

W. A. RIDDELL.
MOLD.
APPLICATION FILED MAR. 9, 1909.

958,892.

Patented May 24, 1910.

Fig. 1.

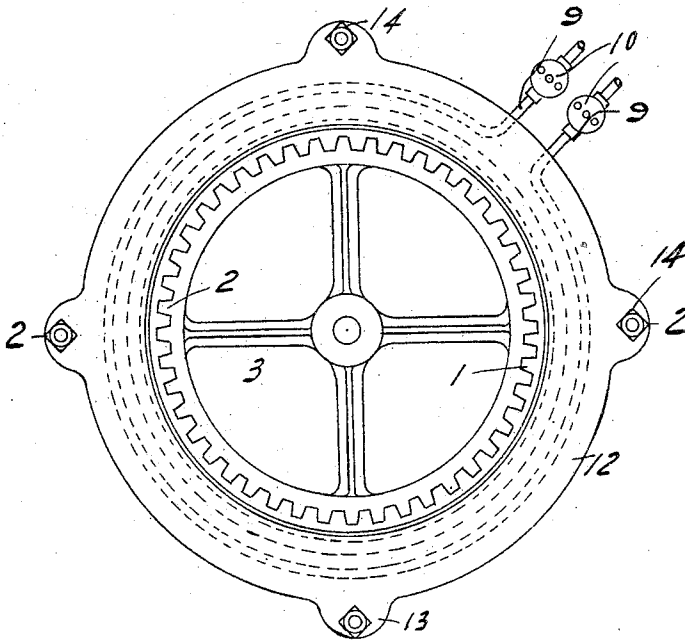


Fig. 3.

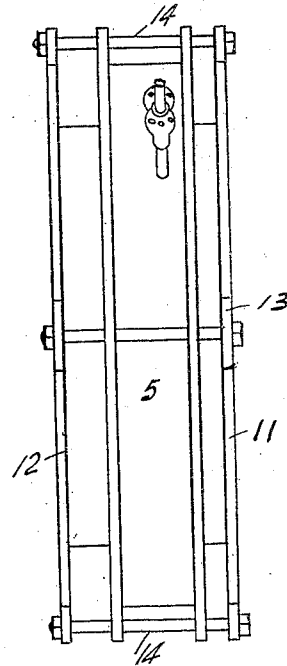
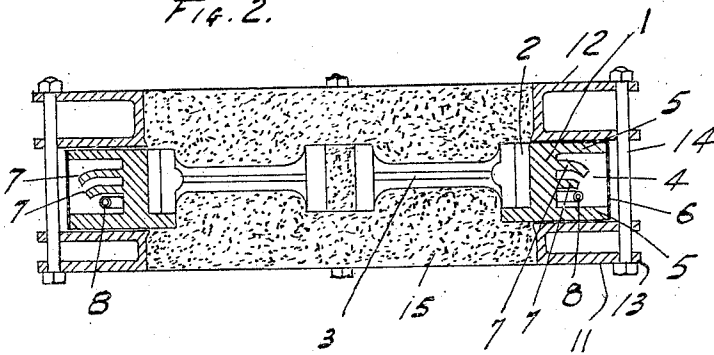


Fig. 2.



Witnesses
Mary W. Hammer
Albert Popkema

Inventor
William A. Riddell
by H. C. Lord
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM A. RIDDELL, OF ERIE, PENNSYLVANIA.

MOLD.

958,892.

Specification of Letters Patent.

Patented May 24, 1910.

Application filed March 9, 1909. Serial No. 482,208.

To all whom it may concern:

Be it known that I, WILLIAM A. RIDDELL, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented new and useful Improvements in Molds, of which the following is a specification.

This invention relates to molds, and consists in certain improvements in the construction thereof as will be hereinafter fully described and pointed out in the claims.

The object of the invention is to form a mold of metal having indentures in which may be cast articles similar to gears, and the invention is particularly desirable for casting articles of the kind specified of steel. In casting articles of this kind and of this material, difficulty has been experienced in fully filling the mold, the metal chilling before it has fully filled the indentures. With my invention I propose to heat this metal portion of the mold, so that the metal being cast, especially such a metal as steel, will fully fill the mold before chilling. In this way a perfect casting may be obtained, and the presence of the metal mold does not with this material change the nature of the casting.

In the accompanying drawings, Figure 1 shows a plan view of the mold, the sand being removed from the top of the mold. Fig. 2 a section on the line 2—2 in Fig. 1. Fig. 3 a side elevation of the mold.

1 marks the metal mold section, which in the drawing is in the shape of a ring having indentures 2 shaped to form gear teeth; 3 marks the sand mold, which in the illustration is arranged to form the body of the gear wheel.

The mold section 1 is formed with an annular chamber 4 on its outer periphery, the chamber being preferably constructed by means of the flanges 5, and a surrounding ring or band 6. Annular flanges 7 extend into the chamber 4, and a burner 8 is arranged in the chamber in position to direct a flame against the flange. The burner is provided with the usual mixer 10. The flanges 7 stiffen the ring 1, but they also increase the heating surface, so that the ring may be readily heated to the desired temperature.

A flask 11 is arranged at the bottom of the ring 1, and another flask 12 at the top. These are bolted together, so as to clamp the ring 1 between them by means of the bolts 14 extending through the ears 13.

As shown in Fig. 2 the metal mold forming the periphery of the gear is supplemented by the sand 15 forming the mold for the body of the gear.

With this construction of the mold, it is possible to cast steel gears with perfectly formed teeth. This is particularly desirable with this metal for two reasons, the surface is clear from the sand with which such castings are usually coated, and the metal itself is not materially changed by the presence of the metal mold.

What I claim as new is—

1. A mold for casting forms with protuberances comprising a metal mold section having indentures in which the protuberances of the castings run; and means for heating the metal mold section.

2. A mold for casting gears, comprising a metal ring having indentures therein to form the gear teeth; and means for heating said ring.

3. A mold for casting forms with protuberances comprising a metal mold section having indentures in which the protuberances of the castings run; an annular chamber on the periphery of said section; flanges extending into the chamber; and means acting on the flanges for heating the section.

4. A mold for casting forms with protuberances comprising a metal mold section of the annular form having indentures in which the protuberances of the castings run; an annular chamber on the mold section; annular flanges extending from the section into the chamber; and means acting on the flanges for heating the chamber.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM A. RIDDELL.

Witnesses:

CHARLES G. BREVILLIER,
K. R. KANE.