J. R. FLANNERY AND E. I. DODDS.

MEANS FOR CLEANING BORES OF STAYBOLTS.

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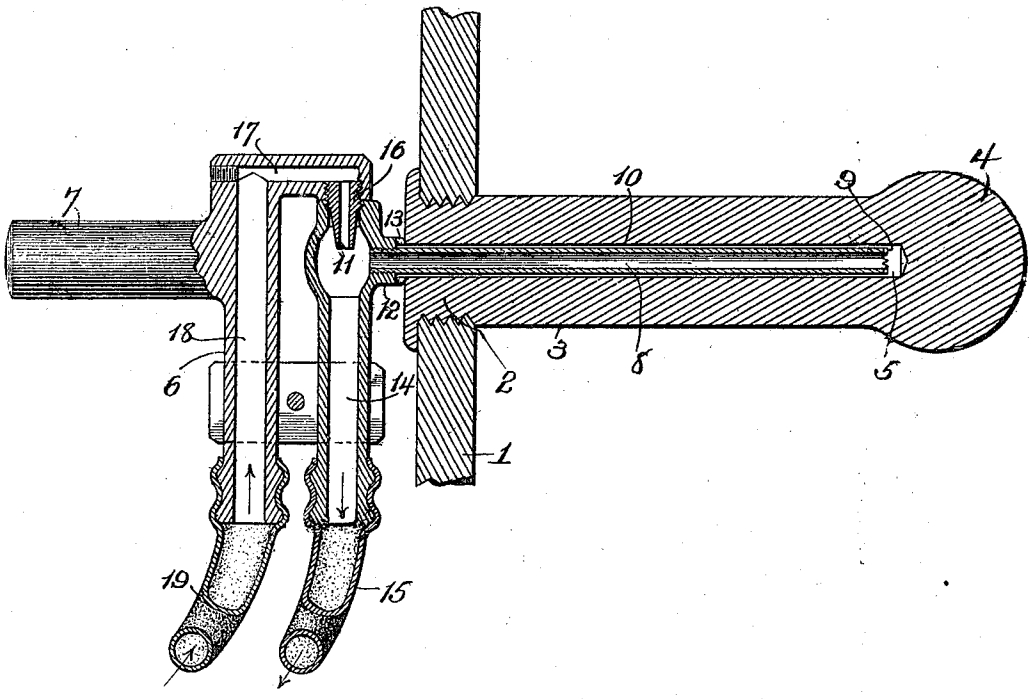
1,317,693. Patented Oct. 7, 1919.



WITNESSES.
E. A. Nottingham
G. F. Downing.

INVENTORS
J. R. Flannery
E. I. Dodds
By Seymour & Bright Attorneys

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN ROGERS FLANNERY AND ETHAN I. DODDS, OF PITTSBURGH, PENNSYLVANIA, ASSIGNORS TO FLANNERY BOLT COMPANY, OF PITTSBURGH, PENNSYLVANIA.

MEANS FOR CLEANING BORES OF STAYBOLTS.

1,317,693. Specification of Letters Patent. Patented Oct. 7, 1919.

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To all whom it may concern:

Be it known that we, JOHN R. FLANNERY and ETHAN I. DODDS, citizens of the United States, and residents of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Means for Cleaning Bores of Staybolts; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to means for cleaning out tell-tale holes in stay bolts for boilers.

Heretofore it has been proposed to provide a staybolt for boilers with a central bore which forms a tell-tale hole into which steam and water may enter in the event that the bolt becomes ruptured, such steam and water finding an exit, in some instances, through the open end of the hole and thus indicating the ruptured condition of the bolt. The tell-tale hole is liable to receive an accumulation of solid matter, such as dust and cinders, which may clog it to a greater or less extent and thus render the functions of said tell-tale hole more or less uncertain.

The object of our invention is to provide simple and efficient means whereby any solid matter which may have accumulated in the tell-tale hole may be easily loosened and quickly removed, so that the bolt may be properly examined to determine its condition.

With this and other objects in view, the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claim.

The accompanying drawing is a sectional view illustrating an embodiment of our invention.

1 represents the inner sheet of a boiler and 2 the inner end of a stay bolt 3 threaded through the sheet 1 and upset,—the other end of stay bolt being made with a head 4 which will be suitably mounted at the outer boiler sheet in any well known manner.

In the construction shown in the drawing, the staybolt is provided with a central bore extending from the inner end of the bolt to a point at or near the head 4 at the outer end of the bolt and forms a tell-tale hole 5.

The device for cleaning the tell-tale hole comprises a head 6 provided with a suitable handle 7, and a tubular tool 8 secured to said head and adapted to enter the tell-tale hole as shown in the drawing,—the free end of said tool being toothed as at 9 for loosening accumulated solid matter within the tell-tale hole, and the diameter of said tool is such with relation to that of the hole or bore 5 that an annular air duct 10 will be formed when the tool is within said bore.

The rear end of the tubular tool 8 communicates with a chamber 11 within the head 6 and the nipple 12 through which the tool passes may be provided with lugs 13 to engage the end of the bolt and insure the free access of air to the annular duct 10.

An outlet duct 14 communicates with the chamber 11 and is adapted for the reception of a tube 15 leading to the inlet of a vacuum pump, not shown. A nozzle 16 is disposed to discharge through the chamber 11 and across the end of the tubular tool 8, said nozzle being located diametrically opposite the duct 14. The nozzle 16 communicates with a duct 17 in one end of the head 6, and said duct 17 communicates with a duct 18, the free end of which latter is adapted for the reception of a tube 19 leading to the outlet of the vacuum pump.

When the tubular tool is inserted into the tell-tale bore and oscillated, the accumulated solid material will be disintegrated or loosened and simultaneously, the passage of air from the nozzle 16 across the chamber 11 will tend to create a vacuum in the latter and hence a suction will be set up through the tool 8 which will operate to withdraw the particles of solid matter and discharge the same through the duct 14.

Slight changes might be made in the details of construction of our invention without limiting its scope, and hence we do not wish to restrict ourselves beyond the scope of the appended claim.

Having fully described our invention what we claim as new and desire to secure by Letters-Patent, is:—

In a cleaning device, the combination of a manually operable head having a suction chamber, and means for creating a suction, and a tubular boring tool secured to said

head and communicating with the suction chamber, the said tool adapted to be entered into a bore open at one end and closed at the other and of less diameter than the bore so as to provide for the passage of air around the same to the free end of the boring tool.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

JOHN ROGERS FLANNERY.
ETHAN I. DODDS.

Witnesses:
F. H. ALLISON,
EDWIN S. RYCE.

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