

W. H. FAHRNEY.
 DRIVE POINT.

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1,002,250.

Patented Sept. 5, 1911.

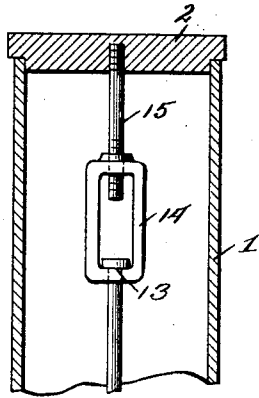
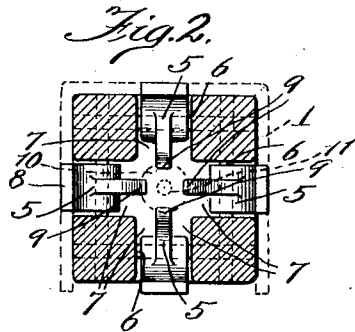
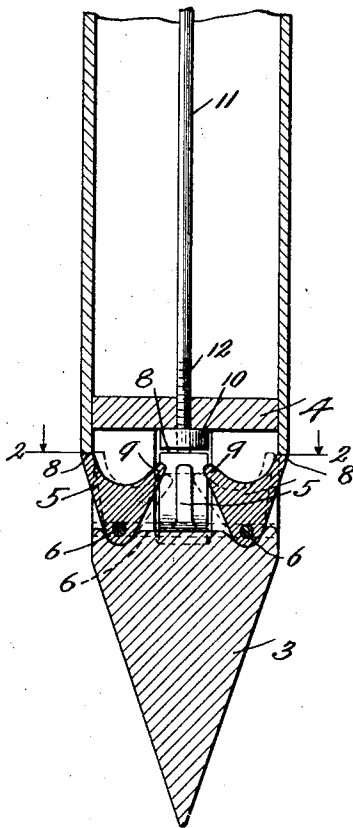


Fig. 1.



Witnesses:

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UNITED STATES PATENT OFFICE.

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DRIVE-POINT.

1,002,250.

Specification of Letters Patent.

Patented Sept. 5, 1911.

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To all whom it may concern:

Be it known that I, WILLIAM H. FAHRNEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Drive-Points, of which the following is a specification.

This invention relates to drive points, and has for its primary object to provide an improved detachable drive point for caissons, molds, hollow piles, or other similar devices adapted to be driven into position in the earth and which, for convenience of illustration, has been shown on the drawings as applied to a hollow pile or caisson.

More specifically, the primary object of this invention is to provide an improved detachable drive point which is adapted to be drawn upwardly through the caisson or pile after said caisson or pile has been lowered into its final position.

Another object is to provide improved means for detachably connecting said drive point to the caisson.

Still another object is to provide improved means for operating the connections between the drive point and the caisson.

Other and further objects will appear in the specification and be more particularly pointed out in the appended claims, reference being had to the accompanying drawings illustrating an exemplification of the invention, and in which—

Figure 1 is a vertical section of a caisson provided with the preferred embodiment of my invention. Fig. 2 is a transverse section on the line 2—2 of Fig. 1.

According to the preferred embodiment shown on the drawings, the caisson 1, preferably of U-shaped cross section as shown in Fig. 2, is provided above with a drive cap 2, which may be suitably secured to the top of the caisson in any preferred manner, but which is preferably maintained in position thereon in the manner hereinafter to be made clear. Detachably connected with the lower end of the caisson 1 is a drive point 3, which may be made of any suitable conformation in cross section to adapt it to be drawn through said caisson after it has been lowered into its final position. In order to provide means for adapting the drive point 3 to releasably engage the lower end of the caisson 1 to prevent said drive point from being moved upwardly through the caisson during the progress of the driving operation,

suitable means are mounted on said drive point for adapting the drive point to be moved into and out of engagement with the caisson. Preferably, however, said means are in the form of a plurality of dogs 5, which are preferably pivotally mounted intermediate of their ends, as at 6, within recesses 7, said recesses communicating along the axis of said point to provide a chamber within the upper portion 4 of the point. In order to provide means for holding the dogs 5 normally in position, in which they project beyond the lateral faces or surfaces of the drive point 3, the outer end 8 of each of said dogs is made relatively heavy in proportion to the inner end thereof, so that the weight of the same will cause the outer ends 8 to project outwardly into engagement with the lower end of the caisson 1. Said dogs are furthermore suitably proportioned to have the inner ends 9 thereof adjacently arranged contiguous to the axis of the drive point 3, in such manner as to adapt them to be operated upon by an enlargement or head 10 rigidly mounted upon the lower end of a rod or bar 11, which extends substantially the entire length of the caisson 1. Adjacent its lower end the rod 11 is provided with a threaded portion 12 by means of which it is adapted to adjustably engage the top of the portion 4 of the drive point 3. Said rod 11 is provided with a swivel connection at 13 with a turn buckle 14, the upper end of said turn buckle being provided with suitable threaded connections with a rod or bolt 15 depending from the cap 2 at the upper end of the caisson 1. By means of this construction suitable means in the form of a sectional tension member are provided for suspending the drive point 3 from the upper end of the caisson 1, while at the same time said means is made adjustable longitudinally to vary the length thereof by means of the turn buckle 14 with its connections. By means of the swivel connection 13, the rod 11 is adapted to be rotated on its axis in such manner as to cause the lower end 12 thereof to be moved axially through the threaded perforation in the portion 4 of the drive point. It will thus be seen that when the rod 11 is turned upon its axis by means of a wrench or other suitable means, the enlargement or head 10 will be moved into operable engagement with the inner ends 9 of the dogs 5. Consequently, after the caisson 1 has been lowered into its final position, the

turn buckle 14 having been rotated in a direction to lengthen the drive point suspension means, the rod 11 may have a further axial adjustment imparted thereto until said dogs 5 are retracted inwardly from the positions in which they engage the lower end of the caisson 1. Said drive point 3 is therefore now adapted to be drawn through the caisson 1 and to be removed therefrom at the top of the caisson.

What I claim is:.

1. In a device of the character described, the combination with a caisson, of a drive point adapted to be moved through said caisson, said point being provided with means releasably engaging said caisson, a pair of rod sections for suspending said point in position on the caisson, one of said sections being supported from above and the other of said sections being connected to said point and operably related to said caisson-engaging means carried by the point, and means for adjustably connecting said rod sections.

2. In a device of the character described, the combination with a caisson, of a drive point movable through said caisson and provided with means for releasably engaging said caisson, a suspension rod connected to said point and operably related to said releasable caisson-engaging means, a drive cap on said caisson, and means adjustable in length for supporting said suspension rod from said cap.

3. In a device of the character described, the combination with a caisson, of a drive cap mounted on said caisson, a rod depending from said cap, a drive point adapted to be moved through said caisson, said point being provided with means for releasably engaging said caisson, and means for securing said point in position on the caisson, said means comprising a rod movably engaging said point and adapted to operably engage the caisson-engaging means, and means for adjustably connecting said rods together.

4. In a device of the character described, the combination with a caisson, of a drive cap mounted on said caisson, a rod depending from said cap, a drive point adapted to be moved through said caisson, said point being provided with means for releasably engaging said caisson, a rod engaging said point and movable axially with respect thereto, the last said rod being provided with a portion movable into and out of engagement with the caisson-engaging means, and means adjustably connecting said rods together to secure the drive point to the caisson.

5. In a device of the character described, the combination with a caisson provided with a drive cap, a rod depending from said cap, a drive point adapted to be moved

through said caisson, a dog pivotally mounted on said point to be moved into and out of engagement with the caisson, a rod having threaded connection with said point, the last said rod being provided with a head movable into and out of operable engagement with said dog, and a turn buckle having threaded connections with both of said rods whereby said drive point may be adjustably supported by said rods.

6. In a device for the purpose described, a drive point provided with a plurality of recesses, a plurality of dogs pivotally mounted intermediately of their ends in said recesses, one end of each dog being heavier than the other to maintain said dog normally in a position in which it projects beyond the lateral surface of the drive point and the other ends of said dogs being contiguously disposed and projecting upwardly, and means bearing down on said contiguous ends for retracting said dogs from their normal positions.

7. In a device for the purpose described, a drive point provided with a plurality of recesses, a plurality of dogs pivotally mounted intermediately of their ends in said recesses, one end of each dog being heavier than the other to maintain said dog normally in a position in which it projects beyond the lateral surface of the drive point and the other ends of said dogs being contiguously disposed, and threaded means engaging said contiguous ends for retracting said dogs from their normal positions.

8. In a device of the character described, the combination with a caisson provided with a drive cap, a rod depending from said cap, a drive point adapted to be moved through said caisson, a plurality of dogs pivoted intermediately of their ends on said drive point and with their inner ends contiguously disposed, a rod having threaded connection with said point, the last said rod being provided with a head movable into and out of simultaneous operable engagement with the inner ends of said dogs, and a turn buckle having threaded connections with both of said rods whereby said drive point may be adjustably supported by said rods.

9. In a device for the purpose described, the combination with a caisson, of a drive point therefor, said drive point being adapted to be moved through said caisson and provided with dogs pivoted intermediately of their ends on said point, one end of each of said dogs being thus adapted to be moved into and out of engagement with the lower end of said caisson, and means suspended from the upper end of the caisson for securing said drive point to the caisson, said means being provided with a portion engaging the other ends of said dogs for simultaneously retracting the

outer ends thereof from engagement with said caisson.

10. In a device for the purpose described, the combination with a caisson provided with a drive cap, of a drive point adapted to be moved through said caisson, said point being provided with dogs pivoted thereon intermediately of their ends, one end of each dog being relatively heavier than the other end to maintain said dog normally in engagement with the lower end of the caisson, extensible means depending from said cap and adjustably secured to said drive point, and means carried by said extensible means for engaging the other ends of said dogs whereby said dogs are moved from their positions of normal engagement with said caisson by the extension of said extensible means.

11. In a device for the purpose described, the combination with a caisson, of a drive point adapted to be drawn through the caisson, dogs pivotally mounted on said point, said dogs being movable into and out of engagement with the lower end of the caisson, and extensible means for locking the drive point to the caisson, said means connecting said drive point with a support adjacent the upper end of the caisson.

12. In a device for the purpose described, the combination with a caisson provided with a drive cap, of a drive point adapted

to be drawn through the caisson, dogs pivotally mounted on said point and adapted to be moved into and out of engagement with the lower end of the caisson, and means for suspending the drive point from said cap, said means being movable longitudinally to operate said dogs and adjustable in length to lock the point on the caisson.

13. In a device for the purpose described, the combination with a caisson provided with a drive cap, of a drive point adapted to be drawn through the caisson, dogs pivotally mounted on said point whereby they are adapted to be moved into and out of engagement with the lower end of the caisson, and means for suspending the drive point from said cap, said means being adjustably connected below with the drive point and provided with a head for simultaneously operating said dogs, and a turn buckle above provided with threaded connections to adjust the length of said suspension means.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 8th day of September A. D. 1909.

WILLIAM HENRY FAHRNEY.

Witnesses:

CHARLES H. SEEM,
FRANCIS A. HOPKINS.