

Aug. 11, 1931.

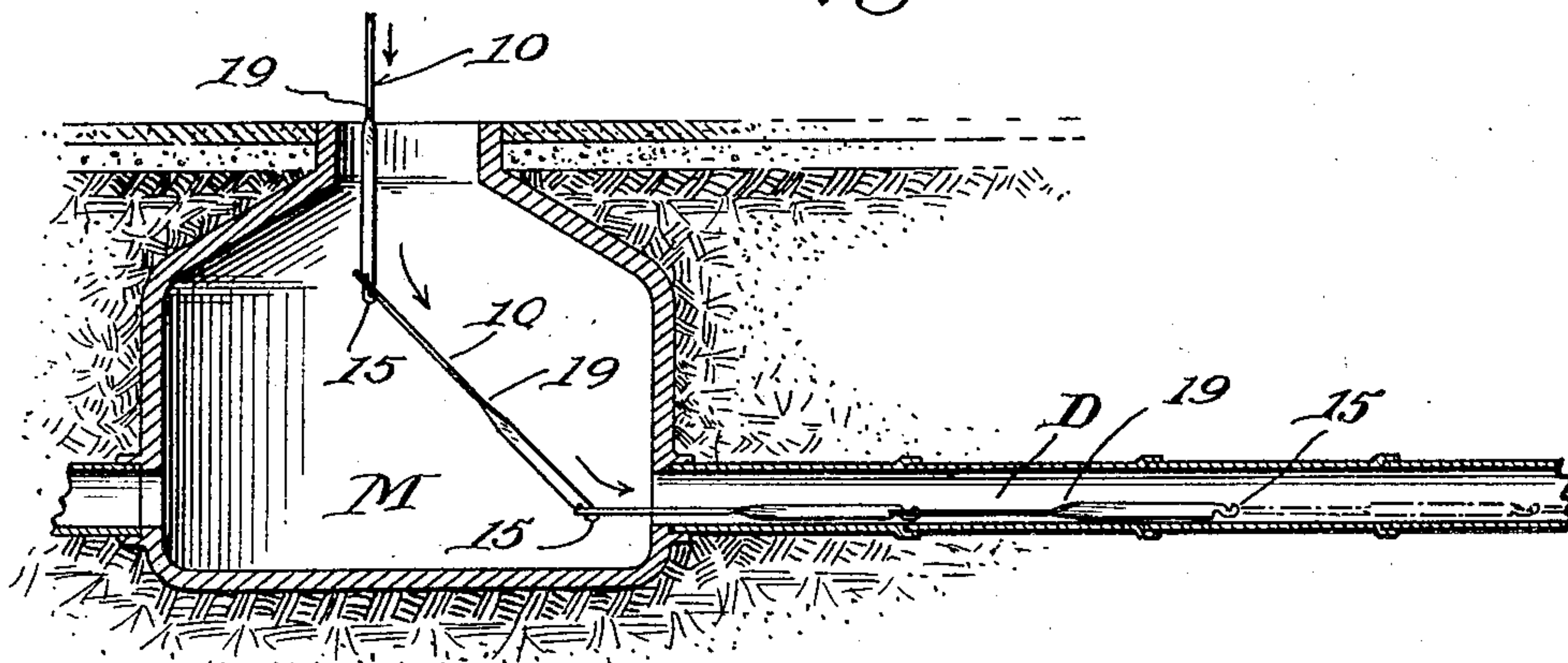
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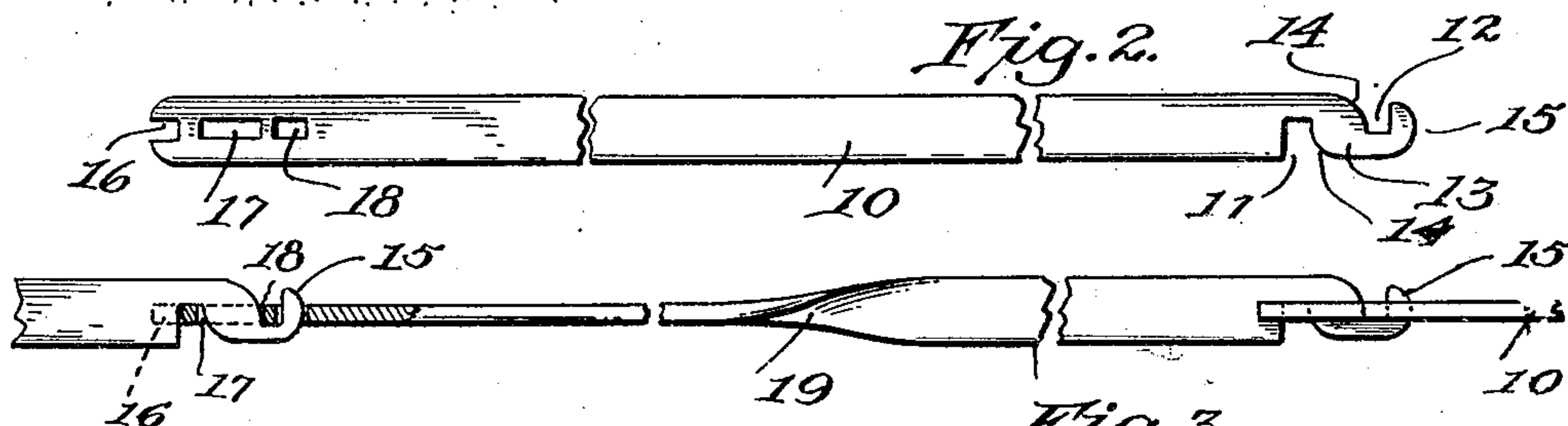
DUCT ROD

Filed June 24, 1930

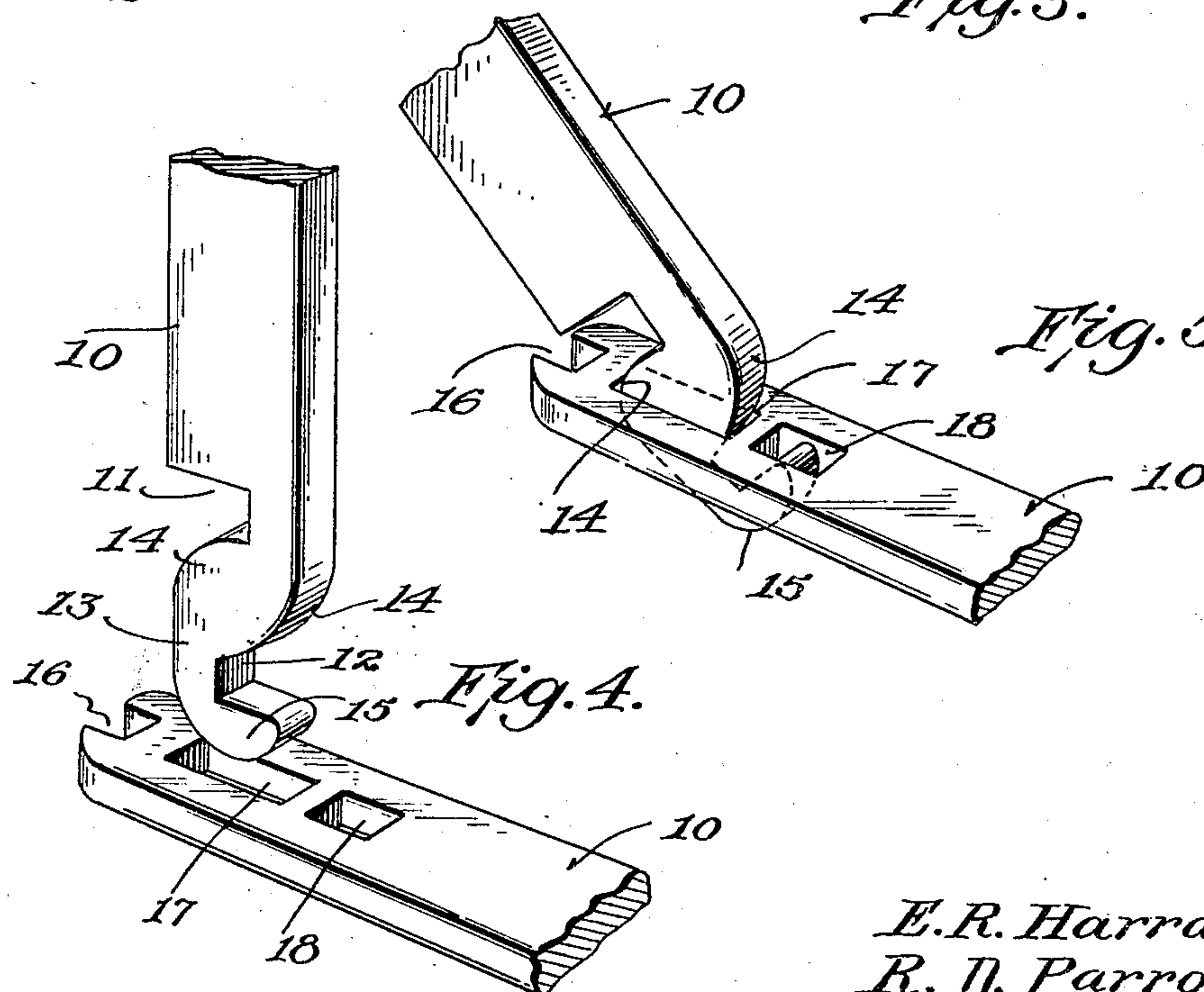
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 4.*

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# UNITED STATES PATENT OFFICE

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## DUCT ROD

Application filed June 24, 1930. Serial No. 463,548.

This invention relates to duct rods such as are used for cleaning underground ducts and for drawing wires through conduits and has special reference to a sectional duct rod.

Among the objects of this invention is the provision of a sectional duct rod wherein the shapes of the ends of the rod sections allows them to be quickly and easily connected and permits considerable flexibility in rodding curved ducts; the provision of sections having a one piece metal construction which gives strength and ease of manufacture, reduces the cost and obviates the splintering due to the use of wooden rods; the provision of metal sections which may be assembled in any location without rotating the rod; the provision of a rod having high abrasive resisting qualities, and which when bundled, occupy less space than those heretofore employed.

With the above and other objects in view the invention consists in general of a novel sectional rod construction wherein the sections are of one piece metal construction.

The invention will now be described in detail in connection with the accompanying drawings, wherein:—

Figure 1 is a vertical section through a man-hole and a portion of a conduit and showing the manner of connecting the sections;

Figure 2 is a plan view showing the stamped blank from which a rod section is made;

Figure 3 is a side elevation partly in section showing one rod section and portions of adjacent sections interlocked therewith;

Figure 4 is an enlarged perspective view illustrating one step in the assembly of adjacent rod sections; and

Figure 5 is a similar view illustrating a succeeding step in the assembly.

In the construction of each section a suitable length of bar or strap metal of uniform width and thickness throughout is stamped or otherwise formed to provide a body 10. A notch 11 extends inwardly from one side edge of the body in spaced relation to an adjacent end. A second notch 12 extends inwardly from the opposite side edge but is located

closer to the adjacent end than the notch 11. These notches are of such depth that the distance laterally across the bar or body between their bottom ends is equal to the thickness of the body. By this means a species of Z-hook 13 is formed at this end, the adjacent sides of the notches being rounded as at 14, as is also the end 15. Extending longitudinally inward from the other end is a notch 16 having parallel sides and a slot 17 of the same width is spaced longitudinally inward from the bottom of the notch 16 a distance slightly greater than the width of the bottom of the notch 11. A second slot 18 is spaced longitudinally inward from the slot 17 at a distance slightly less than the width of the bottom of the notch 12. The length of the slot 17 is slightly greater than the distance longitudinally between the slots 11 and 12 and the length of the slot 18 is slightly greater than the distance between the slot 12 and the adjacent end 15. The body, after being thus stamped from the flat metal bar, is given a 90 degree twist 19 at its center to cause the ends to lie in planes passing through the longitudinal axis of the body and at right angles to each other.

Each section being alike, assembly is effected by approximating the hook end of one section to the slotted end of a second section with the two sections nearly at right angles and the hook end aligned above the slot 17. This hook end is then pushed downwardly through slot 17 and the section is rocked as shown in Figure 5 to cause the end of the Z-hook to engage in the slot 18 and the body adjacent the slot 11 to engage in the notch 16. This operation securely connects the adjacent sections. Figure 1 illustrates the manner of accomplishing the assembly in the restricted space afforded by the usual man-hole M.

The advantages possessed by the duct rods constructed in accordance with our invention will now be appreciated. The end constructions are formed by a single punching operation from a flat metal bar and are brought into a 90 degree relation by a twist at the center. By this construction each section combines two planes at right angles to each other



so that successive sections can be joined by one movement always made in the same plane from any selected location. Due to the shape of the end connections, dirt or gravel cannot lodge in the ends of the rods and prevent their being joined together freely. In addition, the small cross-section of the rod, in comparison with the conventional round rod, makes it easier to push through an obstruction clogging the ducts.

We claim:

1. A sectional rod adapted to be threaded through underground conduits, comprising a plurality of like sections coupled end to end, each section consisting of a flat metal bar having the opposite ends formed to provide respectively a hook member and slots to receive the hook member of another section, and said bar being twisted through 90 degrees intermediate its ends to thereby position said ends in planes at right angles to each other.

2. A duct rod consisting of a series of separable interlocked sections each formed of an integral metal bar twisted to cause its ends to lie in planes at right angles to each other, said sections when in aligned interlocking relation having a corresponding end of each in one of said planes and the remaining ends in the other of said planes.

In testimony whereof we affix our signatures.

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