(No Model.) 2 Sheets—Sheet 1.

J. SANDAGE.

WAGON AXLE SKEIN.

No. 256,744. Patented Apr. 18, 1882.

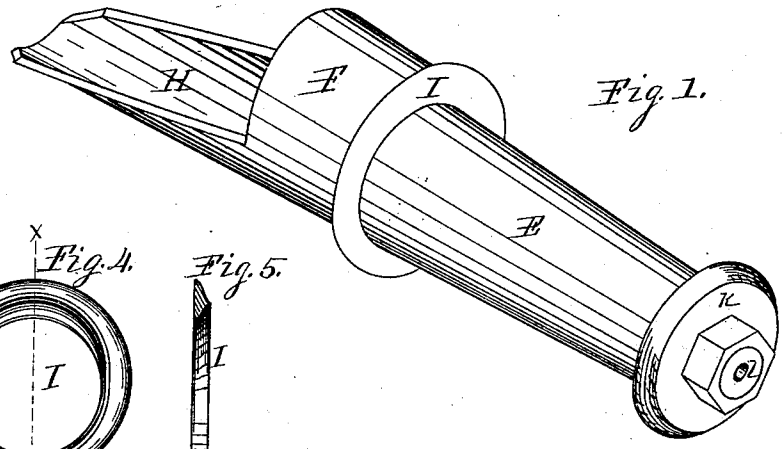


Fig. 1.

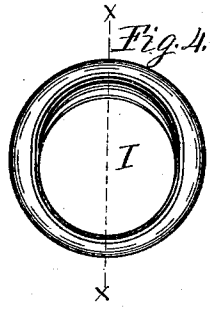


Fig. 4.

Fig. 5.

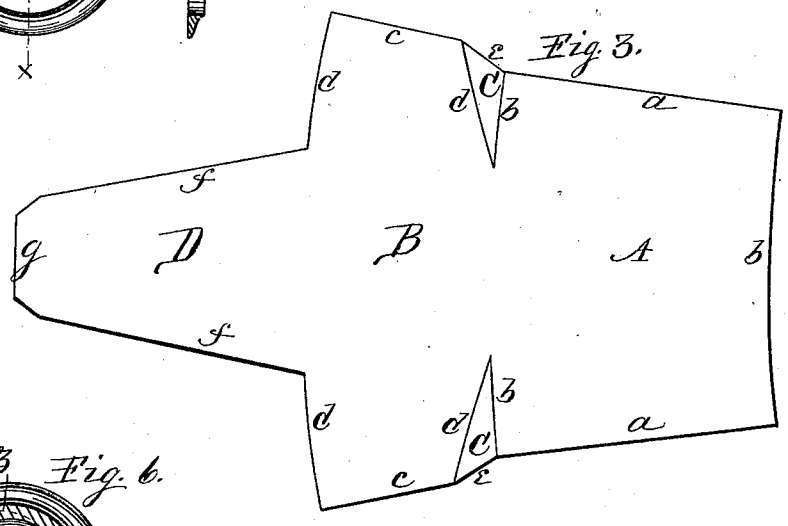


Fig. 3.

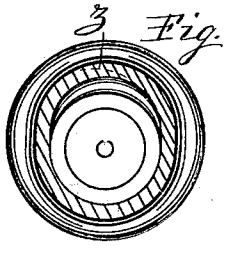


Fig. 6.

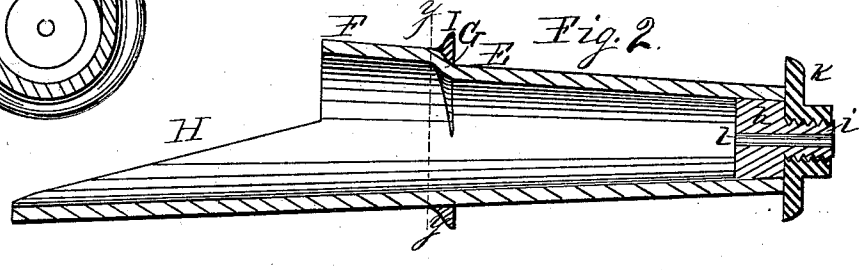


Fig. 2.

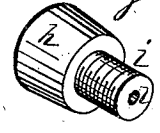


Fig. 7.

Witnesses.
A. O. Behel
F. J. Sawyer.

Inventor.
Joshua Sandage
Per Jacob Behel
Atty.

(No Model.) 2 Sheets—Sheet 2.

J. SANDAGE.

WAGON AXLE SKEIN.

No. 256,744. Patented Apr. 18, 1882.

Fig. 8.

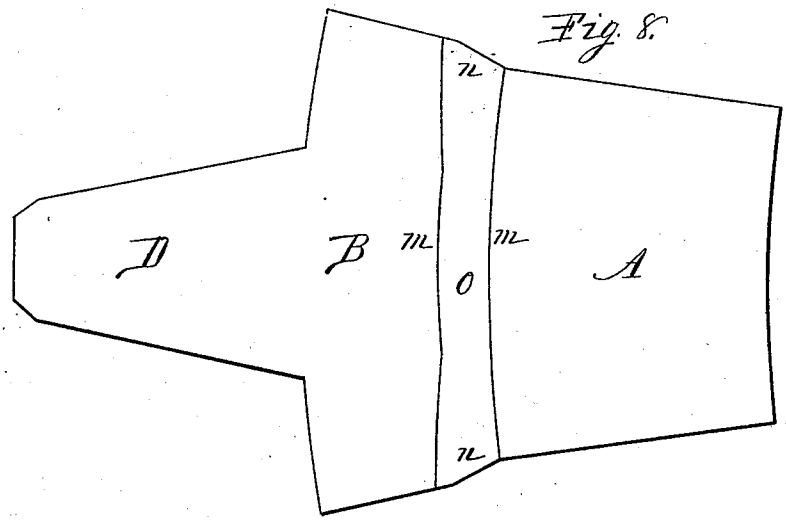


Fig. 9.

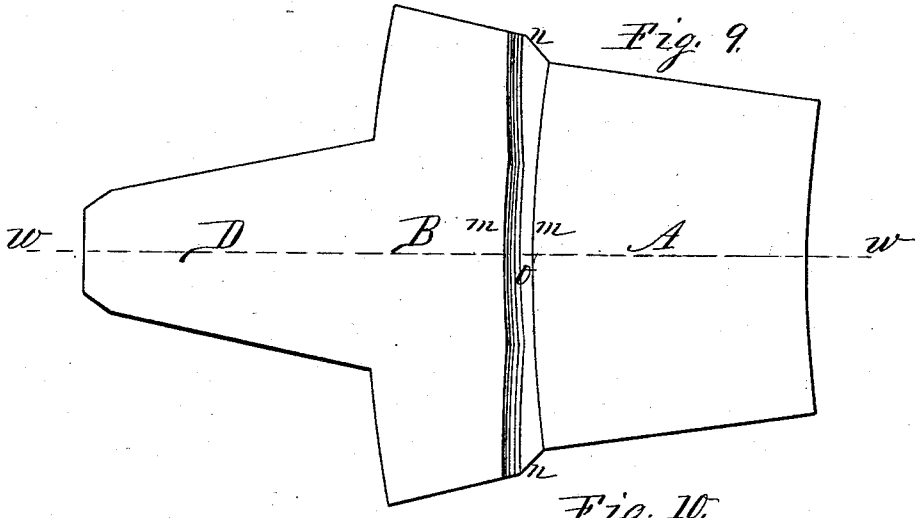


Fig. 10.

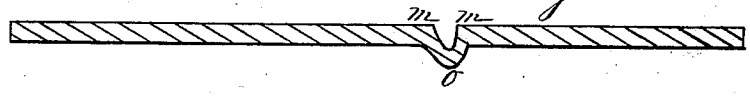
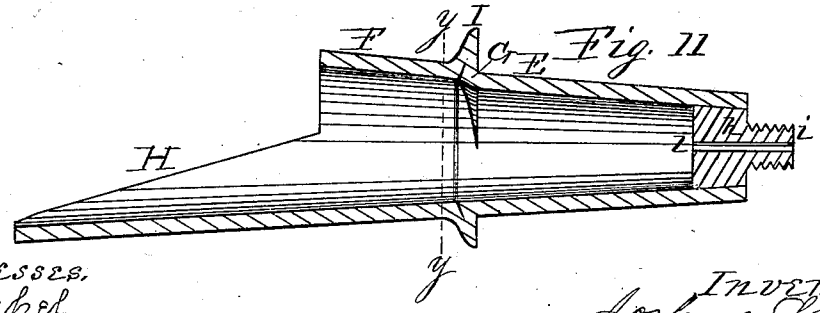


Fig. 11.



Witnesses.
A. O. Bekel.
F. J. Sovereign.

Inventor.
Joshua Sandage
Per Jacob Bekel
Atty.

UNITED STATES PATENT OFFICE.

JOSHUA SANDAGE, OF CARPENTERSVILLE, ILLINOIS.

WAGON-AXLE SKEIN.

SPECIFICATION forming part of Letters Patent No. 256,744, dated April 18, 1882.

Application filed September 11, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOSHUA SANDAGE, of Carpentersville, in the county of Kane and State of Illinois, have invented a new and useful Thimble-Skein for Wagon-Axles, of which the following is a specification.

This invention relates to thimble-skeins employed in the manufacture of wagons; and it consists in a skein produced from plate material, which will be hereinafter more fully described.

In the accompanying drawings, Figure 1 is an isometrical representation of a thimble-skein embodying my invention, of which Fig. 2 is a longitudinal central section. Fig. 3 represents the blank from which to form the thimble-skein. Fig. 4 represents a ring employed to form the collar, of which Fig. 5 is a section on dotted line *x*. Fig. 6 is a transverse section of the thimble on dotted line *y*. Fig. 7 is an isometrical representation of the screw-threaded plug employed to close the outer end of the skein. The following figures, from 8 to 11, inclusive, refer to a slight modification of my improved skein, and of these figures, Fig. 8 represents the blank from which to form the modified skein. Fig. 9 represents the same blank having its transverse central portion raised in rib form to produce the collar of this blank. Fig. 10 is a longitudinal section on dotted line *w*, and Fig. 11 is a longitudinal section of the finished skein.

The blank represented at Fig. 3, from which to form the thimble-skein, is cut to proper size and form from suitable plate material, preferably from plate-steel, and for the purpose of a more clear description I shall divide it into the several sections A, B, C, and D. Of this blank, the section A, bounded by the side lines *a* and end lines *b*, is of proper form and size to produce the skein portion E of the thimble-skein when properly bent in tubular or thimble form. The section B, bounded by the side lines *c* and end lines *d*, is designed to form the enlargement on the upper side of the inner end portion, F, of the thimble-skein. The sections C, bounded by the end lines, *b* and *d*, and the side lines *e*, are designed to form the enlarging curved portions G immediately under the collar on the upper side of the thimble and connect the skein proper with the inner enlarged end portion of the thimble. The portion D of the blank, bounded by the side lines *f* and end line *g*, forms the portion H of the thimble-skein, which extends inward on the under side of the axle-tree. This blank is bent in cylindrical or thimble form, having its axis lengthwise of the blank, and in such a manner that the side edges of the sections A, B, and C overlap each other and are welded, producing a lap-weld, as represented by the dotted line *z* in Fig. 6, through the length of the thimble.

At *h* is represented a plug of suitable material and of proper size to fill the tubular outer end of the skein portion, in which it is placed, being put in position by passing it through the thimble from its enlarged end. This plug is fixed in position in the tube by welding the parts. The outer portion, *i*, of this plug is reduced to a proper size, forming a shoulder against the end of the skein, and the reduced portion is screw-threaded to receive a screw-nut, (represented at *k*,) which is of the usual form and employed for the purpose of holding the wheel on the skein in the manner common in thimble-skeins. This screw-plug is also provided with an axial hole, as at *l*, to receive a skein-bolt to fix it on the axle-tree in the usual manner.

At I is represented a collar made of suitable material and of proper ring form and size to embrace the thimble-skein at the junction of the enlarged portion of the thimble with the skein portion thereof. This ring-formed collar may be fixed in position on the thimble by welding it thereto; or, instead of welding, it may be fixed by the usual means of shrinking it on the thimble-skein.

I also produce my improved skein from plate material without the employment of the separate ring-collar hereinbefore described, and this I accomplish by the employment of a blank, (represented at Fig. 8,) which is substantially the same as the blank represented at Fig. 3, hereinbefore fully described; but in producing the thimble-skein from this blank the portion *o*, embraced between the transverse lines *m* and side lines *n*, is raised, as represented in Figs. 9 and 10. This blank, with its raised portion *o*, is then bent in tubular or thimble form in the same manner as described in connection with the blank at Fig. 3, having its side edges over-

lapping and welded, and having the raised portion *o* closed and welded, producing a thimble-skein, as represented in Fig. 11, having the thimble and collar *o* produced from the same blank of plate material of a single piece.

From the foregoing it will be seen that my improved thimble-skein, made from plate material, consisting of the skein proper, on which the wheel revolves, being that portion between the collar and the screw-nut, and the enlarged thimble portion from the collar to its extreme open end to receive the enlargement of the axle-tree, form a thimble in every particular substantially identical with the approved form of the cast thimble-skein in general use in the manufacture of wagons; but by the employment of malleable plate material I produce a more reliable thimble-skein, and when plate-steel or steel-faced iron plates are employed I am enabled to produce a skein with hardened wearing-surface; or the hardened surface may be tempered to produce a skein combining the maximum of durability and strength to be attained in a single article.

In the foregoing I have described my improved skein as having its side edges joined by a lap-weld, which I prefer; but it may be joined by bringing the edges together in a butt-weld and produce an article substantially the same as hereinbefore described.

I am aware that wagon-axle skeins have been made of a single piece of sheet metal, and hence I make no broad claim to such construction of device, but restrict myself to certain improvements specified in the claims.

I claim as my invention—

1. An axle-skein composed of a spindle-section and an angularly-enlarged extension or socket back of the former, the whole made from a single piece of plate metal and having but a single longitudinal seam, the meeting edges of which are secured by a weld along their entire length.

2. An axle-skein made from a single piece of plate metal and composed of a spindle-section, an enlarged extension or socket back of the former, a short bevel joining the two sections on the upper side of the skein.

3. An axle-skein blank of a single piece of plate metal, without longitudinal division, having a spindle portion and an enlarged extension in rear thereof, whose edges form an angle with those of the spindle portion at the points of junction.

4. An axle-skein blank of a single piece of plate metal, without longitudinal division, having a spindle portion and an enlarged extension in rear thereof, whose edges form an angle with those of the spindle portion at the points of junction and change their own direction angularly a short distance back of those points for the purpose of forming shoulder or angular enlargements on the upper side of the skein at the junction of the spindle with the extension.

5. A plate-metal axle-skein blank composed of a tapering section and a wider section adjoining the wider end of the former and projecting beyond it on each side thereof.

6. A metal-plate axle-skein blank composed of the tapering section, the enlarged central section projecting at each side beyond the former, and the tapering tail-section.

7. A metal-plate axle-skein composed of the spindle portion, an enlarged extension-socket, and a bevel, in combination with the collar fitted at its back edge upon the bevel.

JOSHUA SANDAGE.

Witnesses:
JACOB BEHEL,
A. O. BEHEL.