(No Model.) 2 Sheets—Sheet 1.

C. L. WIEDRICH.

HUB BAND.

No. 486,653. Patented Nov. 22, 1892.

Fig. 1.

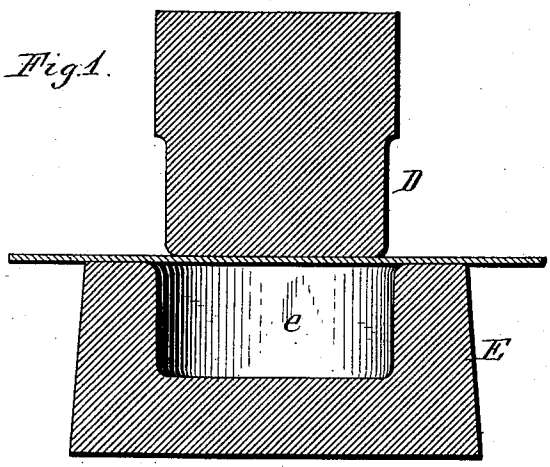


Fig. 2.

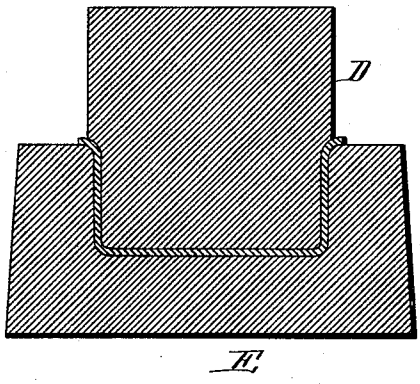


Fig. 3.

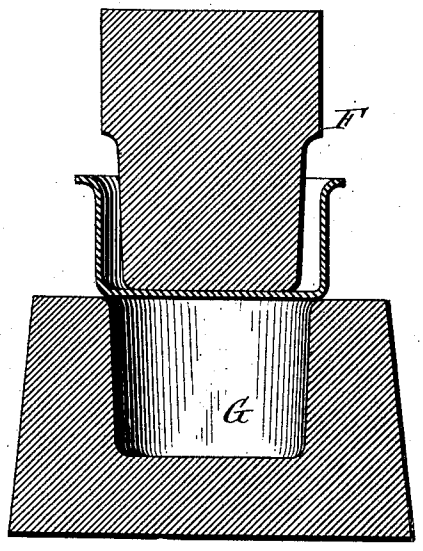
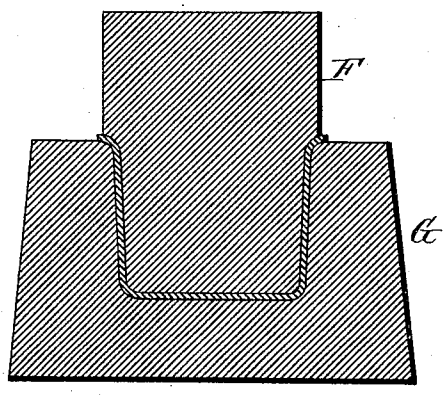


Fig. 4.



Witnesses:
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(No Model.) 2 Sheets—Sheet 2.

C. L. WIEDRICH.

HUB BAND.

No. 486,653. Patented Nov. 22, 1892.

Fig. 5.

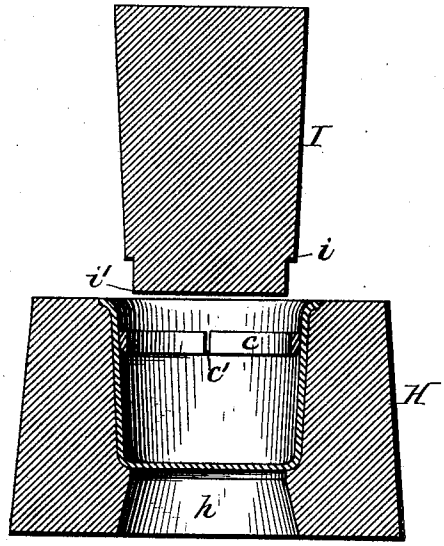


Fig. 6.

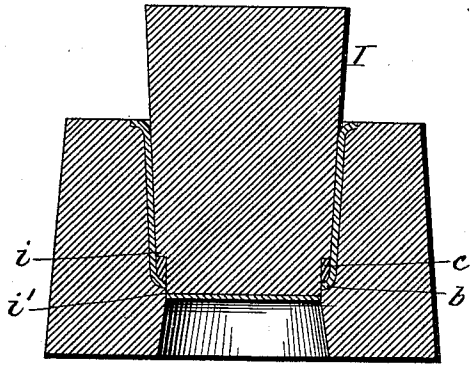
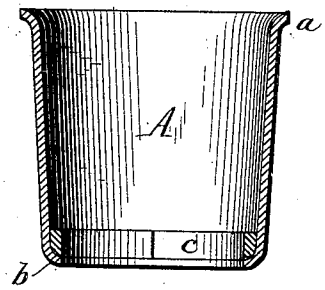


Fig. 7.



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UNITED STATES PATENT OFFICE.

CHARLES L. WIEDRICH, OF BUFFALO, NEW YORK, ASSIGNOR TO PRATT & LETCHWORTH, OF SAME PLACE.

HUB-BAND.

SPECIFICATION forming part of Letters Patent No. 486,653, dated November 22, 1892.

Application filed July 13, 1892. Serial No. 439,874. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. WIEDRICH, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Hub-Bands, of which the following is a specification.

This invention relates to an improvement in wrought or sheet metal hub-bands which are stiffened or reinforced at their outer ends. These hub-bands have heretofore been reinforced by bending the outer end of the band inwardly upon itself, so as to form a double thickness of metal; but this construction is unsatisfactory, because in bending over the outer end of the band the metal is liable to crack or break.

The object of my invention is to reinforce the outer portion of the hub-band in such a manner as to obviate cracking of the metal and so as to produce a smooth and sightly finish.

In the accompanying drawings, consisting of two sheets, Figure 1 is a vertical section of the dies whereby the first bending operation is performed, showing the flat sheet-metal blank between the dies ready to be pressed. Fig. 2 is a similar view of said dies, showing the form of the blank after the first bending operation is completed. Fig. 3 is a vertical section of the dies whereby the second bending operation is effected, showing the cup-shaped blank about to be pressed into the cavity of the stationary die. Fig. 4 is a similar view showing the shape of the blank after the second bending operation is completed. Fig. 5 is a vertical section of the dies whereby the reinforcing-ring is forced into the cup-shaped blank and the bottom is cut out of the blank and showing the ring inserted in the cup preparatory to being driven into place. Fig. 6 is a vertical section of said dies, showing the reinforcing-ring in place and the bottom cut out of the cup. Fig. 7 is a vertical section of the finished hub-band on an enlarged scale.

Like letters of reference refer to like parts in the several figures.

A, Fig. 7, represents the body of the hub-band, which is preferably slightly tapered from its inner toward its outer end and formed at its inner end with the usual flaring lip *a*.

b is an inwardly-projecting annular lip or flange formed at the outer end of the hub-band, and *c* is a stiffening or reinforcing ring fitted within the outer portion of the band and seated against the inner side of the flange *b*.

In producing my improved hub-band a flat circular blank of sheet metal is first bent into the shape of a shallow cup of larger diameter than the finished hub-band by means of dies D and E, as shown in Fig. 2, the lower stationary die E having a shaping-cavity *e*, into which the flat blank is pressed by the upper movable die or plunger D. The shallow cup so formed is next elongated or increased in depth and reduced in diameter to the size of the finished hub-band between dies F and G, Figs. 3 and 4, the cavity of the die G having the proper depth and diameter to impart this form to the blank. The blank may be given this deep cup-shaped form by a single operation between the dies last mentioned, but it is preferably reduced to the proper size by two steps, as before described, because by this method undue straining or stretching of the metal is avoided. The cup-shaped blank is next placed into a die or holder H, Figs. 5 and 6, having a cavity similar to the preceding die G, and an opening *h*, arranged below said cavity. The reinforcing-ring *c* is then inserted in the tapering cup and forced against the bottom thereof by a cylindrical plunger I, having an annular shoulder *i*, which strikes the upper side of the reinforcing-ring. The latter is open or split on one side, as shown at *c'* in Fig. 5, and before being driven into the cup is of larger diameter than the small end of the cup, so that the ring is sprung into the bottom of the cup and retained in place therein by its frictional contact with the surrounding wall thereof. The split ring is of such a size that when its ends abut by the contraction of the ring its external diameter is slightly larger than the internal diameter of the small end of the cup. By thus constructing the ring the small end of the cup is slightly expanded in wedging the ring into the same, whereby the ring is reliably held in place. The lower reduced

portion of the plunger I is made of sufficient length to extend through the bore of the reinforcing-ring in driving the same into the cup, and is formed at its lower end with a cutting-edge *i'*, whereby a circular opening is cut in the bottom of the cup at about the same time that the reinforcing-ring is seated in the same. This opening is of about the same diameter as the bore of the reinforcing-ring, as shown in Figs. 6 and 7, so as to leave the inwardly-projecting flange or lip *b* at the outer end of the hub-band, against which the ring bears and whereby it is confined in the band. While I prefer to cut the opening in the bottom of the cup-shaped blank and drive the reinforcing-ring into the same by a single operation, as before described, it is obvious that the opening could be cut by a separate operation either before or after the ring has been driven into place.

In my improved hub-band the flange or lip at the outer end of the band is simply bent at a sufficient angle to the body of the band to retain the reinforcing-ring in the same, so that the metal is not liable to crack or break in bending it, as is the case in a band in which the outer end of the band is doubled or turned inwardly against the body. As the reinforcing-ring forms no integral part of the band, but is separate therefrom, its thickness and consequent strength are not determined by the thickness of the metal of which the band is constructed, as in the prior construction above referred to; but the ring may be made as heavy and strong as is necessary to properly stiffen the band.

I claim as my invention—

1. A sheet-metal hub-band provided at its outer end with a separate reinforcing-ring driven into the band, with its peripheral face bearing against the inner surface of the band, whereby the outer end of the band is stiffened, substantially as set forth.

2. A sheet-metal hub-band provided at its outer end with an inwardly-extending flange and a reinforcing-ring arranged within the band and bearing with its outer face against the inner side of said flange and with its peripheral face against the inner surface of the hub-band, substantially as set forth.

3. A sheet-metal hub-band having at its outer end an inwardly-turned flange or lip and a split reinforcing-ring sprung into the band and bearing against said flange, substantially as set forth.

Witness my hand this 7th day of July, 1892.

CHAS. L. WIEDRICH.

Witnesses:

JNO. J. BONNER,

FRED. C. GEYER.