

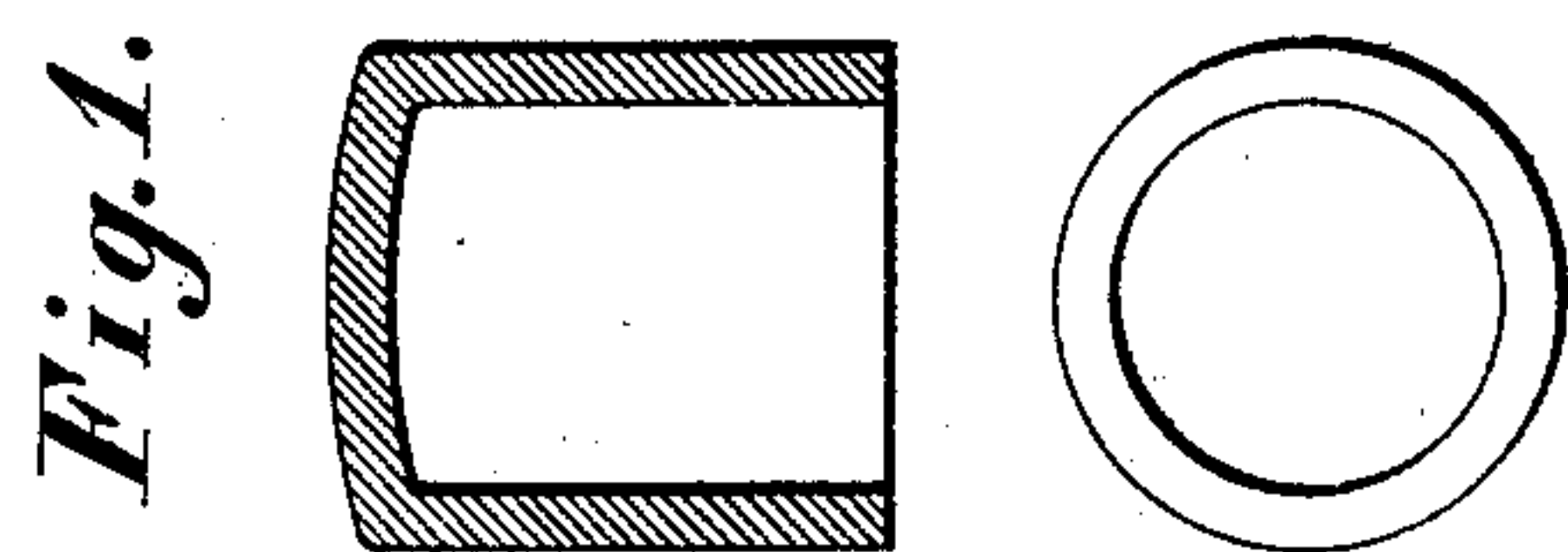
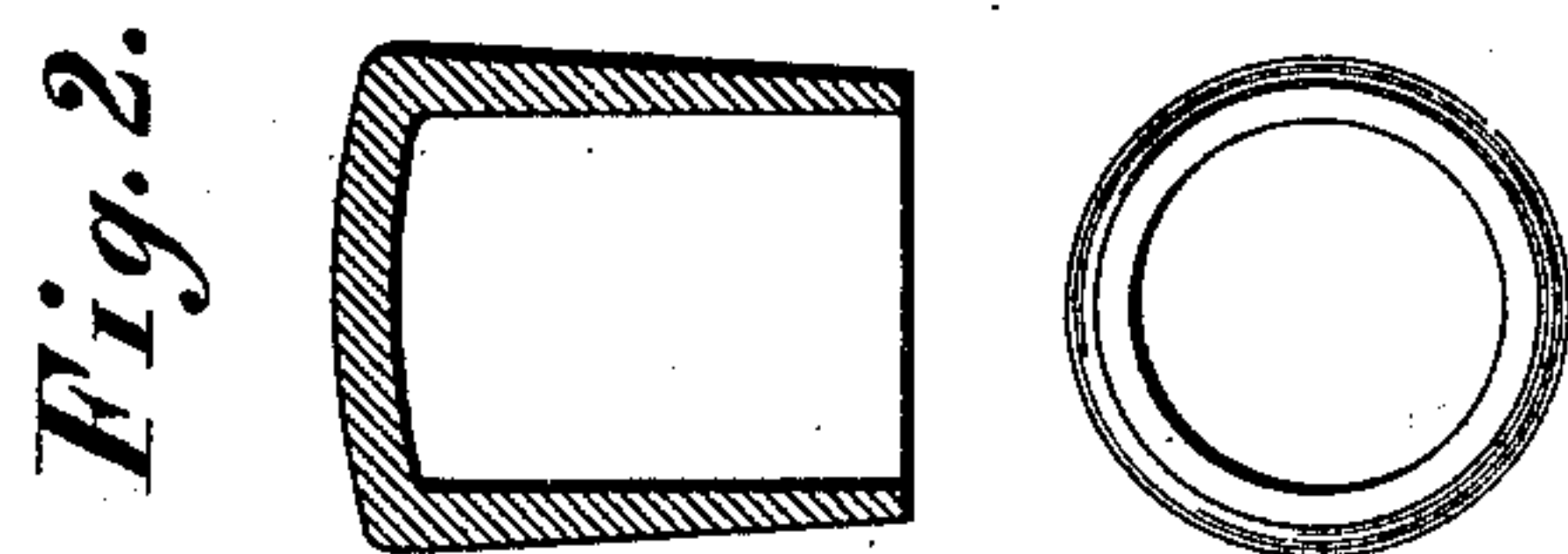
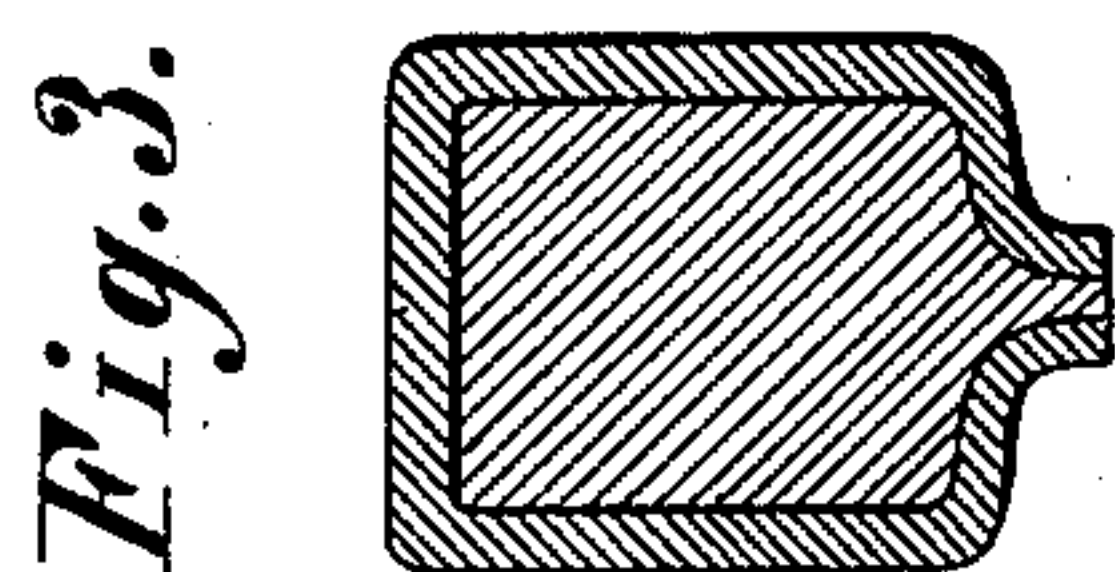
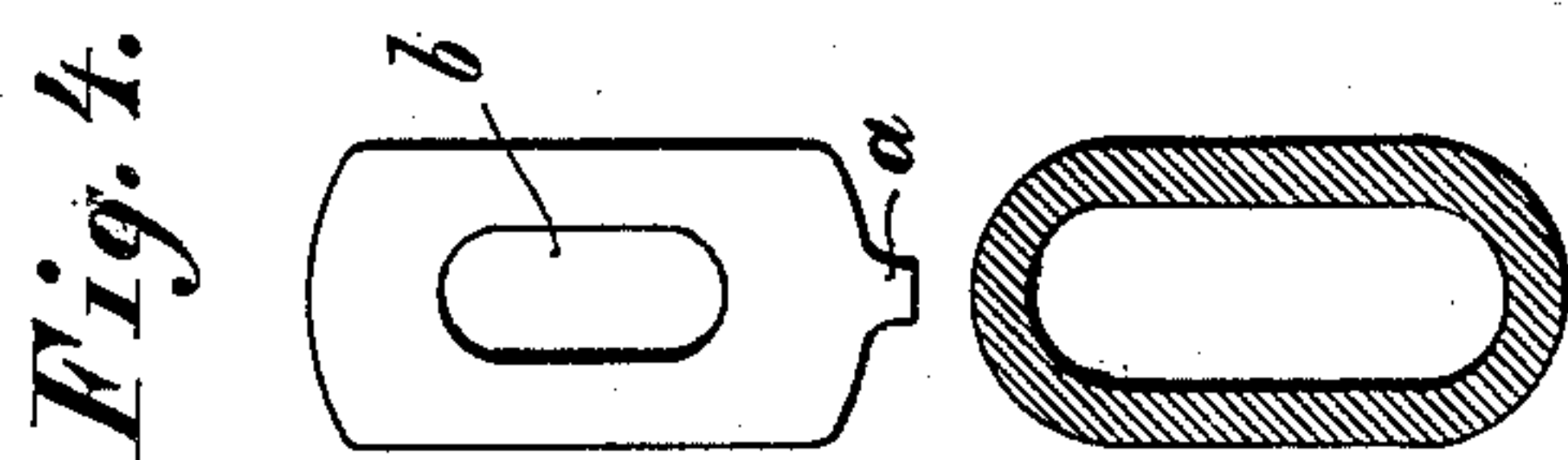
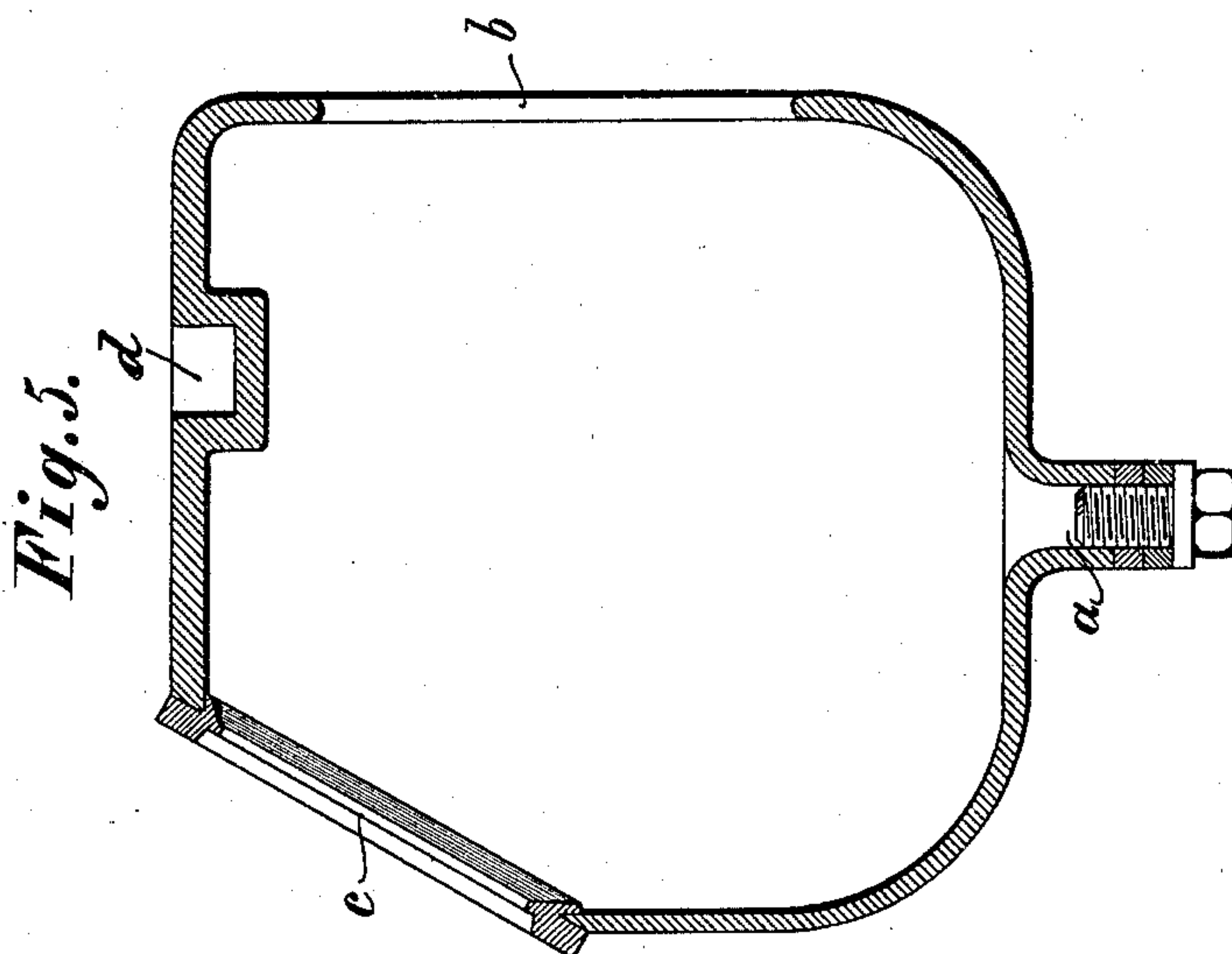
No. 666,037.

Patented Jan. 15, 1901.

H. STÜTING.
MANUFACTURE OF AXLE BOXES.

(Application filed Apr. 5, 1899.)

(No Model.)



Witnesses:
Attest
P. H. Sommers

Inventor
Henrich Stütting
by
[Signature]

UNITED STATES PATENT OFFICE.

HEINRICH STÜTING, OF DORTMUND, GERMANY.

MANUFACTURE OF AXLE-BOXES.

SPECIFICATION forming part of Letters Patent No. 666,037, dated January 15, 1901.

Application filed April 5, 1899. Serial No. 711,863. (No model.)

To all whom it may concern:

Be it known that I, HEINRICH STÜTING, a subject of the Emperor of Germany, and a resident of Dortmund, Westphalia, Germany, have invented certain new and useful Improvements in the Manufacture of Axle-Boxes; and I do hereby 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

One of the chief conditions for securing the durability and good quality of an axle-box is the suitable distribution of the material of which the box is composed. It is well known that an axle-box has to withstand all the shocks that occur during the motion of the vehicle and whose maximum effect is exerted upon that part of the axle-box which is situated above the journal of the axle.

This invention consists in the application to the manufacture of axle-boxes of an otherwise known process by means of which alone a proper distribution of material can be produced and which at the same time admits of making axle-boxes of a uniform shape, which does not require special openings and arrangements for draining out the oil, but itself contains such an oil-outlet.

In the accompanying drawings the successive stages of the process are illustrated by diagrams.

Figure 1 is a section and under side plan view of the blank. Fig. 2 is a vertical section and under side plan view of a modified form of blank, the latter having walls of gradually-reduced thickness from its closed to its open end. Fig. 3 shows the blank in section as shaped and filled with a compressible material. Fig. 4 is a side view and vertical section illustrating a further step in the operation, and Fig. 5 shows the practically completed axle-box by a vertical transverse section.

The process consists, essentially, of the following operations: A hollow cylindrical body of wrought-iron closed at one end and either with an equal thickness of wall throughout, Fig. 1, or with the surface of the annular part

tapering toward the open end, Fig. 2, is first of all swaged or forged into the shape shown in Fig. 3, whereby the hollow space is provided with a neck *a*, like that of a bottle. The interior of the cylinder, whose transverse section perpendicular to the plane of section of Fig. 3 is still circular, is now filled with a suitable compressible or yielding or an elastic resisting material—such as granulated rosin, sand, or compressed air—and the bottle-neck *a* is then closed in any suitable manner, as by means of a screw or other plug. This having been done, the body is pressed to the desired rectangular, oblong, or other cross-section in two directions at right angles to each other by means of suitable presses and dies. From this operation the axle-box issues almost finished. The axle-box may now be provided with a suitable recess *d* in its roof, forming a seat for a car-spring. The neck *a* is now opened again, the resisting material removed, and an opening *b* made in one of the walls of the box, Fig. 4, for the purpose of allowing the end of the axle to pass through. Lastly, a cut is made on the upper half of the box, so as to form a sharp-edged opening. In this the flange *c*, intended for receiving the cover proper, is fixed simply by beading its edge over, Fig. 5. The axle-box is then complete, and no further openings or arrangements for draining out oil are necessary, as all oil can be easily removed through the orifice *a*. This gives the great advantage that there is no weakening of the material, which is distributed throughout in the most serviceable manner possible, a fact which is of great importance as to the present invention.

As may be easily seen from Fig. 5, the material is so disposed that the strongest section is the section most liable to be severely tried by shocks that the box may receive, so that axle-boxes constructed according to the present process possess a considerable superiority in point of durability over those heretofore made.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent of the United States of America, is—

1. The process of making wrought-iron car-axle boxes, which consists in first making a tubular blank closed at one end, then drawing

the walls at the open end of the blank together to form an axial tubular neck α and filling the cylindrical body with a yielding or compressible or elastic medium, and, after
5 closing said neck, subjecting the cylindrical body to pressure in the proper directions to impart to it the form the finished axle-box is to have, then cutting an opening b in the rear wall of the box so formed, for the passage of
10 the axle, and an opening c in the front wall of said box near its roof for the axle-box cover, substantially as set forth.

2. The process of making wrought-iron axle-boxes, which consists in first preparing a tubular blank closed at one end and having
15 walls of gradually-decreasing thickness from its said closed to its open end, then drawing the walls at the open end of the blank to-

gether to form an axial tubular neck α , and filling the cylindrical body with a yielding or compressible or elastic medium, and, after
20 closing said neck subjecting said body to pressure in the proper directions to impart to it the form the finished axle-box is to have, forming a seat d in its roof, and openings b, c in its
25 rear and front walls respectively, and screw-threading the aforesaid tubular neck for the reception of a screw-plug, substantially as set forth.

In testimony that I claim the foregoing as
30 my invention I have signed my name in presence of two subscribing witnesses.

HEINRICH STÜTING.

Witnesses:

WOLDEMAR HAUPT,
HENRY HASPER.