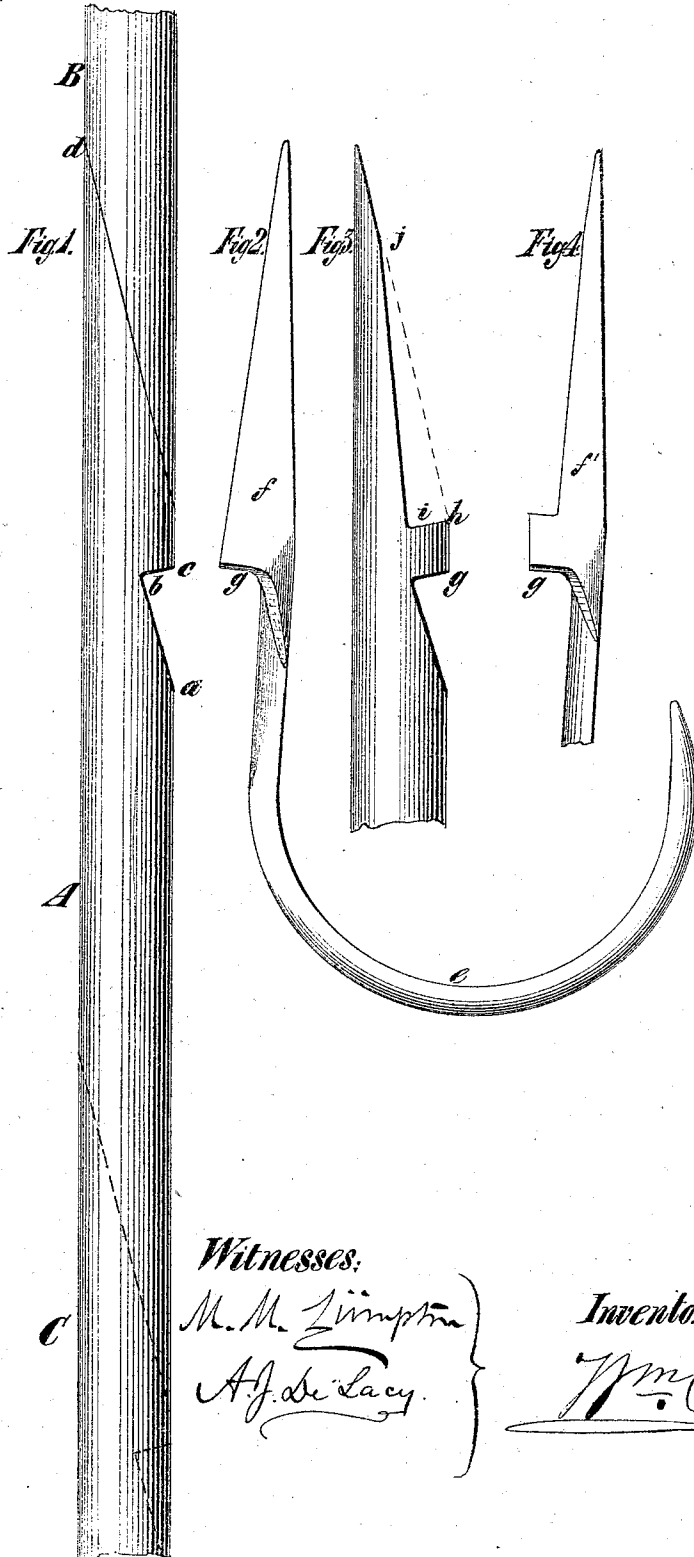


W. CLARK.

Leader Hooks for Buildings.

No. 147,900.

Patented Feb. 24, 1874.



Witnesses:

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IMPROVEMENT IN LEADER-HOOKS FOR BUILDINGS.

Specification forming part of Letters Patent No. **147,900**, dated February 24, 1874; application filed February 4, 1874.

To all whom it may concern:

Be it known that I, WILLIAM CLARK, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Leader-Hooks for Buildings; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms a part of this specification.

The method of manufacturing the kind of hook usually employed for fastening leaders or water-conductors to the sides of buildings, and known in the market as "leader hooks," heretofore generally practiced has been to forge strips or bars of iron into the required shape by hand; as, for illustration, a bar or piece of wrought-iron of the proper size and length is heated in the forge and one end hammered out to form the front end or point of the hook, and, at the other end, opposite sides are hammered down to flatten the bar and form the shank, and the driving-shoulder is also formed by hammering the metal, and the bar is also bent to give it the necessary hook shape.

The object of this invention is to produce the hook complete by machinery, thus reducing the cost of manufacture to a very great extent.

My invention consists, first, in a new method of forming the blanks which are afterward bent to form the kind of leader-hooks above referred to. It consists, secondly, in the new article of manufacture of a leader-hook formed by twisting the shank end of a properly-cut blank outward so as to place the driving-shoulder in proper position, and then bending the body-part of such blank into hook shape.

In the accompanying drawing, Figure 1 represents a full sized blank in the condition it is when it leaves the cutting dies or knives. Fig. 2 is an edge view of a complete hook formed from the blank illustrated in Fig. 1, and more especially designed for being used when affixing a leader to a brick building. Fig. 3 represents the shank shown on the blank represented in Fig. 1, after the same has been subjected a second time to the action of the cutting knives or dies. Fig. 4 is an edge view of the shank portion of a hook made from the blank shown in Fig. 3, and more especially

designed for being used when affixing a leader to a frame building.

I will now describe the method or process of manufacturing my said improved leader-hook. I take a bar or rod of wrought-iron of the proper width and thickness, preferably, a bar which, in cross-section, represents a segment of a circle, and subject it to the action of dies or cutting-knives which cut or sever from such rod or bar a blank of the required shape. The press which I now use for this purpose is an ordinary screw-press. The lower die or knife is stationary, and upon it I place the bar which is to be cut, and I affix one or more suitable guides to the said stationary die or knife to regulate the length of the blank and the angularity of the dividing cut. The upper die or knife strikes the upper side of the rod or bar and severs or cuts the same along the line *a b c d* with a shearing cut. Thus, one stroke of the movable die or knife forms the shank of the blank *A* as well as the front end or point of the preceding blank *B*; and the next stroke severs the blank *A* from said rod or bar, at the same time forming its front end or point and the shank of the next blank *C*, as will be clearly understood by reference to Fig. 1. To form the hook shown in Fig. 2, the body-part *e* of the blank *A* is bent or curved, and the shank *f* is twisted around so as to bring the shoulder *g* on the outside of the hook in proper position to be struck by the hammer for driving the said shank into a chink or crevice in the brick-work. This bending or curving and twisting can be performed very quickly either by hand, with pliers, or by a simple little machine constructed for the purpose.

Now, if the hook is designed for securing the leader to a frame building, I produce the required nail-like shank by taking the blank *A* and turning it end for end for end, and placing it with the flat side uppermost on the stationary die at such angle as will cause the movable die or knife to make the cut designated by the line *h i j*, Fig. 3. This blank so formed, when its body is bent or curved and its shank twisted, as before described, produces a hook having the nail-like shank *f'* shown in Fig. 4.

By this invention I am enabled to produce leader or conductor hooks at a much less cost

than when forged by hand. And my hook will be found to be much stronger at the neck, or that part between the driving-shoulder and body, than the forged hooks for the reason that, often in the forged hooks, some of the lapped-over portions are welded at this point when the metal is not hot enough to properly unite, and hence such hook is liable to break at this point when the hammer is applied to the shoulder in adjusting the hook over a leader or conductor, and in every other respect my improved hook is equally as good as hooks forged by hand.

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

1. The method herein described of forming the blank for a leader-hook, by subjecting a suitable sized and shaped bar of cold iron to the action of cutting knives or dies that will form the angular shoulder-cut *a b c* and the dividing cut *c d*, substantially as specified.

2. The leader-hook herein shown and described, as a new article of manufacture.

Witnesses:

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