C. C. NEIGHBORS.

BACK PRESSURE VALVE.

APPLICATION FILED DEC. 18, 1908.

946,684.

Patented Jan. 18, 1910.

Fig. 1.

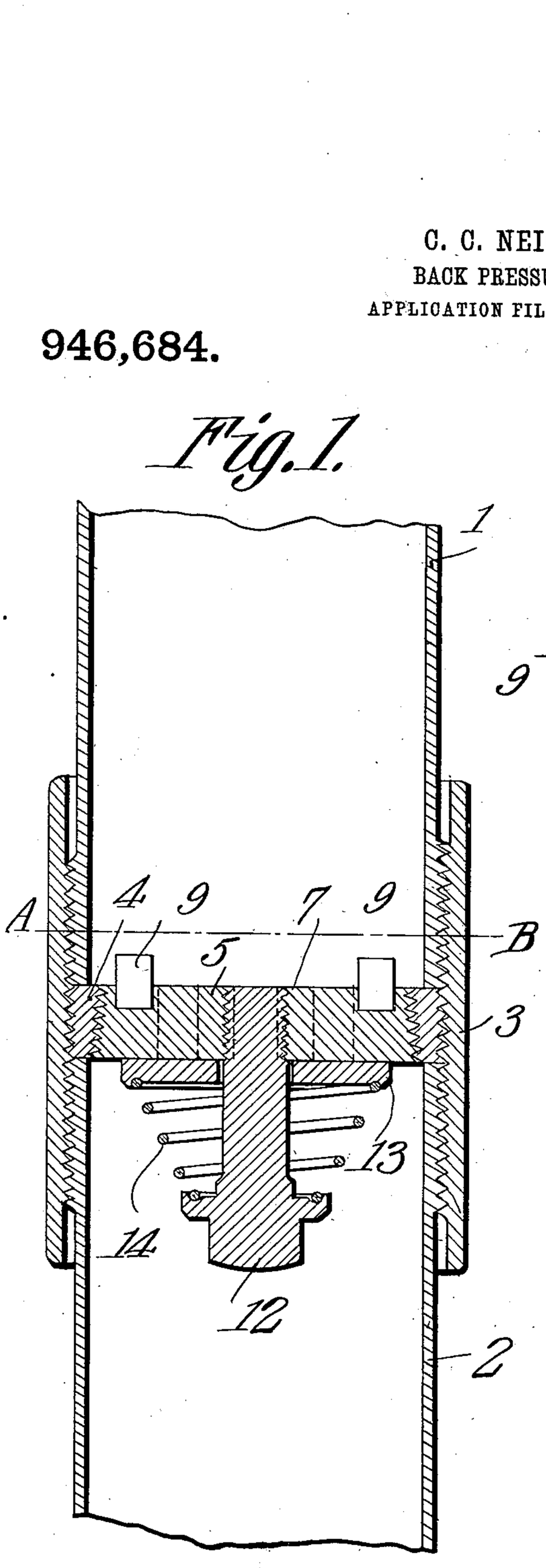


Fig. 2.

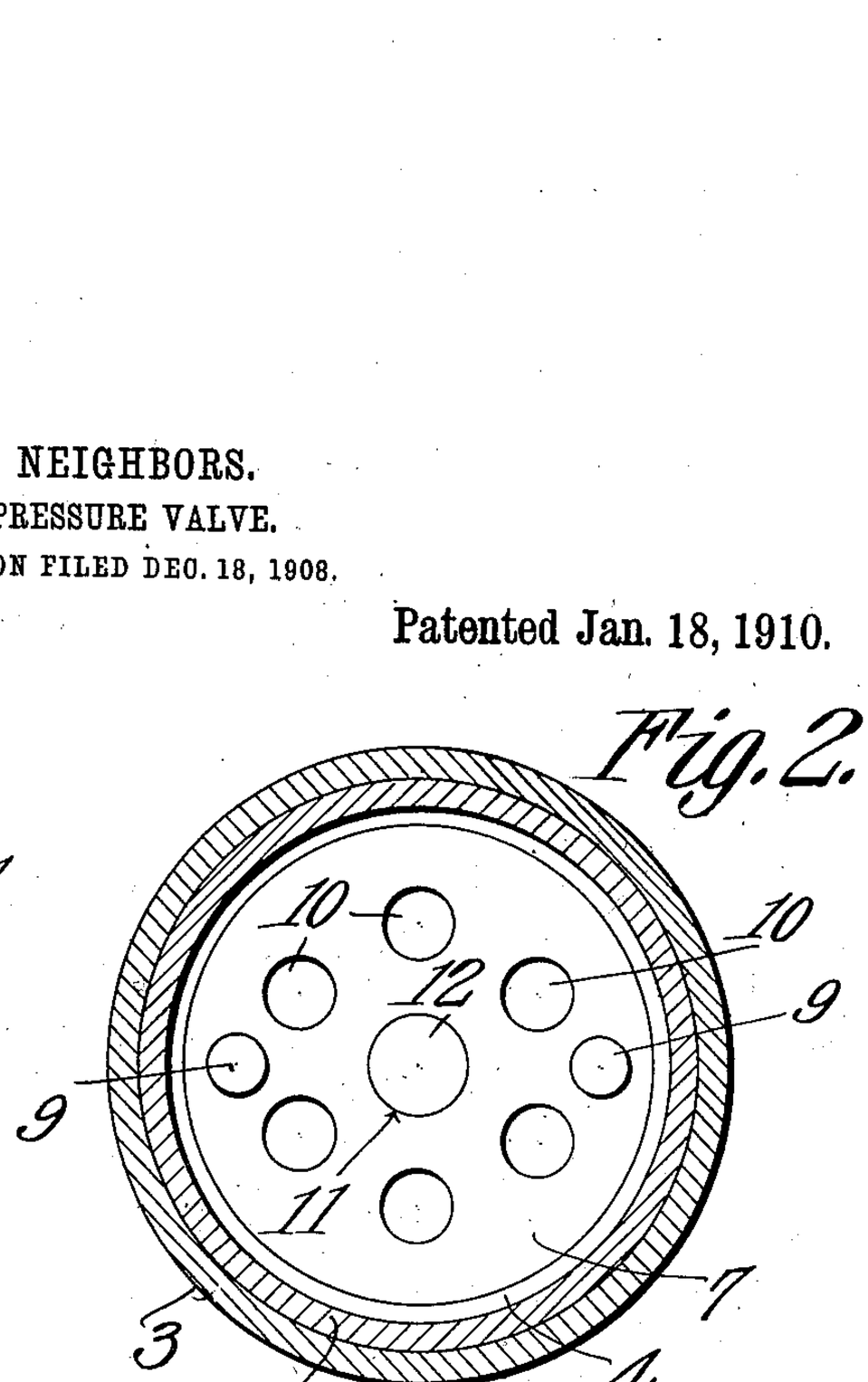
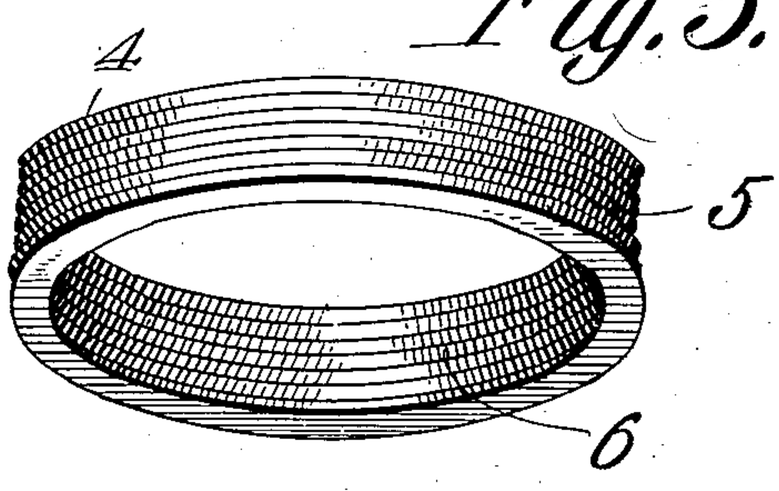


Fig. 3.



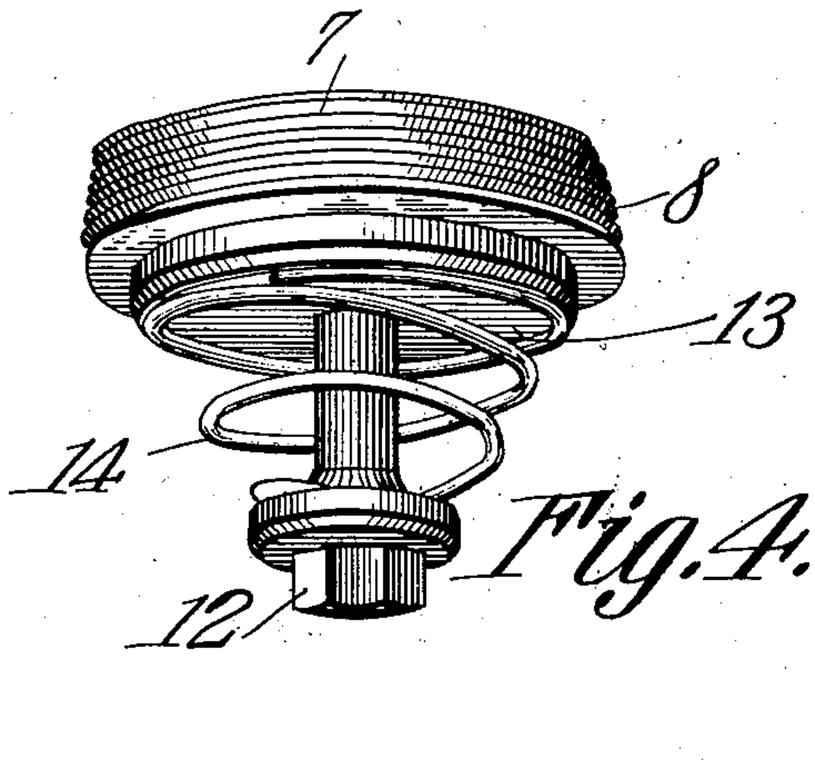


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES C. NEIGHBORS, OF SAN ANTONIO, TEXAS.

BACK-PRESSURE VALVE.

946,684. Specification of Letters Patent. Patented Jan. 18, 1910.

Application filed December 18, 1908. Serial No. 468,216.

To all whom it may concern:

Be it known that I, CHARLES C. NEIGHBORS, a citizen of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented a new and useful Back-Pressure Valve, of which the following is a specification.

By way of explanation, I will state that, in well drilling operations, after the back-pressure valve has been placed, it frequently becomes necessary to remove the same, when, for example, the operator wishes to deepen the well. The common practice in such instances is to drill out the valve, a practice fraught with much annoyance, and, not infrequently, resulting in the loss of the well.

It is the object of this invention to provide a back-pressure valve which may be removed from the well with facility and despatch.

With this and other objects in view, as will hereinafter more fully appear, the invention consists in the novel construction and arrangement of parts hereinafter described, delineated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that, within the scope of the claims divers changes in the form, proportions, size and minor details of the structure may be made, without departing from the spirit or sacrificing any of the advantages of the invention.

Similar numerals of reference are employed to denote corresponding parts throughout the several figures of the drawings.

Referring now to the accompanying drawings:—Figure 1 is a vertical longitudinal section through a section of well-tubing in which my invention is mounted: Fig. 2 is a transverse section passed through Fig. 1 in the line A—B: Fig. 3 is a detail perspective, showing the annular member 4: Fig. 4 is a detail perspective, showing the seat 7 and the accessory parts thereby carried.

In the accompanying drawings the numerals 1 and 2 designate sections of tubing, threaded at their adjacent ends in the ordinary manner, and united by a coupling 3.

In carrying out the invention, I provide an annular member 4, having a cylindrical outer face 5, and a conical downwardly flaring inner face 6, both of the faces 5 and 6 being threaded. I have further shown a seat 7, having a threaded, conical outer edge 8, arranged to engage the face 6 of the annular member 4. The seat 7 is provided with a central opening 11, and, disposed about the central opening 11, are other openings 10, extending through the seat 7. A headed bolt 12 is shown having a threaded terminal arranged to engage the central opening 11 in the seat 7. The valve proper 13 has a central opening arranged to engage the bolt 12, whereby the said valve 13 may be slidably mounted upon the bolt 12. A resilient element 14 is shown, having its lower terminal in contact with the bolt 12, its upper terminal bearing against the valve 13, and serving to force the same upward, closing normally the apertures 10.

The upper face of the seat 7 is arranged to engage a rotating tool, whereby the said seat 7 may be turned downward, and to this end I have attached the upstanding lugs 9 to the seat.

The manner of assembling my invention is as follows:—Let it be supposed that the coupling 3 is mounted upon the member 2. The annular member 4 is then rotated into the coupling 3 and brought into contact with the terminal of the tubing 2, the other parts of the device being carried by the annular member 4, as shown in Fig. 1. The member 1 is then rotated within the coupling 3 to engage the annular member 4. Now, when it is desired to remove the back-pressure valve from the well, a fish-tail bit or like device is lowered into the well, and rotated until it engages the lugs 9. Continued rotation will unscrew the seat 7 from the annular member 4, whereupon the said seat 7 and the valve thereby carried, will drop to the bottom of the pipe, where it may readily be shoved aside into the soft material.

I have made the face 6 of the member 4 conical, and arranged the face 8 of the seat 7 of the same shape, in order that the seat 7 may not accidentally be rotated upward through the annular member 4.

Having thus described my invention, what I claim as new, and desire to protect, by Letters Patent, is:—

1. In a device of the class described, an annular member having a threaded, conical, downwardly flaring inner face; a conical valved member inserted in the annular member and threaded to engage the same; and means carried by the valved member to engage a rotating tool.

2. In a device of the class described, a

coupling internally threaded; an annular member disposed within the coupling and threaded to engage the same, the said annular member having a conical, downwardly flaring, threaded, inner face; pipe sections threaded for insertion into the ends of the coupling and rotatable into terminal abutment with the annular member; a conical, valved member inserted in the annular member and threaded to engage the same; and means carried by the valved member whereby the same may be engaged for downward rotation to free the valved member from the annular member.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CHARLES C. NEIGHBORS.

Witnesses:
J. I. NICHOLLS,
ED. A. CHRISTIAN.