No. 895,439. PATENTED AUG. 11, 1908.

T. DE YOUNG, JR.

MACHINE FOR LAYING PIPE IN TRENCHES.

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Fig. 1.

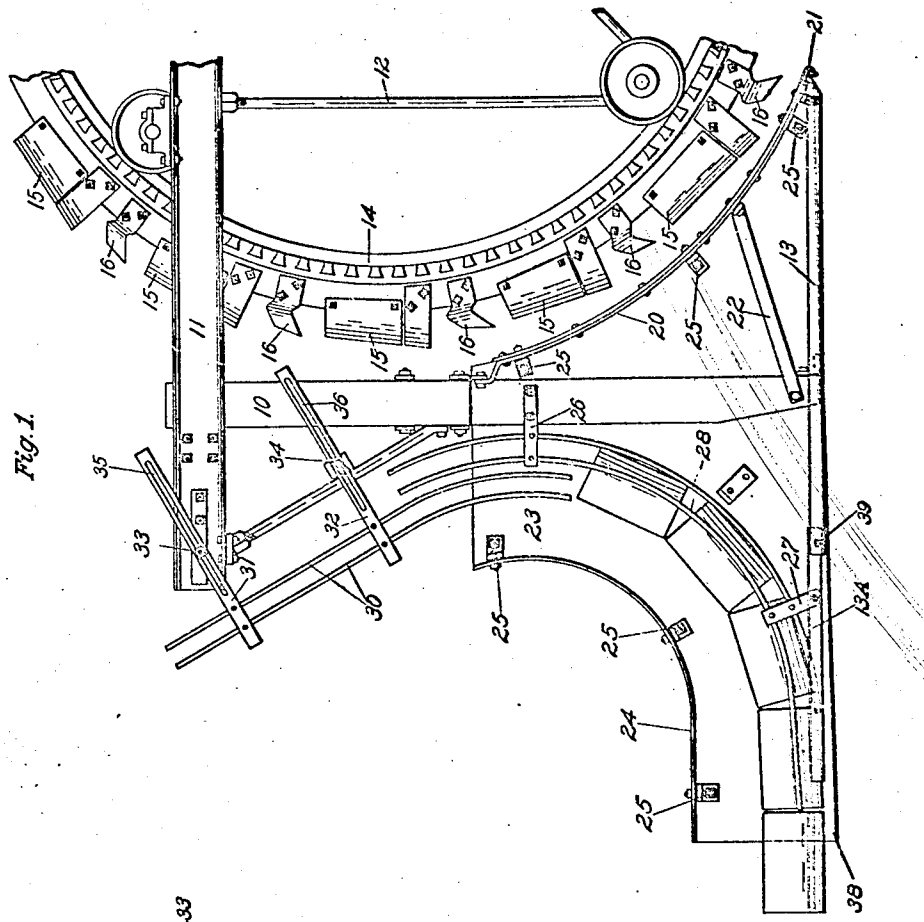
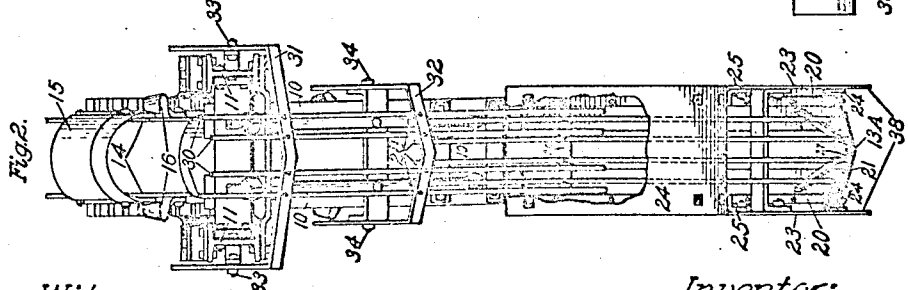


Fig. 2.



Witnesses:

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MACHINE FOR LAYING PIPE IN TRENCHES.

No. 895,439. Specification of Letters Patent. Patented Aug. 11, 1908.

Application filed February 21, 1908. Serial No. 417,055.

To all whom it may concern:

Be it known that I, TEUNIS DE YOUNG, Jr., a citizen of the United States, residing at South Holland, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Machines for Laying Pipes in Trenches, of which the following is a specification.

My invention relates to machines for digging ditches or trenches in the ground and laying tile therein in a single operation.

The object of this invention is to provide a machine which will in a single movement through the earth ditch and elevate therefrom the earth which was originally in it and lay in said ditch a tile pipe without there being any opportunity for the earth caving into said ditch before the tile is laid and without subjecting workmen laying the tile by hand to any danger.

The invention consists in a device of the class described which can be easily and cheaply made and installed which can be easily operated and is satisfactory in operation and is not readily liable to get out of order.

More in detail it consists in the combination with a device such as that shown in my prior U. S. Patent 875,789, issued January 7, 1908, a device for keeping the sides of the ditch open a sufficient length of time to permit the laying therein of tile and a tile laying device carried by the machine by means of which tile may be laid in the ditch before the protecting device is carried along by the machine.

Still more in detail the invention consists in a novel device for laying tile in the ditch the same being operatable from the ground above the ditch and in mechanism for varying the capacity of the machine so that it may be used with tile of different sizes.

The invention also consists in details of construction which will be hereafter more fully described and claimed.

Referring to the drawings, Figure 1 is a side view of a device embodying this invention in its preferred form. Fig. 2 is a rear view showing particularly the tile laying mechanism.

In using the device of this invention a suitable framework 10, 11, 12 and 13 is provided in the forward part of which is mounted some sort of a ditching machine. In Fig. 1 the numerals 14, 15 and 16 represent parts of such a device which is fully illustrated, described and claimed in my above mentioned U. S. patent. As shown and described in that patent the digging wheel of this device travels in a counter clockwise direction when viewed as in Fig. 1 to cut from and elevate from the earth the material occupying the space designed to be the ditch, this while the entire mechanism is gradually moved forward or toward the right in Fig. 1. About the lower rear portion of this excavating and cutting wheel there is provided on the frame a guard plate 20 connected to the base member 13 in the pointed shoe 21. This device is as shown of substantially the width of the trench and serves to prevent any small particles of dirt dropping from the members 15 and 16 of the wheel falling into the bottom of the trench in such a way as to interfere with the pipe laying mechanism which will be hereafter described. The curved guard plate is braced by one or more braces 22 secured to the post 10 and the guard plate. Connected to the sides of the curved plate 20 are two protecting side walls 23 extending as shown a considerable distance back from the plate 20 and past the post or posts 10. The rear portion of these side plates 23 are cut away in a curved line as shown and covered over by the curved apron 24 supported upon cross braces 25. The result of this entire construction is that a hollow box is formed within the ditch, open at its top and at its rear only the opening at the top being at such a height that it is normally above the surface of the earth upon which it is worked so that loose particles of earth can not inadvertently fall into the box. Rigidly secured to two suitable supporting members 26 and 27 are a plurality of wires or rods 28 curved as shown so as to form the base of a track adapted to conduct tile from the opening in the top of the box or casing heretofore described down to a position in which as shown in Fig. 1 they lie flat in the bottom of the ditch each abutting against the next in the manner shown. As it is not desirable that tile shall be dropped perpendicularly down any portion of this chute it is made in curved form as shown, and when it passes the perpendicular at about the location of the supports 26 a plurality of other rods or wires 30 are provided supported upon suitable frames 31 and 32 desirably connected at 33 and 34 respectively to the main frame

of the machine. These supporting members 31 and 32 are provided with slots 35 and 36 through which the fastenings 33 and 34 pass so that said supporting members 31 and 32 with attached rods 30 may be adjusted with reference to the rods 28 so that tile of any size which will go into the protecting box heretofore described may be slipped down the rods 30 and thence into the rods 28 and thence into the ditch.

As the total length of the machine from the point 21 to the rear extremity 38 is too long when made perfectly rigid to readily pass around slight curves which may be necessarily formed in the trench or ditch the base is made in two parts 13 and 13ª the portion 13ª to which the support 27 is attached being pivotally mounted at 39 so that there is a slight give or yield in a horizontal plane between the two parts of the base with the result that a curve may be more easily followed.

In the operation of this device the operator places the machine upon the ground and starts the cutting mechanism in the forward part of the machine which operates as heretofore stated and as fully described in my prior patent. This operation cuts the ditch in the ground and at the same time propels the entire mechanism gradually forward. When the machine has proceeded far enough so that the real bottom of the ditch is reached the operator begins to feed tile sections into the tracks 30 and 28 in the manner described. The first one slips down as shown to the bottom of the ditch and as the machine progresses along its path successive tile follows each other down the track and lie end to end in the bottom of the ditch. As the track which carries these tile sections into the ditch is fully protected on all sides there is no possibility of loose pieces of earth falling in between said successive tile and preventing the proper laying of the same. After the machine has passed along and left the tile, means such as manual labor is provided for filling in the dirt upon them.

What I claim as new and desire to secure by Letters Patent, is:

1. In a device of the class described, a protecting casing adapted to exclude from the ditch particles of earth, and a guiding track through said casing so arranged that tiles slipped down said track will slide to properly laid position in the ground.

2. A tile laying device comprising a suitable frame work adapted to fit in the ditch, an inclosing device about said framework, adapted to exclude particles of earth during the tile laying operation, and a tile track or runway through said inclosing device adapted to lead tile sections through said device to properly laid position within the ground.

3. A tile laying device comprising a suitable frame work adapted to fit in the ditch, an inclosing device about said framework adapted to exclude particles of earth during the tile laying operation, and a tile track composed of wires or rods through said inclosed device adapted to lead tile sections through said device to properly laid position within the ground.

4. In a device of the class described a curved track 28 for tile extending from substantially horizontal position to substantially a vertical position and adapted to have tile slide thereon and supplemental rods 30 placed opposite the upper portion of said first mentioned rods and thence extending upwardly in an inclined direction adapted to have tiles slide thereon from a point above the first rods to such a point that the first mentioned rods are in a position to support the tile for the purposes described.

5. In a device of the class described a curved track 28 for tile extending from substantially horizontal position to substantially a vertical position and adapted to have tile slide thereon and supplemental rods 30 placed opposite the upper portion of said first mentioned rods and thence extending upwardly in an inclined direction adapted to have tiles slide thereon from a point above the first rods to such a point that the first mentioned rods are in a position to support the tile for the purposes described, and means for adjusting the distance between the two sets of rods to accommodate different sizes of tile.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

TEUNIS DE YOUNG, Jr.

Witnesses:

DWIGHT B. CHEEVER,

C. J. CHRISTOFFEL.