T. OLSEN.

Casting Scale-Levers.

No. 159,957. Patented Feb. 16, 1875.

Fig. 1.

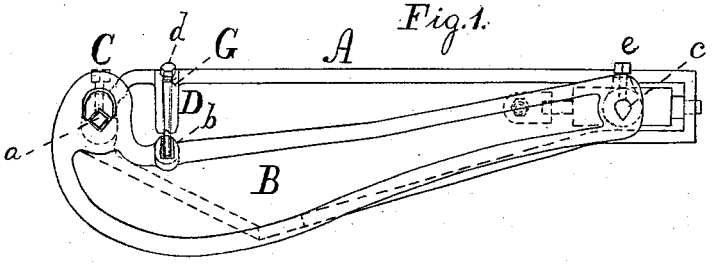


Fig. 3.

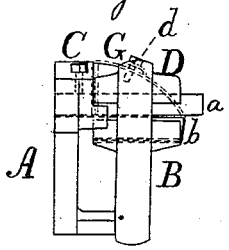


Fig. 2.

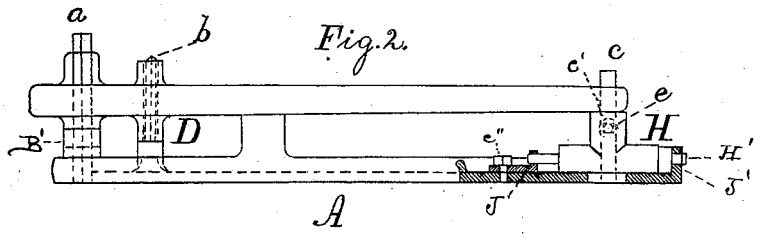


Fig. 4.

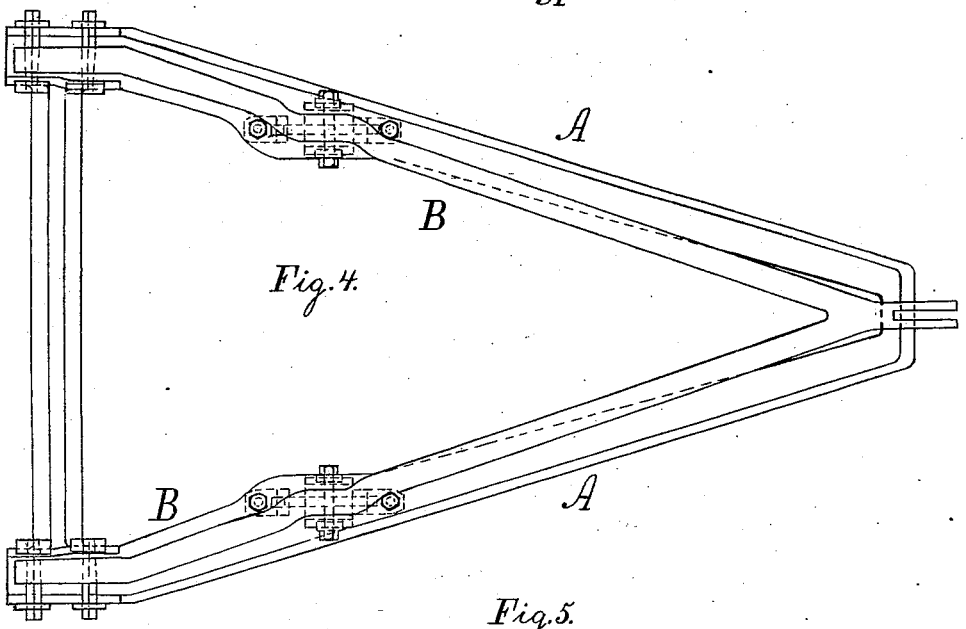
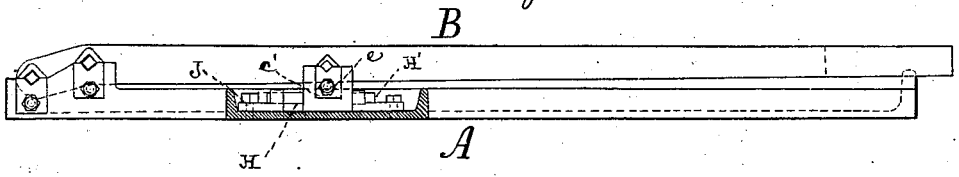


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

TINIUS OLSEN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CASTING SCALE-LEVERS.

Specification forming part of Letters Patent No. **159,957**, dated February 16, 1875; application filed March 28, 1874.

To all whom it may concern:

Be it known that I, TINIUS OLSEN, of the city and county of Philadelphia, and the State of Pennsylvania, have invented a new and useful Improvement in Casting Scale and other Levers; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a top view, illustrative of my invention. Fig. 2 is a side view thereof, partly sectional. Fig. 3 is an end view. Fig. 4 is a top view of a modification. Fig. 5 is a side view of a modification.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to the method of casting scale and other levers with "steels;" and consists in means for properly holding the steels during the process of casting, and providing for shrinkage of the metal of the levers.

Referring to the drawings, A represents the iron board or plate to which the steels or fulcrums *a b c* are to be secured, and B represents the pattern of the lever to be cast. The steel *a* is fitted to a post, B′, rising right-angularly from the face of the plate A, so as to project from the face thereof, and a set-screw, C, is so applied to the post as to firmly hold the steel in position. D represents a stand, projecting from the face of the plate A; and on the inner side of the stand is placed the steel *b*, which will be held in position by a wire fastening, G, which passes around the outer face of steel, and has one portion pass through an opening in the stand adjacent to the plate A, and the other portion passes around the outside of the stand, the two ends of the fastening being secured to a set-screw, *d*, on the stand. H represents a block, which has a sliding motion on a rod, H′, secured to ears or lugs arranged on the plate A, or is secured to the rod, which slides on the said ears or lugs. One ear, J′, is fixed or formed with the outer edge of the plate A, and the other ear is removable, and held to the plate A by a screw, *c″*, whereby the block H may be readily removed from and applied to the rod H′, as necessary or desirable; but the same purpose may be accomplished by driving the rod H′ through the block H, so as to clear the ear J′. A opening, *c′*, is made in the block H for the reception of the steel *c*, and a set-screw, *e*, is provided for holding said steel in position.

When the block is set in proper position or adjusted, movement thereof by the ramming operation will be prevented by a wooden stick, or other suitable material sufficiently rigid for such object, but possessing necessary softness or elasticity to allow the block movement due to shrinkage.

It will be seen that, when the steels are located and the casting has been accomplished, the shrinkage of the metal will draw or move the steels.

Owing to the characteristics of the block H, the steel *c* will readily slide or give with the shrinkage of the casting, but without changing its proper position.

The steel *b* will be similarly operated by the shrinkage that may occur at or about the points between the steels *a* and *b;* but the wire fastening G has not sufficient power to restrain the movement of the steel *b*, and thus the latter retains its position.

It will be seen that the steels have been properly held for the purpose of casting, and, on completion of the casting, that there has been no displacement of the steels.

I am aware that it is not new, in casting scale-levers, to employ movable supports for the steels, so that the latter will be properly held, and provision is made for shrinkage of the metal.

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

1. The stand D, projecting right-angularly from the board A, in combination with the wire G and set-screw *d*, substantially as and for the purpose set forth.

2. The combination, with the board A, of the block H, with opening *c′* and set-screw *e*, and with the rod H′, ear J′, removable ear J, and set-screw *c″*, substantially as and for the purpose set forth.

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