

J. C. DAWSON.
 MEANS FOR UNITING METAL PARTS.
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928,947.

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Fig. 1.

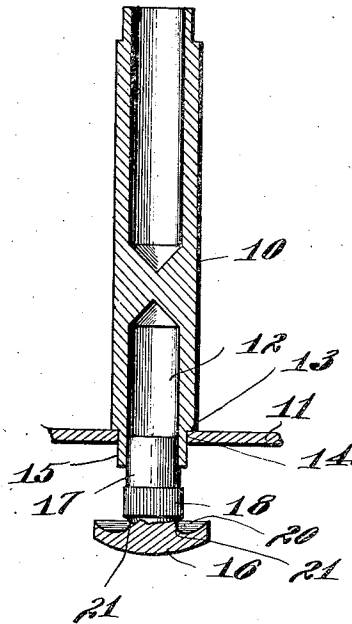


Fig. 2.

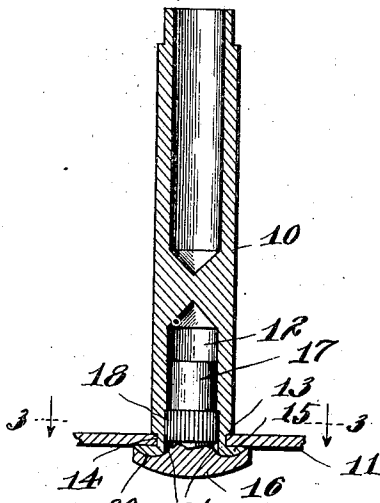
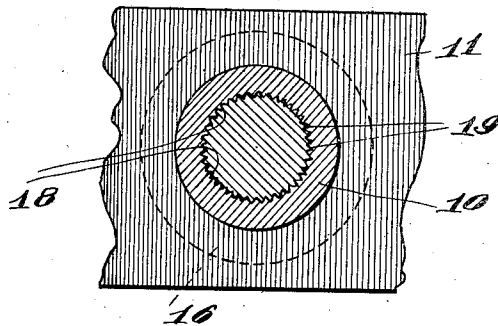


Fig. 3.



Witnesses:

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MEANS FOR UNITING METAL PARTS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES C. DAWSON, a citizen of the United States, and resident of Webster Groves, county of St. Louis, and State of Missouri, have invented certain new and useful Improvements in Means for Unit-
ing Metal Parts, of which the following is a specification and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to means for uniting metal parts and more particularly to means for securing a metal post in an upright position on a metal plate or base.

The object of the invention is to provide improved means for permanently and firmly uniting metal parts in such a way that they can be separated only with great difficulty and not without mutilation which would render their being re-united in the same way impossible.

The invention contemplates a die for clenching metal parts together which shall be permanently secured in position by the clenching to resist any distortion of the connected parts which might, if unresisted, admit of their being separated.

In the accompanying drawings Figure 1 shows a central vertical section of metal parts assembled for connection in the manner provided by the invention, Fig. 2 is similar to Fig. 1 but shows the parts clenched in connected position, and Fig. 3 is a sectional view taken on the line 3—3 of Fig. 2.

The parts shown in the drawings illustrate the application of the invention to permanently securing a metal post 10 in upright position on a metal base plate 11.

In carrying out the invention the foot of the post is made tubular as indicated at 12 and its extreme lower end is reduced in diameter to provide a circumferential shoulder 13 thereon. The base plate 11 is provided with an aperture 14, preferably of such size that the reduced end of the post will fit quite snugly therein. As shown that part of the post 10 which is of reduced diameter is of such length that when the parts are assembled for connection as shown in Fig. 1 of the drawings a portion 15 of the end of the post will project through the aperture 14 to a point beyond the back of the plate when the annular shoulder 13 engages the face of the plate 11 about the aperture.

A die 16 is provided for clenching the pro-

jecting end 15 of the post onto the back of the plate 11. As shown this die has a central stem 17 adapted to enter the tubular end 12 of the post. Preferably a portion of the wall of this stem remote from its outer end is knurled as shown at 18 thereby somewhat increasing the diameter of the stem and providing a portion of its wall with a large number of longitudinal ridges 19, arranged circumferentially thereon as most clearly shown in Fig. 3. These ridges 19 serve to score the inner wall of the tubular end of the post during the assembling of the parts causing the end wall of the stem to more readily yield to the flanging operation incident to its being clenched over on the back of the plate by the die 16. By increasing the diameter of the stem 17 remote from its point by the knurling operation, provision is made for enlarging the tubular end of the post 10 within the aperture 14 of the plate 11 as by the introduction of a wedge.

For flanging over the projecting end 15 of the post onto the back of the plate 11 the inner face of the die 16 has an annular channel 20 which engages the end of the post and has rounded walls for forming or bending the walls of the post. Preferably a part of the channel 20 extends into the stem 17 as most clearly shown at 21 Fig. 1 whereby the stem is reduced in diameter or under-cut at its base.

For permanently uniting the base 10 and the plate 11 the die 16 is applied to the end of the post after the latter has been inserted through the aperture 14 in the plate, as shown by inserting the stem 17 into the tubular end 12 of the post. Pressure is then applied to the die as by striking it with a hammer thus causing the knurled portion 18 of the stem to enter the end of the post whereby the latter is enlarged to bear tightly upon the walls of the aperture 14 of the plate and has its inner walls scored to more readily yield to the flanging subsequently effected by the die 16. Continued application of pressure to the die 16 causes the walls of the channel 20 formed on its inner face to engage and deflect the end wall of the post, the parts being preferably so proportioned that when this operation is completed the channel 20 is substantially filled with the distorted material of the post, that part of the metal of the post which enters the under-cut portion 21 of the channel serving to lock the die in position

and that part of the material of the wall of the post which has been flanged outwardly engaging the back of the plate 11 about the aperture 14 to prevent the separation of the post and plate. As the die 16 is permanently secured in position on the end of the post when the operation is completed, it serves to prevent the application of any tool to the clenched over end of the post for disconnecting the parts and the stem 17 of the die serves by filling the tubular portion 12 of the post to add rigidity to the walls of the post about the point of its connection with the plate.

15 I claim as my invention—

1. In combination, an apertured plate, a post having a tubular end of reduced diameter entering the aperture of the plate, and a die having a head entering the end of the post, the inner face of the head of the die having an annular channel for receiving the end of the post and the stem of the die being knurled.

2. In combination, an apertured plate, a post having a tubular end adapted to enter and project through the aperture of the plate, and a die for clenching the projecting end of the post onto the plate having a stem adapted to enter the tubular end of the post and be permanently secured therein by the clenching.

3. In combination, an apertured plate, a post having a tubular end adapted to enter and project through the aperture of the plate, and a die for clenching the projecting end of

the post onto the plate having a knurled stem adapted to enter the tubular end of the post and be permanently secured therein by the clenching.

4. In combination, an apertured plate, a post having a tubular end adapted to enter and project through the aperture of the plate and an annular shoulder adjacent such tubular end for engaging the face of the plate about the aperture, and a die for clenching the projecting end of the post onto the back of the plate having a head and a stem adapted to enter the tubular end of the post, the inner face of the head of the die having an annular channel for receiving and bending the end of the post, a part of the channel being cut under the stem of the die whereby when the channel is filled with the clenched end of the post withdrawal of the die is prevented.

5. In combination, an apertured plate, a shouldered member having a tubular stem adapted to enter and project through the aperture of the plate, and a die for the end of the stem having a head and a knurled shank, the inner face of the head of the die being provided with an annular channel, a part of such channel being cut under the knurled shank of the die whereby the base of the shank of the plug is of less diameter than the knurled body of the shank.

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Witnesses:

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