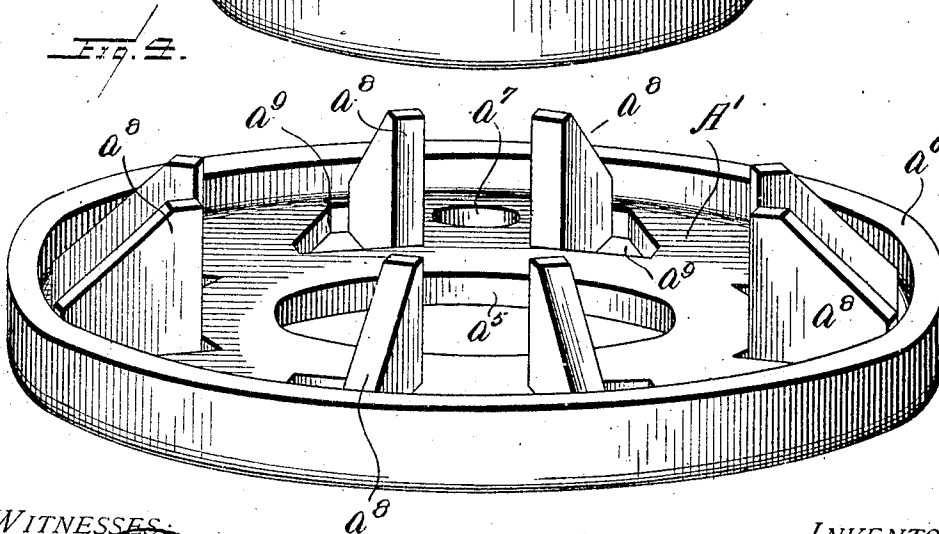
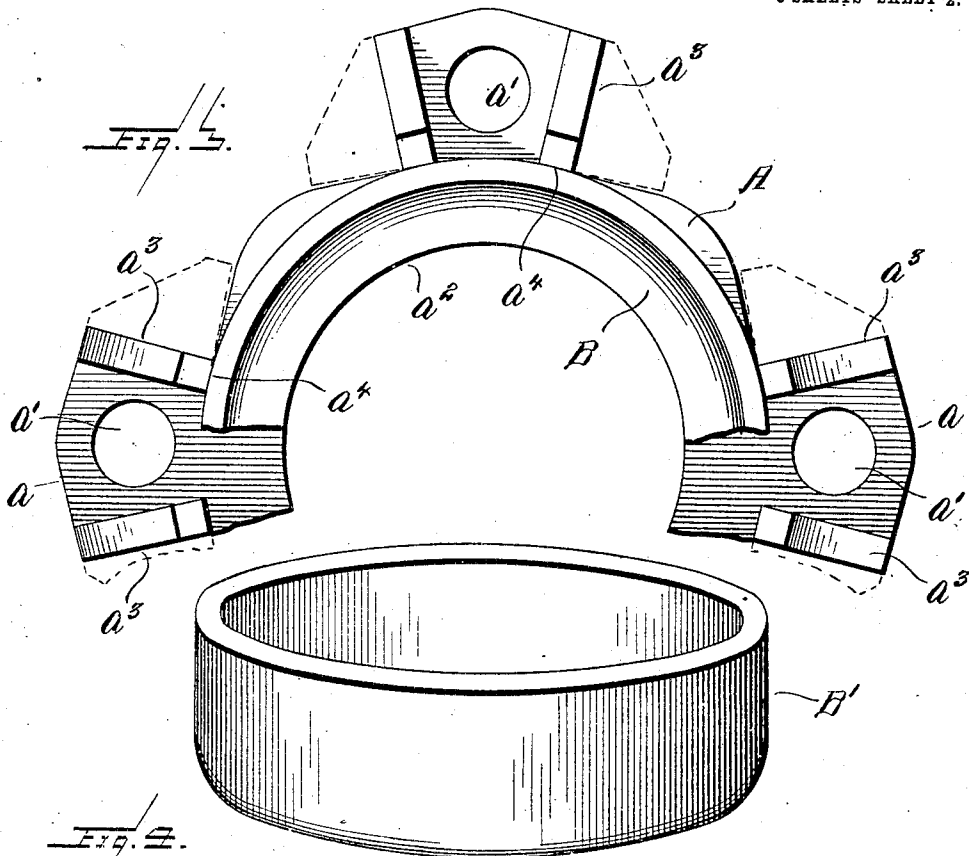


No. 849,370.

PATENTED APR. 9, 1907.

J. CLARK.
CLAMPING RING.
APPLICATION FILED DEC. 21, 1906.

3 SHEETS—SHEET 2.



WITNESSES:

W. F. Hoyle
J. K. Moore

INVENTOR

James Clark
By *Whitaker & Towner* Attorneys

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3 SHEETS—SHEET 3.

Fig. 5.

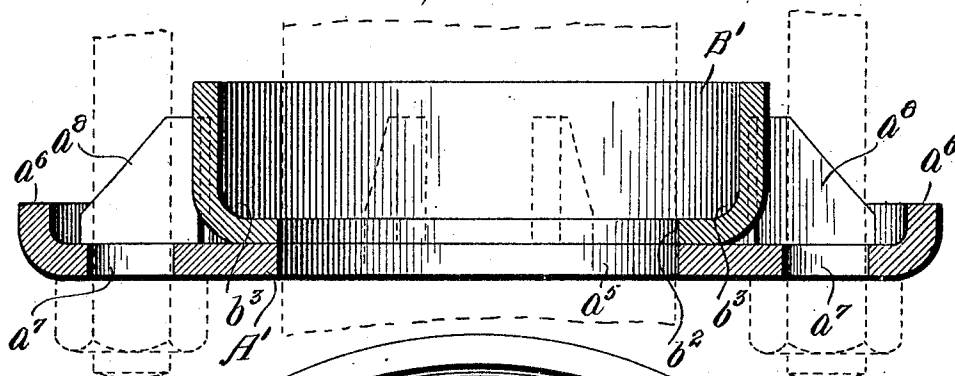


Fig. 6.

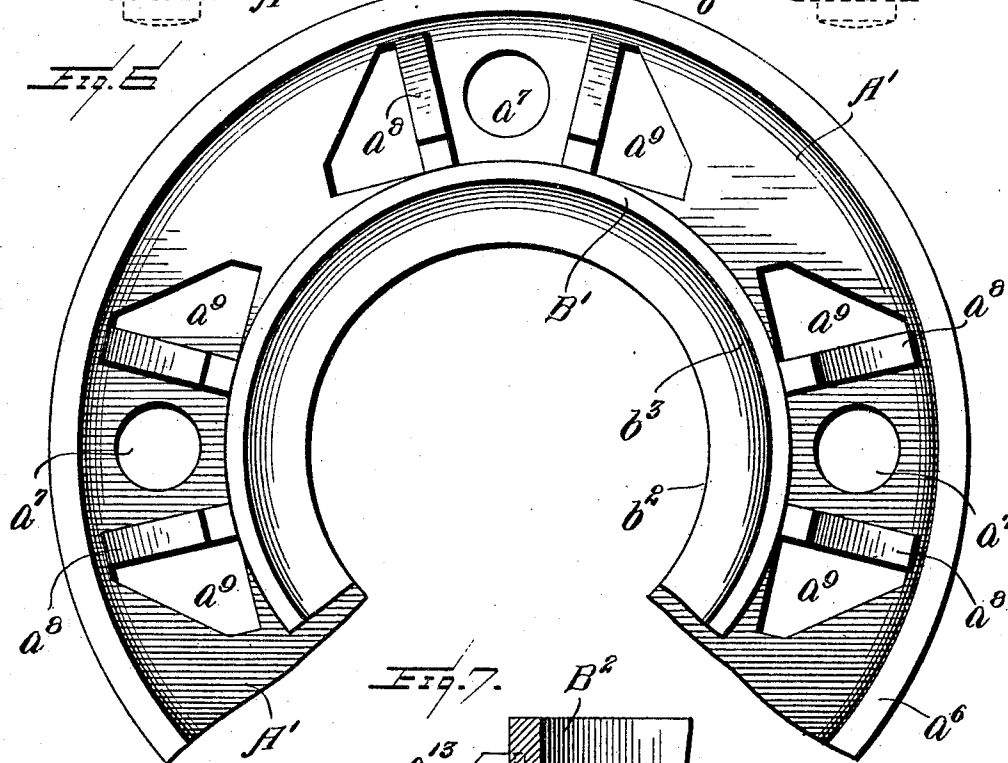
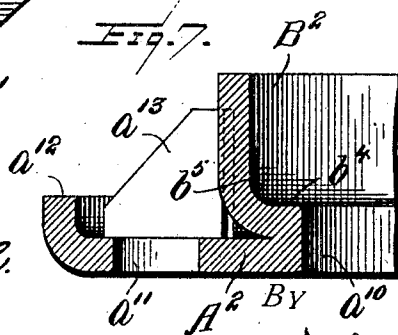


Fig. 7.



WITNESSES:

J. K. Moore
J. K. Moore

INVENTOR

James Clark
Whitaker & Trew Attorney

UNITED STATES PATENT OFFICE.

JAMES CLARK, OF BRADFORD, PENNSYLVANIA, ASSIGNOR TO S. R. DRESSER MANUFACTURING COMPANY, OF BRADFORD, PENNSYLVANIA.

CLAMPING-RING.

No. 849,370.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed December 21, 1906. Serial No. 348,912.

To all whom it may concern:

Be it known that I, JAMES CLARK, a citizen of the United States, residing at Bradford, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Clamping-Rings; 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.

My invention consists in the novel features hereinafter described, reference being had to the accompanying drawings, which illustrate two forms in which I have contemplated embodying my invention, and said invention is fully disclosed in the following description and claims.

The object of my said invention is to provide a clamping-ring for pipe-couplings formed of wrought metal and preferably of sheet metal, such as wrought iron or steel, which can be cheaply made and which will possess great strength and at the same time which may be made of comparatively light or thin material.

To this end the device is formed, preferably, of two parts and comprises a substantially flat plate member, in which are located the bolt-holes, and an annular flange member, the plate member being provided with portions which are bent at an angle thereto to engage and reinforce the flange member and also to reinforce the plate member. The two members of the coupling are preferably formed separately and may be placed together and used, or they may be united by welding or brazing or in any other desired manner, or they may be formed integrally if preferred.

Referring to the drawings, Figure 1 represents a perspective view of the two members of the clamping-ring, showing them separated. Fig. 2 is a sectional view of the parts, showing them in operative relation. Fig. 3 is a plan view of the complete ring, partly broken away. Fig. 4 is a perspective view similar to Fig. 1, showing a modified form of clamping-ring embodying my invention. Fig. 5 is a sectional view of the ring shown in Fig. 4. Fig. 6 is a top plan view of the ring shown in Figs. 4 and 5, partly broken away. Fig. 7 is a partial sectional view similar to Fig. 6, showing a ring

similar to that shown in Figs. 4, 5, and 6, 55 but made in one piece.

In the form of my invention shown in Figs. 1, 2, and 3, A represents the plate member of the clamping-ring, which consists of a substantially annular plate having projecting portions a extending outwardly at intervals in the plane of the plate and provided with bolt-holes a' of any desired shape. These outwardly-extending portions are provided on each side with integral wings or lugs a^3 , which are bent substantially perpendicularly to the plate member, as shown, thus forming reinforcing-lugs, which may be termed "struck-up" lugs and which are preferably disposed radially with respect to the central pipe-aperture a^2 of the plate member. These reinforcing-lugs are thus disposed in pairs, the lugs of each pair being arranged on opposite sides of a bolt-hole. Each of the lugs a^3 has its inner edge a^4 preferably straight and substantially perpendicular to the plane of the plate member A, and said lugs are preferably inclined or beveled on their outer edges, as shown, although this is not essential.

B represents the flange member, which consists of an annular portion disposed perpendicularly to the plane of the plate member and adapted to fit tightly between the inner faces or edges a^4 of the reinforcing-lugs a^3 , said annular portion having at one end an inwardly bent or curved annular reinforcing-flange b , adapted to engage the face of the plate member A, the inner edge of said flange b registering with the pipe-aperture a^2 in the plate member, as shown in Fig. 2, in which a pipe-section and connecting-bolts are indicated in dotted lines.

It will thus be seen that when pressure is applied to the bolts the plate member is reinforced by the annular flange b and also by the lugs a^3 a^3 by reason of their engagement with the exterior of the flange member B, and, conversely, the flange member B is also reinforced by the portions of the plate member A, surrounding the central pipe-aperture, and by the reinforcing-lugs a^3 a^3 .

It will be noticed that the inner diameter of the main portion of flange member B is greater than that of the pipe-aperture a^2 , thus forming a packing-recess (indicated at b' , Fig. 2) for the reception of an annular

packing or packing-ring of rubber or other suitable material.

The two parts of the clamping-ring are placed in engagement, as shown in Fig. 3, and may be used in the manner therein illustrated.

If desired, the parts may be so fitted that when the flange member B is placed in operative relation with the plate member A it will be frictionally retained by the engagement of the lugs a^3 a^3 with the exterior of the flange member B. In some instances I find it desirable to permanently unite the two parts by welding or brazing or otherwise. For example, I may weld the engaged faces of the plate member A and the inturned flange b along the plane indicated in Fig. 2 at $x x$, and I may also weld the engaged portions of the lugs a^3 and the flange member B along the lines $y y$, (indicated in Fig. 2,) if found desirable.

In the form of my invention shown in Figs. 4 to 6, inclusive, A' represents the flat plate member, which in this instance consists of an annular plate having a central pipe-aperture a^5 and having its outer edge portion bent on one side substantially perpendicularly to form a reinforcing-flange a^6 . The plate member is also provided with a series of bolt-holes a^7 of any desired shape, located at intervals around the pipe-aperture a^5 , and said plate-section is also provided with a series of reinforcing-lugs a^8 , located in pairs, the lugs of each pair being on opposite sides of a bolt-hole, said lugs being cut from the metal of the plate member A' and bent up or struck up into a position substantially perpendicular to the plate-section, leaving apertures a^9 in the plate member from which said lugs are removed, it being understood that said lugs are integral with the plate member at their bases. The lugs a^8 are preferably provided with straight inner edges and have beveled or inclined outer edges, as shown, and said lugs are preferably disposed radially with respect to the center of the pipe-aperture a^5 , although this is not essential.

B' represents the flange member of the clamping-ring, which is identical with the flange member B, previously described, and comprises the annular main body disposed substantially perpendicularly to the plane of the plate member and having its inner end portions bent inwardly to form an annular flange b^2 and to provide a packing-recess b^3 . The flange member B' is placed or forced between the lugs a^8 a^8 of the plate member, with the flange b^2 in engagement with portions of the plate member surrounding the pipe-aperture a^5 , as shown in Fig. 5, thus forming the complete clamping-ring.

The parts A' and B' may be permanently united by welding or brazing or otherwise, as previously described with reference to the form shown in Figs. 1, 2, and 3.

In Fig. 7 I have shown a partial sectional view of another modification of my improved clamping-ring in which the plate-section, here indicated A^2 , and the flange member B^2 are formed integrally by forging, rolling, or by the use of suitable dies and have exactly the same form as that shown and described with reference to Figs. 4, 5, and 6. In this form of my invention the plate member is also provided with the central pipe-aperture a^{10} , the bolt-holes a^{11} , the exterior reinforcing-flange a^{12} , and reinforcing-lugs a^{13} . The flange member B^2 is formed by bending up inner marginal portions of the plate member and then expanding it into the form shown, so that the walls of the flange member shall engage the lugs a^{13} a^{13} , the flange member being bent outwardly sharply from the pipe-aperture a^{10} to form the reinforcing-flange b^4 and provide the packing-recess b^5 . The construction of the clamping-ring shown in Fig. 7 is identical with that shown in Figs. 4, 5, and 6 except that the members A^2 and B^2 are integral.

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

1. A clamping-ring for pipe-couplings comprising a plate member, provided with a central pipe-aperture, and bolt-holes located at intervals around said aperture, a flange member having an annular portion disposed substantially perpendicularly to said plate member, and having an inturned annular flange at its inner end engaging the portions of said plate member surrounding said pipe-aperture, and reinforcing-lugs located at intervals around said flange member and extending from said plate member to said flange member, substantially as described.
2. A clamping-ring for pipe-couplings comprising a plate member provided with a central pipe-aperture, bolt-holes located at intervals around said aperture and integral reinforcing-lugs, disposed substantially perpendicularly to the other portions of said plate member, and a flange member having an annular portion disposed substantially perpendicularly to the plate member and engaging the inner faces of said reinforcing-lugs and having at one end an inturned reinforcing-flange engaging said portions of said plate member, surrounding said pipe-aperture, substantially as described.
3. A clamping-ring for pipe-couplings formed of wrought metal and comprising a plate member, provided with a central pipe-aperture, bolt-holes arranged at intervals around said pipe-aperture, and reinforcing-lugs, formed integrally with said plate member and bent substantially perpendicularly thereto, said lugs being arranged in pairs, the lugs of each pair being located on opposite sides of a bolt-hole, and a flange member having an annular portion disposed substantially perpendicularly to the plate member,

and engaging the inner edges of said lugs, and having at its inner end an inwardly-bent annular flange engaging said plate member around said central pipe-aperture, substantially as described.

4. A clamping-ring for pipe-couplings formed of wrought metal and comprising a plate member provided with a central pipe-aperture, bolt-holes arranged at intervals around said pipe-aperture, and integral reinforcing-lugs extending perpendicularly on one side of said plate member, arranged at intervals around said pipe-aperture and substantially radially with respect to the center of said pipe-aperture, and a separately-formed flange member having an annular portion disposed substantially perpendicularly to said plate member, and engaging the inner edges of said reinforcing-lugs, and having at its inner end an inwardly-extending annular flange directly engaging portions of said plate member surrounding said pipe-aperture, substantially as described.

5. A clamping-ring for pipe-couplings formed of wrought metal and comprising a plate member having a central aperture, bolt-holes located at intervals around said aperture, an annular reinforcing-flange around its outer edge, and a plurality of struck-up reinforcing-lugs formed integrally with said plate and extending perpendicularly thereto on

one side of the same, said lugs having substantially perpendicular inner edges, and being disposed substantially radially with respect to the center of said pipe-aperture and arranged in pairs, the lugs of each pair being located on opposite sides of a bolt-hole, and a separate flange member having an annular portion disposed substantially perpendicularly to said plate member and having its exterior engaging the inner edges of said lugs and having at its inner end an inwardly-extending flange engaging said plate member, substantially as described.

6. A clamping-ring for pipe-couplings formed of wrought metal and comprising a plate member provided with a central pipe-aperture, bolt-holes located around said aperture, and a series of integral reinforcing-lugs, extending perpendicularly to said plate member, on one side thereof, and a separate flange member engaging said plate member adjacent to said pipe-aperture and having its exterior engaging the inner edges of said reinforcing-lugs, substantially as described.

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

JAMES CLARK.

Witnesses:

J. A. DUNN,
M. L. WILLIS.