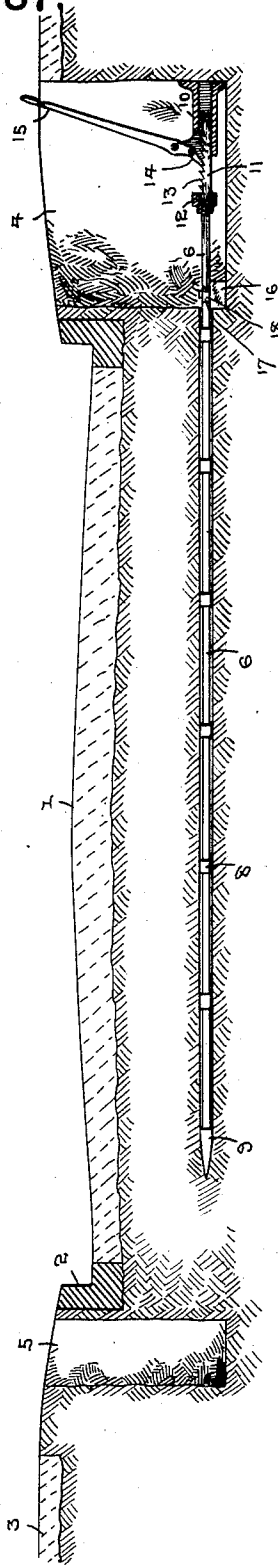
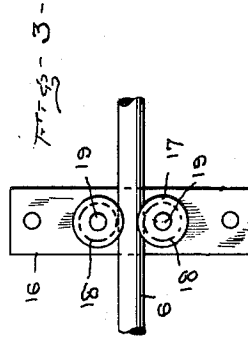
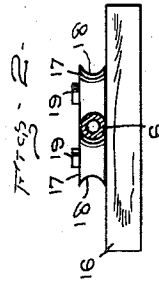
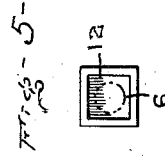
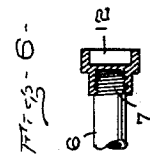
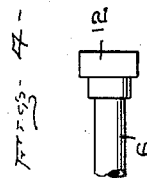


J. E. MARQUISS.  
CONDUIT FORMING DEVICE.  
APPLICATION FILED MAY 29, 1916.

Patented Dec. 26, 1916.

1,210,187

Fig. 1-



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# UNITED STATES PATENT OFFICE.

JAMES E. MARQUISS, OF MONTICELLO, ILLINOIS.

## CONDUIT-FORMING DEVICE.

1,210,187.

Specification of Letters Patent. Patented Dec. 26, 1916.

Application filed May 29, 1916. Serial No. 100,673.

*To all whom it may concern:*

Be it known that I, JAMES E. MARQUISS, a citizen of the United States, residing at Monticello, in the county of Piatt and State of Illinois, have invented certain new and useful Improvements in Conduit-Forming Devices; and I 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.

My invention relates to new and useful improvements in conduit forming devices and more particularly to that class adapted to be used for forming conduits below street surfaces through which are to be extended pipes for various purposes, and my object is to provide a rod or plunger which is formed of a plurality of short sections threadedly connected thereafter together, in combination with means whereby when one section has been forced into the soil, an additional section may be added thereto.

Other objects and advantages will be hereinafter set forth and more particularly pointed out in the accompanying specification.

In the accompanying drawings which are made a part of this application, Figure 1 is a cross sectional view through a street surface, showing the manner of applying my improved device to use. Fig. 2 is an enlarged detail sectional view of the guide for the rod. Fig. 3 is a top plan view thereof. Fig. 4 is a side elevation of the socket employed for retaining the rod operating jack in engagement with the rod. Fig. 5 is an end elevation thereof, and Fig. 6 is a sectional view thereof.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, 1 indicates a street surface which may be covered with any suitable form of paving material, 2 indicates the curbing at each edge of the street surface, and 3 indicates the usual form of side walks, and as it is frequently necessary to lay pipes below the street surface necessitating the cutting of the paving material, I have provided means for forming a conduit through the soil below the paving material without disturbing the street surface, and to this end trenches 4 and 5 are formed, at opposite sides of the street surface and preferably between the curbing and the side walks, said

trenches being of a depth equal to or greater than the depth at which the conduit is to be formed below the street surface, the trench 4 being of a much greater width than the trench 5 whereby the necessary implements for forming the conduit may be operated from the larger trench.

The conduit forming device comprises a rod or plunger 6 which is formed of any number of sections, one end of each section having threads 7 for engagement with a threaded sleeve 8 of the next succeeding section so that any number of the sections may be coupled together to extend the rod or plunger to any length. At one end of the rod 6 is a head 9 which is preferably pointed or torpedo-shaped so that when the head is screwed into engagement with one of the sections of the rod, and pressure is applied to the free end of the rod, the head will readily pass into the soil and form an opening therein.

The rod 6 and head 9 attached thereto are forced lengthwise through the soil below the street surface by means of a jack 10, the base of the jack resting against one vertical wall of the trench 4, while the plunger 11 of the jack is engaged with a socket 12 threaded into engagement with the outermost section of the rod 6, said socket being preferably square in cross section so as to fit the contour of the plunger of the jack, said socket holding the jack in horizontal alinement with the rod while being operated to move the rod lengthwise. One face of the plunger 11 is provided with a plurality of teeth 13 with which cooperate a finger 14, of a lever 15, said lever being pivoted to the jack 10, the finger 14 being so arranged that when the lever is moved in one direction, it will drag over the teeth 13, and when moved in the opposite direction will engage the teeth and cause the plunger to move outwardly, and as the outer end of the plunger is in engagement with the socket on the rod 6, said rod will be moved lengthwise.

In order to guide the rod 6 as it is being forced into the soil, a block 16 of any suitable construction is placed below the pipe 6 adjacent the edge of the trench at which the head 9 is being forced into the soil, said block having a pair of sheaves 17 rotatably mounted thereon, said sheaves having grooves 18 in which the rod 6 fits, and as the sheaves are on opposite sides of the pipe

and as said block is preferably anchored to the bottom portion of the trench 4, the pipe 6 will be properly guided into the soil.

5 In operating this form of device, the head 9 is attached to one of the sections of the rod or plunger, while the socket 12 is attached to the opposite end thereof and by placing the pointed end of the head 9 in engagement with the soil at the point where it is desired to form the conduit and the parts of the jack operated to move the plunger outwardly, said head and section of the rod will be moved lengthwise into the soil. As soon as one section has been forced into the soil, the socket 12 is removed from the end of the rod and a new rod section attached thereto and said socket then attached to the outer end of the new section, this operation being continued until the head 9 projects through the soil into the trench 5. The sheaves 18 engage the rod on opposite sides thereof, and as the sheaves 18 are slidably as well as rotatably mounted upon the studs 19, by lifting upwardly on the sheaves, one or both of the sheaves may be removed from the studs for the introduction of the next rod section between said sheaves. As soon as the head 9 has been forced entirely through the soil and enters the trench 5, said head may be unscrewed from the rod and the rod then pulled backwardly through the conduit and the sections of the rod uncoupled as they are cleared of the conduit. The conduit is then left clear for the introduction of a pipe, and if the pipe is formed in sections, one section may be entered into the conduit and the next succeed-

ing section then attached thereto, and likewise moved into the conduit, this operation being repeated until the proper length of pipe has been introduced through the conduit. By forming the conduit in this manner, it will be readily seen that the time and expense of digging through the street surface and replacing the same will be entirely avoided, and it will likewise be seen that the conduit may be formed at a minimum expense and with the requirement of a minimum amount of time and labor. It will further be seen that the conduit can be formed without closing the street or interrupting the traffic thereover, and when the pipe has been laid and properly connected at its ends, the jack and guide member are removed from the trench and the two trenches then filled with the dirt removed to form the same.

I claim:—

In a conduit forming device, the combination with a jack having a plunger and a lever for operating the plunger, of a rod in sections, means for securing the sections together, a head at one end of the rod, a socket removably attached to the opposite end of the rod, said socket being adapted to engage the plunger of the jack and means to guide said rod.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES E. MARQUISS.

Witnesses:

R. B. WEDDLE,  
GEO. P. MARTIN.