening at one end and indentations on the other end thereof in threaded engagement with said neck, a split bushing  
10 in said head, separated halves for the bushing, a packing between said halves, tapered shouldered ends for the members of one of said halves, the said tapered ends registering with the tapered opening of the packing  
15 nut, a spring bearing between the outer edge of said neck and the shoulders of said packing, a latch bolt supported in a pocket in said head, a spring between the bottom end of the bolt and the bottom of said  
20 pocket, said bolt located so that its upper end will lock with any one of said indentations of the packing nut with the latter in proper position.

25 2. In a front end for a cylinder the combination of a head, a threaded neck formed with said head, a packing nut having a

tapered opening at one end and spherical shaped indentations at the other end thereof in engagement with said neck, a split bushing in said head, separated halves for the  
30 bushing, tapered shouldered ends for the members of one of said halves registering with the tapered opening of the packing nut, the members of the other half bearing against a shoulder formed in the head,  
35 packing between the halves of the bushing, a spring bearing between the outer edge of said neck and the shoulders of said bushing, a cylindrical latch bolt supported in a pocket in said head and having a semispherical  
40 outer end, the said end of the bolt being in the path of said indentations, and a spring between the bottom end of the bolt and the bottom of said pocket.

Signed at New York, in the county of  
New York, and State of New York this  
2nd day of December, A. D. 1910.

GEORGE S. POWER.

Witnesses:

ARTHUR MARION,  
MARTIN ZIMANSKY.

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