(No Model.)

# E. ANDREWS.

## SAW.

No. 315,372. Patented Apr. 7, 1885.

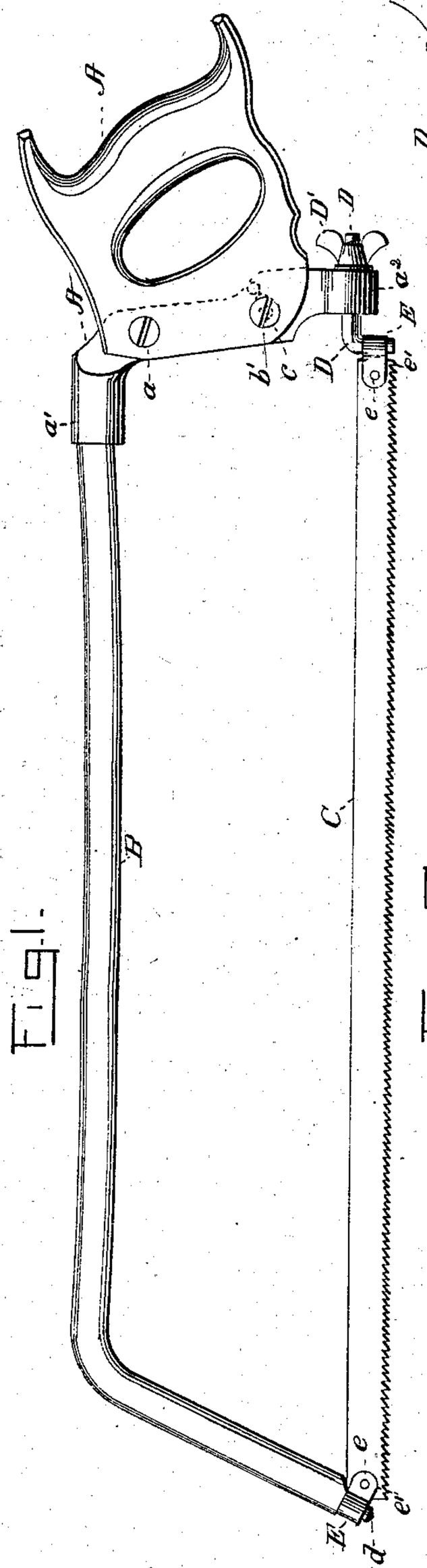


Fig. 1.

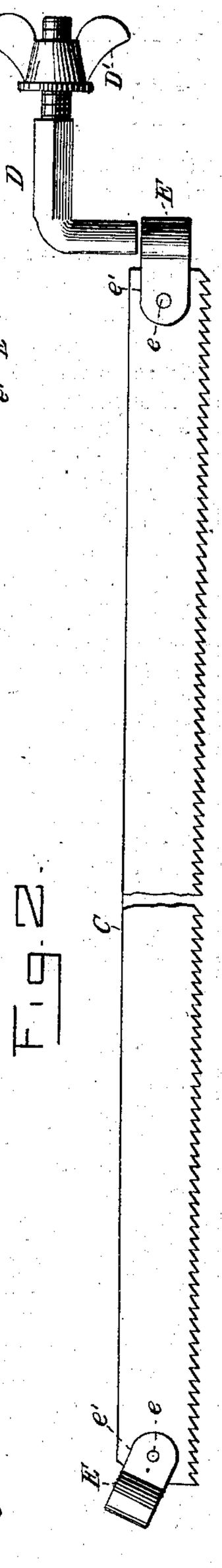


Fig. 2.

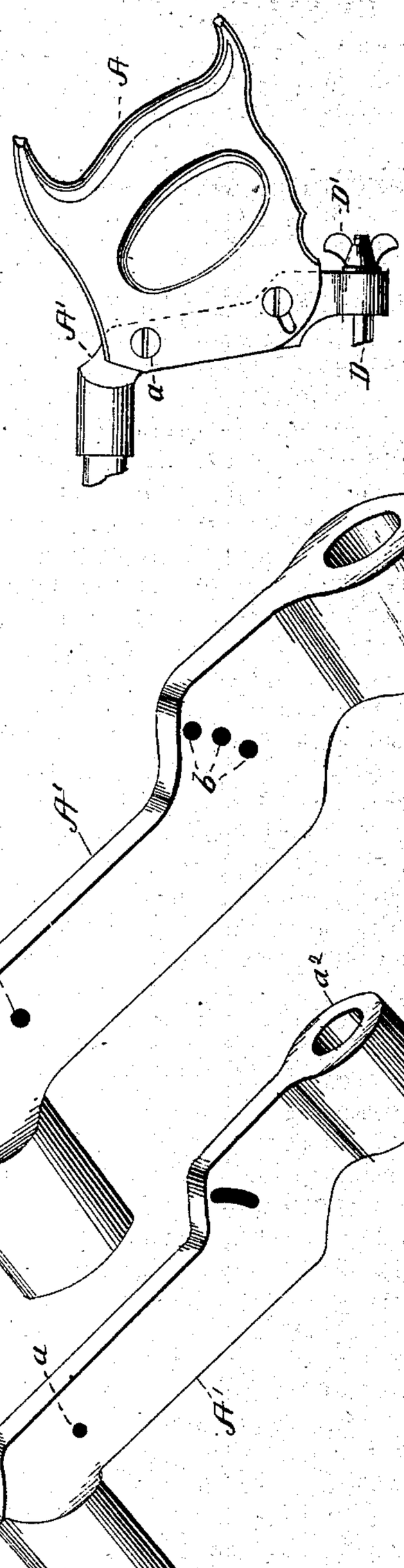


Fig. 5.




Fig. 3.

Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## SAW.

SPECIFICATION forming part of Letters Patent No. 315,372, dated April 7, 1885.

Application filed February 9, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, EMANUEL ANDREWS, of Williamsport, in the county of Lycoming and State of Pennsylvania, have invented a new and useful Improvement in Saws; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates, particularly, to the class of saws used by butchers and in metal-sawing; and its objects are to provide convenient means for readily attaching and detaching the blade and for tightening and loosening the same, and means for adjusting the handle to suit the requirements of the operator. These objects I attain by the use of certain fastening and tension devices, the construction of the saw-handle, and the adaptation of the blade, frame, and handle to the accommodation of such devices, all as more fully hereinafter described, and pointed out in the claims.

For a better understanding of my improvements, in connection with the following description, attention is invited to the accompanying drawings, in which—

Figure 1 is a side view of my improved saw with a blade applied and set by devices constructed in accordance with my invention; Fig. 2, a detail view of the saw-blade and its fastening and tension devices; Fig. 3, a detail of the casting, or that portion of the handle to which the rear ends of the saw frame and blade are secured; and Figs. 4 and 5, details of modifications of the casting and handle.

Like letters of reference denote corresponding parts in the several views.

A denotes the handle, which is slotted in front of its grip-opening to receive a metal handle-casting, A′, to which this handle is pivoted at its upper corner, as shown at *a*. This part of the frame, called the "handle-casting," aside from its general utility, gives strength and firmness to the handle, and is formed with a socket, *a′*, on its upper end to to receive the rear end of the metal back B, and with a socket, $a^2$, on its lower end to receive the means, hereinafter described, for securing and tightening the saw-blade C. This handle-casting A′ is also provided near its lower end with several bolt-holes, *b*, arranged in the arc of a circle, as shown in Fig. 3, and the slotted portion of the handle A is provided near its lower end with a single bolt-hole, *b′* corresponding in size with the holes *b* of the handle-casting A′. By means of these holes *b* and *b′*, in connection with a suitable bolt, *c*, the handle A may be adjusted upon the handle-casting A′ to different angles of inclination in respect to the blade to suit the requirements of the operator. The metal back B, constituting the frame of the saw, should be of such a shape externally as to fit the socket *a′* on the upper end of the handle-casting A′, in which its rear end is removably inserted, and the outer end of this back B is curved or bowed in a manner common with backs for this class of saws. This outer end of the back B is reduced so as to form a round bolt or pin, *d*, or this part may be a separate piece secured to the frame in any suitable way. In the socket $a^2$ on the lower end of the handle-casting A′ of the handle A is inserted a shank, D, with one end bent at right angles to form a bolt or pin for a purpose corresponding to that of the bolt or pin *d* on the outer end of the back B. The other or opposite end of the shank D protrudes through the socket $a^2$ on the other side, and is made round, and is screw-threaded on its exterior to receive a thumb or other tightening nut, D′. While this shank D should be of such a size as to readily pass through the socket $a^2$, the shape of that portion between the screw-threaded and bent ends is preferably angular, or of such a shape as to secure itself against lateral movement in the socket. The blade C used with this form of frame and tension device is clearly shown in Fig. 2, and is provided at each end with a loop, E, attached thereto by a single rivet, *e*, passing through the blade and ears *e′ e′* of the loops. The saw-blade thus constructed is applied to the frame by slipping the loops E E over the bolt or pin *d* of the back B, and over the bent end of the shank D, and is properly adjusted and tightened by turning the thumb-nut D′.

By attaching the loops E E to the blade with only one rivet they are enabled to properly adjust themselves, together with the blade, under any tension applied by the turning of the

thumb-nut D′, and adapts itself to the inclination from the perpendicular of the bolt or pin *d* and to small variations and inclinations of the bent end of the shank D.

It will be manifest that the means for adjusting the handle is capable of many changes without the exercise of invention.

For instance, as shown in Figs. 4 and 5, instead of the independently-arranged holes *b* in the handle-casting A′, a curved slot could be substituted, or such a slot could be made in the handle to engage with a pin or bolt on the handle-casting; but these substitutes would be found objectionable for the reason that the adjustment of the handle could not be made perfectly rigid, as under active operation sufficient pressure upon the saw-handle would gradually loosen the adjustment and permit the handle to slip and change its position. With the means I have devised the adjustment can be made absolutely rigid and secure against any pressure by hand, and it may be well to state here that to give additional security in this respect the heads of the adjusting-bolt *c* may be sunk into the handle flush with its surface.

One of the many advantages asserted for my improvements is the facility they afford for the attachment of different blades and backs to one and the same handle, and the advantage derived from the construction and arrangement of the handle is that it avoids the "heavy-at-point" feeling, and can be adjusted to suit the requirements of the operator. This is an important feature, from the fact that under certain circumstances in sawing meat as well as metal an adjustable handle renders the handling of the saw more convenient and comfortable; and, again, there is a difference of opinion among operators as to the proper relative arrangement of the handle and blade. Another advantage is that the saw-blade can be applied to the frame and removed from the same without any skill, as there is only one way of accomplishing this operation—namely, by merely slipping the loops on and off the ends of the frame and the shank.

Having thus set forth my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a saw of the character described, an adjustable handle pivoted at a point near its front upper corner to the handle-casting, substantially as described.

2. The combination of the handle A, the handle-casting A′, and the pivoting-bolt *a*, constructed and arranged substantially as described and shown.

3. The combination of the slotted handle A, the handle-casting A′, to which it is pivoted, the bolt *a*, by which the handle is pivoted to the handle-casting, the adjusting-bolt *c*, and the holes *b* in the handle, and the holes *b′* in the handle-casting, by means of which the pivotal adjustment is maintained, substantially as described.

4. The combination of the pivoted adjustable handle A, the handle-casting A′, provided with the socket *a′*, and the metal back B, removable both from the handle-casting and from the saw, substantially as described.

5. In a saw of the character described, the combination of back B, provided with the downward-projecting pin *d*, the handle-casting A′, the shank D, with downward-bent end, and the saw-blade C, provided with the loops E E, substantially as and for the purposes set forth.

6. In a saw of the character described, the combination of the pivoted adjustable handle A, the handle-casting A′, provided with sockets *a a′*, the back B, provided with the downward-projecting pin *d*, and the shank D, with its downward-bent end and tightening nut D′ with the saw C, provided with end loops, E E, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EMANUEL ANDREWS.

Witnesses:
J. W. A. YOUNG,
W. T. ANDREWS.