(No Model.)

A. H. SOUTHWORTH.

AXLE SKEIN.

No. 277,624. Patented May 15, 1883.

Fig. 1.

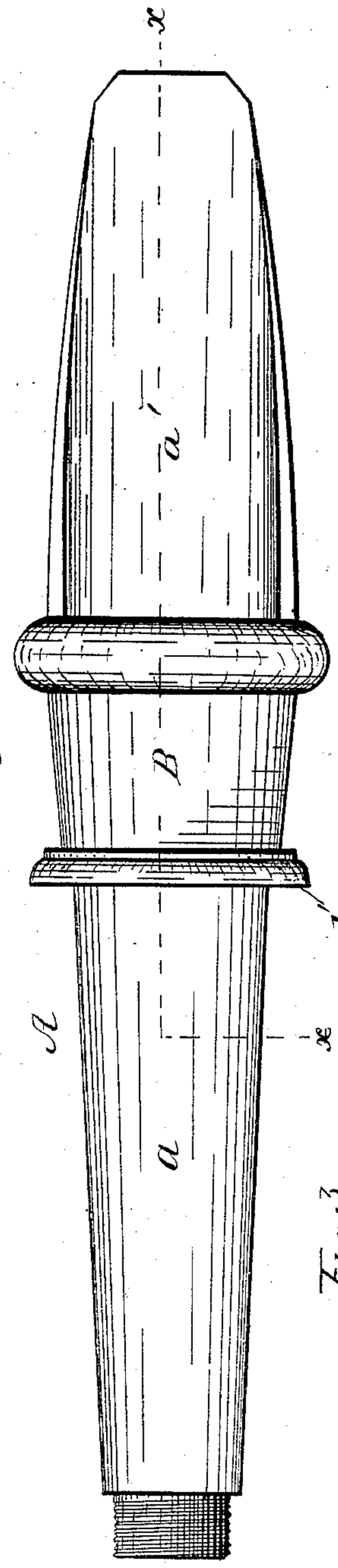


Fig. 2.

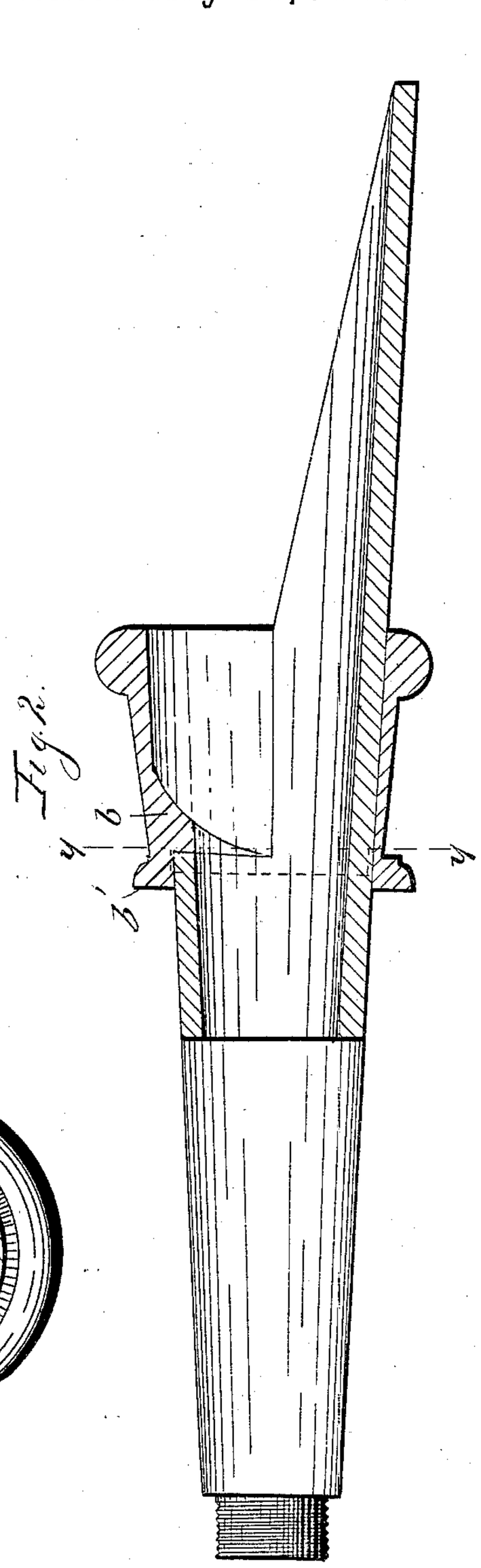
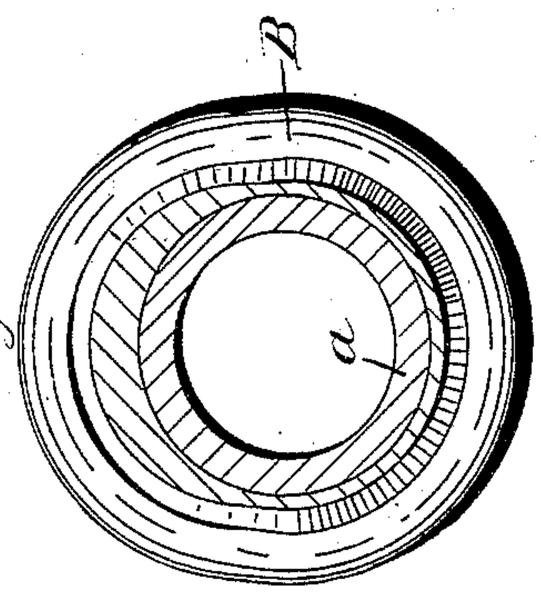


Fig. 3.



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UNITED STATES PATENT OFFICE.

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AXLE-SKEIN.

SPECIFICATION forming part of Letters Patent No. 277,624, dated May 15, 1883.

Application filed March 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALBERT H. SOUTHWORTH, a citizen of the United States, residing at Lockport, in the county of Niagara, in the State of New York, have invented a certain new and useful Improvement in Axle-Skeins, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of an axle skein having my improvement. Fig. 2 is a section on the line *x x* in Fig. 1. Fig. 3 is a section on the line *y y* in Fig. 2.

The same letters denote the same parts in all the figures.

My invention relates to metallic skeins for axles; and the object of it is to combine the advantages of a wrought-skein with those of a cast skein:

To this end it consists in a skein of wrought metal, having a sleeve, collar, or yoke cast thereon.

In the drawings, A denotes a skein, formed of steel or other wrought metal, consisting of the spindle *a*, inclosing the end of the axle-tree, and the extension *a'*, supporting the thicker part of the axle-tree, but cut away at the top. The superior lightness and strength of such a skein, when formed of sheet-steel, make the employment of that material very desirable; but it is also very desirable that the skein should have an enlargement toward the inner end of the spindle, so as to take in more wood, and thereby give greater strength to the axle-tree, and it is very difficult to form such an enlargement in a wrought skein. It is also extremely difficult and expensive to form lugs or an oiling-cup with its connected grooves and tubes on a wrought skein. For these reasons wrought skeins have not come into general use.

In order to combine all the advantages which I have enumerated, I cast upon the wrought skein, around the larger end of the spindle and the adjoining part of the extension *a'*, a sleeve, B, of suitable shape to inclose the spindle and the adjoining part of the extension, and having on its outer end a circular collar, B'. On the upper side, however, beyond the collar, the outline of the sleeve rises above the line of a circular arc, its inner surface being circular where it adjoins the spindle, but its outer surface being nearly straight-sided for a short distance above the horizontal diameter, thereby making the upper part of the sleeve thicker there than the lower part. Just beyond the spindle, however, this thickness diminishes from within, so that an enlargement, *b*, is formed capable of containing a corresponding enlargement of the axle-tree.

To effect the union of the sleeve which I have described with a wrought-skein, I first form the latter complete in the usual way, then insert it in a mold of suitable form, and pour in the molten metal for the sleeve. I find by experiment that the sleeve is thus joined to the skein with a firmness practically equal to that produced by welding. Obviously, by giving the requisite shape to the mold, lugs may be formed on the collar or sleeve, and depressions may be sunk in it, so as to form an oil-cup with its connected grooves. In addition to these advantages of a cast skein, the sleeve affords a guide by which to turn the axle-tree. The want of such a guide is a serious objection to the use of wrought skeins, since they generally have an open top at the larger end.

By shaping the mold accordingly the lower part of the sleeve might be dispensed with and a mere yoke cast on the skein in which to form the enlargement *b;* but it is obviously preferable to have the sleeve embrace the skein.

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

An axle-skein of wrought metal, in combination with a sleeve, collar, or yoke cast thereon, substantially as and for the purpose described.

ALBERT H. SOUTHWORTH.

Witnesses:

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