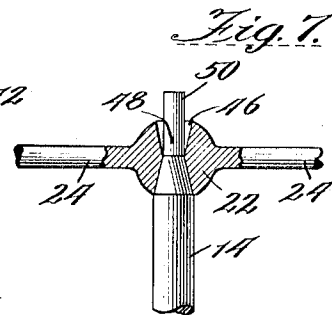
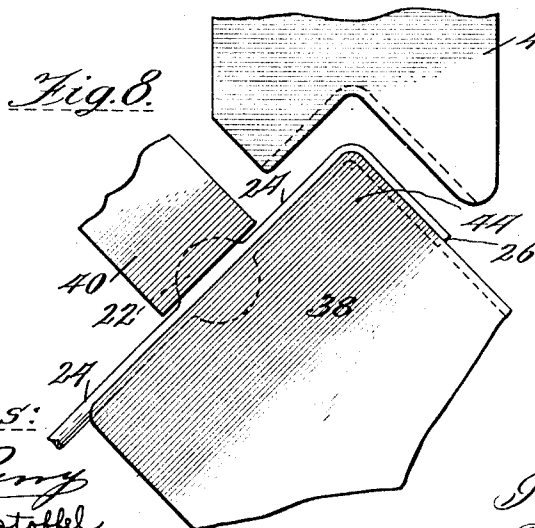
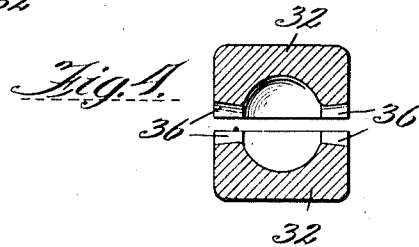
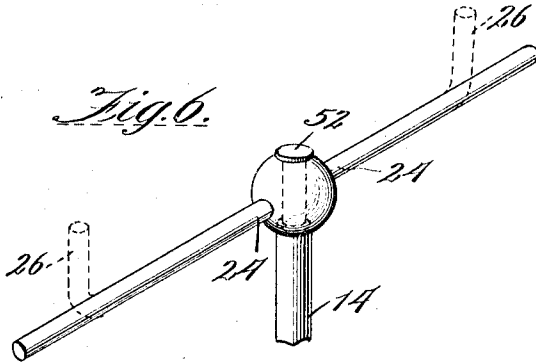
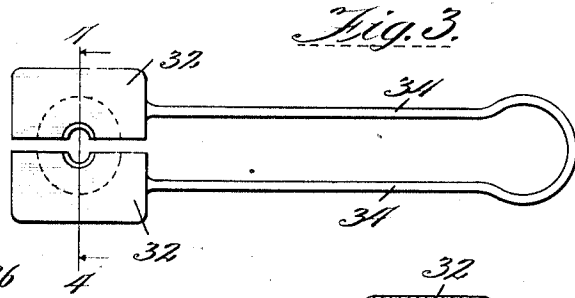
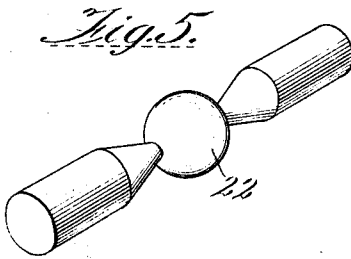
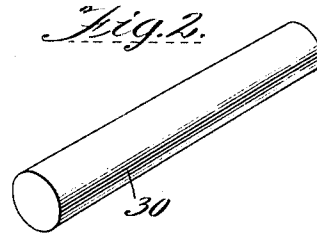
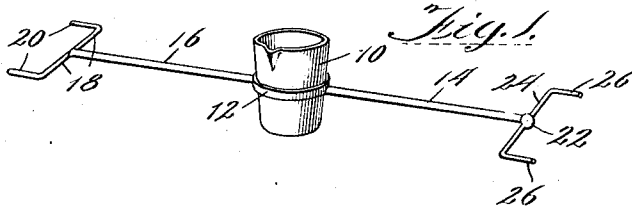


J. B. RODGER.
METHOD OF MAKING HANDLES FOR LADLES.
APPLICATION FILED APR. 12, 1909.

978,652.

Patented Dec. 13, 1910.



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UNITED STATES PATENT OFFICE.

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METHOD OF MAKING HANDLES FOR LADLES.

978,652.

Specification of Letters Patent.

Patented Dec. 13, 1910.

Application filed April 12, 1909. Serial No. 489,264.

To all whom it may concern:

Be it known that I, JAMES B. RODGER, a citizen of the United States, residing at Harvey, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Methods of Making Handles for Ladles, of which the following is a specification.

The object of this invention is to make a ladle handle from one piece of metal thereby doing away with a large amount of waste metal with consequent reduction in cost, also doing away with danger of breakage and therefore the danger to life and limb which frequently follows the breaking of any device used in connection with the handling of molten metal and finally the object is to reduce somewhat the weight and consequently improve the appearance of the device without sacrificing strength.

The invention consists in the method of making this device from a single piece of metal preferably in one heating of the raw material of which it is made.

Referring to the drawing, Figure 1 shows a ladle handle carrying a ladle. Fig. 2 shows the piece of stock metal from which the handle is made. Fig. 3 illustrates the die used for forming the central or bearing portion of the handle device. Fig. 4 is a sectional view on the line 4—4 of this device of Fig. 3. Fig. 5 illustrates the condition of the bar after the die illustrated in Fig. 3 has been applied and removed. Fig. 6 illustrates the method of applying the handle mechanism proper to the member 14. Fig. 7 illustrates another method of making the same connection and Fig. 8 shows the method and mechanism for forming the handle proper 26 upon the ends of the members 24.

Fig. 1 of the drawing illustrates a ladle used in an ordinary foundry for conveying molten metal from the cupola to the molds upon the floor. Such a ladle is ordinarily carried by two men one at each end of a carrying device consisting of an annular ring 12 supporting the ladle proper and having rigidly extending from it two bars 14 and 16. Rigidly secured to one of these rods as 16 is a handle member 18—20 by which the man at that end of the device may tilt the ladle. Upon the other end of the device as bar 14 is a handle member or bar 24 journaled upon the bar 14 by means

of the enlarged circular or spherical center portion 22 at substantially the middle of the member 24. The ends of the rod 24 are bent into grasping handles 26 adapted to be taken hold by the workman at that end of the device. It is practically necessary that this last mentioned handle mechanism be pivoted on bar 14 so that the workman grasping the handle 20 may rotate the ladle about said pivot as an axis for the purpose of pouring metal therefrom. It has heretofore been the practice to take a large chunk of metal of sufficient size to form the bearing member 22 and to weld thereon on opposite sides thereof the pieces 24—26 so as to form the complete ladle handle. This has been a slow, expensive method and an unsatisfactory one in that the handle portions 24 were apt to break off from the enlarged pivotal portion 22.

In making the device of this invention a bar of metal 30, illustrated in Fig. 2, is provided of the same diameter as the outside finished measure of the circular or bearing portion 22 of the finished handle. This whole bar 30 is heated up and by the aid of proper manipulating tools is placed under a heavy trip hammer or other similar device between the jaws 32 of a suitable die member mounted upon suitable handles 34 as illustrated in Fig. 3. At a blow from the trip hammer these die members 32 are forced together thereby swaging out through the openings 36 in the dies 32 all of the metal of the bar 30 adjacent to the center thereof which can not be accommodated in the central space between the dies 32 or in other words in the central ball 22. In other words the portion of the handle members 24 in close proximity to the ball shaped bearing member 22 are formed within these openings 36. While the metal 30 is still hot and preferably still inclosed within the device 32 the handles 24 are forged or drawn first into the condition of Fig. 5 and finally into that of Fig. 6. As the handles 24 are thus drawn out to uniform diameter the partly finished device is placed upon the block 38, the central portion 22 being held and engaged by the member 40, thereupon the hammer moves the member 42 into contact with the corner 44 of the block 38 thus bending the handle 26 from the full line position of Fig. 6 to the dotted line position of Fig. 6 or to the

finished position shown in Fig. 1. When the device has been thus far completed a hole 46 is punched or drilled through the center of the member 22 in a line parallel to the handles 20 and the end portion 48 of the bar member 14 is inserted therein as illustrated in Fig. 7 and the extreme end 50 of the bar member 14 is struck with the hammer thus causing it to form itself into the head 52 or any suitable form enlarged which will prevent the handle member from coming off from the end of the rod 14 this while permitting rotation of the member 22 about said bar 14 in the manner described. Any other well known form of pivotally attaching the member 22 to the end of rod 14 may be used without departing from the invention.

By this construction the handle is formed in a single piece in which the fibers or grains of metal run continuously around the enlarged bearing member 22 and through the handles thereby doing away with the danger of breakage where the welding is made as heretofore described. At the same time the process of manufacture is greatly cheapened.

The claims are:

1. The method of making a ladle handle consisting in taking a bar of metal of the required diameter for the central bearing member, heating said bar of metal, placing it in a die which forms the central bearing member and starts to form the handle, then while the metal is under the same heat drawing out the handle from the central portion to the right length and diameter.

2. The method of making a ladle handle consisting in taking a bar of metal of the required diameter for the central bearing member, heating said bar of metal, placing it under a die which forms the central bearing and starts to form the handle, then while the metal is under the same heat bending the ends of the handle into the desired position for the grasping handles for the purposes set forth.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

JAMES B. RODGER.

Witnesses:

C. H. BENTLEY,
G. R. BRANDON.