

ELBRIDGE WHEELER.

Improvement in Fagots for Metal Bars.

No. 122,090.

Patented Dec. 19, 1871.

FIG. 1.

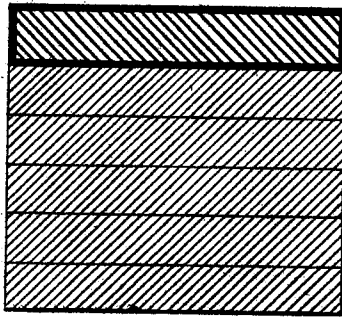


FIG. 2.

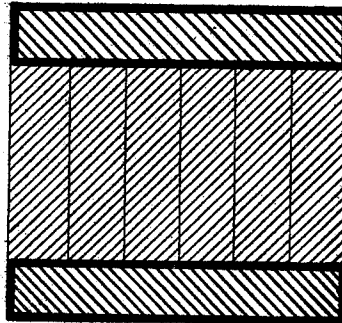
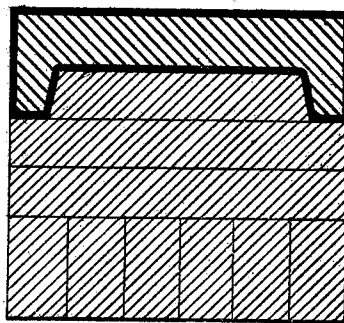


FIG. 3.



WITNESSES

Harry Smith
John Parker

Elbridge Wheeler
by his Attys.
Horszen and Son.

UNITED STATES PATENT OFFICE.

ELBRIDGE WHEELER, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN FAGOTS FOR METAL BARS.

Specification forming part of Letters Patent No. 122,090, dated December 19, 1871.

Specification describing an improvement in the Manufacture of Combined Iron and Steel Bars, invented by ELBRIDGE WHEELER, of Philadelphia, county of Philadelphia and State of Pennsylvania.

My invention consists of a pile composed partly of wrought-iron and partly of an iron-clothed steel bar or bars or piles, as described hereafter, a homogeneous bar of combined iron and uninjured steel being produced by the rolling of the pile. My invention further consists of a combined iron and steel bar rolled from the said pile.

Figures 1, 2, and 3 in the accompanying drawing represent different modifications of my improved pile.

I have ascertained that when a bar, pile, or fagot of steel is entirely inclosed or enveloped in a thin casing of sheet iron, it can be subjected to a far greater heat without danger of being burned than when the steel is unprotected, and that consequently steel thus incased can be heated to such a degree and rendered so ductile that it can be reduced to any desired shape by ordinary rolls. Availing myself of this peculiar property of a sheet-iron protecting casing, I roll a bar or pile of steel thus incased to a proper size and shape for forming part of a pile.

In Fig. 1, for instance, *a* represents a bar which has been rolled from a steel pile or bar incased in sheet iron, the latter being effectually welded to the steel by heating and rolling, and, in fact, forming an integral part of the steel. This iron-clothed steel bar is on the top of the pile in Fig. 1, the remainder of the pile being composed of iron bars of any size or shape which circumstances may suggest. After this pile has been subjected to a proper welding-heat it may be submitted to the rolls and reduced thereby to the desired shape. The result will be a homogeneous steel-faced bar, for the iron clothing of the top bar of the pile will be reduced to so thin a film, and this film will be so effectually incorporated with the steel, that the presence of iron on the top of the rolled bar will scarcely be perceptible. The pile (Fig. 2) is composed of two iron-clothed steel bars and intermediate layers of wrought-iron bars.

A pile of this character can be used for the production of an iron bar having opposite faces of steel.

In the pile Fig. 3 the iron-clothed steel bar, which forms the top of the pile, has ribs on the under side, so that the steel will extend further down the opposite sides of the pile than in those described above.

The shape and size of the iron-clothed steel portion of the pile must be determined by the character of the bar to be produced by rolling the pile. A steel-faced railroad-rail, for instance, will require an iron-clothed steel bar differing in shape from that required in forming a tire for a flanged wheel. In like manner the shape and size of the iron-clothed steel bar forming a part of the pile may be changed, and disposed of in the pile according to the desired distribution of the steel in the finished bar.

In some cases a pile or fagot of steel entirely incased in sheet-iron may be used as part of a pile; but I prefer to weld the steel to the iron casing prior to arranging it in the pile. I may remark here that it is preferable to protect the opposite ends of the pile with sheet-iron caps when placed in the furnace, so that the ends of the steel portions of the pile may not be subjected to excessive deteriorating heat.

If desired, the iron-clothed steel portion of the pile may be made by pouring cast-steel into a sheet-iron casing. The manner of clothing the steel, however, forms no part of my present invention.

I claim as my invention—

1. A pile composed partly of iron and partly of one or more steel bars or fagots clothed with iron, as set forth.
2. As an improved manufacture, a bar rolled from the said pile.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ELBRIDGE WHEELER.

Witnesses:

WM. A. STEEL,
JOHN K. RUPEETUS.

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