

(No Model.)

J. MUNRO.
PILE DRIVER HAMMER.

No. 551,989.

Patented Dec. 24, 1895.

Fig. 1.

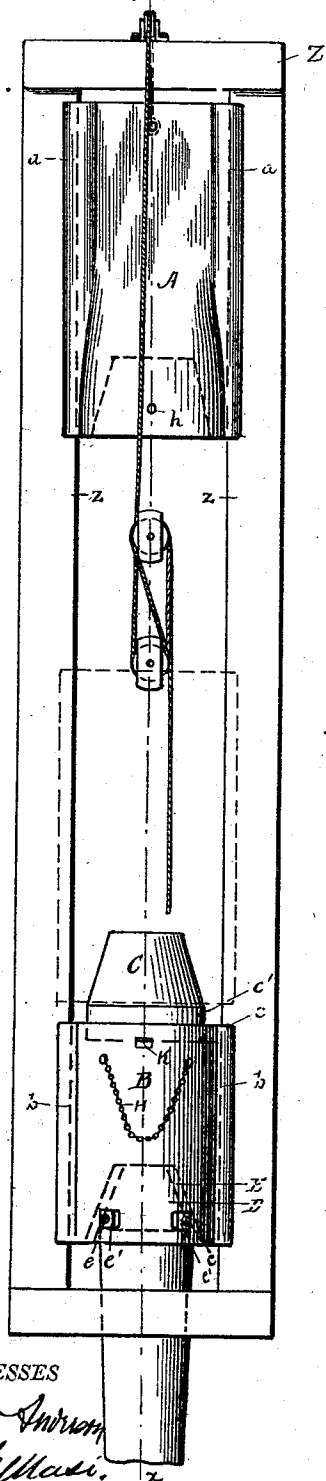


Fig. 2.

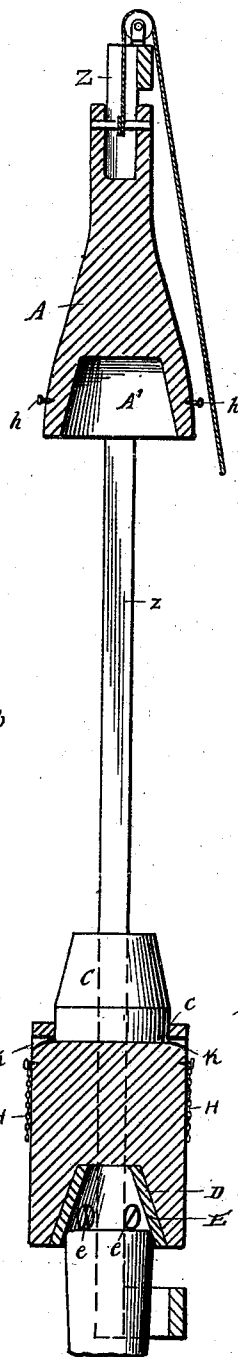
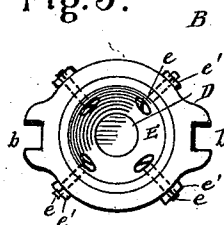


Fig. 3.



WITNESSES

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PILE-DRIVER HAMMER.

SPECIFICATION forming part of Letters Patent No. 551,989, dated December 24, 1895.

Application filed August 3, 1895. Serial No. 558,089. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH MUNRO, a citizen of the United States, and a resident of Astoria, in the county of Clatsop and State of Oregon, have invented certain new and useful Improvements in Pile-Driver Hammers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a face view of the invention. Fig. 2 is a section on line *x x*, Fig. 1. Fig. 3 is a bottom plan view of the follower.

The object of this invention is to provide a pile-driver hammer with a follower which is arranged to fit the top of the pile to keep it from splitting and in its proper place while it is being driven; and the invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawings, the letter *Z* designates an upright frame of any suitable character, between vertical guides or ways *z* of which is arranged to reciprocate the hammer *A*. This hammer consists of a body of iron formed at its lateral portions with vertical grooves *a*, which engage and move upon the ways or guides *z*. Formed in the bottom of said hammer is a frusto-conical socket *A'*, which is usually about twelve inches in depth, twelve inches in diameter at its upper end and eighteen inches in diameter at its lower end. These dimensions, however, may be varied.

B designates the follower, which consists also of a body of iron of cylinder form, preferably, and having grooves *b* in its lateral portions which correspond to the grooves *a* of the hammer. In the upper end of this follower is formed a shallow socket *c*, usually about one inch in depth, and into which is fitted a frusto-conical block *C* of hard wood. This block *C*, upon the descent of the hammer, enters the socket *A'* thereof and receives the impact of the blow. Said block has a lower portion *c'* which does not enter the said

socket and which serves to prevent direct contact between the two bodies of iron.

In the lower end of the follower *C* is formed a frusto-conical socket *D*, which is usually of about the same dimensions as the socket *A'* of the hammer, and which is adapted to fit over the end of the pile to prevent the latter from splitting or spreading, and to hold it steady while it is being driven.

E designates a metallic bushing or thimble which is arranged to fit into the socket *D*, being of frusto-conical form. The interior diameter of this bushing or thimble is usually six inches at its upper end and twelve inches at the lower end. It is secured firmly in place by means of bolts *e* whose heads are countersunk into the bushing or thimble and which are secured by nuts *e'* upon the outside of the follower. These bolts can be readily removed and the bushing or thimble taken out or replaced, it being designed for use only when driving small piles, which are usually about six inches in diameter at the driving end. In driving such piles with a follower having a large socket, such as is employed for twelve-inch piles, the pile is moved from one side to the other and causes the hammer to fracture the leaders. By the use of this thimble or bushing the pile is held firm and directly in the center and is driven easier and faster, all prying and wedging being avoided.

Means are usually provided whereby the hammer and follower may be connected together. In the drawings I have shown the follower as having chains, cords, or the like, (indicated at *H*,) which are adapted to slip over pins or projections *h* of the hammer. The purpose of this connection is to permit the hammer and follower to be raised and lowered together, or to be held together at the top of the leaders when not in use.

K K designate small holes or apertures which communicate, one at each side, with the lower portion of the shallow socket *c*. These holes serve to admit a suitable tool or implement underneath the block *C* in order that said block may be pried out and a new one inserted when necessary.

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

1. In a pile driver, the combination of a hammer having in its lower portion a vertical frusto-conical socket, of a follower having seated in its upper end a removable non-metallic block formed with a frusto-conical portion adapted to enter the said socket, and with a lower cylindrical portion of too great a diameter to enter said socket, said follower having also apertures through which a suitable implement may be introduced to remove the said block, substantially as specified.

2. In a pile driver, the combination of a hammer having in its lower portion a vertical

frusto-conical socket of a follower having in its upper end a non-metallic frusto-conical block, and in its lower end a frusto-conical socket, and a bushing or thimble adapted to be removably secured within the said socket, substantially as specified.

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

JOSEPH MUNRO.

Witnesses:

E. Z. FERGUSON,
JULIA MUNRO.