S. M. CHASE.

REINFORCING TUBE FOR BORING TOOLS.

APPLICATION FILED MAR. 7, 1921.

1,386,687. Patented Aug. 9, 1921.

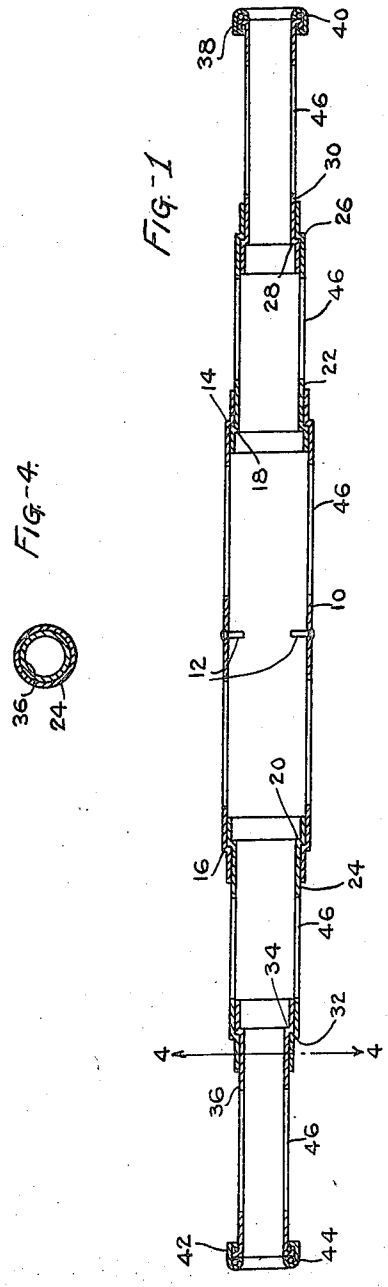


FIG. 1

FIG. 4

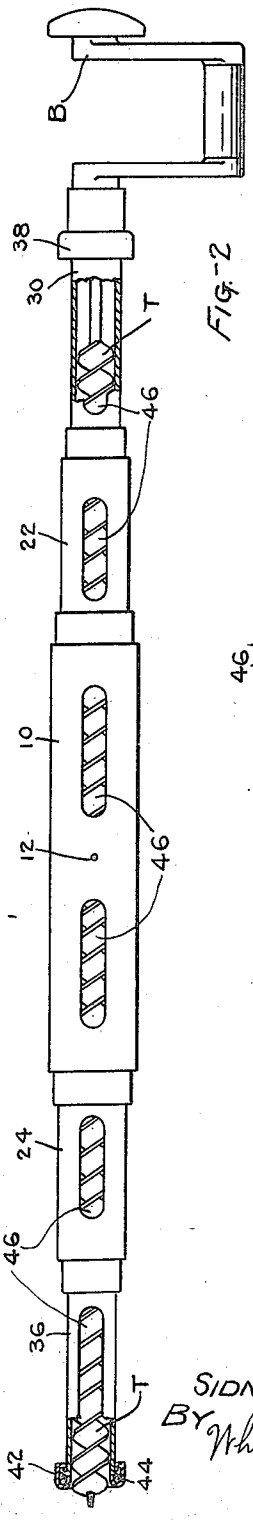


FIG. 2

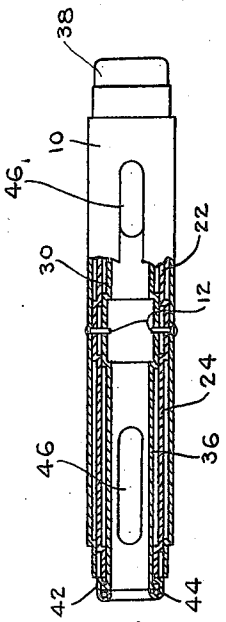


FIG. 3

INVENTOR:
SIDNEY M. CHASE.
BY Whiteley and Ruckman
ATTORNEYS.

UNITED STATES PATENT OFFICE.

SIDNEY M. CHASE, OF MINNEAPOLIS, MINNESOTA.

REINFORCING-TUBE FOR BORING-TOOLS.

1,386,687. Specification of Letters Patent. Patented Aug. 9, 1921.

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To all whom it may concern:

Be it known that I, SIDNEY M. CHASE, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Reinforcing-Tubes for Boring-Tools, of which the following is a specification.

My invention relates to reinforcing tubes for boring tools, and an object is to provide a telescoping tube within which a long bit or boring tool such as used by workmen in installing electric wires, may rotate and be supported. It frequently happens that such long boring tools are not sufficiently strong to stand the strain to which they are subjected. I, therefore, provide a reinforcing tube adapted to fit over the boring tool, this tube consisting of sections which slide together as the boring operation progresses.

The full objects and advantages of my invention will appear in connection with the detailed description, and the novel features embodied in my inventive idea will be particularly pointed out in the claims.

In the accompanying drawing which illustrates the application of my invention in one form,—

Figure 1 is a longitudinal central sectional view of my device in extended position. Fig. 2 is an elevational view of my device partly broken away and applied to a boring tool. Fig. 3 is a sectional elevational view of my device in collapsed position. Fig. 4 is a view in cross section on the line 4—4 of Fig. 1.

Referring to the construction shown in the drawings, the numeral 10 designates the central section of my device, and this section at its middle is provided with stop pins 12. The two ends of this section are contracted to form shoulders 14 and 16 adapted to cooperate with shoulders 18 and 20 respectively on the inner ends of adjacent sections 22 and 24 telescopically engaging within the central section 10. The outer end of the section 22 is provided with a shoulder 26 adapted to coöperate with a shoulder 28 on the inner end of a section 30 telescopically engaging with the section 22, while the outer end of the section 24 is provided with a shoulder 32 adapted to coöperate with a shoulder 34 on the inner end of a section 36 telescopically engaging within the section 24. The outer end of the section 30 is provided with a rotatable ball retainer 38 adapted to contain ball bearings 40, while the outer end of the section 36 is provided with a rotatable ball retainer 42 adapted to contain ball bearings 44. The sections are provided with slots 46 through which the chips may escape.

The operation and advantages of my invention will be apparent from the foregoing description. The reinforcing tube in extended position is placed over a long boring tool such as T attached to a brace B by which it is rotated. As the boring progresses, the telescoping sections gradually slide together, the inward movement of the sections 22 and 24 being limited by the stop pins 12 and the inward movement of the sections 30 and 36 being limited by the ball retainers 38 and 42. When the sections are wholly collapsed as shown in Fig. 3, the tube may be removed, and, if the boring is still to be continued, the exposed portion of the boring tool is not long enough to require reinforcement. The tool attaching member of the brace rests upon one of the ball retainers so that the tool rotates without rotating the tube. When the sections are drawn out into extended position, the coöperating shoulders with which the sections are provided prevent them from being entirely pulled apart.

I claim:

1. A reinforcing tube for boring tools comprising a plurality of telescoping sections.

2. A reinforcing tube for boring tools comprising a central section, and sections of a size different from said central section telescopically arranged at both ends thereof.

3. A reinforcing tube for boring tools comprising a central section and sections of a size progressively decreasing telescopically arranged at both ends of said central section.

4. A reinforcing tube for boring tools comprising a plurality of telescoping sections provided with slots for the escape of chips.

5. A reinforcing tube for boring tools comprising a plurality of telescoping sections and a rotatable ball bearing device mounted on the outer end of an end section.

6. A reinforcing tube for boring tools comprising a plurality of telescoping sec-

tions, and means for limiting the outward movement of said sections.

7. A reinforcing tube for boring tools comprising a plurality of telescoping sections, and means for limiting the inward movement of said sections.

8. A reinforcing tube for boring tools comprising a plurality of telescoping sections, means for limiting the outward movement of said sections, and means for limiting the inward movement of said sections.

In testimony whereof I hereunto affix my signature.

SIDNEY M. CHASE.