

No. 612,628.

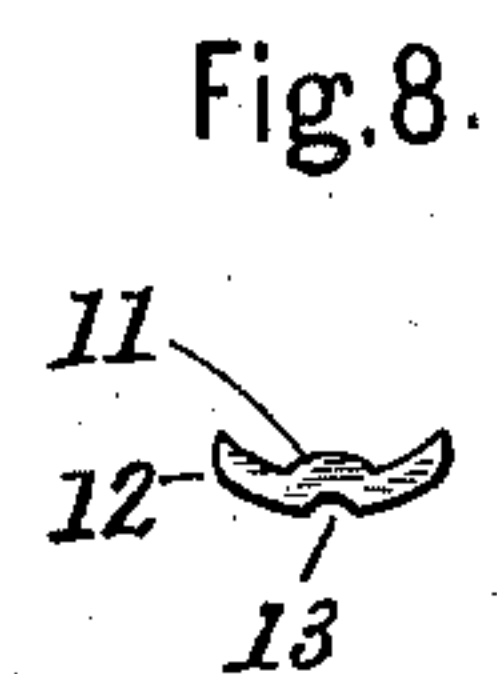
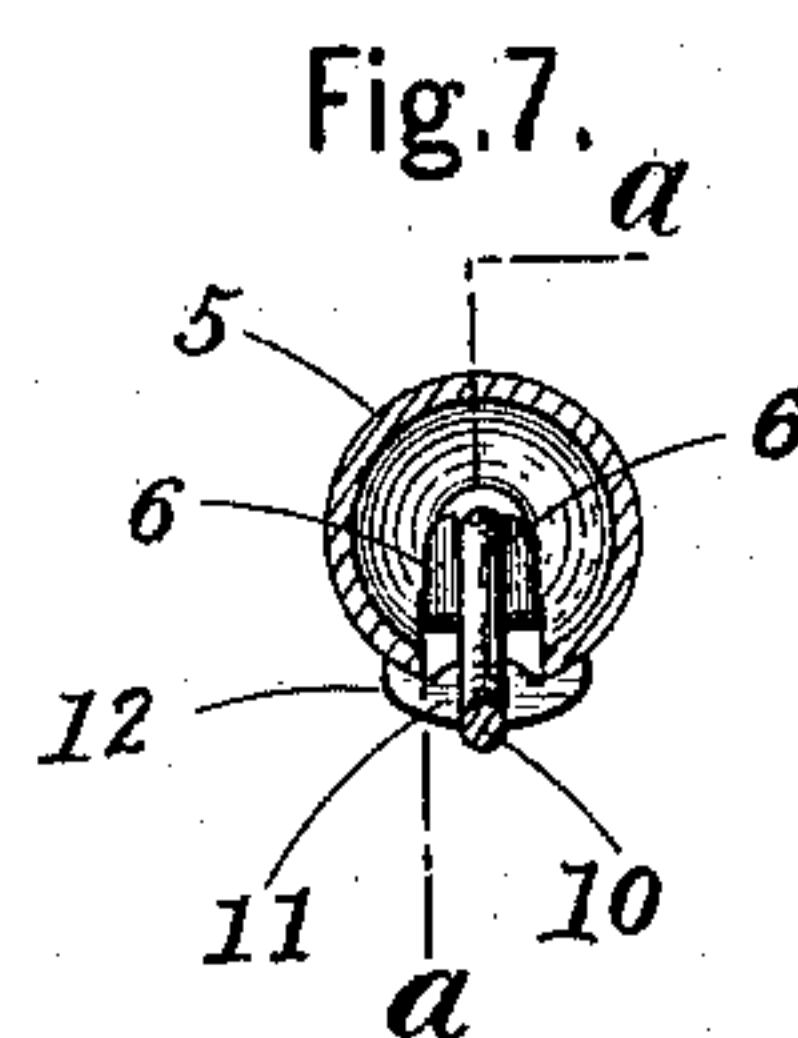
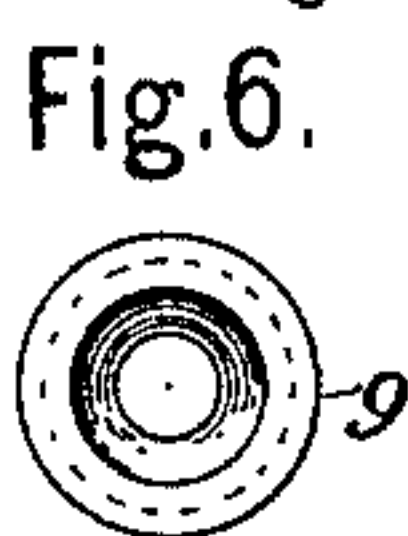
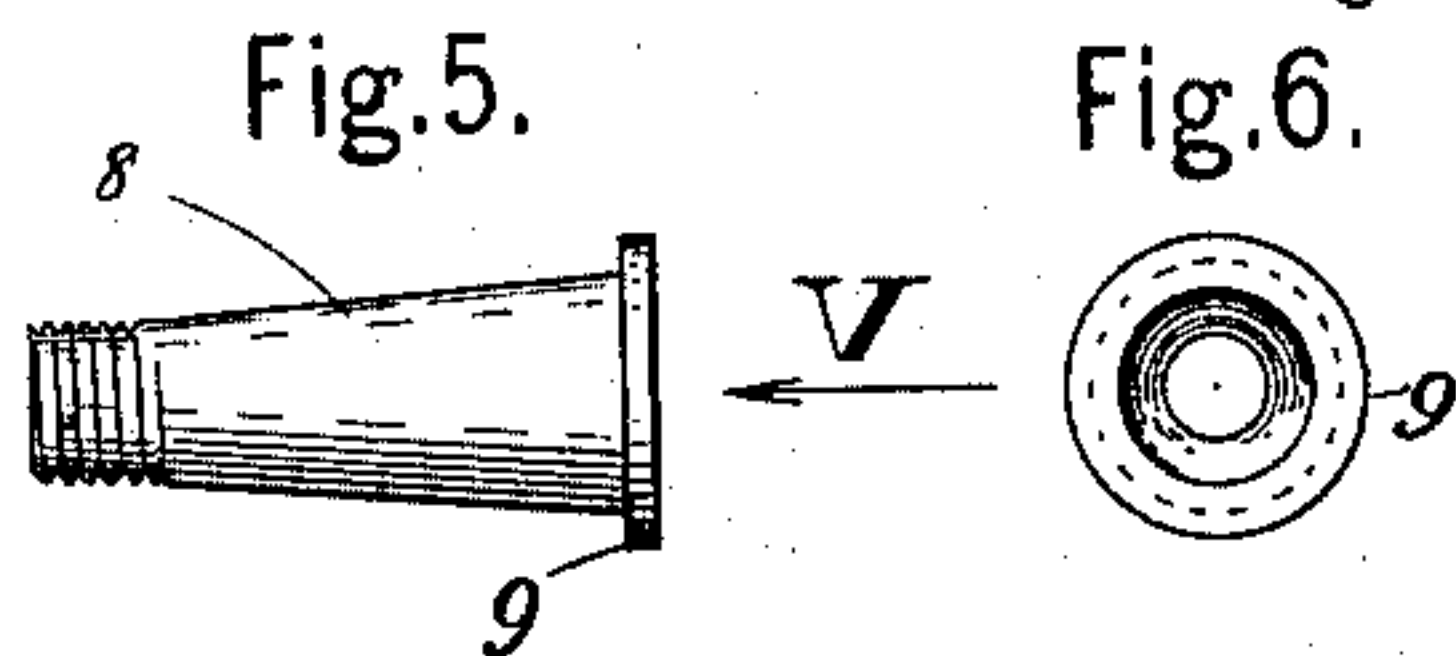
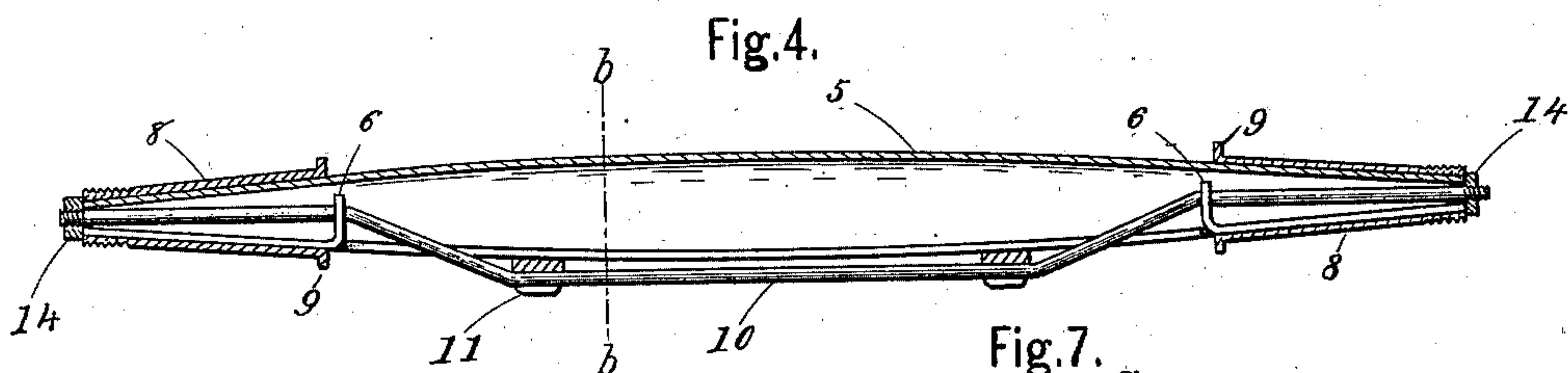
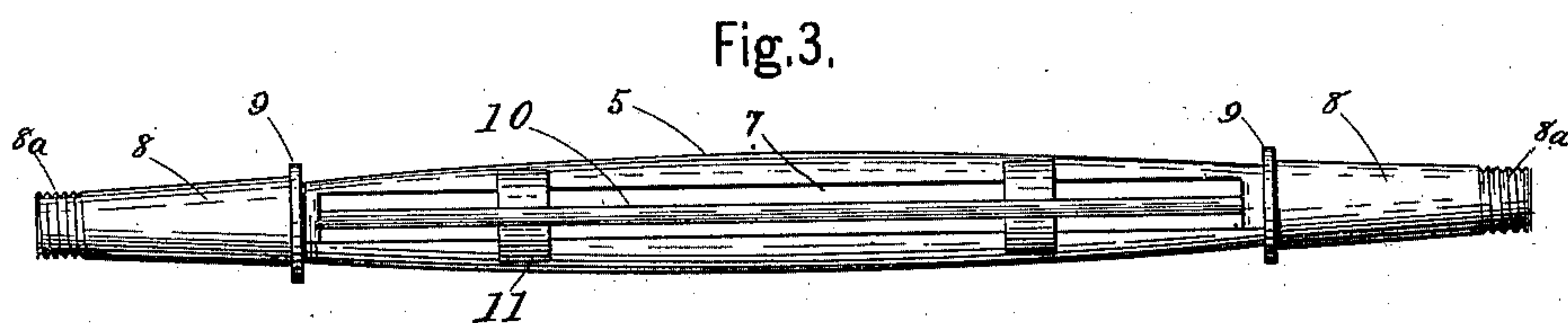
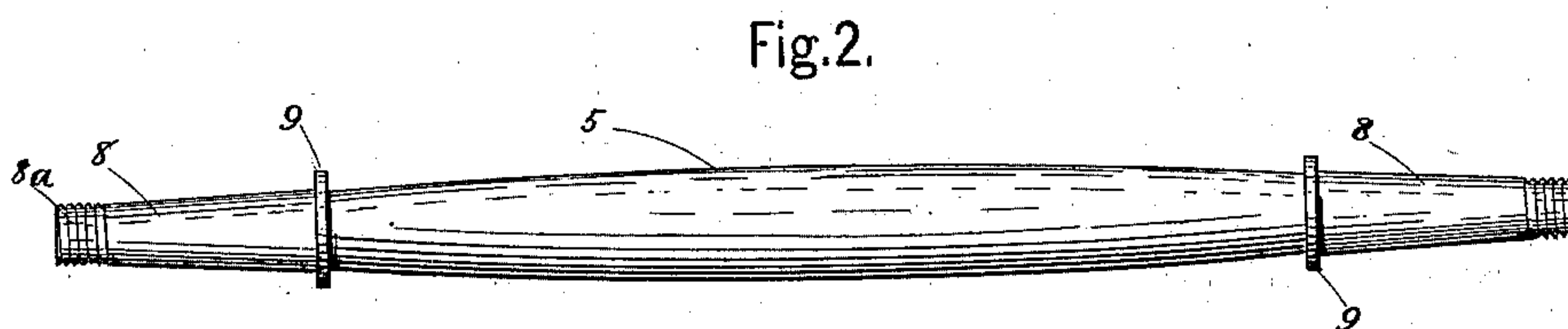
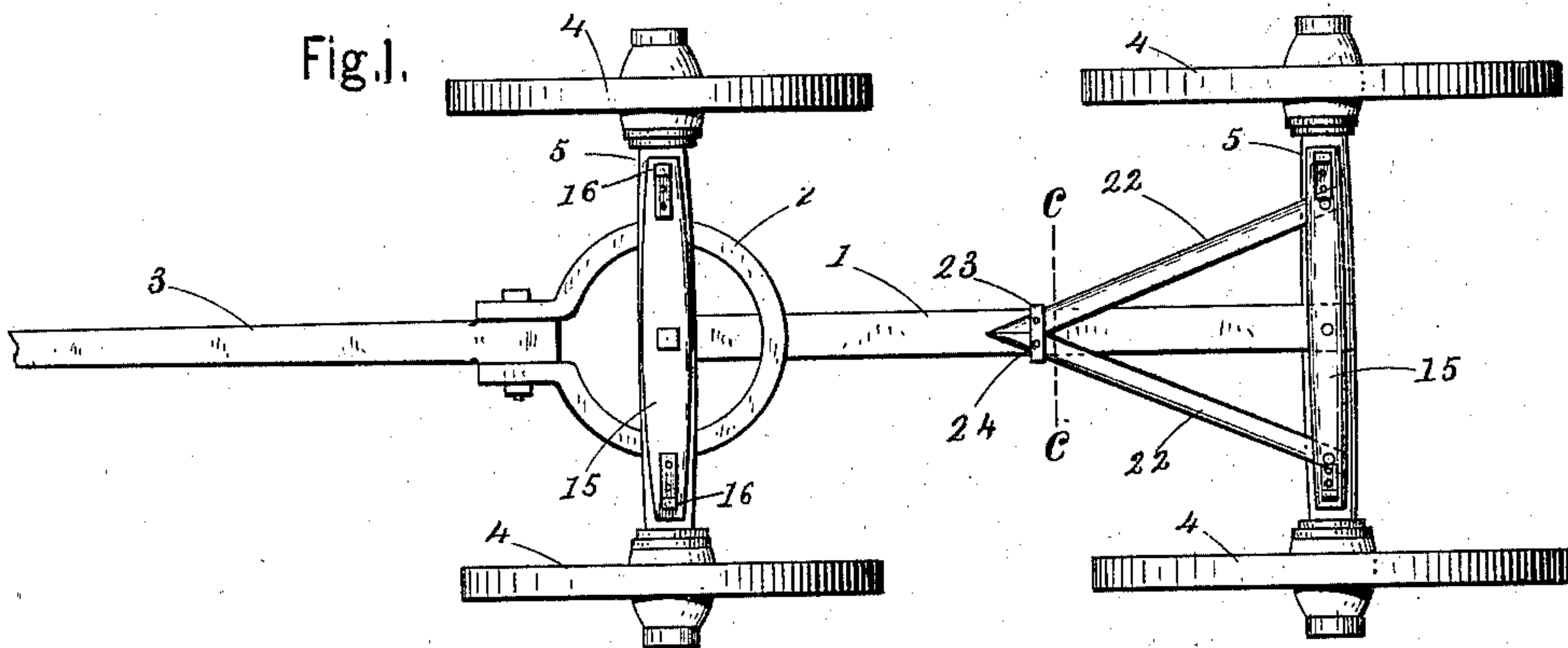
Patented Oct. 18, 1898.

B. F. HORTON.
WAGON AXLE.

(Application filed Dec. 14, 1897.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses,
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By *James Sangster* Attorney.

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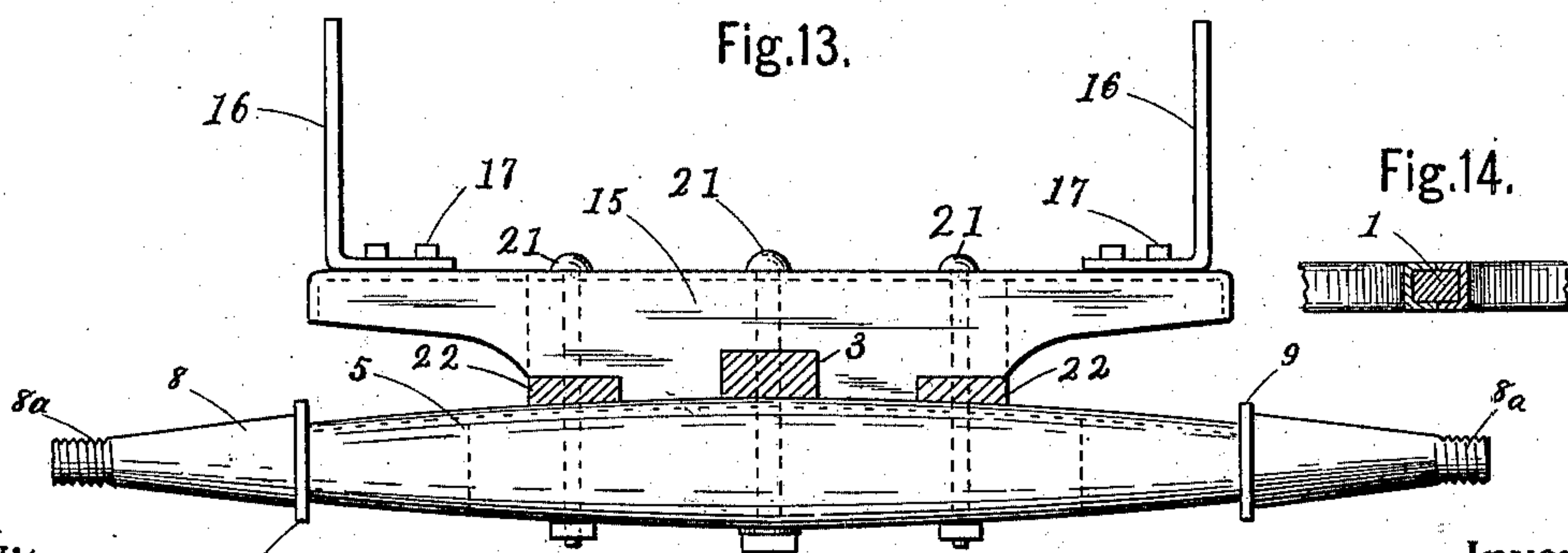
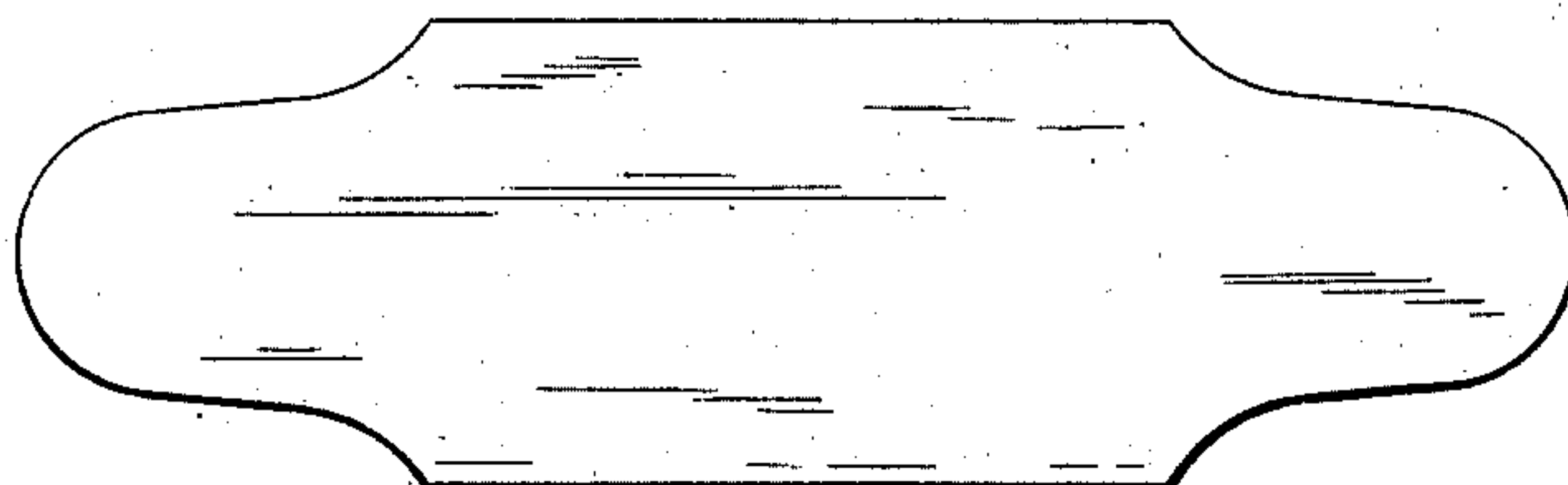
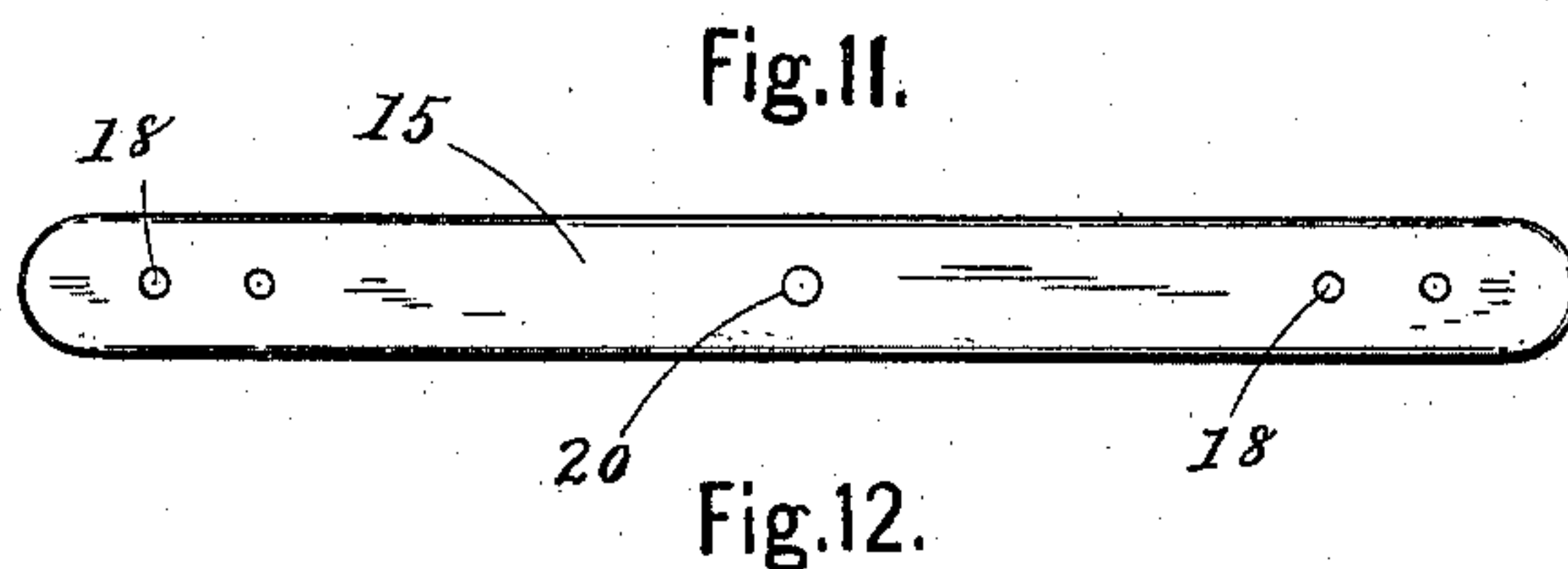
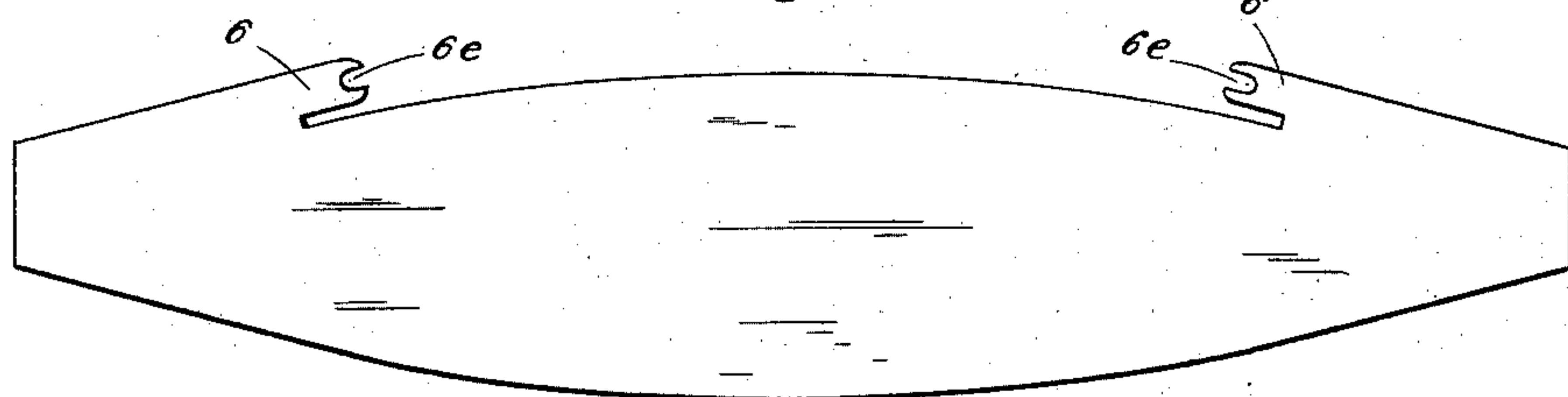
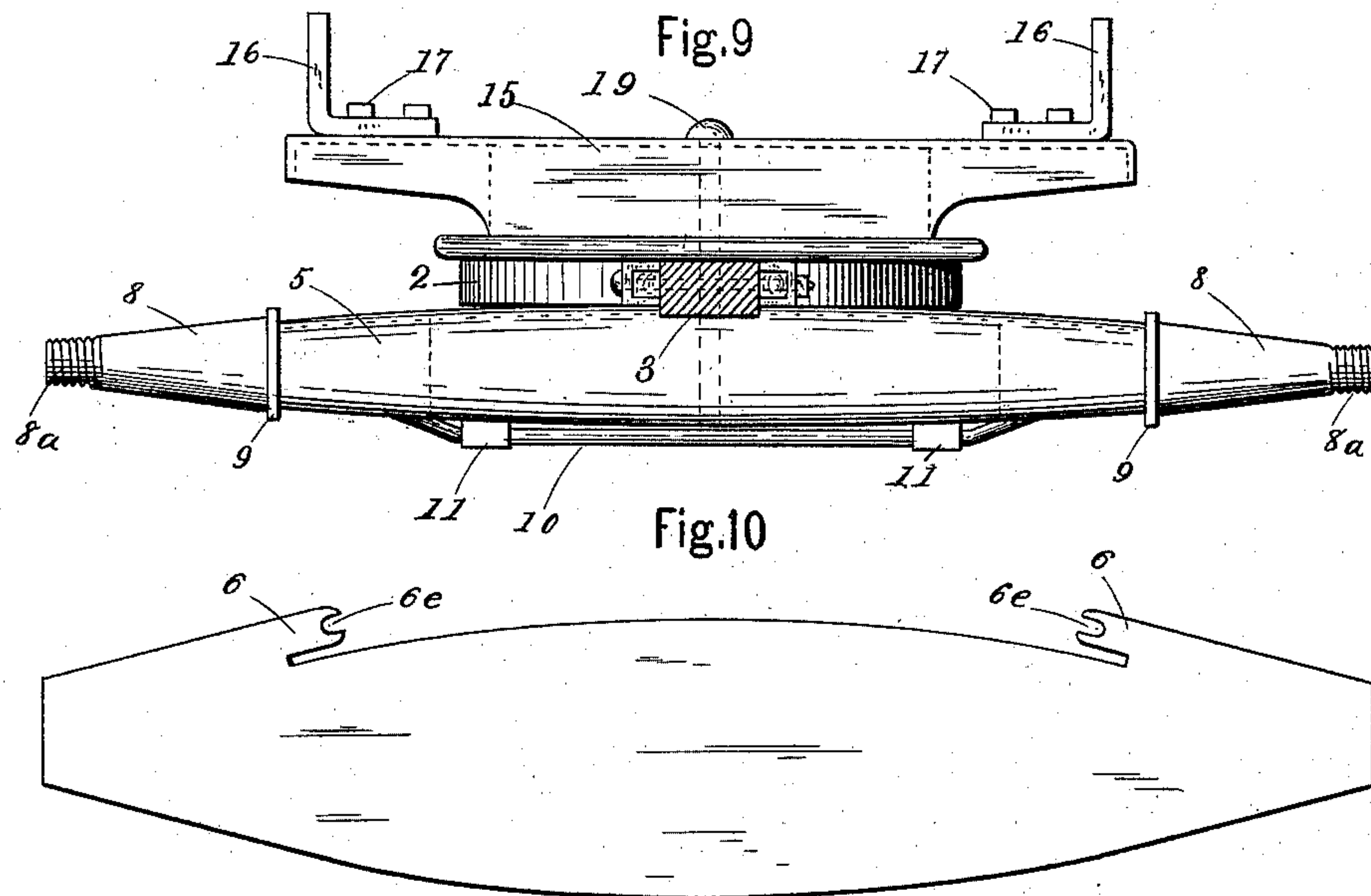
B. F. HORTON.

WAGON AXLE.

(Application filed Dec. 14, 1897.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses,
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UNITED STATES PATENT OFFICE.

BENJAMIN F. HORTON, OF BUFFALO, NEW YORK.

WAGON-AXLE.

SPECIFICATION forming part of Letters Patent No. 612,628, dated October 18, 1898.

Application filed December 14, 1897. Serial No. 661,780. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. HORTON, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Wagons, of which the following is a specification.

My invention relates to a vehicle or wagon having the axles, bolsters, and other coöperating parts constructed of sheet metal, preferably of sheet-steel, stamped or otherwise brought up into the required form; and the object is to produce a cheap, simple, efficient, and easily-constructed vehicle-frame of extreme strength without materially increasing the weight, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view of a vehicle or wagon frame and running-gear constructed in accordance with my invention. Fig. 2 represents a detached top view of one of the wagon-axles. Fig. 3 represents an under side view of the axle shown in Fig. 2. Fig. 4 represents a central longitudinal section on or about line *a a*, Fig. 7, the line *a a* cutting through the top side only and then passing through the seam where the two edges of the sheet metal join. Fig. 5 represents a detached side elevation of one of the tubular tapering sleeves upon which the wheels of the vehicle are journaled. Fig. 6 represents an end view of the sleeve shown in Fig. 5, looking in the direction of the arrow *V* in said figure. Fig. 7 represents a vertical cross-section on or about line *b b*, Fig. 4. Fig. 8 represents a side elevation of one of the cross-bars for holding the truss-rod in position. Fig. 9 represents a front elevation of the axle, the fifth-wheel, and bolster, a cross-section through the tongue also being shown. Fig. 10 represents substantially the preferable form of the sheet-metal blank from which the axle is formed. Fig. 11 represents a top view of the sheet-metal bolster. Fig. 12 represents substantially the preferred shape of the blank from which the bolster is formed or stamped into shape. Fig. 13 represents a front elevation of the rear axle and bolster, a vertical section being cut through the reach and its connecting-braces. Fig. 14 represents

a vertical cross-section on or about line *c c*, Fig. 1, cutting through the reach and the hind hounds, all parts of the vehicle beyond said hounds and section being omitted.

Referring to the drawings in detail, in which like numerals represent like parts, 1 represents the reach, 2 the fifth-wheel, 3 the tongue, and 4 the wheels, all of which are of the ordinary and well-known construction.

The axles 5 are formed from a sheet-metal stamping, preferably sheet-steel, and in substantially the shape shown in Fig. 10, the blank being pressed in a die into substantially the form shown in Figs. 2, 3, 4, and 7.

The forked extensions 6 (shown in Fig. 10) are when the blank is pressed into its tubular shape bent inward and upward to form supports, (see Fig. 4,) and a longitudinal slot 7 is thereby formed in the under side of the tubular axle, as illustrated in Figs. 3 and 4, particularly Fig. 3, the object of which will be explained farther on.

A tubular tapering sleeve 8, preferably formed of cast or malleable iron and provided at its inner or larger end with an outwardly-projecting flange 9 and having its outer end 8^a screw-threaded, is slipped over each end of the tubular axle portion, and a truss-rod 10, having screw-threaded ends, is passed into the tubular axle over the forks 6, its middle portion between the forks 6 being bent diagonally downward and under the bridge-bars 11, substantially as shown in Fig. 7. The bridge-bars 11 are each provided with the side portions 12, adapted to seat against the sides of the slot 7, and a central groove 13, in which the truss-rod is supported. The screw-nuts 14 are nearly of the same circumference as the outer ends of the tapering sleeves 8 and engage and screw upon the screw-threaded ends of the truss-rods, and their purpose is to draw the truss-rod tightly upon its supports, the forks 6 and the bridge-bars 11, and thereby greatly strengthen and brace the tubular axles. The nuts 14 also abut against the outer ends of the tapering sleeves 8, and thereby lock the said sleeves upon the axle ends.

The bolsters 15 are also preferably formed of sheet-steel or other similar suitable metal and stamped into shape. The preferred form of the blank is illustrated in Fig. 12, which

is pressed to the required shape in a die or other suitable machine. The bolster when pressed into shape is substantially in the form illustrated in Figs. 9 to 11 and 13. A brace 16
5 is secured to the upper portion of the bolster at or near each end by means of the bolts 17, which are passed through the holes 18 in the bolster. (See Fig. 11.)

10 In Figs. 1 to 9 and 13 of the drawings the braces 16 are represented as being secured to the exterior of the top of the bolster; but they may be secured to the under side thereof without departing from the nature of my invention.

15 The front bolster is secured to the front axle by means of a single bolt 19, which passes through the opening 20 in the bolster, (see Fig. 9 and also Fig. 11, where the opening 20 is shown,) and the rear bolster to the
20 rear axle by three or more bolts 21. (See Fig. 13.)

The hind hounds 22 are preferably formed of sheet metal and are bent in the form of a hollow rectangle in cross-section having its
25 inner side cut away. These hounds are rigidly fastened at their rear ends between the bolster and axle or to either, and their front ends inclose and surround the reach, substantially as shown in Fig. 14, their extreme
30 ends preferably being separated at the outer side, substantially as shown in Fig. 1. A tubular sleeve or ring 23 is forced around the front ends of the hind hounds and the reach and firmly secured in place by bolts 24.

35 The wheels 4 are journaled upon the tapering sleeves 8 and are secured thereon by any well-known means, preferably a nut screwed upon the screw-threaded end 8^a of the sleeve.

40 I am aware that changes in the form and proportion of parts and in the details of construction of the device herein shown and described as the preferred embodiment of my

invention may be made by a skilled mechanic without departing from the principle or sacrificing the advantages of my invention, and 45 I therefore reserve the right to make such modifications and alterations as fairly fall within the scope of my invention.

I claim as my invention—

1. A wagon-axle comprising a body portion 50 formed from a sheet-metal blank and having a depression on one side and forked extensions which, when the blank is pressed into tubular shape form a longitudinal slot and supports, bridge-bars arranged over the slot, 55 a truss-rod extending through one end of the body portion, over one support, diagonally through the slot and over one bridge, to and over the other bridge diagonally through the slot and over the remaining support and 60 finally through the opposite end of the body and means for fastening the ends of the rod in place and also for regulating the tension of said rod, as set forth.

2. A wagon-axle, comprising a body portion 65 formed from a sheet-metal blank, and having forked extensions, which are, when the blank is pressed into its tubular shape bent inward and upward to form supports, and also to provide a longitudinal slot, two bridge-bars, 70 a truss-rod passed into one end of the body portion over the first forked portion then diagonally through the slot and under the two bridge-bars, again diagonally through the slot over the other forked portion and out through 75 the opposite end, a tubular tapering sleeve forced over each end of the body portion and nuts for securing the sleeve against longitudinal displacement and also regulating the tension of the truss-rod, as set forth.

BENJAMIN F. HORTON.

Witnesses:

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