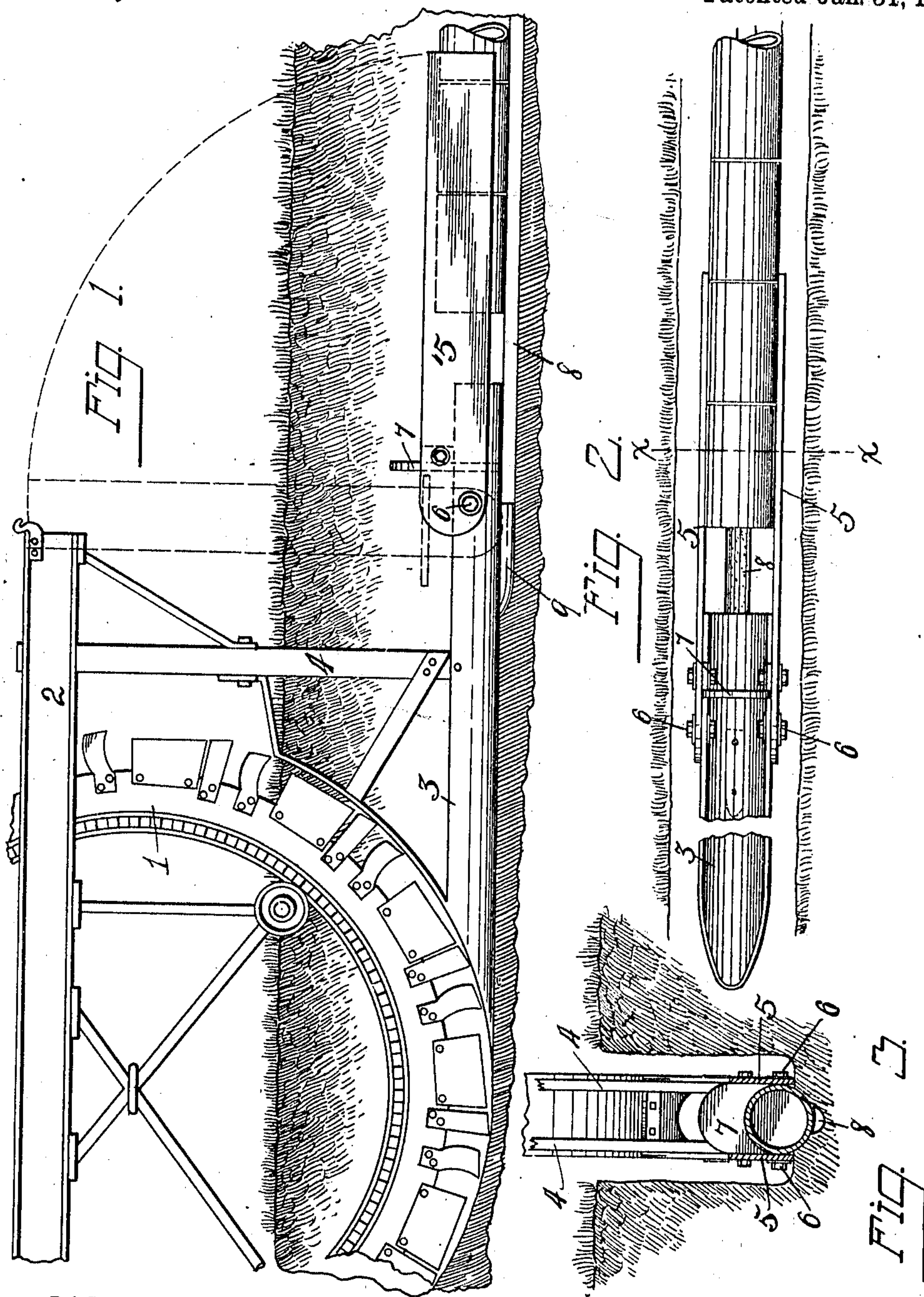


W. ARPS.  
ATTACHMENT FOR DITCH DIGGING MACHINES.  
APPLICATION FILED MAY 16, 1910.

982,781.

Patented Jan. 31, 1911.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

WILLIAM ARPS, OF MALINTA, OHIO.

ATTACHMENT FOR DITCH-DIGGING MACHINES.

982,781.

Specification of Letters Patent. Patented Jan. 31, 1911.

Application filed May 16, 1910. Serial No. 561,590.

*To all whom it may concern:*

Be it known that I, WILLIAM ARPS, a citizen of the United States, and a resident of Malinta, in the county of Henry and State of Ohio, have invented a certain new and useful Attachment for Ditch-Digging Machines; 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to ditching or trench excavating machines, and has reference more particularly to an attachment for use on machines of this type employing a rotary excavating wheel, but is not restricted to such use as it may be employed in any connection for which it may be adapted or appropriate.

The object of my invention is the provision, in combination with a trench excavating machine, of an attachment which is adapted to trail from the excavating parts at the bottom of the trench and to prevent the crumbs or particles of earth, which fall back into the trench, from rolling to the central portion of the trench bottom whereby to interfere with the laying of tile therein, thus enabling tile to be laid with greater ease and much more rapidly than has heretofore been the case.

A further object of my invention is the provision of means on the bottom of the shoe, which usually trails from the excavating parts at the bottom of the trench, for forming a groove in the central portion of the concaved trench bottom into which any earth crumbs which may be lying in the trench bottom may be brushed so as not to interfere with the laying of tile therein. This groove also serves to maintain the tile in alinement until the trench is refilled.

The invention is fully described in the following specification, and a preferred embodiment of the same illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of an excavating machine, with the attachment comprising my invention associated therewith. Fig. 2 is a plan view of a portion of the machine and attachment, and Fig. 3 is a transverse section of the same and a tile laid therein on the line  $x-x$  in Fig. 2.

Referring to the drawings, 1 designates the usual or any suitable type of excavating wheel, 2 a portion of the frame-work of the machine which guides the movements of the wheel, and 3 a shoe or elongated scoop-like member, which is concavo-convex in cross-section, and carried by a pendent portion 4 of the frame 2 in position to rest upon the central portion of the trench bottom and to closely trail behind the wheel. This shoe is commonly used in machines of this type.

The feature of my invention consists in attaching a bar 5 to each side of the rear end portion of the shoe 3 in position to trail therefrom and rest at its lower edge upon the trench bottom at the sides of the central concaved portion usually formed by the wheel scoops and the shoe 3 due to the formation thereof. This is not material, however, for should the trench bottom be flat, or substantially so, the lower edges of the bars 5 are substantially on a level with the shoe bottom, to adapt them to rest upon the trench bottom.

The bars 5 are suitably spaced apart to permit tile to be deposited therebetween on the trench bottom, as indicated, and are of suitable length to permit the placing of one or more tile lengthwise between the same to the rear of the shoe 3. The inner ends of the bars 5 are preferably pivoted to the sides of the shoe 3, as at 6, to adapt them to be swung to inoperative vertical position, as indicated by dotted lines in Fig. 1.

The bars 5 are connected adjacent their rear ends to the rear of their pivot by a partition member 7, which, when the bars are lowered, stands in vertical position and fits down closely within the shoe 3. This partition obstructs the passage of dirt longitudinally through the shoe and causes it to gather at such partition and as it rises above the height of the shoe walls to fall thereover into the trench at the sides of the shoe and bars 5, thus keeping the space between the bars 5 free from crumbs or the like.

In practice it is found that the laying of tile is greatly facilitated by providing a narrow groove 8 centrally of the trench bottom longitudinally thereof, as such groove serves to aline the tile and to hold them in position until anchored by a refilling of the trench, and also to receive any crumbs which may happen to fall within the space between the bars 5. To accomplish this I



provide a lug or groove forming plow 9 on the bottom of the shoe 3, which lug or plow has its nose sharpened to facilitate its passage through the earth.

5 I wish it understood that my invention is not limited to any specific construction or arrangement of the parts, except in so far as such limitations are specified in the claims.

10 Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is,—

1. In a trench excavating machine, the combination with a scoop-like shoe capable  
15 of sliding on a trench bottom, of a pair of bars trailing from such shoe, said bars being spaced from each other and from the trench walls and a member forming a partition transversely between said bars adjacent  
20 their inner ends and fitting down within the shoe to prevent the passage of matter there-

through into the space between the members.

2. In a trench excavating machine, the combination with a scoop-like shoe sliding  
25 on the trench bottom, of a pair of bars trailing from such shoe and pivoted to the sides thereof to permit a vertical swinging of the bars, said bars being spaced from  
30 each other and from the trench walls, and a member forming a partition transversely between said bars adjacent their pivoted ends and adapted to fit down within the shoe to prevent the passage of matter there-  
35 through into the space between the bars.

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

WILLIAM ARPS.

Witnesses:

JAMES DONOVAN,

TILLIE GOTTSCHALK.