J. H. ALKER.
Forging Mandrels.

No. 199,892. Patented Feb. 5, 1878.

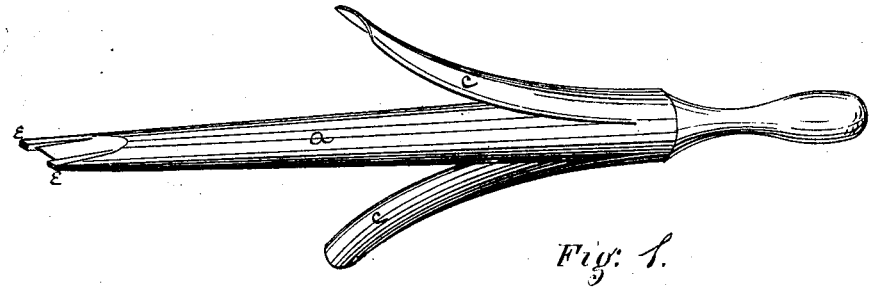

Fig. 1.

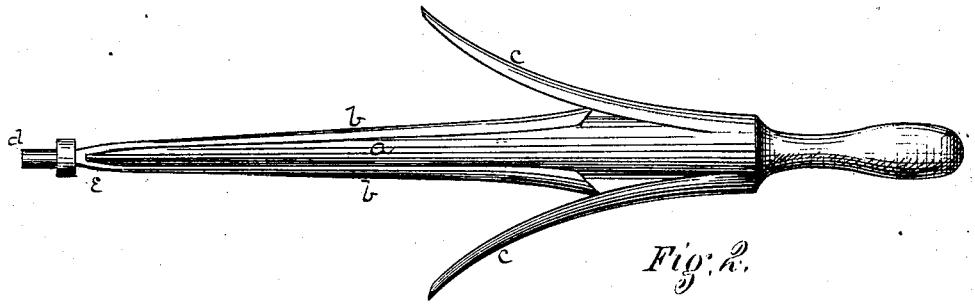

Fig. 2.

Witnesses
W. L. Mann
C. L. Parker

Inventor John H. Alker
By Attorney George H. Christy.

UNITED STATES PATENT OFFICE.

JOHN H. ALKER, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO JONES AND LAUGHLINS, OF SAME PLACE.

IMPROVEMENT IN FORGING-MANDRELS.

Specification forming part of Letters Patent No. **199,892**, dated February 5, 1878; application filed January 12, 1878.

To all whom it may concern:

Be it known that I, JOHN H. ALKER, of Pittsburg, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Forging-Mandrels; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a perspective view of my improved forging-mandrel, and Fig. 2 shows a side elevation of the same in connection with the straps of an ordinary sucker-rod coupling applied thereto, and illustrative of its manner of use.

In the forging and welding of sucker-rod couplings and other similar articles consisting of two parallel or nearly parallel straps united at one end, it is customary to insert between the straps a shaping or forging mandrel, so as to secure a suitable and uniform shape and position to such straps. This mandrel is usually inserted by one workman, who forces it in endwise between the strap parts up to the point where such straps are welded together. As the mandrel is thus forced in the straps will be bent or deflected away from the stem of the mandrel, and it is necessary for another workman to grasp such straps in a pair of tongs and bend them down upon the stem, and secure them there by slipping a ring or keep over the ends, when the straps are forged to the desired shape. This operation is performed while the iron to be forged is heated and ready for working, and the delay thus incurred and the services of the helper or additional workman which are required add considerable to the expense of the finished article.

My improved mandrel is designed to overcome the objections mentioned; and consists of a mandrel-stem, *a*, of such form as to give the desired interior shape to the straps *b b* of the article to be forged.

Near the outer end or base of this mandrel-stem are secured flaring guides or wings *c c*, one on each opposite side. These wings or guides are attached at one end only, and this may be done by riveting, welding, or otherwise. They are arranged in line with the mandrel-stem, and with the flaring or free ends toward the point of the same. As shown, the form of these guides is concavo-convex in cross-section; but other shapes may be given them, as required by the article to be forged.

The amount of flare given the guides is such that they may engage the ends of the straps *b* and guide or deflect them toward the mandrel as the latter is inserted between such straps.

In order to guide the mandrel as it is forced in between the straps, and secure its proper position, I arrange guides or shoulders *e* on both sides of the point of the stem, as shown in Fig. 1.

In using my improved mandrel the coupling or other article, being first properly heated, is laid in such position that the workman may force the mandrel-stem endwise between the straps, which he does until the point, guided by the shoulders *e*, reaches the point where the two straps are united. In thus pushing the mandrel into place the ends of the straps come against the inside of the guides *c*, and, sliding along the inner faces of the same, they are bent, sprung, or deflected down upon and held against the stem of the mandrel, as shown in Fig. 2. The coupling is then manipulated in the usual way, so as to fix the straps and other parts in the desired shape and form.

By my improvement one person is enabled to perform the work which before has required two, and also to do the same more quickly.

I claim herein as my invention—

1. A forging-mandrel having guiding-wings *c c* attached thereto, substantially as and for the purpose set forth.

2. A forging-mandrel having guides *e* arranged upon the point of the stem, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand.

JOHN H. ALKER.

Witnesses:

WEST MCMURRAY,

CLAUDIUS L. PARKER.