(No Model.)

J. L. THOMSON & J. J. UNBEHEND.

WASHER PLATE AND RIVET FOR ARCTICS.

No. 368,560. Patented Aug. 16, 1887.

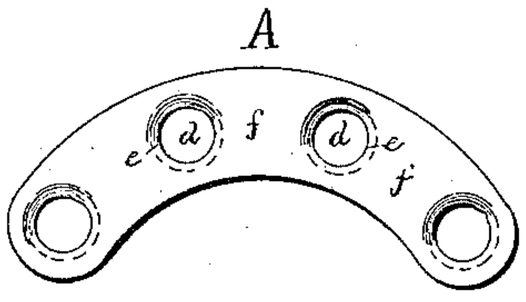

Fig. 1.

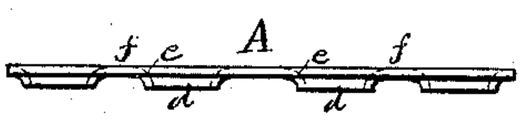

Fig. 2.

Fig. 3.

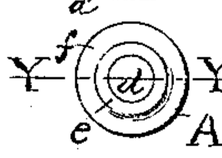

Fig. 4.

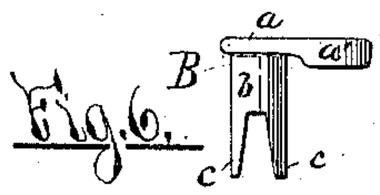

Fig. 6.

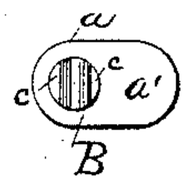

Fig. 7.

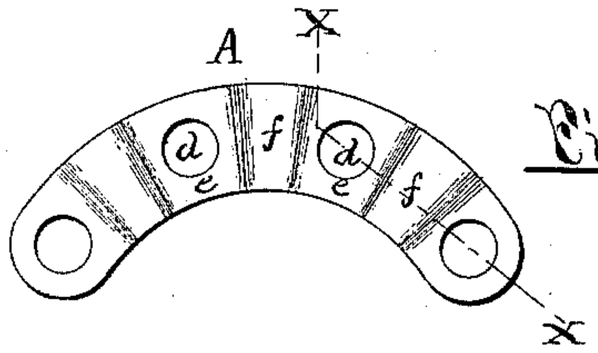

Fig. 5.

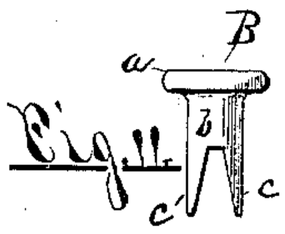

Fig. 11.

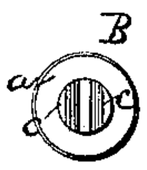

Fig. 12.

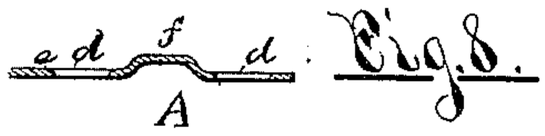

Fig. 8.

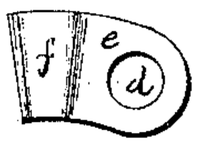

Fig. 10.

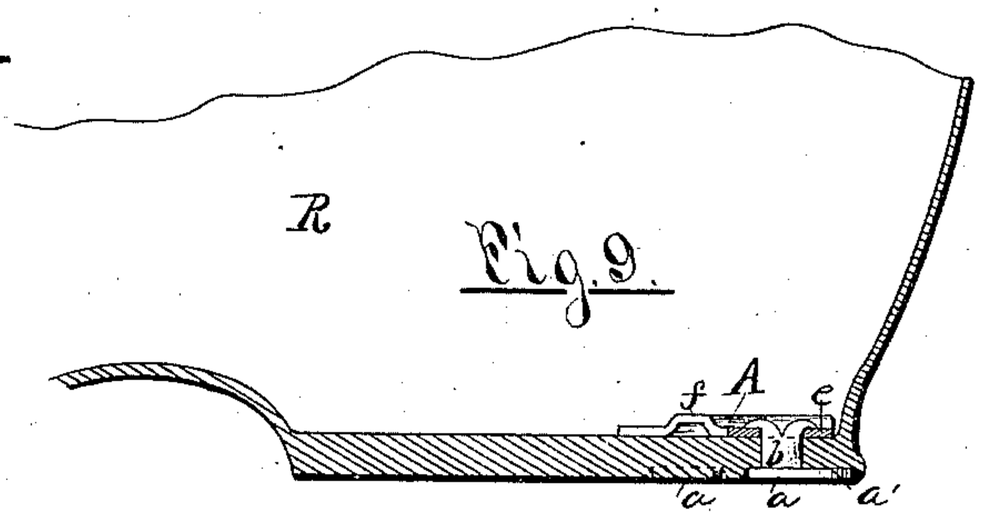

Fig. 9.

Witnesses

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By Dyer & Gibbs

Attys

UNITED STATES PATENT OFFICE.

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WASHER-PLATE AND RIVET FOR ARCTICS.

SPECIFICATION forming part of Letters Patent No. 368,560, dated August 16, 1887.

Application filed December 20, 1886. Serial No. 222,032. (No model.)

To all whom it may concern:

Be it known that we, JUDSON L. THOMSON and JACOB J. UNBEHEND, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Rivets and Washer-Plates for Arctics, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

Our invention relates to improvements in the class of rivets and heel-plates or washers for rivets adapted for use in the heels of arctics and the like overshoes, and the object is to produce a rivet and plate which shall co-operate in the production of a durable and effective device for the desired purpose, wherein the clinching-prongs of the rivet are protected by the plate, so as to prevent the prongs from being cut out or worn off by the heel of the wearer; and to this end our invention consists, essentially, in a rivet provided with a solid shank slotted about midway its length, so as to leave a solid bearing portion of about the thickness of the heel of the arctic to receive the wear and sustain the heel against the weight of the wearer brought thereon in use, and in providing tapering fastening-prongs eccentrically arranged in relation to the head of the rivet, as hereinafter more particularly described; also, in combining the rivet with a heel-plate or washer having a depressed bearing for the clinching-prongs of the rivet and a raised bearing-surface for the heel of the wearer in use, whereby the clinching-prongs of the rivet are protected from contact with the heel of the wearer, and consequently the said clinching-prongs are relieved from the grinding wear or cut, which, in all of the devices now used, soon cut off the clinching-points of the rivet, allowing them to pull out and effectually destroy the arctic or overshoe; and it furthermore consists in the detail construction and arrangement of the parts, all as hereinafter more particularly described, and pointed out in the claims.

In specifying our invention, reference is had to the accompanying drawings, in which like letters indicate corresponding parts in all the views.

Figure 1 is a top plan of our improved heel-plate, showing the depressed bearing-surfaces for the clinching-prongs of the rivet and the raised bearing-surfaces for the heel of the wearer. Fig. 2 is an edge view of the same, illustrating the shape of the plate. Fig. 3 is a detached view of the rivet and washer-plate, the washer or heel-plate being in section, taken on line *y y*, Fig. 4. Fig. 4 shows a top plan of Fig. 3. Fig. 5 shows a modification in the form of the bearing-surfaces in the washer or heel-plate. Fig. 6 is a detached view of the rivet. Fig. 7 shows an inverted plan view of the rivet. Fig. 8 is a section of the heel plate or washer, taken on line *x x*, Fig. 5. Fig. 9 is a sectional view of an arctic or overshoe, showing the plate and rivet in position united by the clinches. Fig. 10 is a detached view of a modification in the construction of the heel-plate or washer illustrated in Fig. 5, and Figs. 11 and 12 are modified forms of the rivet.

A represents the improved washer-plate for use in the heels of arctics or the like overshoes, and the same consists of a metallic plate having holes or apertures *d d*, for the passage of the clinching-prongs of the rivets, and depressed bearing-surfaces *e e*, for the clinches of the prongs, and raised portions or bearing-surfaces *f f*, as best shown in the edge view, Fig. 2, for the heel of the wearer to bear on. It will be observed that the raised surfaces *f f* are of sufficient height above the depressed surfaces upon which the clinches of the rivets bear to raise the heel of the wearer above and out of contact with the point of the clinches. In all devices of this character heretofore used great difficulty has been experienced in securing an efficient washer-plate and rivet for use in the heels of arctics and like overshoes, for the reason that in use the heel of the wearer comes in contact with the clinching-prongs of the rivet and cuts out the clinch, leaving the rivet free to pull out; and when this occurs an opening is left in the heel for the admission of water, &c., and the overshoe is cut out to an extent to make the same useless. Our heel-plate or rivet-washer is designed to overcome this defect, and it affords a very effective and simple device and very efficient for the desired purpose.

We do not restrict ourselves to the precise form of plate illustrated in Figs. 1 and 2,

since the same may be readily modified in construction without departing from the principle of our invention—as, for example, the plate A may be cut into sections or made circular, as illustrated in Figs. 3 and 4, or the same may be constructed zigzag in form, as illustrated in Fig. 5; but in either case the plate is formed by stamping the same in a die or casting it very light, so as to leave the depressions *e e* adjacent to and surrounding the apertures *d d*, through which the clinching-prongs of the rivet pass, and providing the raised surfaces *f f*, of sufficient height to allow the heel of the wearer to come above the top of the clinches and to prevent contact of the heel with the clinches.

The rivet is denoted by B, and the shank thereof is bifurcated or slotted about midway its length, so as to leave the solid portion *b* between the head *a* and the clinching-prongs *c c*.

The solid portion *b* of the rivet is located one side of the center of the head, so that when it is slotted to form the clinching-prongs *c c* the same are eccentrically arranged in relation to the head *a*. In other words, the shank of the rivet is cylindrical in cross-section and is arranged at one side of the center of the head, as best shown in Fig. 6, and the portion of the head denoted by *a'* is slightly enlarged, as shown in Fig. 6, for the purpose hereinafter explained.

The clinching-prongs *c c* are tapered down to a blunt point without spreading the same beyond the diameter of the solid portion.

It will be understood, of course, that the metal of the rivet is such as will form a pliable and flexible point, which may be readily clinched when the prongs are inserted through the material of the arctics in position through the apertures *d d* in the washer-plate A. The object of providing the enlargement *a'* of the head *a* of the rivet and in leaving the solid portion *b* in the shank of the rivet is to afford, in the first place, support for the outer extremity of the heel of the arctic or overshoe and to prevent the same from being cut out by the rivet-head or the heel of the wearer in use. There is always more wear on the outer extremity of the heel, owing to the way in which the foot of the wearer strikes in walking, and the enlargement *a'* of the head *a* is applied to the arctic or overshoe in the manner illustrated in Fig. 9, with the long portion coming next to the outer extremity of the heel to protect the heel from this wear, and the solid portion *b* of the rivet affords a solid bearing for the heel of the arctic between the head *a* and the clinching-prongs *c c*, which clinch on the washer-plate, as previously described.

Experience has demonstrated that where the washer-plate is united by the rivet to the heel of the arctic and the prongs are cut up near the head of the rivet the elastic nature of the heel permits (after a while) the plate to become loosened from the clinch and to give or play under the action of the heel in walking, and such action results in the disintegration of the heel of the arctic, besides allowing the parts to become loosened and more readily affected by the wear under the action of the heel. By securing the plate A to the solid portion *b* of the rivet this defect is overcome and the plate is firmly secured to the solid part of the rivet, affording a rigid bearing for the heel of the wearer and effectually preventing and overcoming the aforementioned defects, and, as has been stated in reference to the washer-plate A, the clinching-prongs of the rivet B are protected from contact with the heel of the wearer by the raised bearing-surfaces *f f*; hence the device is exceedingly durable, and will remain intact until the arctics are worn out by the natural wear of use.

The operation of our improvement will be readily understood from the foregoing. The plate A is applied to the interior of the heel of the arctic or like overshoe and the rivet is inserted through the material of the heel, with the elongated and enlarged portion of the head in the position shown in Fig. 9—that is, next to the outer extremity of the heel—and the clinching-prongs passing through the apertures or holes *d d* in the plate A. Then the clinching-prongs *c c* are headed down in any desirable manner, and the overshoe is ready for use.

It will be observed that the herein-described rivet and washer-plate for the heels of arctics and like overshoes are best adapted for use together, and are most efficient for the purpose of this invention when so used; but it is obvious that other forms of rivets known to the art may be substituted for the herein-described rivet and used with the improved heel-plate or washer; and at Figs. 11 and 12 we have illustrated a desirable form of rivet for such use. In this form of rivet the solid portion *b* and the prongs *c c* are arranged concentrically in relation to the head; hence we do not restrict ourselves to the specific form of rivet combined with and used in connection with the heel-plate, although the above-described rivet gives better results when used in connection with the heel-plate or washer than any form of rivet with which we are conversant.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The within-described rivet for arctics and the like overshoes, having a solid shank slotted about midway its length, so as to leave the solid portion *b* and the tapering fastening-prongs *c c* eccentrically arranged in relation to the head *a*, substantially as and for the purpose set forth.

2. The combination of the heel-plate or washer A, having a depressed bearing for the clinching-prongs of the rivet and a raised bearing-surface for the heel of the boot or shoe, with a rivet passing through the heel of the arctic or like overshoe and clinching on the depressed bearing of the plate, substantially as and for the purpose set forth.

3. The within-described heel-plate for arc-

tics and the like overshoes, having apertures for the passage of the clinching-prongs of the rivets and a depressed bearing-surface for the clinched prongs and a raised bearing-surface for the heel of the wearer to protect the clinched prongs of the rivet from contact with the heel in use, substantially as and for the purpose set forth.

4. As an improved article of manufacture, the within-described rivet having an elongated head and clinching-prongs arranged eccentrically in relation to the head, substantially as described.

In testimony whereof we have hereunto signed our names, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 17th day of December, 1886.

JUDSON L. THOMSON.
JACOB J. UNBEHEND.

Witnesses:
E. C. CANNON,
WILLIE BUCKINGHAM.