(No Model.)

# F. E. BEARDSLEY.

## AXLE CUTTER.

No. 456,935. Patented Aug. 4, 1891.

Fig. 1.

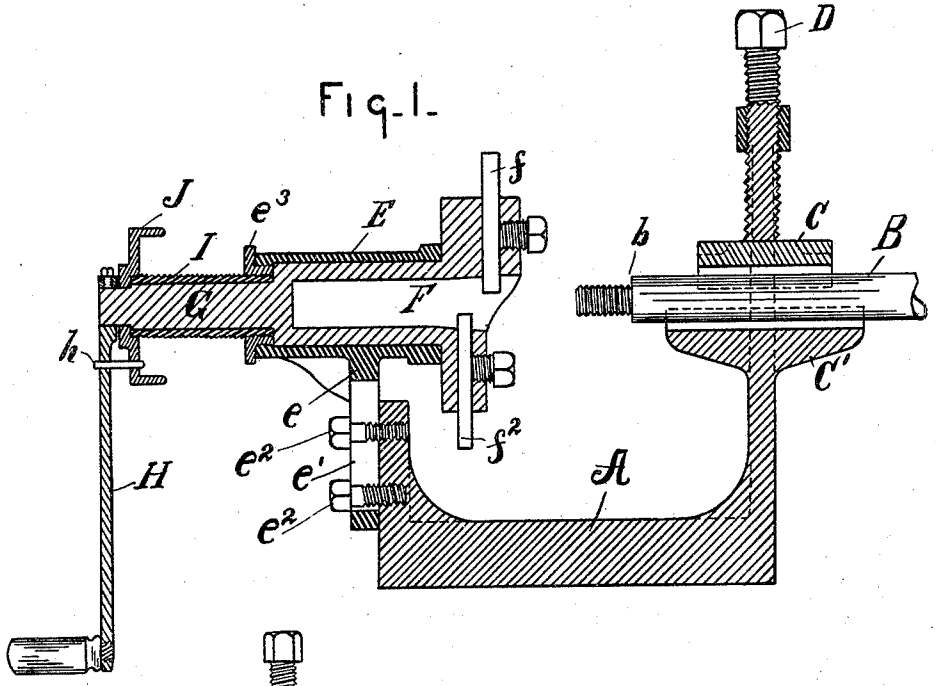



Fig. 2.

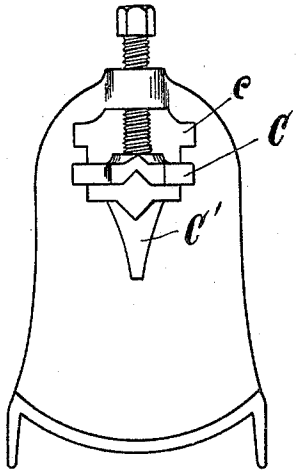
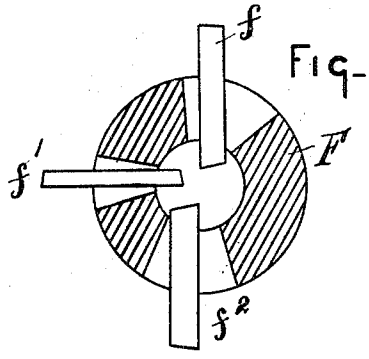



Fig. 3.




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# UNITED STATES PATENT OFFICE.

FRANK. E. BEARDSLEY, OF TRAVERSE CITY, MICHIGAN.

## AXLE-CUTTER.

SPECIFICATION forming part of Letters Patent No. 456,935, dated August 4, 1891.

Application filed March 21, 1891. Serial No. 385,917. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK. E. BEARDSLEY, a citizen of the United States, residing at Traverse City, county of Grand Traverse, State of Michigan, have invented a certain new and useful Improvement in Axle-Cutters; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

In the drawings, Figure 1 is a vertical section of my invention. Fig. 2 is an end elevation showing the provision for holding the axle. Fig. 3 is a sectional view of tool-head.

The purpose of my invention is to provide an axle-cutter adapted to clamp and firmly hold an axle while being turned and threaded, and provided with a revolving tool-head mounted in an adjustable frame, whereby the same may be centered on the end of the axle, and further adapted to be gradually fed onto the axle and give the requisite feed to the tools while turning back the shoulder preparatory to threading, and also adapted to automatically feed the threading-tool while cutting the thread.

In the drawings, A represents the connecting-frame supporting the jaws for holding the axle at one end and the support for the tool-head and mandrel at the other end.

B is an axle clamped by the jaws C and C′, held or clamped by the large set-screw D. The upper jaw C is held in position by ways formed in each end and adapted to embrace the frame, and is unshipped by raising it to the top when it is relieved by the opening *c*. The lower jaw is cast solid with the frame. These jaws have angular recesses in their faces, whereby the axle is centered as well as clamped.

The tool-frame E is adjustably connected to the frame A by slotting the standard *e* at *e′*, allowing it to slide up and down on the clamping-bolts $e^2$. The purpose of the vertical adjustment is to provide for centering the cutter-head on any size of axle.

The tool-head F is preferably cast solid with the mandrel G, and it and the mandrel are revolved by the crank H. The mandrel is mounted in the frame E, and has free longitudinal movement in the direction of the axle clamped in the jaws, and is forced in this direction, when desired, to give the tool-head the proper feed, by attachments consisting of the threaded sleeve I and the hand-wheel J, screwed thereon. The threaded sleeve I engages with the interior thread on the nut $e^3$, screwed into the end of the frame E.

The tool-head F is adapted to hold the three tools *f f′* $f^2$. *f* is adjusted to cut back the shoulder *b* on the axle, *f′* to cut off the end of the axle, and $f^2$ to cut the thread farther on the axle after the shoulder has been cut back by the tool *f*. I make these tools of half round steel, and preferably reversible, so that when one end becomes dull the other can be used.

In operating my invention the axle is clamped between the jaws and the tool-head raised to the proper height by loosening the screws $e^2$. This adjustment is made so as to bring the axial centers of the mandrel G to correspond with the center of the axle B. The axle is first shouldered or turned back at the point *b* the desired distance by the use of the turning-tool *f*, the longitudinal feed being accomplished by the use of the hand-wheel J, which turns the threaded sleeve I and advances it through the nut $e^3$ against the shoulder of the mandrel, thus forcing the feed. The tool *f′* may be adjusted to cut off the end of the axle at the same time the tool *f* cuts the shoulder, the feed of the two tools being simultaneous. After the shoulder has been cut back the desired distance the tool for threading the part cut back is adjusted and the crank H engaged with the hand-wheel by inserting the pin *h*, so as to cause the sleeve I to revolve with the crank. It is manifest that the tool will advance one thread of the sleeve I each revolution of the crank, and will form a thread on the axle to agree with the thread on the sleeve.

By removing the sleeve I and the nut $e^3$ and substituting therefor a pair having a different pitch, it is manifest that a thread of different pitch will be cut on the axle, and by providing different pairs to correspond with the different sizes any size desired can be cut.

What I claim is—

1. In an axle-cutter, a tool-head adapted to carry the turning-tools and a threading-tool, in combination with a mandrel for turning said tool-head, a threaded sleeve mounted on said mandrel and adapted to feed the same longitudinally, and a nut with interior and exterior threads engaging said threaded sleeve and supporting the same in the frame of said axle-cutter, substantially as described.

2. In an axle-cutter, a tool-head adapted to carry the turning and threading tools, in combination with a mandrel for turning said tool-head, a threaded sleeve mounted on said mandrel and adapted to feed the same longitudinally, a nut with interior and exterior threads engaging said threaded sleeve and supporting the same in the frame of said axle-cutter, a crank for revolving said mandrel, and means for connecting said crank with said threaded sleeve, whereby the threading-tool is advanced one thread each revolution of said crank, substantially as described.

3. In an axle-cutter, the combination of frame A, adapted to be clamped to an axle, tool-frame E, adjustably connected to said frame A to permit vertical movement, mandrel G, threaded sleeve I, nut $e^3$, having interior threads engaging said sleeve and exterior threads engaging the tool-frame, whereby said sleeve and nut are made interchangeable with other pairs having different pitch, and means for revolving said mandrel and said threaded sleeve simultaneously, substantially as and for the purposes described.

In testimony whereof I sign this specification in the presence of two witnesses.

FRANK. E. BEARDSLEY.

Witnesses:

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A. H. BROWN.