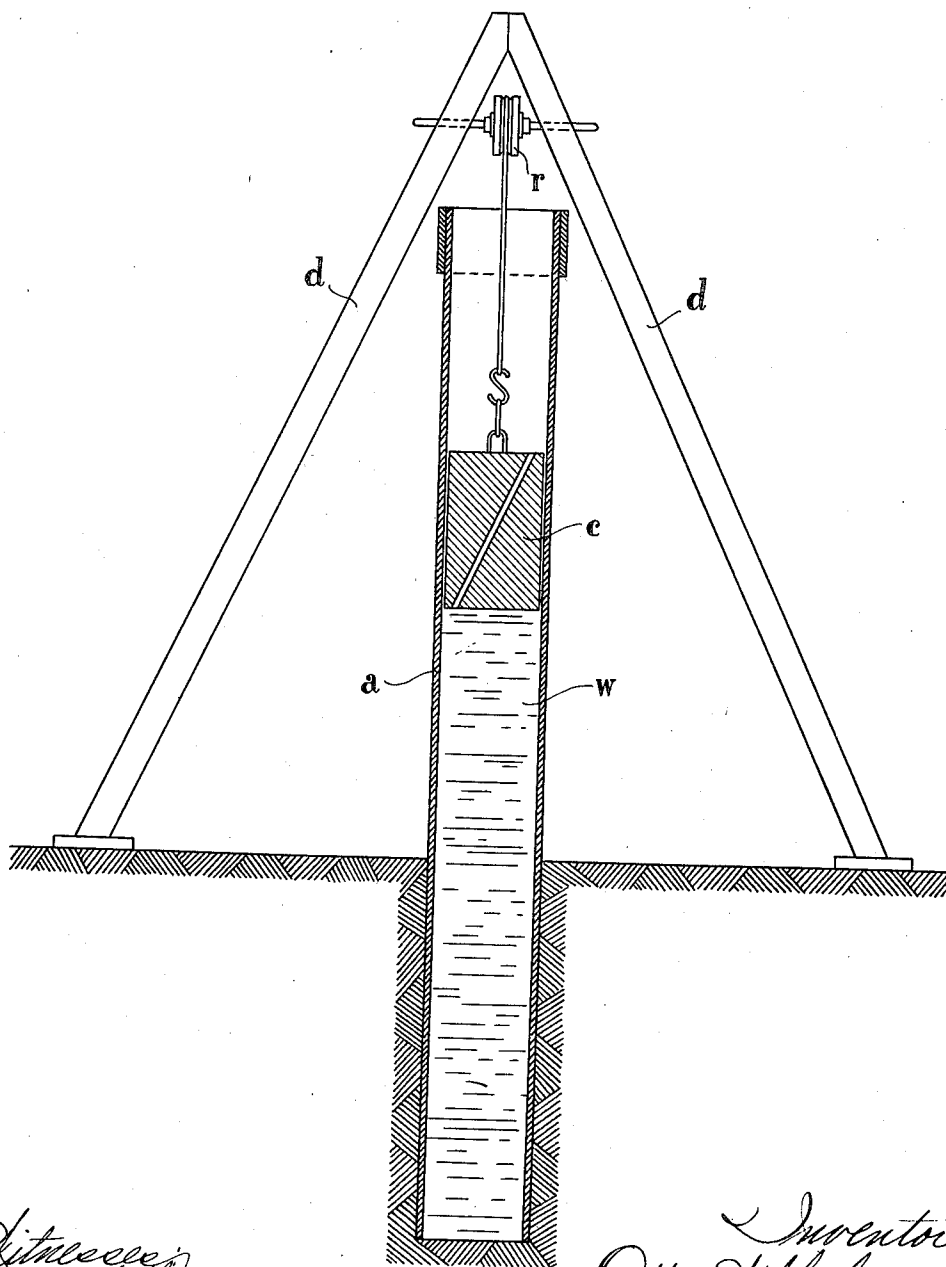


O. WILHELMI.
METHOD OF PRODUCING WELL HOLES, POLE HOLES, AND THE LIKE.
APPLICATION FILED JAN. 2, 1914.

1,103,334.

Patented July 14, 1914.



Witnesses:
H. A. Hobbs
Edw. M. Abbey

Inventor:
Otto Wilhelmi
by B. Singer
Att'y

UNITED STATES PATENT OFFICE.

OTTO WILHELMI, OF LUCERNE, SWITZERLAND, ASSIGNOR OF ONE-HALF TO THE FIRM OF INTERNATIONALE SIEGWARTBALKEN-GESELLSCHAFT, OF LUCERNE, SWITZERLAND.

METHOD OF PRODUCING WELL-HOLES, POLE-HOLES, AND THE LIKE.

1,103,334.

Specification of Letters Patent.

Patented July 14, 1914.

Application filed January 2, 1914. Serial No. 810,019.

To all whom it may concern:

Be it known that I, OTTO WILHELMI, a subject of the German Emperor, and resident of Lucerne, Switzerland, have invented
5 an improved and novel Method of Producing Well-Holes, Pole-Holes, and the like, of which the following is a specification.

To produce holes for wells, piles, poles, posts, and the like, either boring tools are
10 employed which remove the earth from the bore hole (which, however, is deficient in the case of producing holes for concrete poles or the like, because the ground is not compressed below the pointed pile shoe),
15 or driving tubes with a core passing through the interior of the tube and having a pointed lower end are made use of, which afterward are drawn out of the ground; if, perhaps, these tubes have been driven in without the
20 core mentioned, the pile shoe is left behind within the ground. To ram driving tubes into rather resistible ground, very strong blows are necessary which can be attained only by a heavy monkey and a great height
25 of drop.

Experts know from experience that such mode of procedure requires heavy and expensive pile driving machines which entail great expenses for transport, erection,
30 and working, and can not be employed upon any place in consequence of the dimensions of their base and the useful height necessary for certain heights of drop. If, however, a driving tube is rammed in by the mediation of a pile of plastic material, such as
35 cement-, lime-, loam-pulp, liquid concrete, or a column of water or another liquid, the pressure produced by the blow of the monkey is transmitted by hydrostatic action to the
40 inner surface of the tube and to the ground below this latter, the height of that pressure being the result of the height of the column of liquid multiplied by its weight, or of the pressure exerted upon the column
45 of liquid.

In order to make my invention more clear, I refer to the accompanying drawing, in which is represented a vertical section through the ground, a bore hole, a driving
50 tube, and a monkey in connection with some other parts appertaining thereto.

If, for instance, the height of the tube

amounts to 10 meters and that of the column of liquid to 5 meters and if the weight of the monkey *c* amounts to 4,000
55 kilograms, then the pressure upon the ground amounts to 5,000 kilograms multiplied by the weight of the column of liquid of 5 meters, thus: 25,000 kilograms; this pressure is exerted laterally upon the
60 walls of the tube *a* and vertically upon the ground. To produce such a high pressure, a pile driver of the expensive kind above mentioned is required, whereas that pressure may be produced in a very simple,
65 cheap, and as efficient manner by the means shown in the drawing, the more, as the tube *a* may serve at the same time as guide for the monkey *c*, the tube serving as a substitute for the guide posts provided at the
70 pile driving machines.

Owing to the friction (lateral pressure) of the pressed contents of the tube, this latter is driven into the ground if the monkey is dropped upon the mass in the tube, thus
75 without letting the monkey act directly upon the tube itself, whereby the known noisy and hard blows of the monkey are done away with.

The three-legged boom shown may be used
80 as support for the monkey rope pulley and for drawing out the tube afterward if such is required. The lower end of the tube may be appropriately shaped to facilitate its penetrating into the ground.

85 Having now described my invention, what I desire to secure by a patent of the United States is:

1. The method of producing holes for wells, piles, posts, and the like, consisting
90 in introducing a liquid or plastic substance into a driving tube and pressing upon said substance, substantially as described.

2. The method of producing holes for wells, piles, posts, and the like, consisting
95 in introducing a liquid or plastic substance into a driving tube, and letting a monkey act upon said substance, as set forth.

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

OTTO WILHELMI.

Witnesses:

FRANZ HOPPEN,
ALFRED MEGER.