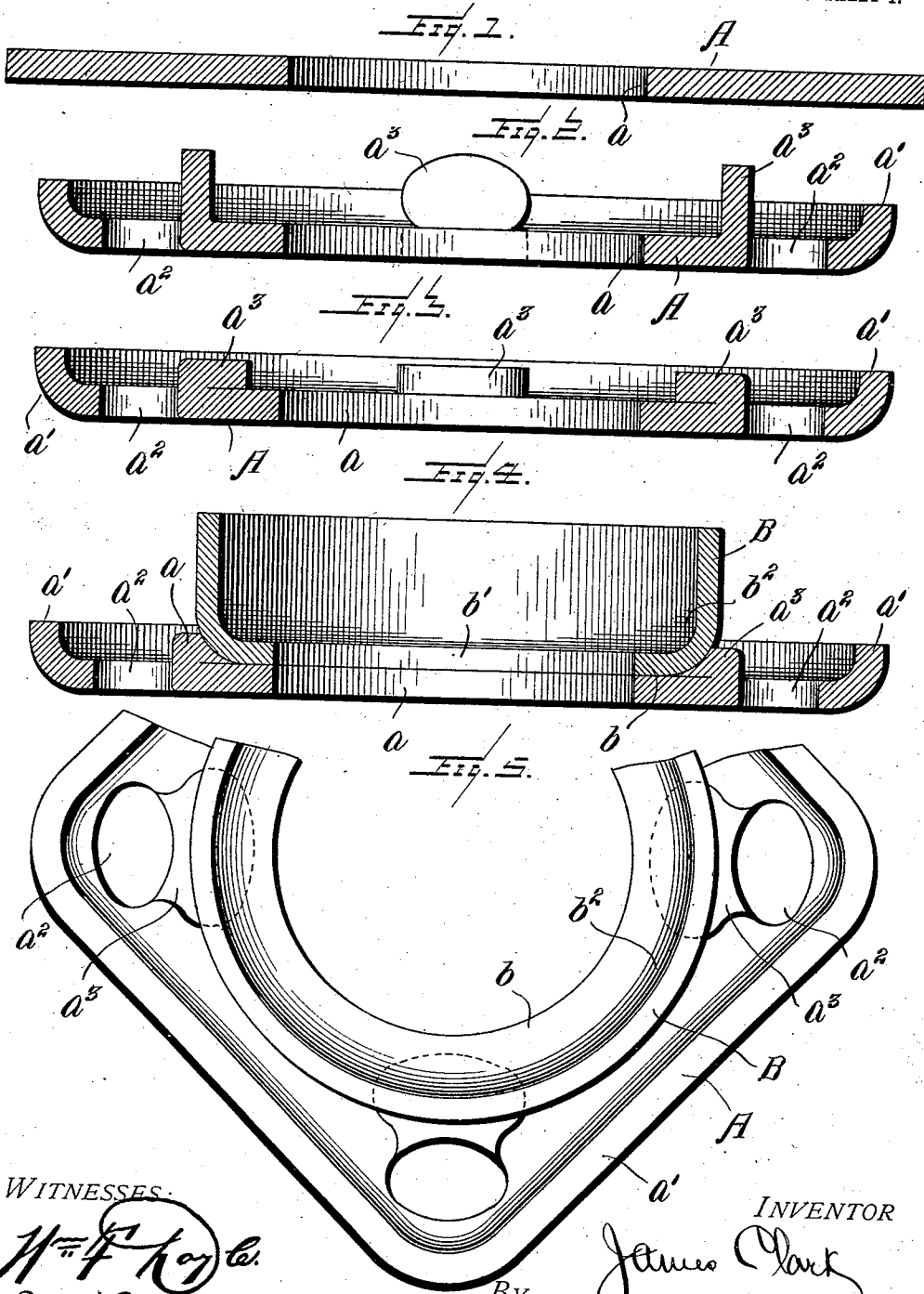


No. 848,969.

PATENTED APR. 2, 1907.

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

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 6.

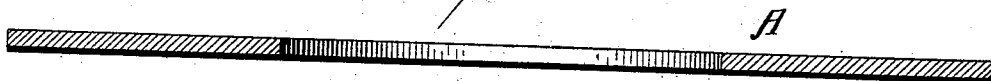


Fig. 7.

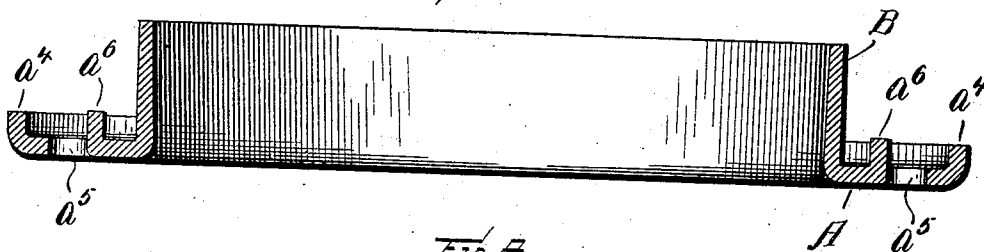


Fig. 8.

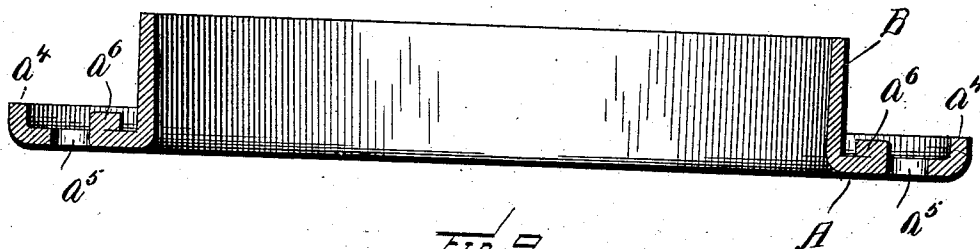


Fig. 9.

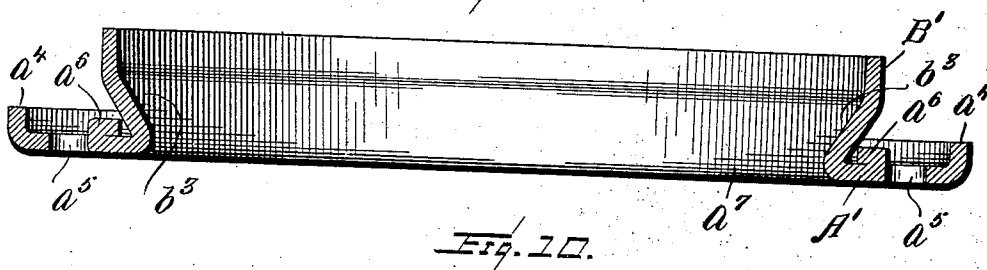
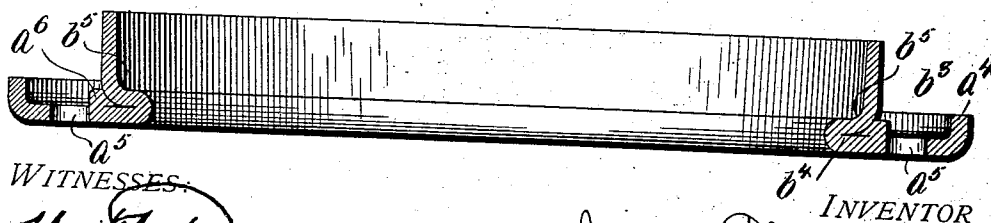


Fig. 10.



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CLAMPING-RING.

No. 848,969.

Specification of Letters Patent.

Patented April 2, 1907.

Application filed December 21, 1906. Serial No. 348,913.

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 one form in which I have contemplated embodying my invention; and said invention is fully disclosed in the following description and claims.

The object of my invention is to form a clamping-ring for pipe-couplings of wrought metal, such as wrought iron or steel, to produce a cheap, light, and strong device for this purpose.

In carrying out my invention I form a clamping-ring which consists of a plate member disposed perpendicularly to the axis of the ring and provided at intervals with bolt-holes, which are punched or struck from the same in such manner that the metal which is displaced is not entirely severed from the plate member, but is bent over upon one face of the same and made to reinforce a flange member which is provided with an annular portion disposed substantially perpendicularly to the plate member and has portions at one end bent inwardly substantially parallel to and engaging the face of the said plate member, all as will hereinafter more fully appear.

In the drawings, Figure 1 is a sectional view of a blank which can be advantageously employed for the production of the plate member of my improved clamping-ring when the two members thereof are formed separately, as herein shown. Fig. 2 is a sectional view of said blank after the bolt-holes are formed therein, the metal from said bolt-holes being left integral with the plate member on the inner side to form reinforcing-lugs. Fig. 3 is a similar view showing the reinforcing-lugs bent down into contact with the face of the plate member. Fig. 4 is a sectional view of the complete clamping-ring. Fig. 5

is a plan view of the same. Fig. 6 represents a sectional view of a blank which may be conveniently employed for making the clamping-rings as an integral structure. Figs. 7, 8, and 9 represent sectional views of the blank in various stages in the production of the finished ring. Fig. 10 represents the finished ring when made in one piece.

In Figs. 1 to 5, inclusive, of the drawings I have shown the plate member and flange member of my improved clamping-ring formed separately; but this is not essential. In Fig. 1 I have shown a blank which can be advantageously used in forming the separate plate member and which consists of a flat plate A, of sheet metal, preferably wrought iron or steel, which may be round or polygonal, as desired, and is provided with a central aperture *a* for the passage of a pipe therethrough. This blank is preferably acted upon in any suitable manner to bend up its periphery or outer edge on one side to form a reinforcing-flange *a'*; but this is not essential and may be dispensed with, if desired. The plate member A is also provided at suitable intervals with bolt-holes *a*² of any desired size or shape, those here shown being substantially oval, and in the formation of these bolt-holes the metal displaced is left integral with the plate-section along or at the edge nearest the pipe-aperture *a* to form reinforcing-lugs *a*³, (see Fig. 2,) which are bent over and upon one face of the plate member A and extend part way toward said pipe-aperture, as shown in Fig. 3.

B represents the flange member of the clamping-ring, also made of wrought iron or steel, and which has an annular portion disposed substantially perpendicularly to the plate member and of a diameter greater than that of pipe-aperture *a* and has its inner end (or the end adjacent to the plate member) bent or curved inwardly to form an annular flange *b*, parallel with the plate member, the inner edge of said flange *b* forming a pipe-aperture *b'*, registering with the pipe-aperture *a* of the plate member. The flange *b* forms the bottom of an annular packing-recess (indicated at *b*²) for the reception of a packing-ring of rubber or other suitable material. The flange member B is preferably made separately from the plate member A, as shown in the drawings, and is forced into engagement

with the plate member (preferably while the latter is in a highly-heated condition) with such force as to cause it to seat itself or embed itself in the reinforcing-lugs a^3 , as shown in Fig. 4, (so that said lugs are partially flattened and caused to exactly conform to the exterior of the flange member,) and until the flange b thereof is brought into contact with the plate member, the pipe-apertures of the two members being in registration. The effect of this construction is that the flange b reinforces the plate member, and vice versa, and the flattened lugs reinforce both the plate member and the flange member and provide a solid wall of metal at the inner side of each bolt-hole from the plate member to the flange member, thus making a very strong construction. It will be noted that the lugs a^3 support the curved portions of the flange member between the perpendicular portions thereof and thoroughly reinforce the packing-recess adjacent to the bolt-holes, where the pressure is applied when the ring is employed in a pipe-coupling.

In some instances I find it convenient to permanently unite the two members A and B by welding the flange b to the adjacent portions of the plate member and also to the lugs a^3 , if desired, or by brazing, if preferred. In some cases also I may form the flange member integral with the plate member, as illustrated in Figs. 6 to 10, inclusive. In these figures, Fig. 6 shows a blank which can be conveniently employed for making my improved clamping-ring integral and which consists of a flat plate, round or polygonal, provided with a central aperture. The plate is first operated upon to bend up the inner marginal portions to form a flange member B', extending from the inner edge of the flat portion or plate member A', the outer edge of which is preferably (although not necessarily) bent up to form a reinforcing-flange a^4 . The plate member A is also provided with the bolt-holes a^5 by punching up the lugs a^6 at suitable intervals, leaving said lugs connected to the plate member A at their inner edges, all as shown in Fig. 7. The reinforcing-lugs a^6 are then bent down upon the plate member A', as shown in Fig. 8, and the flange member B' is then expanded at its outer end, as shown in Fig. 9, to a greater diameter than the portion which is connected with the plate member at the bend which forms the pipe-aperture a^6 . The intermediate portions b^3 of the flange member are then expanded in an outward curve and are seated upon the reinforcing-lugs a^6 , which are thereby partially flattened. The part b^4 of the flange member B' adjacent to the pipe-aperture is simultaneously forced into contact with the plate member A' around said pipe-opening and the annular packing-recess b^5 is formed, as clearly shown in Fig. 10. The ring so produced and illustrated in

Fig. 10 is substantially identical in construction as the ring shown in Figs. 1 to 5, inclusive, except that the parts A' and B' are formed integrally and the results accomplished are the same in both forms.

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

1. A clamping-ring for pipe-couplings comprising a plate member, disposed perpendicularly to the axis of the ring, and provided with a central pipe-aperture, a plurality of bolt-holes located around said aperture and separated reinforcing-lugs each located between one of said bolt-holes, and said central aperture, and a flange member having annular portions disposed substantially perpendicularly to said plate member, and having at its inner end integral portions disposed parallel to and engaging a face of the plate member, around said pipe-aperture and also engaging said reinforcing-lugs, substantially as described.

2. A clamping-ring for pipe-couplings formed of wrought metal and comprising a plate member, disposed perpendicularly to the axis of the ring, and provided with a central pipe-aperture, a plurality of bolt-holes located around said aperture, and separated reinforcing-lugs formed integrally with said plate each located between one of said bolt-holes and the pipe-aperture and connected to the plate member at the edge of the bolt-hole, and a flange member having annular portions of greater diameter than the pipe-aperture disposed substantially perpendicularly to said plate member and having at its inner end inwardly-extending integral portions, forming an annular reinforcing-flange, having portions engaging a face of the plate member adjacent to said pipe-aperture and portions engaging said reinforcing-lugs, substantially as described.

3. A clamping-ring for pipe-couplings formed of wrought metal and comprising a plate member disposed perpendicularly to the axis of the ring and provided with a central pipe-aperture, bolt-holes located at intervals around the said aperture, and reinforcing-lugs, integral with the said plate member, lying upon one face of said plate member, between the bolt-holes and the pipe-aperture and connected with the plate member adjacent to the edges of said bolt-hole and a flange member having an annular portion disposed substantially perpendicularly to the plate member, and an inwardly-extending annular flange at its inner end engaging said plate member, and also engaging said lugs, the portions of said lugs engaging said flange member conforming to the shape thereof, substantially as described.

4. A clamping-ring for pipe-couplings formed of wrought metal, comprising a plate member having a central pipe-aperture, a plurality of bolt-holes, located around the

said aperture and a reinforcing-lug located between each bolt-hole and the pipe-aperture, connected integrally with the plate at the edge of the bolt-hole, and a separate
5 flange member having an annular portion substantially perpendicular to said plate member, and having its inner end provided with an inwardly-extending flange portion engaging said plate member adjacent to said pipe-aperture and embedded in said reinforcing-lugs, substantially as described. 10

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

JAMES CLARK.

Witnesses:

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