

No. 752,003.

PATENTED FEB. 9, 1904.

F. SHUMAN.  
PROCESS OF FORMING CONCRETE PILES.

APPLICATION FILED JUNE 25, 1903.

NO MODEL.

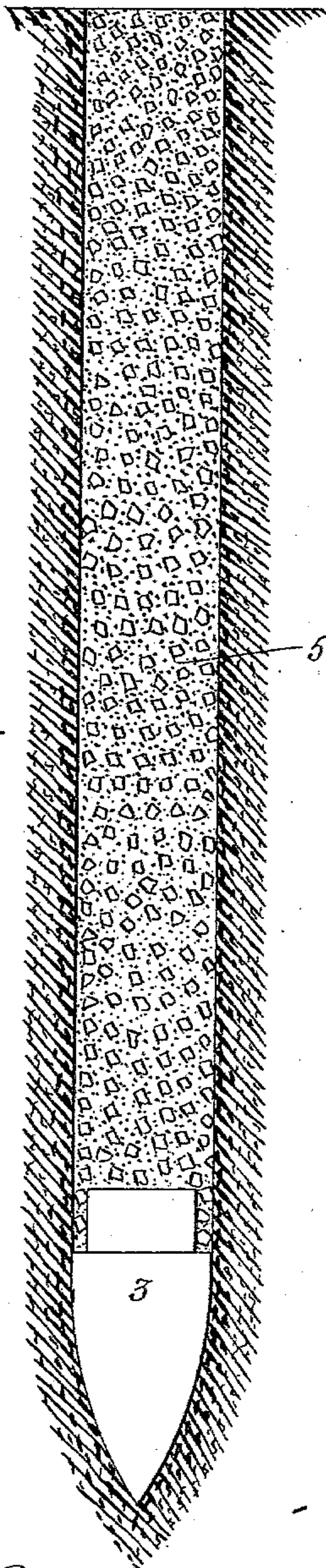


Fig. 2.

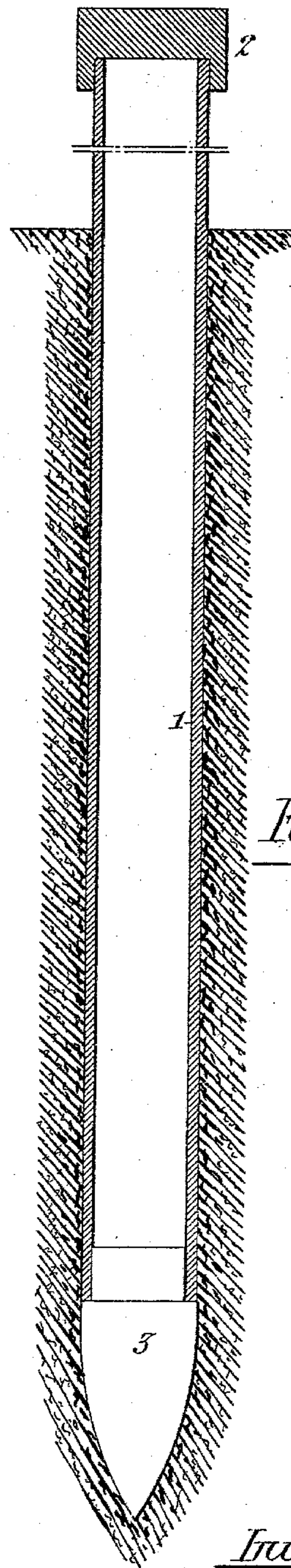


Fig. 1.

Witnesses:-

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## UNITED STATES PATENT OFFICE.

FRANK SHUMAN, OF PHILADELPHIA, PENNSYLVANIA.

## PROCESS OF FORMING CONCRETE PILES.

SPECIFICATION forming part of Letters Patent No. 752,003, dated February 9, 1904.

Original application filed April 23, 1903, Serial No. 153,974. Divided and application filed June 5, 1903, Serial No. 160,190. Divided and this application filed June 25, 1903. Serial No. 163,113. (No specimens.)

To all whom it may concern:

Be it known that I, FRANK SHUMAN, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented a certain Improved Process of Forming Concrete Piles, (the same being a division of my application, Serial No. 160,190, filed June 5, 1903, as a division of my application, Serial No. 153,974, filed April 23, 1903,) of which the following is a specification.

My invention relates to that method of forming piles of concrete or cement which consists in first driving a preparatory pile into the ground, then withdrawing said preparatory pile, and then filling the opening formed thereby with concrete or cement in fluid or plastic form, which when it sets forms the permanent pile.

The object of my invention is to so construct such a preparatory pile that it can be employed as a means for introducing into the opening a base or foundation for the reception of the mass of concrete which is to form the permanent pile.

In the accompanying drawings, Figure 1 is a vertical section of a removable preparatory pile constructed in accordance with my invention, showing the pile driven into the ground in order to form the opening for the subsequent reception of the permanent pile; and Fig. 2 is a similar view showing the permanent pile produced by filling the opening with cement or concrete after the withdrawal of the preparatory pile.

The pile consists of a metal tube 1, although it may be a solid pile, of wood or metal, if desired, this pile being provided at the top with a suitable driving-head 2 and at the bottom with a point 3, which is detachable from the

pile 1, so that when said pile is driven into the ground the point will be forced ahead of it until a hole of the desired depth has been produced, whereupon the pile 1 can be withdrawn, leaving the point 3 at the bottom of the hole. The concrete or other plastic material of which the permanent pile is to be composed is then introduced into the hole above the point, and when it becomes set said concrete forms the permanent pile 5, as shown in Fig. 2, the point 3 at the bottom of the hole constituting an effective base or foundation for said pile, since it is firmly seated in the ground, the latter having been compacted by the point in the driving of the same, for the point is tapered for the double purpose of facilitating entry of the same and effecting the desired displacement or compacting of the earth without tearing or disrupting the walls of the hole.

The point can be made of any material which will withstand the shock of driving.

Having thus described my invention, I claim and desire to secure by Letters Patent—

The method of making concrete piles which consists in providing a pile with a detachable point, driving said pile to displace the earth, withdrawing the pile, without the point, and after the withdrawal of the pile filling the opening, above said point, with concrete or other plastic material and permitting the same to set, substantially as specified.

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

FRANK SHUMAN.

Witnesses:

F. E. BECHTOLD,  
JOS. H. KLEIN.