Jan. 24, 1928. 1,656,929

L. L. WHITNEY

METHOD OF FORGING FULCRUMS

Filed Jan. 9, 1924 2 Sheets-Sheet 1

Fig. 13.



Fig. 12.

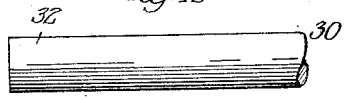


Fig. 1.

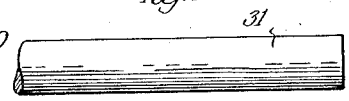


Fig. 2.



Fig. 16.



Fig. 14.



Fig. 3.



Fig. 15.



Fig. 4.



Fig. 5.

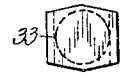


Fig. 19.

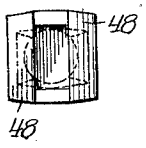


Fig. 17.

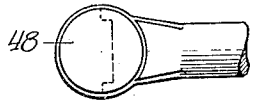


Fig. 6.

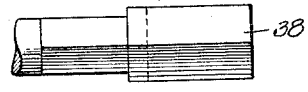


Fig. 18.

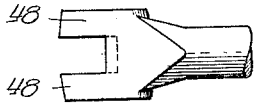


Fig. 7.

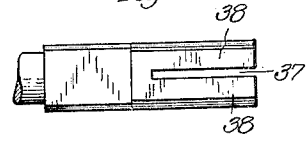


Fig. 8.

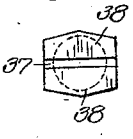


Fig. 22.

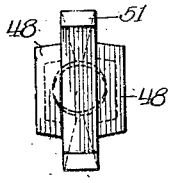


Fig. 20.

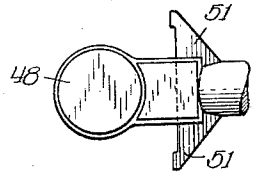


Fig. 9.

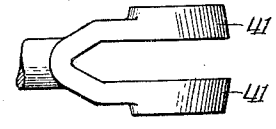


Fig. 21.

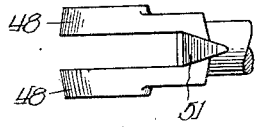


Fig. 10.

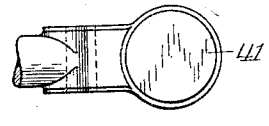
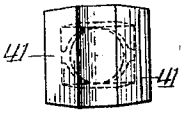


Fig. 11.



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Attys.

Witness:
A. Burkhardt.

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L. L. WHITNEY

METHOD OF FORGING FULCRUMS

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Fig. 23.

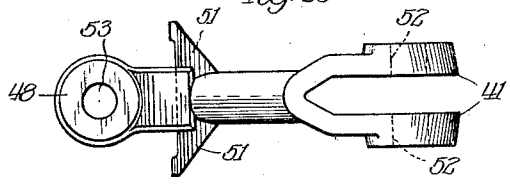


Fig. 24.

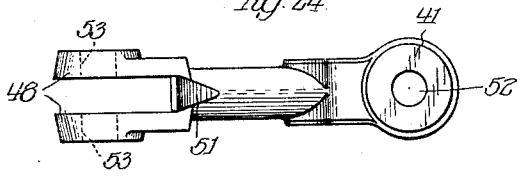


Fig. 25.

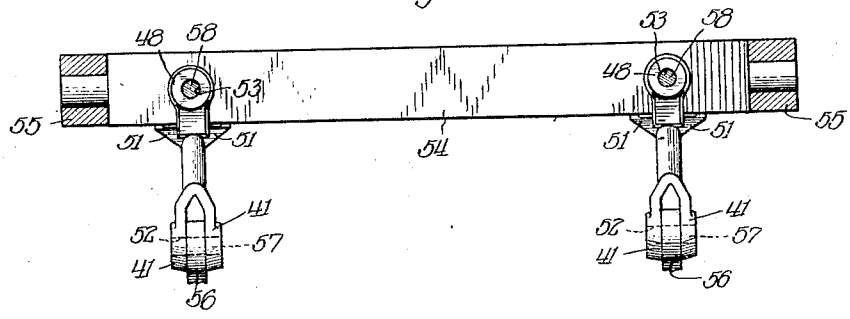


Fig. 27.

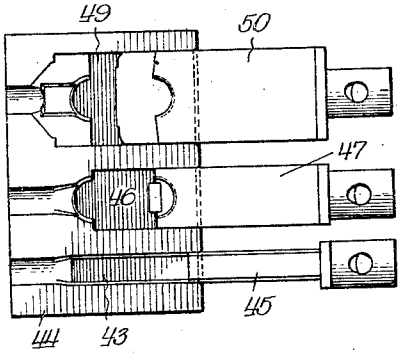
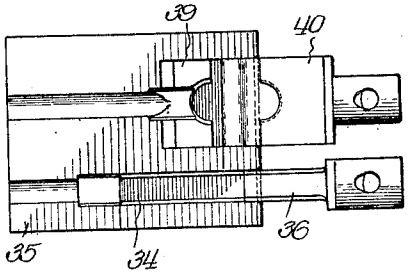


Fig. 26.



Witness:
R. Burkhardt

Inventor:
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By Wilkinson, Huxley, Byron & Knight
Attys.

Patented Jan. 24, 1928. 1,656,929

UNITED STATES PATENT OFFICE.

LOREN L. WHITNEY, OF HAMMOND, INDIANA, ASSIGNOR TO AMERICAN STEEL FOUNDRIES, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW JERSEY.

METHOD OF FORGING FULCRUMS.

Application filed January 9, 1924. Serial No. 685,076.

This invention relates to a method of forging fulcrums.

One object of this invention is to provide a simple, efficient and improved method of forging fulcrums whereby a stronger and better finished fulcrum may be made at a reduced cost.

Another object is to provide a method of forging fulcrums adapted to meet the various requirements for the commercial production of fulcrums.

These and other objects are accomplished by means of the method disclosed on the accompanying sheets of drawings, in which—

Figure 1 is a fragmentary side elevation of a blank from which the fulcrum is to be forged;

Figure 2 is an end view thereof;

Figures 3, 4 and 5 are top, side and end views respectively, of one end of the blank after the latter has been upset to accumulate enough stock at that end to form jaws;

Figures 6, 7 and 8 are top, side and end views respectively, of the same blank after that end has been hot-sawed, split, punched or spread preparatory to forming jaws;

Figures 9, 10 and 11 are top, side and end views, respectively, of the same end of the blank after the blank has been subjected to pressure for giving final shape and finish to said jaws;

Figure 12 is a side elevation of the opposite end of the blank;

Figure 13 is an end view thereof;

Figures 14, 15 and 16 are top, side and end views, respectively, of the second end of the blank after it has been upset;

Figures 17, 18 and 19 are top, side and end views respectively, of the second end of the blank after the latter has been spread with a parting tool preparatory to forming jaws;

Figures 20, 21 and 22 are top, side and end views respectively, of the second end of the blank after the jaws have been completed and bearing lugs formed to prevent pivoting of the fulcrum;

Figures 23 and 24 are top and side views of the completed fulcrum with registered openings formed in the jaw members for the reception of a fulcrum pin in one end and a rivet in the other;

Figure 25 is a top plan view of a flat bar beam to which fulcrums formed by the method above indicated are secured;

Figure 26 is a sectional view of stationary and movable dies by means of which one end of the fulcrum is formed; and

Figure 27 is a similar sectional view of stationary and movable dies by means of which the other end of the fulcrum is formed;

The various novel features of the invention will be apparent from the following description and drawings, and will be particularly pointed out in the appended claims.

Referring to the figures of the drawings, it will be noted that a blank 30, in this instance of round stock, is provided having two end portions 31 and 32. The end 31 is first heated and then placed in a die and upset to build up sufficient stock 33 preparatory to forming jaws. The stationary die portion, as shown at 34 in the die block 35 of Figure 26, is used for such upsetting and also a movable die 36. The upset portion of this first end 31 of the blank is then hot-sawed, split, punched or spread to provide a longitudinally extending opening 37, as shown in Figures 6, 7 and 8, to form jaw portions 38. The same end of the blank is then placed in the stationary portion 39 of the die block 35 and subjected to further pressure by the movable die member 40 to form the completed jaws 41, as shown in Figures 9, 10 and 11.

The other or second end 32 of the blank is then heated and upset to build up stock at 42, as shown in Figures 14, 15 and 16. In this instance the second end 32 of the blank is placed in the stationary die portion 43 in die block 44 and subjected to pressure by a movable die member 45. The second end of the blank is then placed in the stationary die portion 46 and subjected to further pressure by the movable die 47 to spread the metal at that end for partially forming jaws 48, as shown in Figures 17, 18 and 19. The second end of said blank is then placed in the stationary die portion 49 of the die block 44 and subjected to further pressure by a movable die member 50 for completing the jaws 48 and, at the same time forming oppositely extending bearing lugs 51 to prevent pivoting of the fulcrum, as shown particularly in Figures 20, 21, 22 and 25. Registering openings 52 are then formed in the jaws 41 and registering openings 53 formed in the jaws 48, as shown in Figures 23 and 24, for completing the fulcrum.

In Figure 25 the fulcrums are shown as

applied to a flat bar beam 54 to the ends of which lever hangers 55 may be attached. Between the jaws 41 of each fulcrum there is received a brake lever 56 which is pivotally connected to the jaws by a pin 57 passing through the registering openings 52 in the jaws and through an opening in the brake lever. Another pin or rivet 58 extends through the registering openings 53 in the jaws 48 and also through the flat bar beam 54 for securing the fulcrum to said beam 54, and it will be noted that the bearing lugs 51 bear against an edge of the beam 54 for preventing a pivotal movement of the fulcrum with respect to said beam.

By means of the simple, efficient and improved method hereinabove described a brake beam fulcrum may be forged which is stronger and has a better finish, and produced at a cost lower than fulcrums heretofore made.

It is my intention to cover all modifications of the invention falling within the spirit and scope of the following claims.

I claim:

1. The method of forging a fulcrum consisting in providing a blank, heating same, upsetting one end thereof to accumulate sufficient metal to form jaws, forming a longitudinal opening in said upset end to provide spaced jaw portions, then treating said jaw portions to finish said jaws, then upsetting the other end of the blank to accumulate metal, then forming a longitudinal opening in said second upset end to provide spaced jaw portions, and then subjecting said end to further treatment to form completed jaws and bearing lugs to cooperate and prevent pivoting of the fulcrum.

2. The method of forging a fulcrum consisting in providing a blank, upsetting the ends thereof to accumulate sufficient metal to form jaws, treating the ends of said blank to form longitudinal openings to form portions of pairs of jaws, then treating said jaw portions for finishing said jaws, and providing bearing lugs adjacent one pair of jaws to cooperate to prevent pivoting of the fulcrum.

3. The method of forging a brake beam fulcrum consisting in providing a blank, heating the ends thereof, upsetting said ends to accumulate sufficient metal to form jaws, treating said upset ends to form longitudinal openings at an angle with respect to each other to provide pairs of spaced jaw portions, and then subjecting said jaw portions to further treatment for finishing said pairs of jaws and forming bearing lugs adjacent one pair of jaws and extending at the same angle as the opening between the jaws at that end.

Signed at Hammond, Indiana, this 7th day of December, 1923.

LOREN L. WHITNEY.