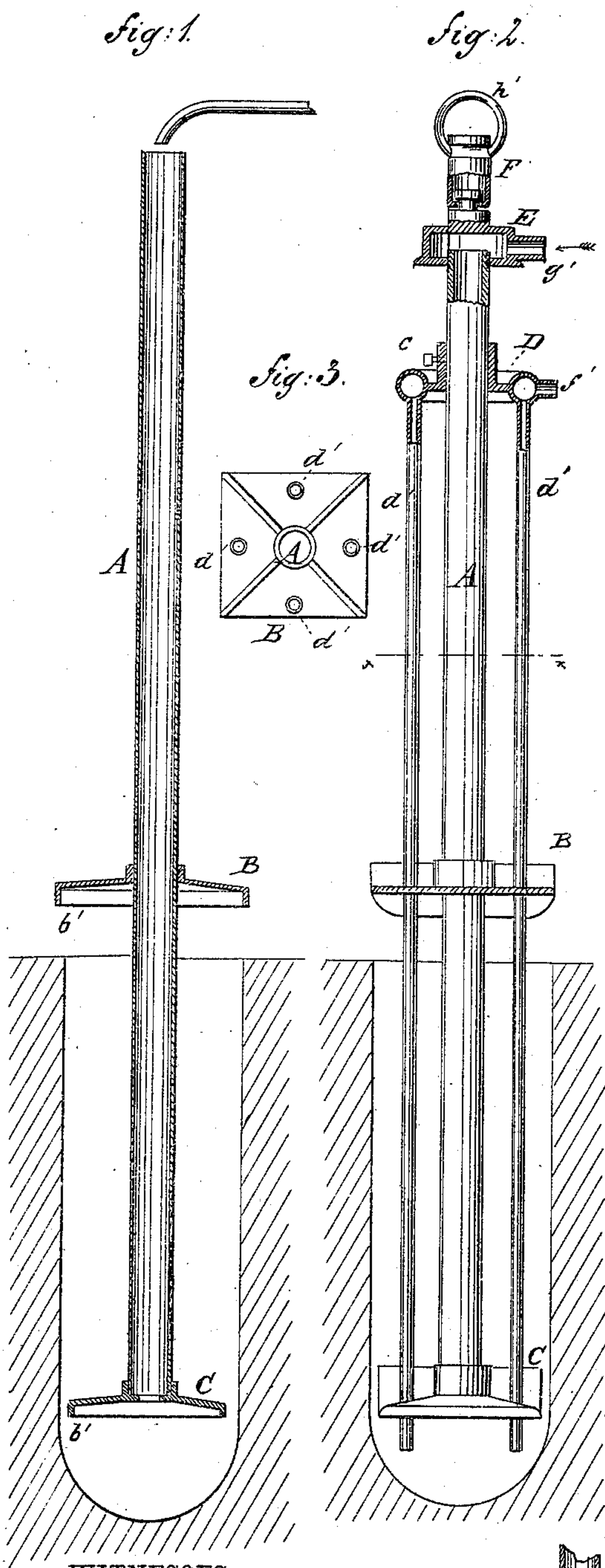


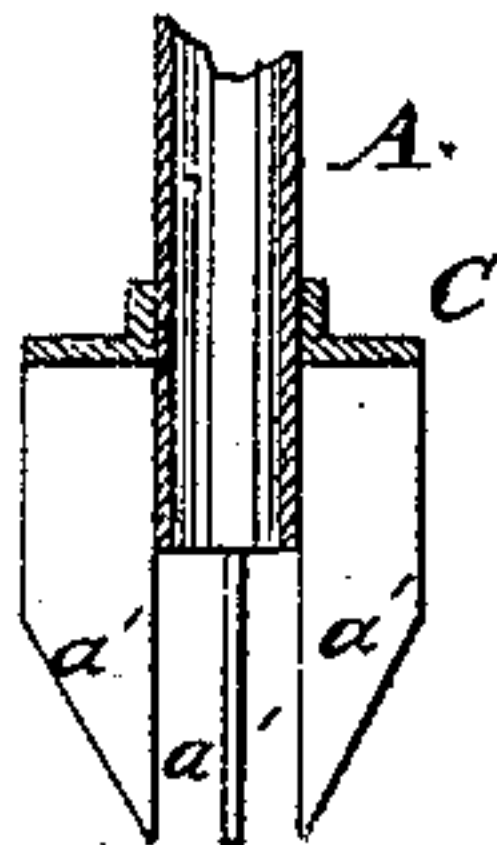
H. CASE.  
 Process and Apparatus for Sinking Piles.  
 No. 223,479.                      Patented Jan. 13, 1880.



WITNESSES:

*Chas. Nida.*  
*C. Sedgwick*

Fig. 4



INVENTOR:

*H. Case*  
 BY *Mum & Co*  
 ATTORNEYS.

# UNITED STATES PATENT OFFICE.

HENRY CASE, OF BROOKLYN, NEW YORK.

## PROCESS AND APPARATUS FOR SINKING PILES.

SPECIFICATION forming part of Letters Patent No. 223,479, dated January 13, 1880.

Application filed July 28, 1879.

*To all whom it may concern:*

Be it known that I, HENRY CASE, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Process and Apparatus for Sinking Piles, of which  
5 the following is a specification.

Figure 1 is a sectional elevation of a cylindrical metal pile provided with shoes. Fig. 2 is an elevation, partly in section, of a pile provided with shoes and water-reservoir and surrounded with tubes. Fig. 3 is a transverse  
10 section on line *xx*, Fig. 2. Fig. 4 is a sectional elevation of an improved shoe attached to the foot of a pile.

15 Similar letters of reference indicate corresponding parts.

The object of this invention is to sink piles for submarine or other foundations without the aid of pile-driving machinery, and to secure good bearings for the piles at proper  
20 depths.

In the drawings, Figs. 1, 2, 3, and 4, A represents an iron tubular pile, and B and C the shoes firmly fixed upon it, the lower shoe serving as a base or bearing for the foot of the pile, while the upper one is to rest a little below the ground surface to prevent, by its horizontal extension, the lateral movement of the pile. This pile, Fig. 1, it will be seen, is  
25 entirely open at the top, and open also at the bottom, and is designed to represent a tubular pile sunk by the pressure of the column of water within it, and perhaps by the supplemental aid of the lower shoe.

35 In all cases the shoe shown in Fig. 4, having deep and pointed webs *a'*, may be used as the lower shoe in lieu of the shoes represented in the other figures, and especially will this be of advantage where the shoe must aid in the excavation of the soil. When the aid of a shoe is not required for this purpose the shoe may be secured to the piece with its webs uppermost, as shown in several of the figures, and in such case the rim *b'* gives a good hold  
40 to the shoe upon the soil.

In Fig. 2 two or more devices are shown for the application and use of water for the purpose intended.

D represents a tubular ring with collar, that is slipped over the pile and held in place by a set-screw, *c*, or its equivalent, and from this ring extend downward several tubes, *d'*, that are retained close to the tube by passing through holes made in the shoes. Through the pipe *f'* water may be forced into the ring and down through the tubes *d'* under pressure sufficient to readily remove the soil from below the pile, and the ring and tubes may be removed as soon as the pile has sunk to its position.  
50 55 60

Another device is shown in the reservoir E, that is provided with a pipe, *g'*, and a swiveled rod or handle, F. This reservoir is screwed or otherwise tightly fixed upon the head of the pile, and water forced into it by pipe *g'* and down through the pile to effect the desired purpose, or a suction-pump may be attached to the pipe *g'* of sufficient force to draw up through the pile the soil directly beneath it, so that it shall be able to sink to its place. The swiveled rod F and ring *h'* afford convenient means for handling and adjusting the reservoir.  
65 70

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—  
75

1. The combination of the ring D, provided with pipe *f'* and tubes *d'*, substantially as and for the purpose described.

2. The combination of tubes *d'* and tubular ring D, provided with pipe *f'*, with the pile A and shoes B and C, substantially as herein set forth.  
80

3. The reservoir E, provided with pipe *g'*, swiveled rod F, and ring *h'*, substantially as herein shown and described.  
85

HENRY CASE.

Witnesses:

I. I. STORER,  
C. SEDGWICK.