

T. A. DUNGAN.
COFFER DAM.

APPLICATION FILED AUG. 18, 1902.

NO MODEL.

Fig. 1.

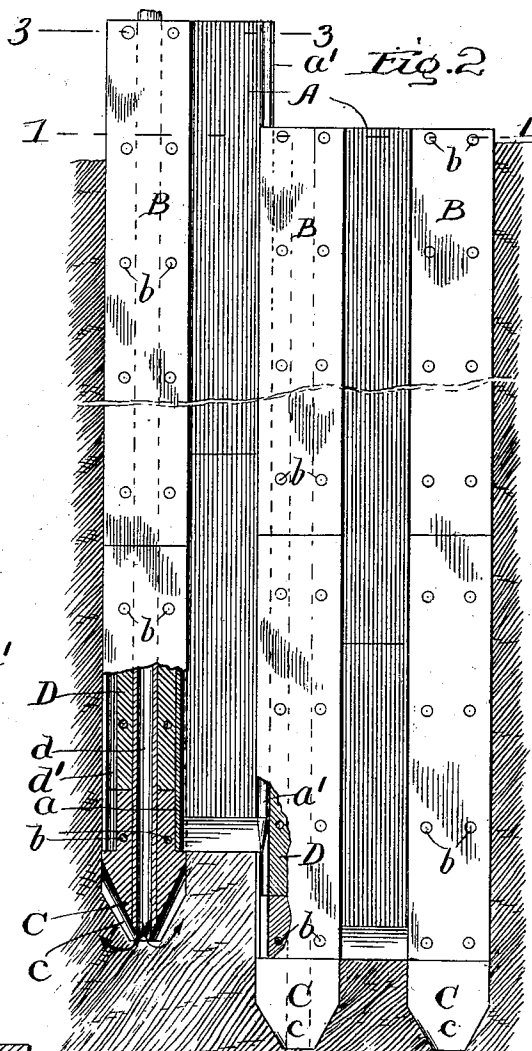
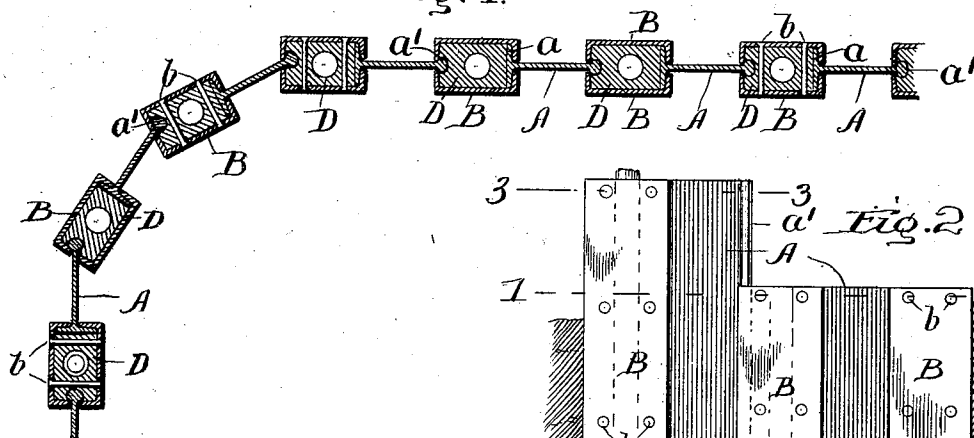


Fig. 3.

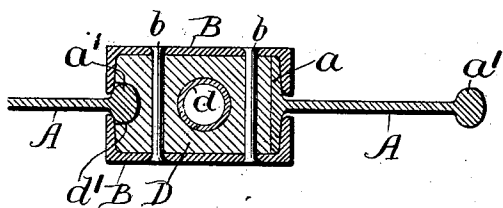


Fig. 4.

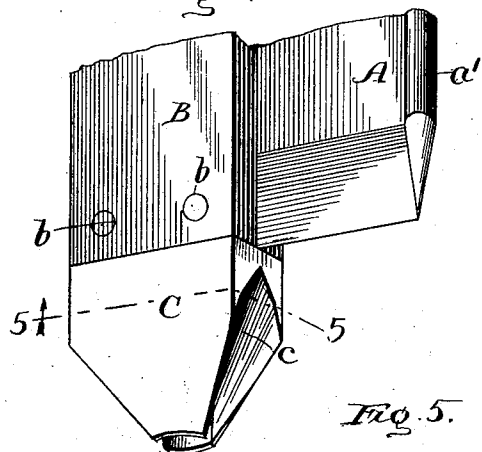
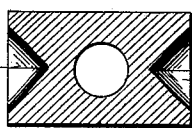


Fig. 5.



Witnesses:

Russell Wiles
S. Oliss.

Inventor:

Thomas A. Dungan
by H. B. Butler
Atty.

UNITED STATES PATENT OFFICE.

THOMAS A. DUNGAN, OF CHICAGO, ILLINOIS.

COFFER-DAM.

SPECIFICATION forming part of Letters Patent No. 732,401, dated June 30, 1903.

Application filed August 18, 1902. Serial No. 119,992. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. DUNGAN, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Coffor-Dams, of which the following is a specification.

My invention relates to certain improvements in coffer-dams, the purposes of which are, first, to render the driving of the piles, of which said dams are composed easy and to make it possible to drive the same to a greater depth; second, to provide means whereby the various parts are interlocked and tight joints produced between them, and, third, to provide a construction capable of being erected in either curved or rectilinear form. In addition to these main purposes certain minor improvements have been effected, which will readily appear in connection with the description of the form and operation.

The invention is illustrated in the drawings by means of five figures, of which—

Figure 1 is a horizontal section in line 1 1 of Fig. 2, showing a section of the dam in position. Fig. 2 is a side elevation of a similar section, broken away in section at certain places to show the construction and interlocking of the parts. Fig. 3 is an enlarged horizontal section showing a single pile and portions of two adjacent interlocking parts. Fig. 4 is an enlarged perspective of the lower end of one of the piles and one of the parts interlocking therewith, and Fig. 5 is a horizontal section in plane 5 5 of Fig. 4.

The preferred construction is shown in the figures and will be described minutely. It is to be understood, however, that the broader features of my invention are not limited to the details of construction illustrated, it being possible to vary the same considerably without departing from the invention.

Referring to the drawings, the preferred form of pile represented will be clearly understood from Fig. 3 and 4, and consists of an outer shell made up of oppositely-disposed channel-beams B B, the adjacent edges of their flanges being separated a slight distance by means of a central core or filling D, preferably of wood and perforated longitudinally, a pipe *d* being preferably fitted in the per-

foration and extended from top to bottom. The two channels are secured upon the filling in the form shown by means of rivets *b*. Upon the lower end of the pile is secured a preferably cast point C, preferably perforated to receive the pipe *d* and grooved at *c* upon its opposite edges. The pipe *d* furnishes a passage through which water may be forced downward out of the bottom of the pile to clear the way for the sinking of the latter, and the grooves *c* upon the edges of the point C direct the water laterally to clear the way for the interlocking connections between the piles. One of said interlocking connections is shown at *a*, and what are known as deck-beams are preferred for this purpose, the flange of one of said deck-beams being firmly embraced between the channels B B by means of flanges upon one side and the filling D upon the other side and being driven with the pile to which it is thus connected. Upon the opposite side of the pile a groove *d'* is provided in the filling adapted to receive the bulb *a'* of the deck-beam, and the adjacent flanges of the channel irons embrace the web of the deck-beam below the bulb to secure the latter tightly in the groove *d'*. The lower end of each deck-beam is preferably sharpened, as shown in Fig. 4, to assist in sinking it in the soil, and the material through which it passes is cleared away for it by the water which has been ejected from the lower portion of the last preceding pile and also by the water that is discharged from the bottom of the one which is driven, together with the deck-beam.

Fig. 1 illustrates the ease with which a corner is rounded, and Fig. 2 the manner in which a pile is driven. In the latter figure it will be noticed that the bulb *a'* of the deck-beam is inserted in the groove *d* of the preceding pile and guides the pile to which it is connected as it enters the earth. It should be noticed that there are no projecting parts upon these piles likely to deflect them in their downward course.

After a pile has been driven the water causes the filling, which is preferably of wood, to swell and tighten all of the joints.

I claim as new and desire to secure by Letters Patent—

1. In a coffer-dam, the combination with a

series of piles, consisting of a solid core and a metal casing around the same, of a series of deck-beams arranged between the piles and having their flanges and bulbs secured
5 to the adjacent piles between the fillings and casings of the latter, substantially as described.

2. The combination with a longitudinally-perforated pile, of a shoe therefor provided
10 with means for directing water laterally from the point of the pile, substantially as described.

3. In a coffer-dam, the combination with a series of interlocking parts, of a series of piles

provided with means for interlocking there- 15
with, said piles being longitudinally perforated and provided with means for directing water from the point in the direction of the interlocking parts, substantially as described.

In witness whereof I have hereunto set my 20
hand, at Chicago, in the county of Cook and State of Illinois, this 14th day of August, A. D. 1902.

THOMAS A. DUNGAN.

Witnesses:

S. BLISS,

RUSSELL WILES.