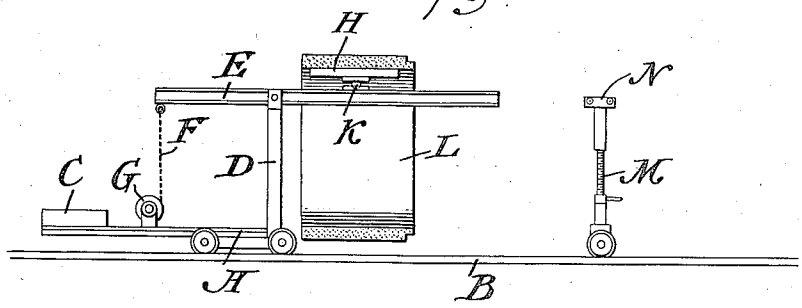
J. C. MITCHELL.

METHOD OF LAYING SECTIONAL PIPES.

APPLICATION FILED MAY 6, 1915.

1,195,147. Patented Aug. 15, 1916.

Fig. 1.



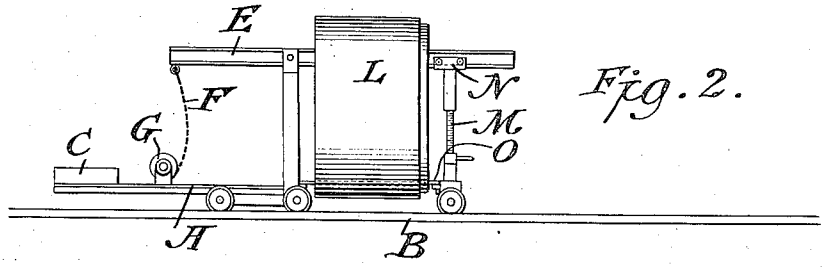


Fig. 2.

Fig. 3.

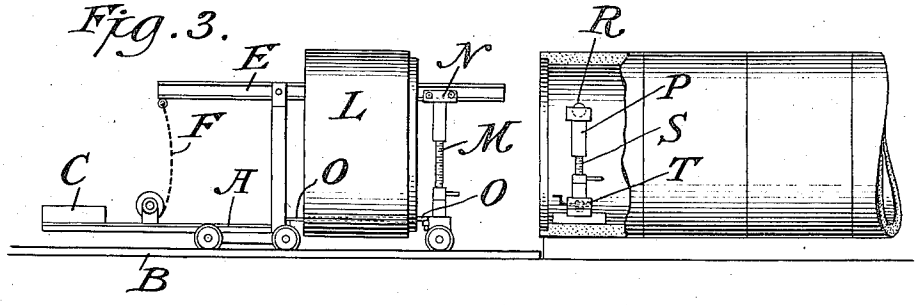
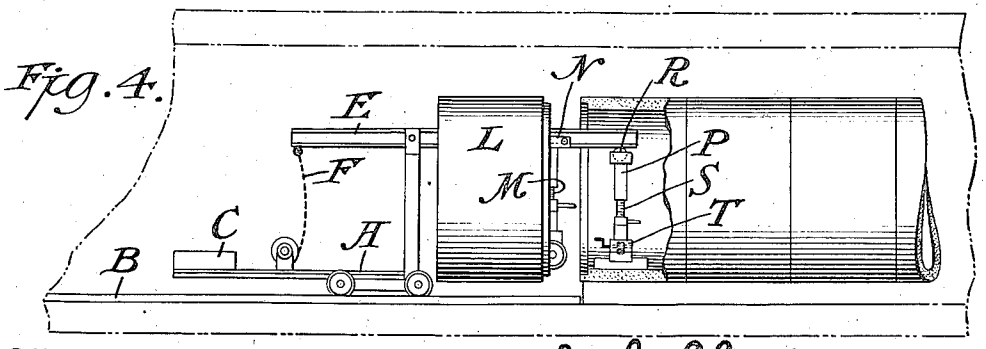


Fig. 4.



Witnesses:

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JOHN C. MITCHELL, OF AMPERE, NEW JERSEY.

METHOD OF LAYING SECTIONAL PIPES.

1,195,147. Specification of Letters Patent. Patented Aug. 15, 1916.

Application filed May 6, 1915. Serial No. 26,231.

To all whom it may concern:

Be it known that I, JOHN C. MITCHELL, a citizen of the United States, residing at Ampere, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Methods of Laying Sectional Pipes, of which the following is a full, clear, and exact description.

In the present advanced state of the art of constructing water conduits, it is not unusual to build the pipe or conduit in sections of reinforced concrete which, though only about six feet in length, are of such diameter and mass as to weigh ten tons or more each, and when such sections are laid, particularly in tunnels or confined trenches, it becomes a most serious problem to provide means for handling, transporting and placing the sections economically and in such manner as to insure the proper alinement of each section as laid. To accomplish the desired result in this regard, I have devised an apparatus which answers perfectly all practical requirements and renders the laying of such pipes an easy and simple matter.

My present application has for its subject this apparatus, and while the specific details of the same are hereinafter more fully set forth and illustrated by reference to the drawing, I may now describe in a general way those features which distinguish the same and constitute what I understand to be its novel and patentable features.

I employ, in the first place, a four-wheeled truck, which is designed to run on a track extending from any desired point up to the end of a laid section of pipe, which it is the purpose to extend by the addition of another section or sections. This truck carries a motor by means of which it may be propelled back and forth over the track, and other operations performed as may be required.

On the forward part of the truck a vertical support is placed, which according to good engineering practice would be preferably an A-standard, and pivotally connected thereto at or near its top is a strong I-beam, the rear end of which is connected by a chain to a hoisting device on the truck which is designed to be operated, when necessary, by the engine.

When a pipe section is to be put in place in the line of pipe, it is hoisted out or lowered over the track in front of the truck, the I-beam, by the forward movement of the truck, threaded through the section, and the chain tightened to bring the I-beam into tight or lifting contact with the interior of the section.

The I-beam carries a saddle mounted on a universal joint which impinges upon the inner surface of the pipe section and allows for a slight subsequent adjustment of the same to facilitate its exact alinement with the laid section.

In addition to the truck above described, and which has four or more wheels, I also employ a two wheeled truck carrying an extensible column or support with a head at the top adapted to pass over onto and engage with the I-beam. This truck is then moved up to the forward end of the pipe section, engaged with the I-beam and then elongated by a jack until it takes up the weight on the free end of the beam and supports the pipe section on itself and the A-standard on the four wheeled truck. The rear and forward trucks are then rigidly connected by any suitable means, such as metal bars, and the whole moved up to the laid section of pipe. Within the end of the latter is an extensible column or support mounted on a temporary base and carrying at its top an anti-friction head over which the end of the I-beam is run. Then, by a jack in the column, the latter is extended until it takes up the weight on the forward end of the beam, relieving that on the two wheeled truck. The latter is then shortened by its jack, released from connection with the rear truck, and when its reduced length permits, is run back on the beam and into the section of pipe. This permits the latter to be brought up snug with the end of the laid section, and by the manipulation of a lateral adjusting means on the column inside the laid section, the new pipe section is brought into perfect alinement, the joint connected and a foundation built under the new section.

The support constituted by the two wheeled truck is then shortened, the chain to the I-beam is loosened, and the trucks and columns then withdrawn, for bringing up and adding another pipe section.

In the accompanying drawing, an apparatus of this general character is illustrated. In this drawing, I have omitted specific illustration of the several devices used, of the universal joints and means for adjusting the supports longitudinally and lat-

erally, merely indicating such devices in a more or less conventional way, as these, in themselves, form no part of my invention and are well known and understood by those skilled in the art.

Figure 1 is a sectional view of a pipe section, and a side view in elevation of the trucks and their appurtenances. Fig. 2 is a side elevation of a pipe section supported by the two trucks. Fig. 3 shows the same parts and in addition a part of a laid pipe, the end being in section, to exhibit the supporting column arranged therein. Fig. 4 is a general view of a tunnel or trench, showing the two-wheeled truck shortened and forced back into the pipe section, and the forward end of the beam resting on the column within the laid section.

The four-wheeled truck A, running on a track B, carries a motor, represented by C, and a stout standard D to which the I-beam E is pivotally connected.

A chain F is connected to the rear end of the beam and to a hoisting device G, and a saddle H, is shown as placed on the I-beam and provided with a universal joint K. The pipe section to be laid is marked L, and the two-wheeled truck, with a jack M and a head N to engage with and run or slide along the beam, are shown as detached from the rear truck in Fig. 1, but operatively connected therewith by rods O, in Figs. 2 and 3.

In Figs. 3 and 4, the end of the laid pipe is shown with the movable column P, mounted therein. This latter has an anti-friction head R, a jack S for its longitudinal adjustment, and a device T by which it may be laterally adjusted.

It will be understood that as soon as a pipe section is adjusted in position, the track under it may be removed, if so desired, before the bed of concrete or other material is put in under the new section of pipe.

This device has proved in operations carried out on a very large scale to be a great saver of time, labor and expense, and has proved an engineering accomplishment of the highest value.

What I claim is:

1. An apparatus for transporting and laying large pipe sections, comprising, in combination, three coöperating elements, a truck and horizontal beam supported thereon to be threaded through a pipe section, a truck with a longitudinally adjustable support for the forward end of the beam, and a longitudinally adjustable support adapted to be placed in a laid section of pipe and to take up the weight of the forward end of the beam when the latter is introduced into said laid section.

2. In an apparatus of the kind described, the combination with a truck, a horizontal beam pivotally supported thereon, and means for tilting the beam, of a longitudinally adjustable traveling support for the forward end of said beam, adapted to travel along said beam and to be forced into a pipe section supported by the beam when sufficiently reduced in length, whereby a pipe section on the beam may be forced into intimate engagement with a laid section.

3. In an apparatus of the kind described, the combination with a truck, a horizontal beam pivotally supported thereon, and means for tilting the beam, of a saddle connected to the beam by a universal joint, a truck having a longitudinally adjustable support for engaging with the beam, and adapted to be forced back into a pipe section on the saddle when sufficiently shortened, whereby a pipe section on the beam may be brought into intimate engagement with the end of a laid section.

4. The combination with a truck having a horizontal beam adapted to carry a pipe section, of a longitudinally adjustable support adapted to be set in the end of a laid pipe section to receive and support the end of the beam when a new section is brought thereon into engagement with the laid section.

5. The combination with a truck having a horizontal beam adapted to carry a pipe section, of a longitudinally and laterally adjustable support adapted to be set in the end of a laid pipe section to receive and support the end of the beam when a new section is brought thereon into engagement with the laid section, and to facilitate the alinement of such new section.

6. An apparatus for laying heavy pipe sections, comprising, in combination, the following instrumentalities: a beam for threading and sustaining a pipe section, traveling front and rear supports therefor, a fixed longitudinally adjustable support adapted to be set in a previously laid section to receive and support the forward end of the beam when the pipe section is brought up to a laid section, both the forward and the fixed supports being removable through the pipe section when said section, supported by them, has been brought up to and secured in proper alinement with the laid section.

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

JOHN C. MITCHELL.

Witnesses:

ALLAN M. HIRSH,

MAY PRICE.