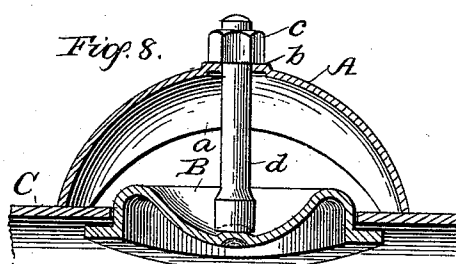
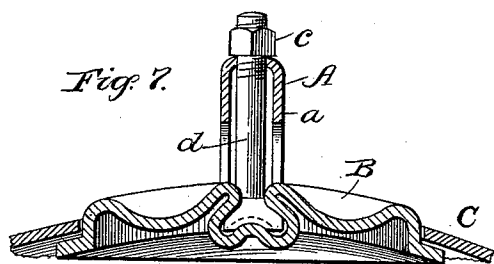
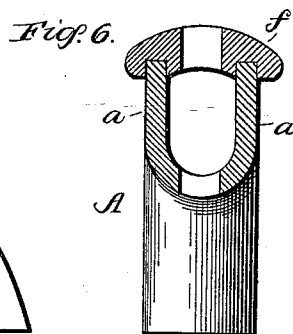
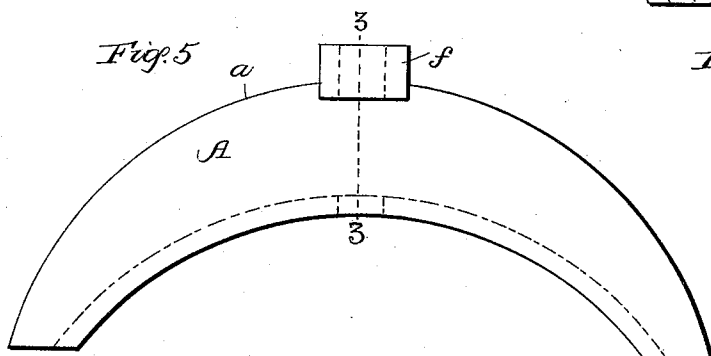
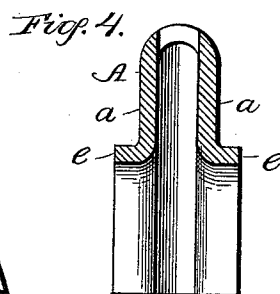
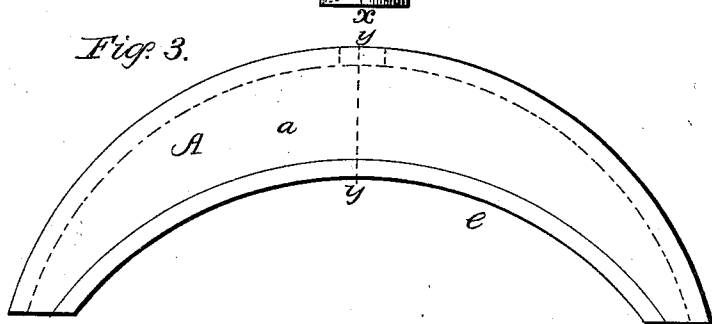
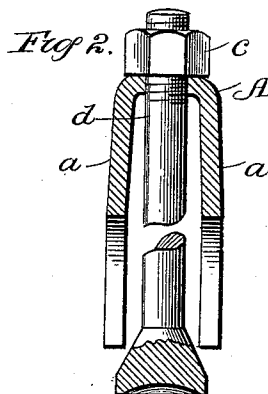
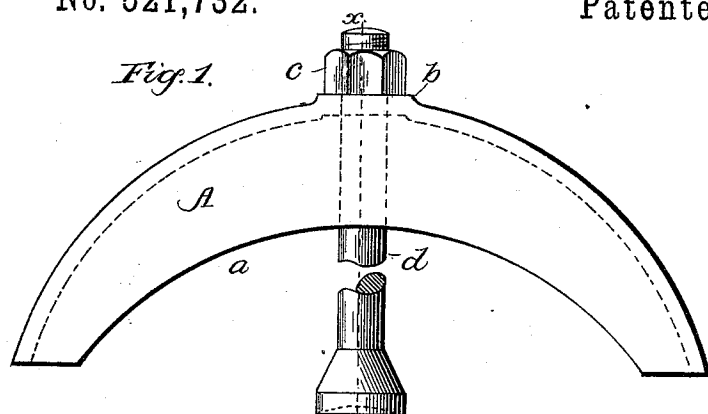


(No Model.)

J. P. ROE.
YOKE FOR MANHOLE COVERS.

No. 521,732.

Patented June 19, 1894.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES P. ROE, OF POTTSTOWN, PENNSYLVANIA.

YOKE FOR MANHOLE-COVERS.

SPECIFICATION forming part of Letters Patent No. 521,732, dated June 19, 1894.

Application filed April 11, 1894. Serial No. 507,170. (No model.)

To all whom it may concern:

Be it known that I, JAMES P. ROE, a subject of the Queen of Great Britain, residing at Pottstown, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Yokes or Bridges for Manholes, Hand-Holes, and Sludge-Holes of Steam-Boilers, Tanks, and the Like; 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.

This invention relates to yokes or bridges for securing the covers or plates for manholes, hand-holes and sludge-holes of steam boilers, tanks, and the like, in position, and it has for its object to provide a simple, durable, comparatively inexpensive and a much lighter yoke or bridge for the purpose named than those now in common use, and it consists in providing a yoke or bridge of wrought iron or steel, stamped, pressed or rolled to a shape or form adapted to give the maximum of strength with the minimum quantity of metal and in other details of construction and arrangement of parts as hereinafter more fully described and claimed.

In the accompanying drawings forming a part of this specification—Figure 1 is a side elevation of one form of my improved yoke or bridge; Fig. 2 a vertical section on the line $x-x$, Fig. 1; Fig. 3 a side elevation of another form of yoke or bridge; Fig. 4 a vertical section on the line $y-y$, Fig. 3; Fig. 5 a side elevation of still another form of yoke or bridge; Fig. 6 a vertical section on the line $z-z$, Fig. 5; Fig. 7 a vertical section through a man-hole cover or plate showing my improved yoke or bridge in cross section in position on a steam boiler, tank or other vessel; and Fig. 8 a vertical section of a man-hole cover or plate showing my improved yoke or bridge in longitudinal section in position on a steam boiler, tank or other vessel.

Similar letters refer to similar parts throughout all the views.

Heretofore yokes or bridges for man-hole covers or plates have been made of a solid casting of iron or steel thickened at the point where the bolt passes through them to form a hub. Such yokes or bridges if made of cast

iron are made very heavy in order to give them the strength necessary to enable them to withstand the powerful pressure to which they are subjected thereby rendering them difficult to handle and costly to manufacture and, if made of steel, cast solid, what is gained in lightness of weight over cast iron is offset by the greater cost of the material.

Now, it is my object, to provide a yoke or bridge for the purposes named in which is combined the advantages of lightness in weight, great strength, and low cost of production, and this is accomplished by making them of wrought iron or steel plates pressed, stamped or rolled the desired shape.

Referring to the drawings A represents my improved yoke or bridge which, in all the views, is represented in the usual arched shape in outline, the differences between the several yokes or bridges shown being best illustrated in the sectional views.

Referring now to Figs. 1 and 2 it will be seen that the yoke or bridge is formed by pressing, stamping or rolling with the depending side flanges a thus making it, substantially, of an inverted U-shape in cross section, and with a flat seat b , for the nut c which holds the bolt d in position, to bear on, a perforation or opening being formed in the yoke or bridge through which the bolt extends. The side flanges a extend from end to end of the yoke or bridge and decrease in depth gradually from the center toward each end of the yoke or bridge, thus providing the greatest depth of flange at the point where the greatest strain is exerted on the yoke or bridge.

In Figs. 3 and 4 I show a yoke or bridge which is also of an inverted U-shape in cross section, whose depending side flanges a are bent at right angles, outwardly, to form the lateral flanges e , thus providing an increased bearing surface for the ends of the yoke or bridge. The bridge or yoke shown in these figures is also perforated at its crown for the bolt, and may or may not be formed with a seat for the nut.

In Figs. 5 and 6 I show the yoke or bridge U-shaped in cross section, forming a channel by turning the side flanges a upwardly instead of down, in the bottom of which the perforation is formed for the bolt. Immedi-

- ately above the perforation I connect the edges of the two side flanges by a bar *f* having a perforation therein which corresponds to and registers with or is in line with the perforation formed in the channel bottom. The bar *f* is secured to the yoke or bridge by forming grooves to correspond to the curvature of the yoke or bridge therein, into which the edges of the side flanges extend.
- 10 In Figs. 7 and 8 I show the form of yoke or bridge illustrated in Figs. 1 and 2 applied to a man-hole cover or plate B in position on a boiler or tank C from which the arrangement of the parts when in use may be readily understood. The bolt and plate shown in these figures possess novel features which it is not necessary to describe here and for which I have filed a separate application, of even date herewith, for Letters Patent.
- 20 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—
1. A yoke or bridge for man-holes, hand-

holes, sludge-holes, and the like, consisting of a wrought iron or steel, sheet or plate stamped, pressed or rolled the desired shape and with side flanges, substantially as described. 25

2. A yoke or bridge for man-holes, hand-holes, sludge-holes and the like, consisting of a wrought iron or steel sheet or plate, stamped, pressed, or rolled, the desired shape and with side flanges and with lateral flanges, substantially as described. 30

3. A yoke or bridge for man-holes, hand-holes, sludge-holes and the like, consisting of a wrought iron or steel sheet or plate, stamped, pressed or rolled into a channel form and having a bar connecting the edges of said channel, substantially as described. 35

In testimony whereof I affix my signature in presence of two witnesses. 40

JAMES P. ROE.

Witnesses:

WILLIAM F. LACHMAN,
J. H. MAXWELL.