

C. Walton,

File Driver.

No. 43,357.

Patented June 28, 1864.

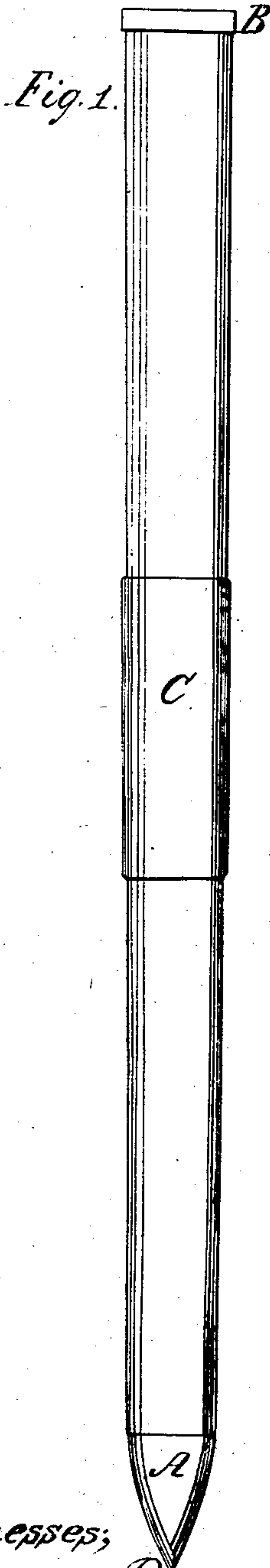


Fig. 2.

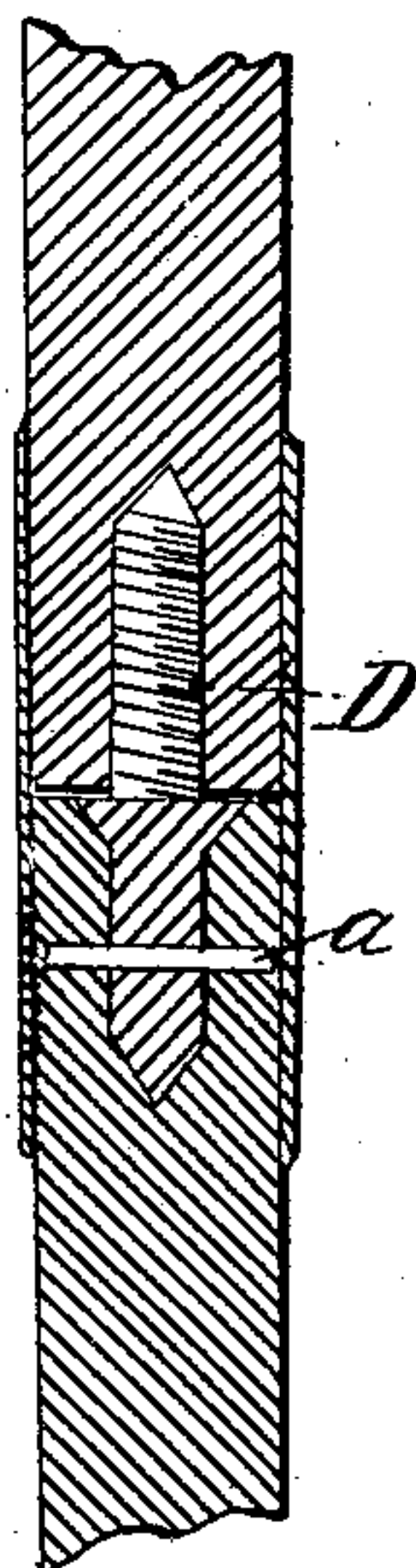


Fig. 4.

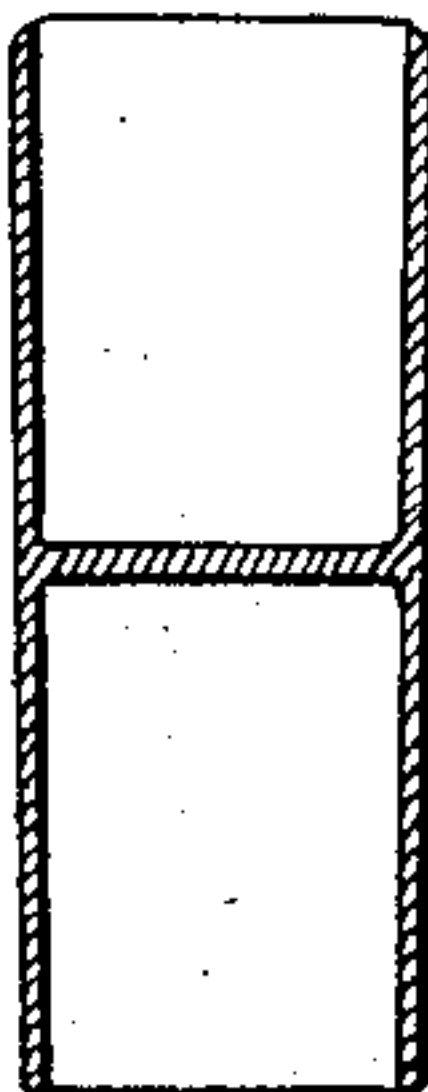
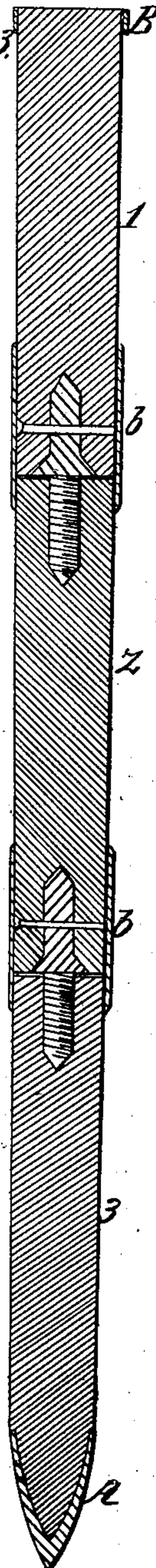


Fig. 3.



Witnesses;
J. Snowden Bell
F. Schmidt.

Inventor;
Chauncey Walton,

UNITED STATES PATENT OFFICE.

CHAUNCEY WALTON, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN CONSTRUCTION OF PILES FOR WHARVES, &c.

Specification forming part of Letters Patent No. 43,357, dated June 28, 1864.

To all whom it may concern:

Be it known that I, CHAUNCEY WALTON, of the city of Washington and District of Columbia, have invented a new and useful Improvement in Piles for Docks, Wharves, and Foundations; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, in which—

Figure 1 is a view in elevation of my improved pile. Fig. 2 is a central longitudinal section of the middle portion of the same, and Fig. 3 is a longitudinal section of a pile composed of three pieces of short timber. Fig. 4 is a section of a form of ferrule for a pile.

It is the object of my invention to guard the wooden pile used in constructing docks and wharves from the rapid decay to which it is, as now used, liable at the water-line, and to render short timber equally as effective as long timber for piles in foundations and other uses, and thus strengthen the structure deriving support from the pile, economizing material in its construction, and economizing labor in putting the pile in place; and my invention consists in surrounding the pile with a metallic band or ferrule at the water-line, coating the ferrule with a water-proof varnish to prevent corrosion, and making the pile in sections or pieces, and uniting these sections with screws and ferrules so as to connect the sections rigidly as one continuous piece of any desired length, or admit the separation of them at points best adapted to the work proposed.

Fig. 1 in the accompanying drawings represents a pile with a metal shoe, A, to enable it to be forced through or into hard strata without fracture, and a metal ring, B, to prevent the head from being broken by the ram.

A part of my improvement is shown in the ferrule or band C, which may be cast or otherwise made water-tight of any suitable metal, iron being the cheapest. The band or ferrule C must be so placed upon the pile as that while it is situated nearly central over the joint of a pile, made of two pieces, the bottom must be always below the lowest tide and the top above the highest. When the band is thus placed and the pile about to be driven, the ferrule must be coated with a heavy

caoutchouc varnish, or, what is possibly still better, a thick coat of boiled coal-tar, and this coating will be an excellent application for the wooden portion of the pile to prevent it from absorbing moisture. Should there be any danger of the ferrule moving out of place from driving the pile, it may be riveted to either the upper or lower portion of the pile; or the ferrule may be cast with a diaphragm across its center, as shown in Fig. 4, and the ferrule may be extended for bearings above the water-line.

As it is one chief object of the ferrule to prevent as far as possible all hygrometric changes in the condition of the timber it surrounds, it is obvious that the ferrule C should be made to fit neatly both at top and bottom on the pile, and that the boiled-tar coating should be made to fill perfectly any small crevices that might exist at these points without such filling.

It is obvious that the length of the ferrule must be greater than the range of the tide at the locality where the pile is used, so that no precise dimensions can be given for all conditions; but these dimensions of the ferrule must vary as well for the locality as for the size of timber used for the pile. In the upper waters of the Chesapeake Bay, for example, as at Baltimore and elsewhere, the mean variation in the tide is about nine inches, or the highest tide is about seventeen inches, while the lowest is nine, and, of course, in such situations a ferrule of two feet would be long enough, while at New York a much longer ferrule would be necessary.

To make the pile of short pieces of timber I use, in addition to the ferrule, a strengthening screw-bolt, D, as seen in Fig. 2. The pieces from which it is proposed to make the pile being reduced to a uniform diameter at two ends, these are sawed truly at right angles to their axes, when one end is centrally bored and the screw-bolt D fastened therein by a pin, *a*, or otherwise. The ferrule is then securely fitted on the piece that sustains the screw, and, the other end of the pile having been previously centrally bored with the proper diameter of hole to let the threaded portion of the screw-bolt fit tightly and cut a thread therein, is screwed down upon the screw and within the ferrule until

the ends of the two pieces meet, when the pile is to be banded at top, and, if necessary, shod at bottom, and is as good for using entire in docks and wharves as if made of a single stick that would have been far more expensive and much more laborious to handle.

When the short-piles are wanted for foundations beneath the water, the advantages of my jointed pile are very marked, for, as shown in Fig. 3, it can be made in sections of any number or length desired, as 1 2 3, for example. For this purpose it is only necessary to attach a screw, or screw and band, to the sections 1 and 2, as at *b b*, when section 3, having been driven to the depth beneath the water desired, can be detached by unscrewing and removing sections 1 and 2, and thus the piling can be effected to any extent

and at any depth without destroying long timber or sawing a single stick under water.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Surrounding the wooden pile with a metallic ferrule at the water-line to preserve the wood by keeping it in a uniform hygro-metric condition.

2. Making the pile of two or more short pieces of timber, substantially in the manner and for the purpose described.

In testimony whereof I have hereunto subscribed my name.

CHAUNCEY WALTON.

Witnesses:

JOS. SNOWDEN BELL,
EDM. F. BROWN.