No. 881,711.

PATENTED MAR. 10, 1908.

B. F. PALMER.

COMBINED PLUG AND STOP COCK.

APPLICATION FILED MAY 6, 1907.

FIG. 1

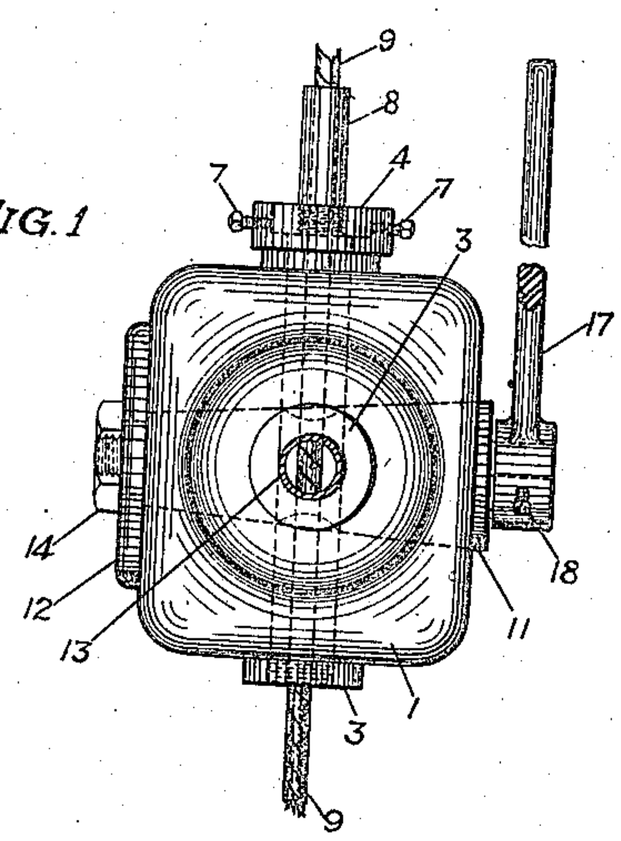



FIG. 2

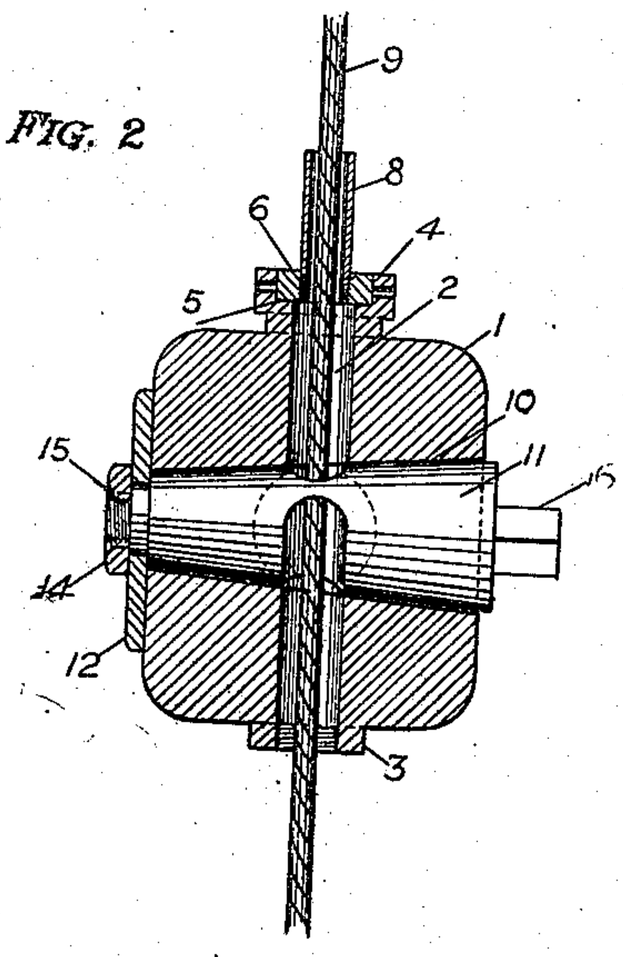



FIG. 3

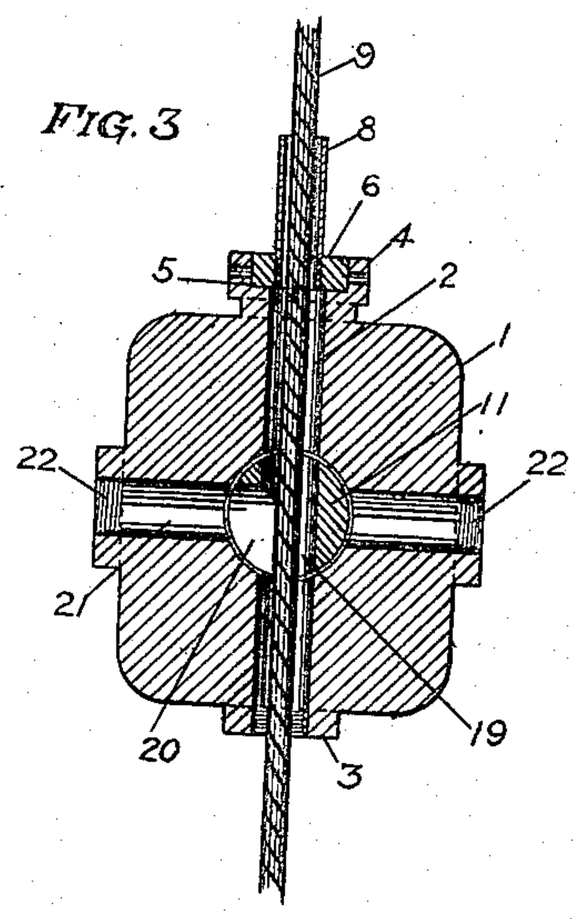
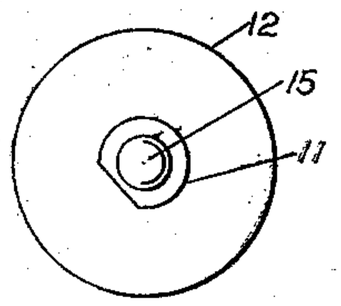



FIG. 4




WITNESSES:

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# UNITED STATES PATENT OFFICE.

BENJAMIN F. PALMER, OF JACKSONBURG, WEST VIRGINIA.

## COMBINED PLUG AND STOP-COCK.

No. 881,711. Specification of Letters Patent. Patented March 10, 1908.

Application filed May 6, 1907. Serial No. 371,981.

*To all whom it may concern:*

Be it known that I, BENJAMIN F. PALMER, a citizen of the United States of America, residing at Jacksonburg, in the county of Wetzel and State of West Virginia, have invented certain new and useful Improvements in a Combined Plug and Stop-Cock, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a combined plug and valve for controlling the flow of gas, oil or water or other similar fluid from a well during the drilling operation and when desired to cut off the flow entirely and the object thereof is to provide a combined plug and valve that can be easily and quickly secured to the casing at the top of a well and control the escape of or to prevent the escape of oil, gas or water to the atmosphere.

A further object of the invention is to provide a combined plug and valve for the purpose set forth which will not interfere with the operation of the drill supporting cable during the drilling of a well.

A further object of the invention is to provide a combined plug and valve preferably adapted to use in connection with oil wells and provided with means whereby the flow of oil or gas can be entirely shut off and thereby eliminate the danger of injury to the controlling mechanism and derrick of a well that might be caused by the oil or gas being accidentally ignited.

Further objects of the invention is to provide a combined plug and valve for the purpose set forth which shall be simple in its construction, strong, durable, efficient in its use, readily set up in operative position, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view the invention consists in the novel construction, combination and arrangement of parts hereinafter more specifically described and illustrated in the accompanying drawings wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to, which come within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views,—Figure 1 is an elevation of a combined plug and valve in accordance with this invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a cross sectional view, and Fig. 4 is a detail in elevation.

Referring to the drawings in detail, 1 denotes a valve casing which constitutes a plug for the outer end of the casing of an oil well thereby substantially closing said end. The casing 1 is provided with a vertically-disposed bore 2 which terminates at its lower end in an interiorly threaded nipple 3 adapted to be secured to the outer end of the casing of the well. The upper end of the bore 2 terminates in a collar 4 having a seat 5 in which is mounted a head 6, the latter being secured in the collar through the medium of the set screws 7, these latter extending through the collar and engaging the head. The head 6 carries a vertically-extending sleeve 8 through which passes the drill supporting cable 9, the diameter of the sleeve 8 with respect to the diameter of the cable 9 being such as to allow of a free movement of the cable 9, but not sufficient to permit of a voluminous escape of oil or gas.

The valve casing 1 is furthermore provided with a longitudinally disposed tapering seat 10 which intersects the bore 2 approximately centrally thereof. Engaging the seat 10 is a tapering plug 11 which is capable of being rotated within the casing 1 and is retained in the said casing through the medium of a washer 12 and a nut 14, the former engaging one side of the valve casing while the latter is mounted upon the threaded contracted end 15 of a plug and engages the washer 12. The opposite end of the plug 11 is formed with a rectangular shank 16 for the reception of an operating lever 17, said lever being detachably mounted upon the shank 16 through the medium of the set screw 18. The plug 11 is provided with a port 19 adapted to register with the vertically-disposed bore 2 of the valve casing. The valve casing 1 is furthermore provided with a horizontally disposed bore 21 extending at right angles with respect to the seat 9 and bore 19 and one side of the plug 11 is cut away as at 20. The plug 11 not only provides means for establishing communication between the upper and lower portion of the bore 2 but also to establish communication between one side of the bore 21 and lower portion of the bore 2 and furthermore constitutes means when shifted to close the lower portion of the bore 2, consequently preventing any escape of gas or oil. By providing the cut away portion 20 in the

plug 11 to establish communication between the lower portion of the bore 2 and one of the sides of the bore 21 it is evident that a means is set up whereby the gas or oil can be conducted from the well through the port 20 while the supporting cable 9 extends down through the port 2. The bore 21 terminates in interiorly threaded nipples 22 and which can be connected to suitable pipes, not shown, for conducting the oil or gas to suitable reservoirs or tanks.

The combined plug and valve is preferably constructed of strong durable metal and can be made of various sizes with respect to the casing in connection with which it is used.

What I claim is:

A valved plug for oil well casing comprising a housing formed with a tapering seat extending transversely therethrough and angularly disposed with respect to the well casing, said housing further provided with a vertically extending and a horizontally extending bore, each of said bores formed of a pair of branches, said seat communicating with said bores, said vertical bore constituting a passage for a drill supporting cable which extends through the housing, a plug mounted against said seat and provided with a passage for establishing communication between the upper and lower branches of the vertical bore, said plug further having its periphery cut away for establishing communication between one of the branches of the horizontally extending bore and the lower branch of the vertical bore when said plug is in its normal position, said plug further adapted when shifted from normal position to have said cut away portion establish communication between the other branch of the horizontally extending bore and the lower branch of the vertically extending bore and when so shifted cutting off communication between the two branches of the vertical bore, said plug projecting at both ends from said housing, means secured to one end of the plug for retaining it within the housing, and a lever secured to the other end of the plug for shifting it, a recessed offset provided upon the top of said housing, a vertically extending guide sleeve mounted in said recess, and means extending through the wall of the recess for securing said guide sleeve in position, said guide sleeve forming a continuation of the vertical bore of the housing.

In testimony whereof I affix my signature in the presence of two witnesses.

BENJAMIN F. PALMER.

Witnesses:

W. W. FITCHER,

E. C. ZINN.