

D. B. OLIVER.
Piles.

No. 199,311.

Patented Jan. 15, 1878.

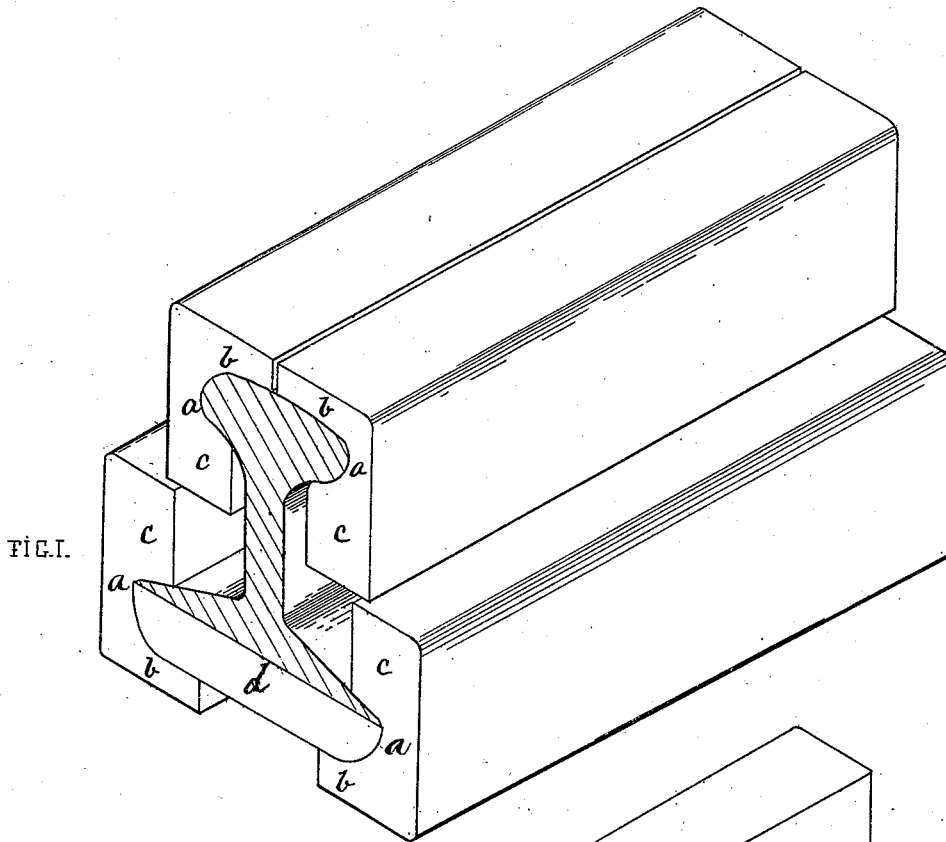
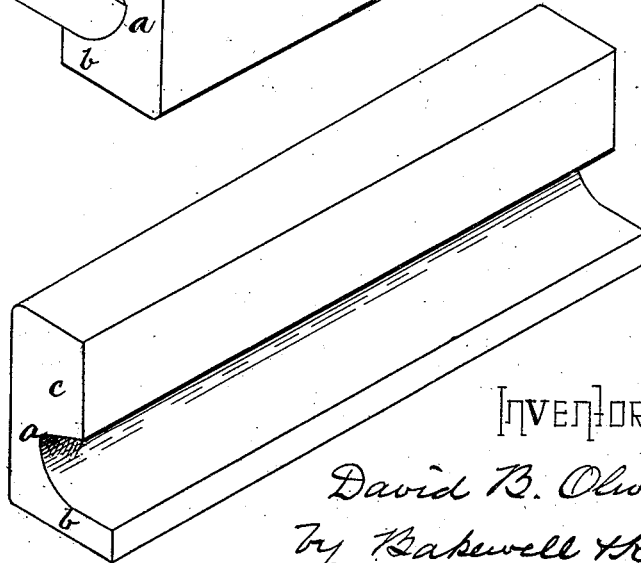


FIG. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

DAVID B. OLIVER, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN PILES.

Specification forming part of Letters Patent No. **199,311**, dated January 15, 1878; application filed June 19, 1877.

To all whom it may concern:

Be it known that I, DAVID B. OLIVER, of the city of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Piles and Pile-Bar for Utilizing Old Rails, &c.; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of a pile embodying my invention. Fig. 2 is a perspective view of a grooved or flanged bar employed in building piles.

Like letters refer to like parts wherever they occur.

My invention relates to the construction of piles in the utilization of old rails and like irregular forms; and consists, first, in a grooved pile-bar having two unequal flanges, and adapted to inclose either or both the flange and head of a rail; and, secondly, in a pile composed of a rail or like irregular bar, an equalizing-bar, and a series of similarly-grooved head and flange pieces.

Heretofore, in the utilization of old rails, rail ends, and other irregular forms, three general methods have been adopted: first, "faggoting," wherein the rail or like article was inclosed by three or more flat bars, the interstices between the rail and bars filled in with scrap, and the whole tied or wired. The objection to faggoting is, first, the labor involved in building the pile, and consequent cost of manufacture; and, secondly, the billet produced is too large for intermediate sizes of merchant iron or billets, and gives rise to waste, except in manufacturing special classes of merchant iron.

The second method, or what is termed "breaking down"—*i. e.*, reheating and rolling the rail into flat or other bar—is objectionable, as involving considerable labor, owing to the form of the rail and the number of passes necessary to bring it into bar form.

The third method—*viz.*, cutting the rail into sections, of which the head, web, and flange each form a section—while it reduces the labor of re-rolling or working, is in the main objectionable, because the bars thus produced are

too small for general use, and are only applicable to special purposes.

The object of the present invention is, first, to obtain a bar for forming piles which will enable the wiring or binding of piles to be dispensed with, thus reducing the labor and expense of building piles; and, secondly, the formation of a pile adapted to the production of all sizes, and especially the intermediate sizes, of merchant iron or billets.

I will now proceed to describe my invention, so that others skilled in the art to which it appertains may apply the same.

In the drawings, *a* indicates a grooved bar having two flanges, *b c*, preferably of unequal width and height, the flange *b* being the highest and the flange *c* being the broadest. This bar I usually make direct from the puddle-ball or muck-bar, by passing the ball from the squeezers through a pair of suitably-grooved rolls, thus reducing materially the cost of production, though, if desired, the bar *a* may be made, in any of the well-known ways, from other suitable material at hand.

d represents a flat bar employed in forming my pile, said bar usually corresponding in width to the width of the web, and preferably of such thickness as will equalize the thickness of the web to the head, or, in other words, fill out the groove of pile-bar *a*.

The bar *d* may be rolled from the puddle-ball in the same manner as bar *a*, or otherwise produced, as preferred.

Having obtained a grooved or flanged pile-bar, *a*, and a flat bar, *d*, I form my pile by applying the flat bar to the base or flange of a rail, arranging two grooved bars, *a*, so that the flanges *b* pass under the bar *d*, and the edges of the rail-flange and bar *d* are received in the grooves, finally completing the pile with two more pile-bars, *a*, which inclose the head of the rail, the flanges *b* resting thereon, and the flanges *c* applying themselves in line with the web, the whole being similar to what is shown in Fig. 1 of the drawing.

In heating the pile preparatory to rolling the same, I prefer to lay the pile upon one side, so that two of the grooved bars *a* rest upon the furnace-hearth, as in such position the flange and head of the rail, resting one in

the groove of each bar, serve as keys, and hold the pile firmly together until the several parts are sufficiently hot to unite or stick and bind.

The advantages of my improved pile are, that a single form of bar, and one readily produced, is the only special shape required to inclose the rail (which is desirable, especially in utilizing steel rails) and lock the pile together, whereby both time and labor are saved in building piles; and I also produce a pile from which intermediate sizes of merchant iron or billets of from thirty to one hundred and thirty pounds weight can be rolled.

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

1. The combination, with a rail, of a series of similarly-flanged bars and an equalizing-bar adapted to encircle the rail, substantially as and for the purpose specified.

2. The double-flanged pile-bars, substantially as described, adapted to be applied to both the head and flange of a rail in forming a pile, substantially as specified.

In testimony whereof I, the said DAVID B. OLIVER, of the city of Pittsburg, county of Allegheny, and State of Pennsylvania, have hereunto set my hand.

DAVID B. OLIVER.

Witnesses:

JAMES I. KAY,

F. W. RITTER, Jr.