March 18, 1941. R. P. PEEBLES 2,235,587

SAFETY CLAMP

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FIG. 2

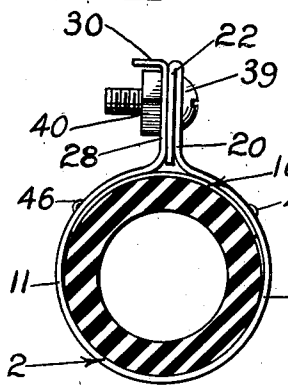


FIG. 1

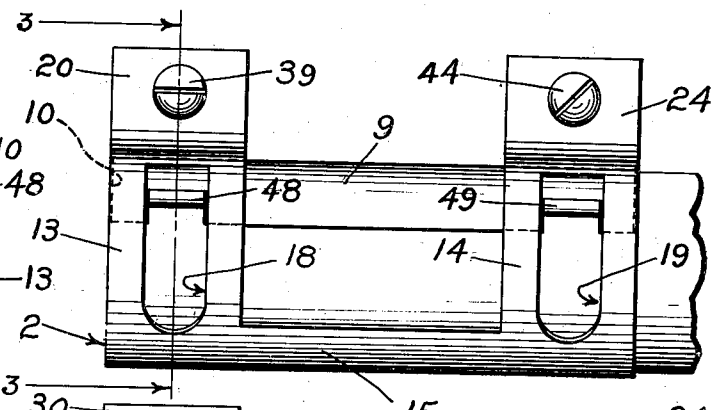


FIG. 3

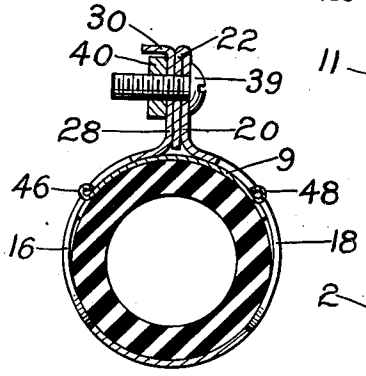
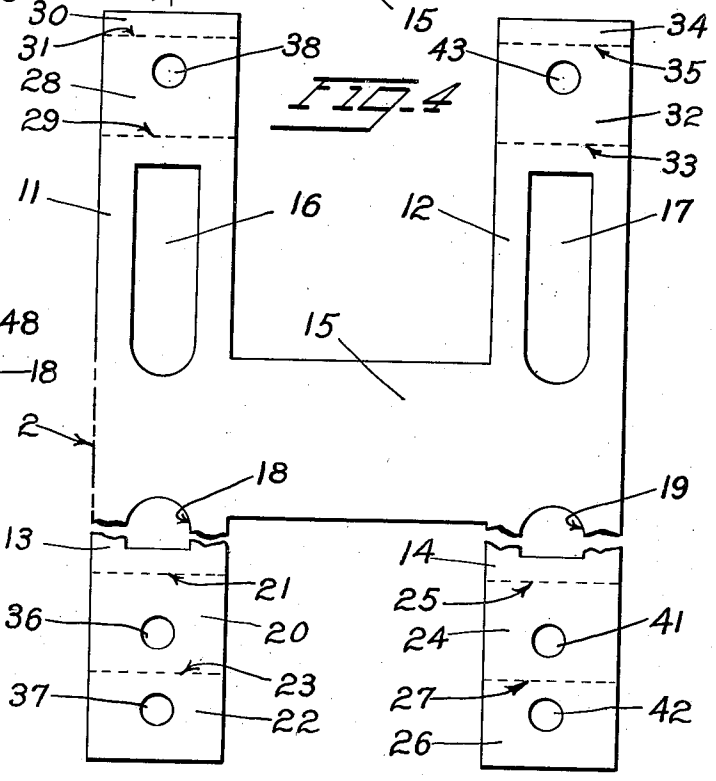


FIG. 4



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FIG. 6

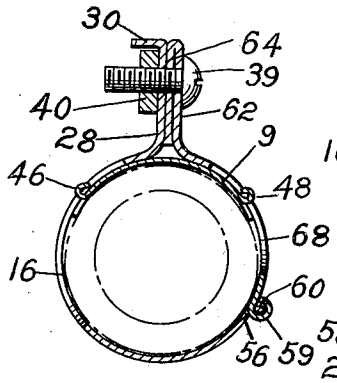


FIG. 5

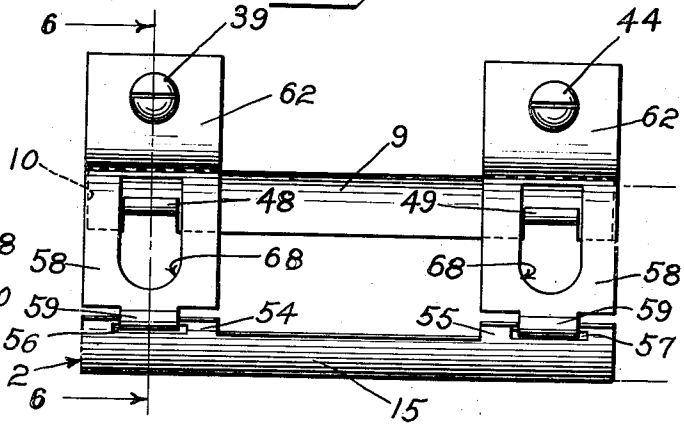


FIG. 7

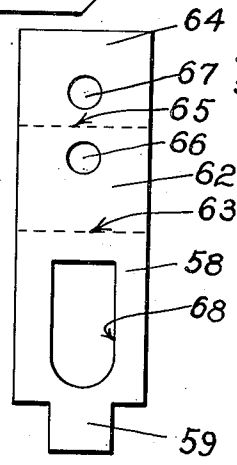


FIG. 8

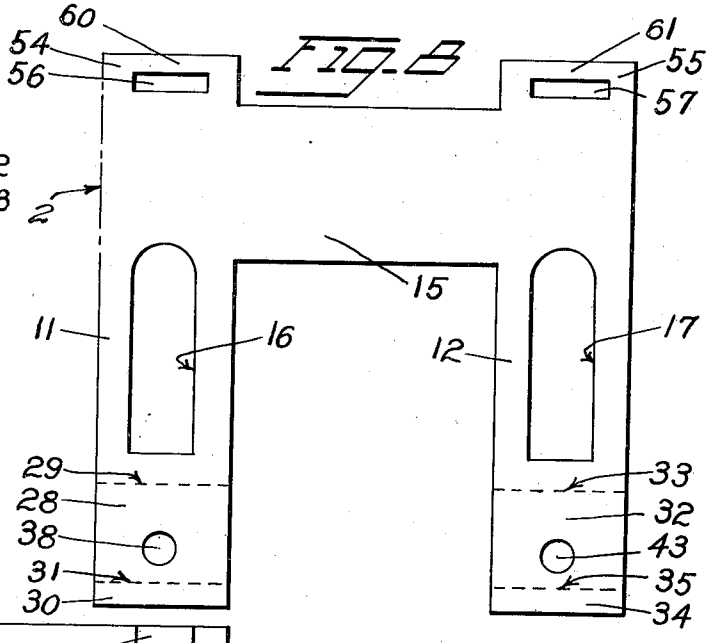
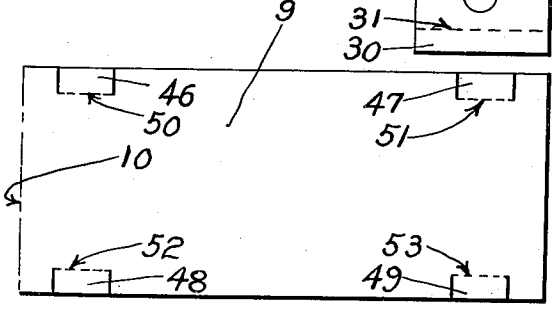


FIG. 9



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SAFETY CLAMP

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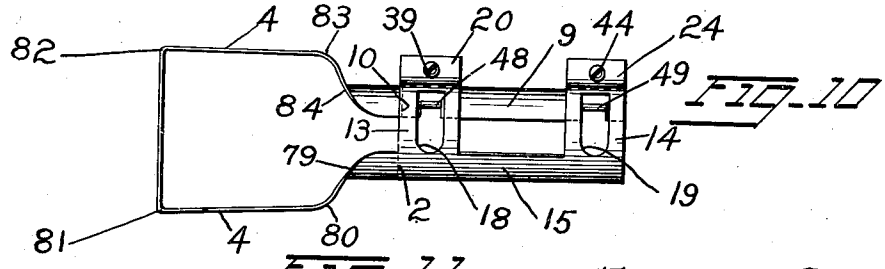


FIG. 10

FIG. 11

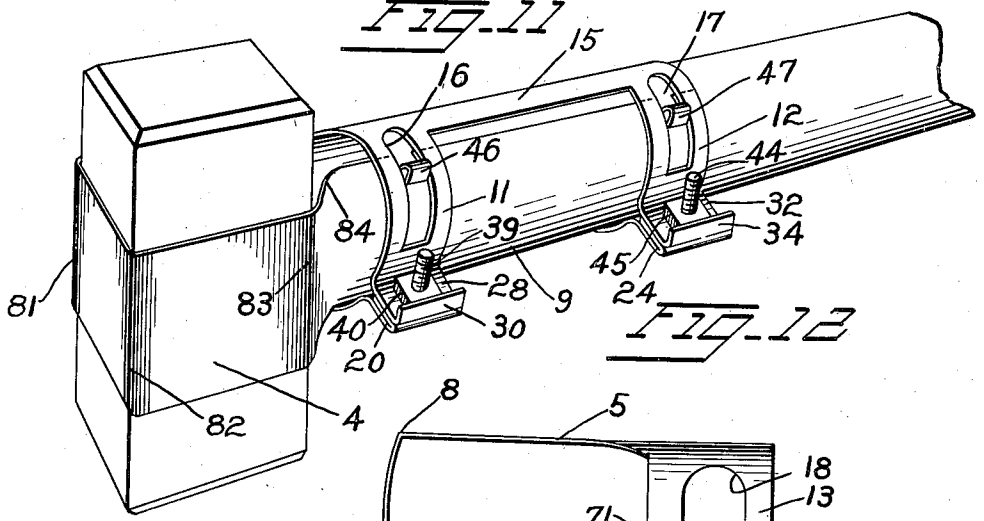


FIG. 12

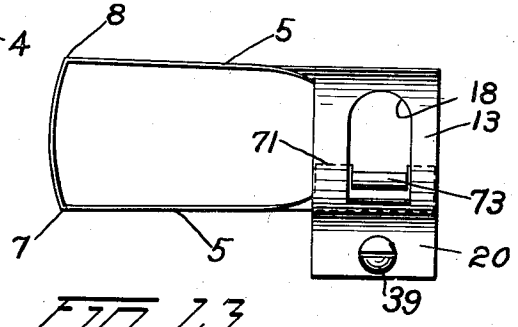


FIG. 13

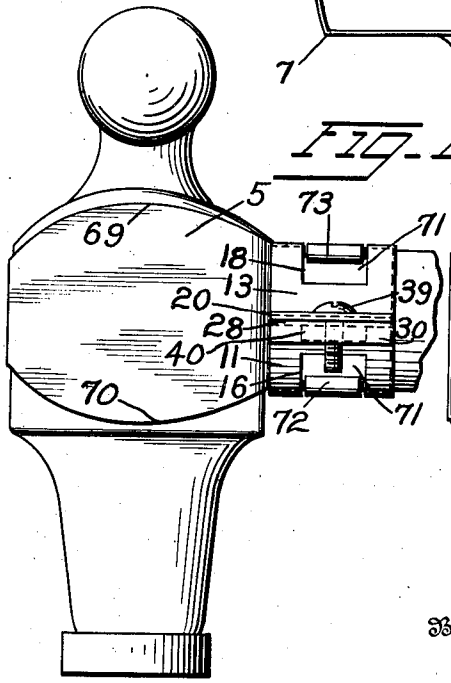
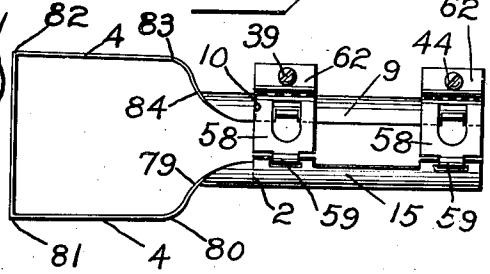


FIG. 14



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Patented Mar. 18, 1941 2,235,587

UNITED STATES PATENT OFFICE

2,235,587

SAFETY CLAMP

Roddie Phillips Peebles, Paducah, Ky.

Application September 6, 1939, Serial No. 293,625

6 Claims. (Cl. 306—40)

My invention relates generally to improvements in clamps and reenforcement strip apparatus and it consists in the combination, construction and arrangements, herein described, and claimed.

It is an object of my invention, to provide a strong, durable and efficient safety clamp, adaptable to hold securely and safely the head of a tool, such as a hammer, axe, mall, hatchet or like object to the handle of such tool, reenforcing the said handle against breaking at or near the head and to generally improve upon and simplify the construction of the existing type of clamps and to provide a construction that is relatively simple, capable of being easily and cheaply produced.

Embodied in the foregoing device, are several distinct inventions which are dependent upon each other and which mutually contribute to produce the aforesaid device. The reenforcement and clamping means for securing the said device to the handle of the tool, as separately claimed are readily adaptable as a strong, durable and efficient clamping and reenforcement means for use on hose, cable, pipes, broken parts of furniture, hardware, tools, implements, and a clamping and reenforcement means which are adaptable in tree grafting and for the setting of broken bones.

Other objects and advantages will be apparent from the following description when taken in connection with the accompanying drawings.

Figure 1 is an enlarged side elevation of the reenforcement and clamping means embodied in my improved safety clamp separated respectively from the said device along the line **10**, and **2**, of Figure 10 and shown in position on a piece of hose. The said reenforcement and clamping means being thus adapted as a hose clamp.

Figure 2 is an end elevation of Figure 1.

Figure 3 is a sectional view taken along the line **3—3** of Figure 1.

Figure 4 is a plan view of the blank of the clamp shown in Figure 1.

Figure 5 is an enlarged side elevation of the reenforcement and clamping means of a modified specie of my improved safety clamp separated, respectively, from the said device along the line **10** and **2**, of Figure 14, showing the hinged side, thereof.

Figure 6 is a sectional view taken along the line **6—6** of the Figure 5.

Figure 7 is a blank of the hinged bands shown in Figures 5 and 6.

Figure 8 is a plan view of the blank of the clamp shown in Figure 5, without the hinged bands.

Figure 9 is a top plan view of the blank of the reenforcement strip, embodied in my improved safety clamp, and separated from the said safety clamp along the line **10**.

Figure 10 is a top elevation of my improved safety clamp.

Figure 11 is a perspective view of the side of my improved safety clamp showing the opposite side from that disclosed in Figures 10 and 14.

Figure 12 is a top elevation of a modified specie of my improved safety clamp.

Figure 13 is a side view of Figure 12.

Figure 14 is a top elevation of a modified specie of my improved safety clamp showing the hinged side thereof.

In the embodiment of my invention illustrated in Figures 10 and 11, my improved safety clamp is stamped from sheet metal in one piece in the form of a blank. The blank for the clamping means is shown in detail in Figure 4. Formed integral with the clamping means along the line **2**, of Figure 4, there is provided a band or sheet metal strap **4**, Figures 10 and 11, which is suitably bent at **79, 80, 81, 82, 83** and **84**, so as to fit around the head of the desired tool, as shown in Figure 11, and the said metal strap is formed integral with the reenforcement strip **9**, along the dotted line **10**, the detailed structure of the blank for the said reenforcement strip is shown in Figure 9.

The aforesaid clamping means comprises preferably four bands or lateral extensions indicated by numerals **11, 12, 13** and **14**, Figures 1, 4, 10 and 11, formed integral with a reenforcement strip or connecting tie **15**, extending at right angles to the said bands. The said bands **11, 12, 13** and **14**, are formed with a longitudinal slot therein indicated respectively by numerals **16, 17, 18** and **19**, the purpose of which will appear hereafter. The bands **11**, and **13**, and the bands **12**, and **14**, are shaped from the blank, Figure 4, into two separate circular collars, having the end parts thereof, projecting radially outward to serve as clamping ears or flanges. The reenforcement strip **15**, of the sheet metal strap **4**, is bent or transversely curved along the periphery of the said circular collars. The metal strap **4**, being formed integral with the clamping means along the line **2**, and curved further as shown in Figures 10 and 11, to fit the handle of the tool and turned at **79, 80, 81, 82, 83** and **84**, to fit the head of the tool, Figures 10 and 11. The further end of the said sheet metal strap **4**, being curved to fit the opposite side of the handle of the tool is formed integral with the reenforcement strip **9**.

The flange 20, of the band 13, Figure 4, is bent, along the dotted line 21, substantially at right angles to the said band, and the end part 22, of the band 13, is bent, along the dotted line 23, over, parallel and contiguous with the flange 20, thereby serving as a support to the projecting ear 20, as shown in Figures 2 and 3.

The flange 24, of the band 14, is bent, along the dotted line 25, similar to flange 20, and the end part 26, of the band 14, is bent, along the dotted line 27, parallel and touching the flange 24.

The flange 28, of band 11, Figure 4, is bent substantially at right angles to the said band, along the dotted line 29, and the end part 30, is bent along the dotted line 31, at right angles to the flange 28, forming an outwardly bent lip, as shown in Figures 2 and 11, and the flange 32, of the band 12, is bent along the dotted line 33, substantially at right angles to the band 12, and the end part 34, of the band 12, is bent along the dotted line 35, at right angles to flange 32, in a similar manner to end part 30, of band 11, as shown in Figure 11.

The radially projecting parts 20, 22 and 28, have provided, therein, a bolt hole indicated, respectively, by numerals 36, 37 and 38, for the reception of a clamping bolt 39, having a screw threaded shank, which engages the nut 40, by means of which the said bands 11 and 13, are tightened. The outwardly bent lip 30, on the projecting ear 28, is so constructed as to restrain the nut 40, from turning with the bolt 39, as shown by Figures 2 and 11.

The radially projecting parts 24, 26 and 32, have similarly provided, therein a bolt hole indicated, respectively, by numerals 41, 42 and 43, for the reception of clamping bolt 44, engaging the nut 45, by means of which the bands 12 and 14, are tightened. The said nut 45, is restrained from turning with the bolt 44, by the outwardly bent lip 34, as shown by Figure 11.

There is further provided an additional reenforcement strip 9, formed integral with the sheet metal strap 4, along the line 10, and the said reenforcement strip 9, is stamped in the form of a blank, having cuts in the edges, thereof, as shown in Figure 9, so as to form the parts 46, 47, 48 and 49, which parts are bent outward along the dotted lines 50, 51, 52 and 53, respectively, and around upon the reenforcement strip 9, forming looped members.

The said reenforcement strip 9, is bent or curved transversely along the periphery of the circular collar formed by the bands 11 and 13, and the circular collar formed by the bands 12 and 14.

The said reenforcement strip 9, is adapted to be inserted between the object to which the clamp is to be applied and the inner sides of the said bands, directly opposite the reenforcement strip 15, extending across the space between the clamping ears 24 and 32, and across the space between the clamping ears 20 and 28, as shown by Figures 2 and 11.

The looped members formed by the parts 46, 47, 48 and 49, are inserted from the inner side of the respective bands 11, 12, 13 and 14 into the respective slots 16, 17, 18 and 19. The said slots are adapted for the respective looped members to move longitudinally therein and as the clamping bolts 39, and 44, are tightened on the respective nuts 40 and 45, thereby tending to close the ends of the circular collars, the looped members, aforementioned, contained in the respective longitudinal slots, move therein toward the reenforcement strip 15, thus clamping and reenforcing the handle of the tool and holding securely the head of the tool.

In the embodiment of my invention illustrated in Figure 14, there is shown a modified specie of my invention which is stamped from sheet metal in three pieces in the form of blanks. The same differs from the specie shown in Figure 10, in that instead of having the bands or lateral extensions 13 and 14, formed integral with the reenforcement strip 15, there is formed integral with the reenforcement strip 15, and at right angles thereto, the flanges 54, and 55, respectively, apertured at 56, and 57, as shown by Figures 5 and 8, to receive respectively the tongue 59, of the hinged band or lateral extension indicated by numeral 58. The hinged band or lateral extension 58, is stamped from sheet metal in the form of a blank as shown in Figure 7, having a tongue 59, which is adapted to be inserted from the inner side of the flange 54, through the aperture 56, and bent around the part 60, upon the hinged band 58, and the said tongue 59, likewise is adapted to be inserted from the inner side of the flange 55, through the aperture 57, and bent around the part 61, upon the hinged band 58.

The bands or lateral extensions 11 and 12, Figure 8, are formed substantially as previously described. The hinged bands 58, are shaped with the band 11, and band 12, from the blanks, Figures 7 and 8, into two separate circular collars, Figures 5 and 6, having the end parts thereof, projecting radially outward to serve as clamping ears or flanges. The flange 62, of the hinged band 58, Figure 7, is bent along the dotted line 63, substantially at right angles to the said band, and the end part 64, of the hinged band 58, is bent, along the dotted line 65, over, parallel and contiguous with the flange 62.

The projecting parts 62 and 64, have provided therein a bolt hole indicated by numerals 66 and 67, respectively, adapted for the reception of the clamping bolt 39, which is further received in the bolt hole 38, of band 11, and engages the nut 40, by means of which the said bands 11 and 58, are tightened, Figures 5 and 6. The bolt holes 66 and 67, are similarly adapted for the reception of the clamping bolt 44, which is further received in the bolt hole 43, of band 12, and engages the nut 45, by means of which the said bands 12 and 58, are tightened.

The hinged band 58, is formed with a longitudinal slot 68, therein. The said slot 68, of hinged band 58, like slot 18, of band 13, previously explained, is adapted with the longitudinal slot 16, of band 11, for the looped members 48 and 46, of the reenforcement strip 9, to move, respectively, longitudinally therein, and the said slot 68, like the slot 19, of band 14, previously explained, is adapted with the longitudinal slot 17, of band 12 for the looped members 49 and 47, of the reenforcement strip 9, to move, respectively, longitudinally therein, as shown by Figures 5, 6 and 14.

The reenforcement strip 9, is bent or curved transversely along the periphery of the circular collar formed by the bands 11 and 58, and the circular collar formed by the bands 12 and 58, and as the said collars are tightened by the clamping bolts 39 and 44, respectively, the said reenforcement strip 9, is further transversely curved and the looped members, aforementioned, contained in the respective longitudinal slots, move therein toward the reenforcement strip 15,

thereby clamping and reenforcing the handle of the tool and holding the head of the tool securely thereto.

The clamping means described above is formed integral at line 2, with a sheet metal strap 4, which is formed substantially as previously described, the further end of the said sheet metal strap 4, being formed integral with the aforesaid reenforcement strip 9, along line 10, thereof.

The third specie of my invention shown by Figures 12 and 13, is stamped from sheet metal in one piece in the form of a blank comprising bands or lateral extensions 11 and 13, formed substantially the same as bands 11 and 13, shown in Figure 4, previously described, like numerals indicating like parts. The said bands 11 and 13, are formed integral and at right angles to a sheet metal strap 5. The said bands 11 and 13, are shaped to form a circular collar having the end parts, thereof, projecting radially outward to serve as clamping ears or flanges, as previously described. The metal strap 5, is bent or transversely curved along the periphery of the said circular collar and curved to fit the handle of the tool and turned at 7 and 8, Figure 12, to fit the head of the tool as shown in Figure 13. In order to give further support to the head of the tool the upper edge 69, and the lower edge 70, of the side of the sheet metal strap 5, are stamped substantially convex, Figure 13, and the further side of the said metal strap is formed substantially the same. The further side of the metal strap 5, aforesaid, being curved to fit the handle of the tool, is formed integral with a reenforcement strip 71. The said reenforcement strip 71, of sheet metal strap 5, having cuts in the edges thereof, forming on the opposite edges, thereof, parts 72 and 73, formed substantially the same as parts 46 and 48, shown in Figure 9, and previously described. The said parts 72 and 73, are bent outwardly and around upon the reenforcement strip 71, forming looped members.

The said reenforcement strip 71, is bent or curbed transversely along the periphery of the circular collar formed by the bands 11 and 13. The said reenforcement strip 71, is adapted to be inserted between the object or handle of the tool to which the clamp or collar is to be applied, and the inner sides of the said bands, directly opposite the other side of the sheet metal strap 5, extending across the space between the clamping ears 20 and 28, of bands 11 and 13, respectively.

The looped members 72 and 73, are inserted from the inner sides of the said bands 11 and 13, respectively, into the respective, longitudinal slots 16 and 18, of bands 11 and 13.

The said looped members 72 and 73, correspond respectively, to the looped members 46 and 48, as shown in Figures 2 and 3. The said slots are adapted for the respective looped members 72 and 73, to move longitudinally therein, as the clamping bolt 39, is tightened on the nut 40, as shown in Figures 12 and 13, thereby, tending to close the ends of the circular collar formed by the bands 11 and 13, and causing the looped members 72 and 73, to move longitudinally, therein, clamping and reenforcing the handle of the tool and securing the head, thereof, safely in place.

It will be readily understood that minor changes in the size, form and construction of the various parts of my invention may be made and substituted for those, herein, shown and described, without departing from the spirit of my invention, the scope of which is set forth in the appended claims.

Having thus described my invention, what I claim as my invention and desire to secure by Letters Patent, is:

1. The means for securing the head of a tool to the handle therefor, comprising a strap stamped out of sheet metal provided with a plurality of bands having longitudinal slots in the sides thereof, and radially projecting clamping ears, and the said strap being adapted to embrace the tool head, the free end thereof, extending along the inner side of the said bands, curved transversely along the periphery of the bands, extending across the space between the said ears, and having projecting looped members adapted to move longitudinally in the slots, aforesaid.

2. An article of manufacture for fastening parts together comprising a reenforcement strip stamped out of sheet metal provided with a plurality of spaced clamping bands having a longitudinal slot formed in the sides thereof, the said reenforcement strip connecting the said bands, formed integral therewith, and having apertured flanges formed opposite the said bands, other bands provided with a longitudinal slot in the sides thereof hinged at the flanges, aforesaid, forming with the opposite bands circular collars having radially projecting perforated ears, the aforesaid reenforcement strip being curved along the periphery of the said collars, each of the collars having a clamping bolt passing through the said ears.

3. The means for securing the head of a tool to the handle therefor, comprising a strap shaped to fit around the head of a tool, one end of the strap having an extension formed integral with a plurality of bands provided with a longitudinal slot in the sides thereof, the said extension having apertured flanges formed opposite the said bands, other bands provided with a longitudinal slot in the sides thereof hinged at the flanges, aforesaid, forming with the opposite bands, circular collars having radially projecting perforated ears, the aforesaid extension being curved along the periphery of the said collars, each of the collars having a clamping bolt passing through the said ears, the opposite end of the said strap having an extension disposed along the inner sides of the said collars, curved transversely along the periphery of the collars, extending across the space between the ears and connecting the said collars, the latter extension having projecting looped members disposed in the longitudinal slots, aforementioned, adapted to engage and move longitudinally therein.

4. Means for securing the head of a tool to the handle therefor; comprising a strap provided with lateral extensions at one end adapted to embrace the said handle and the other end of the said strap and to be adjustably clamped there around and the said strap being adapted to embrace the tool head, projecting members mounted on the said other end of the said strap and adapted to engage the said extensions for movement thereon and in engaging relationship therewith for preventing longitudinal displacement of the said other end of the said strap, and means for holding the said extensions in clamping relation.

5. Means for securing the head of a tool to the handle therefor; comprising a strap adapted to embrace the tool head, lateral extensions formed at one end of the said strap and adapted to em-

brace the said handle and the other end of the said strap and to be adjustably clamped there around, the said extensions having longitudinal slots formed therein, the opposite end of the said strap having projecting parts positioned in the said longitudinal slots for longitudinal movement therein and in such a manner as to prevent longitudinal displacement of the said other end of the said strap, and means for holding the said extensions in clamping relation.

6. An article of manufacture for fastening parts together; comprising a reenforcing strip having a plurality of spaced collars formed integral therewith and adapted to embrace a part disposed therein and to be adjustably clamped there around, the said collars having provided longitudinal slots therein, a second reenforcing strip extending along the inner side of the said collars and connecting the collars aforesaid, projecting members mounted on the second reenforcing strip aforesaid and positioned in the said longitudinal slots so as to move longitudinally therein and in such a manner as to prevent longitudinal displacement of the said second reenforcing strip.

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