

No. 895,883.

PATENTED AUG. 11, 1908.

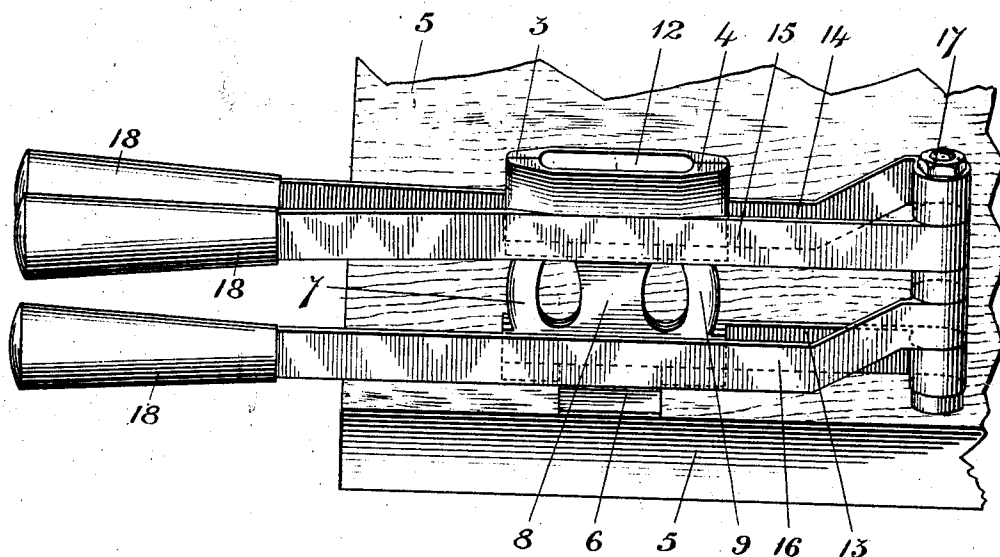
C. S. McINTIRE.

APPARATUS FOR CASTING LINKS IN CHAIN FORM.

APPLICATION FILED FEB. 17, 1908.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

J. B. Gage
W. H. Kessler

Inventor

Charles S. McIntire
James L. Norris

Atty.

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3 SHEETS—SHEET 2.

Fig. 2.

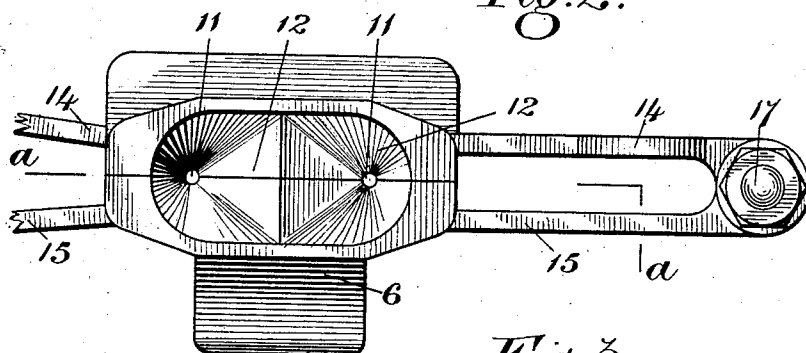


Fig. 3.

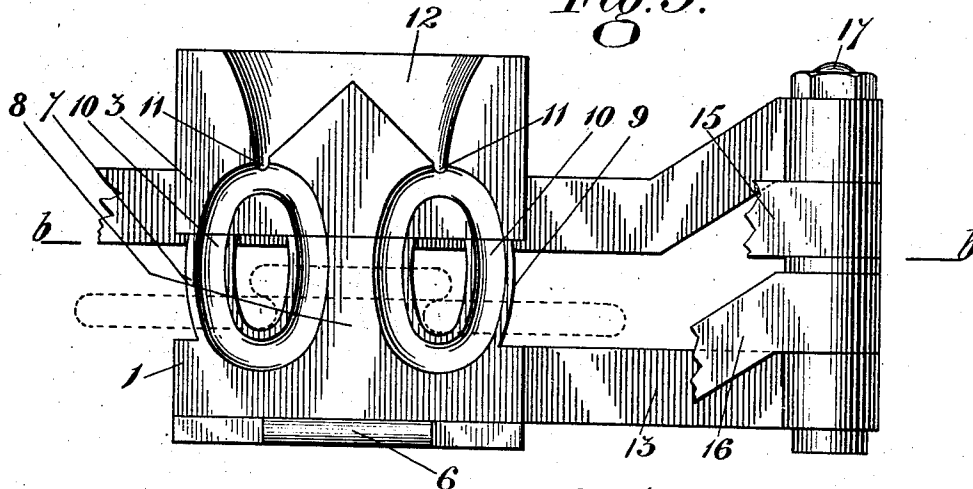
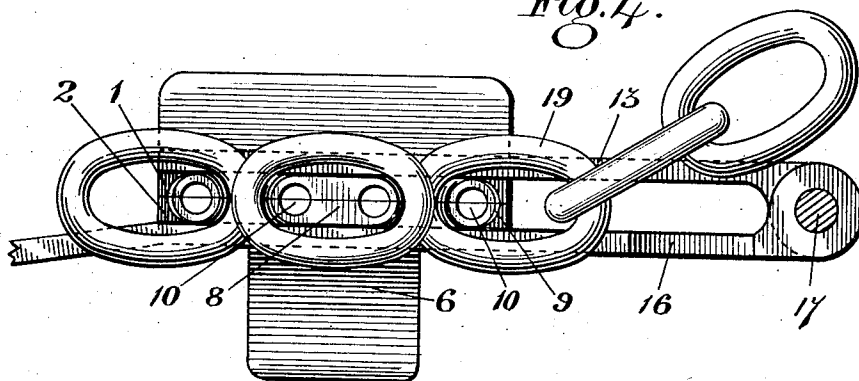


Fig. 4.



Witnesses:

James L. Norris
James L. Norris

Inventor

Charles S. McIntire

James L. Norris

Atty.

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3 SHEETS—SHEET 3.

Fig. 5.

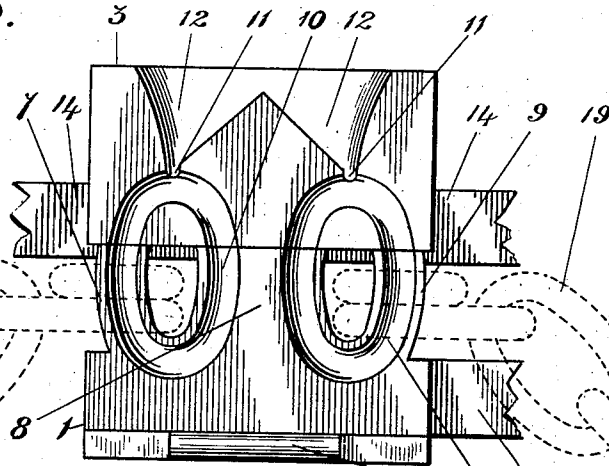


Fig. 6.

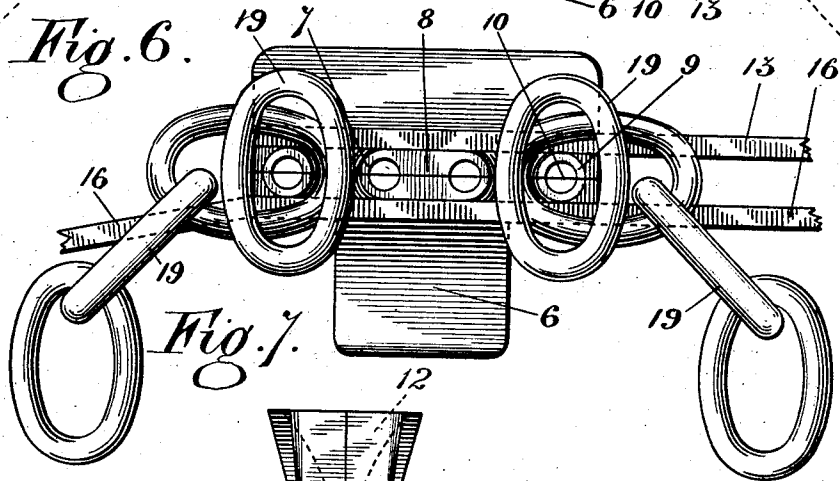
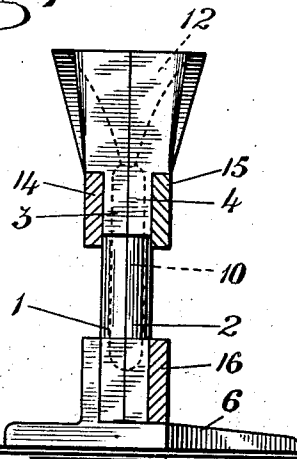


Fig. 7.



Witnesses

John H. ...
Ed. Mesler

Inventor

Charles S. McIntire

James L. Norris

Att'y

UNITED STATES PATENT OFFICE.

CHARLES SHIELDS McINTIRE, OF BRIXTON, LONDON, ENGLAND.

APPARATUS FOR CASTING LINKS IN CHAIN FORM.

No. 895,883.

Specification of Letters Patent.

Patented Aug. 11, 1908.

Application filed February 17, 1908. Serial No. 416,328.

To all whom it may concern:

Be it known that I, CHARLES SHIELDS McINTIRE, a subject of the King of Great Britain, residing at 83 Effra road, Brixton, London, England, have invented certain new and useful improvements in Apparatus for Casting Links in Chain Form, of which the following is a specification.

This invention relates to that class of apparatus wherein links of a chain are cast in a mold composed of four pieces, and in which mold a link already cast is placed in such position that the newly cast link is in engagement with same, and as the casting proceeds, a chain is formed. In such constructions hitherto known, a great disadvantage has occurred by reason of the construction of the sections forming the molds, and by the extreme heat to which the molds are subjected to, by the molten metal preventing proper fitting of the sections of the molds together to insure a well made link without jagged edges being formed at the seams, or meeting edges of the mold sections. In all molding devices for casting chain links, the sections forming the mold have been placed together in a box or like appliance, and clamped or held together by pins, wedges or the like, and in consequence, the sections, after casting, have to be removed separately and laid upon a bench to cool, to be afterwards handled and refitted for casting. This entails great labor, and a slow process of working, and as before stated, imperfect working and construction of links by reason of the indifferent register of the sections, due to heat and other causes.

Now the object of my invention is to overcome these disadvantages, and construct an apparatus which shall always be efficient; the sections always in register with each other, thus insuring a proper shaped link at each casting, and of such a nature that the apparatus will not get so heated as to be unworkable for a time, so insuring continuous working, and further, all the parts are connected together and easily operable by hand to place them in position for casting and removing of the link or chain.

My invention will be clearly understood from the annexed drawings in which, at Figure 1, I show a perspective elevation of my apparatus in position for casting two links and attached to a base which forms part of a stand or bench. Fig. 2. is a plan of the apparatus with the handles removed.

Fig. 3. is a face view of two half molds on the line *a a* of Fig. 2. Fig. 4. is a plan of the two bottom half molds on the line *b b* of Fig. 3. In Figs. 3 and 4, the casting two links at a time and the making of one chain is shown, the position of the already made links being shown in dotted lines Fig. 3, and full lines Fig. 4. Figs. 5 and 6, are similar views to Figs. 3 and 4, but showing the position of the already made links, Fig. 5, in dotted lines, and Fig. 6 in full lines, when casting links for making two chains at a time. Fig. 7. is an end elevation of the apparatus with the handles removed.

According to this invention, the apparatus is constructed with a mold composed of four pieces or sections 1, 2, 3 and 4, the section 1 being attached to a base 5 forming part of a stand or bench, and having a projecting member 6, which forms the rest or support for the section 2 when the bottom half mold is closed up.

Each bottom half mold is formed with uprightly extending arms 7, 8 and 9, and such arms have grooves 10 which extend into the mold as shown, and when the two half molds 1, 2, are placed together, the grooves 10 form two holes of the shape of a portion of the links to be cast. The arms 8 have two grooves 10 which extend outwards through the sections 1, 2, to the arms 7, 9, so as to form holes for two links.

Each half section 3 and 4 is formed with grooves 10 which coincide with the grooves in the sections 1 and 2, and when the whole of the sections are joined together, the combined grooves form two holes of the shape of the link, and into which the metal is poured to form the links.

Each groove in the upper sections 3 and 4 has a passage 11 at the upper part leading to a recessed portion, and when the whole of the sections are placed together, these recessed portions form a receiver 12 into which the molten metal is poured for casting the links.

To each section 1, 2, 3, and 4, is attached a rod 13, 14, 15, 16, such rods being connected together at a distance from the mold by a hinge joint 17. The rods 14, 15, 16, are continued on the side of the mold opposite to that of the hinge, and terminate in handles 18, by which the mold sections are opened and closed.

In the drawings, the rods 14 and 15 are positioned with a portion thereof projecting below the sections 3, 4. This projecting por-

tion acts as a block or wall which when the sections 3 and 4 are closed on to the sections 1 and 2, insure that the sections 3 and 4 are in register with 1 and 2, but a depending lip 5 from the sections 3 and 4 will answer the same purpose.

The meeting faces and edges of the sections 1, 2, 3 and 4 are smooth, and fit to a nicety, and in assembling the sections together, the 10 section 2 rests on the projecting member 6, and the sections 3 and 4 upon the sections 1 and 2, with the depending portion or portions of the rods 14, 15, close up to the outer edge of the sections 1 and 2, the whole being in 15 register and held thereat. If I desire to cast links separate, I now pour the molten metal into the receiver 12, the metal flowing into the holes 10 and forming the links, and after sufficient cooling, the sections are opened out, 20 when the newly made links fall away on to the bench or table 5 to be afterwards removed, and on a reassembling of the sections, a further casting can be effected.

When I desire to cast links so as to form a 25 single chain, I close the sections 1 and 2, and I place already made links 19 over the arms 7, 8, and the end link 19 of a chain over the arm 9 as shown in Fig. 4. I then close the two sections 3 and 4, together, on to the sections 1 and 2, pour in the molten metal, when 30 the separate links and the end link of the chain will be connected. This being one casting I connect up three links and add at one operation four links to a chain.

35 When I desire to build up two chains at one time, instead of placing a previously made link over the arm 8, I place the link at one end of each chain, and an already made link over each arm 7 and 9, and then proceed 40 to cast, thus having each length of chain built up two links at a time.

As before stated, the hinge 17 is at a distance from the mold, this is to prevent the heat from the molds interfering with the 45 proper action of the hinge and allowing of proper positioning of the mold sections to

insure perfect register, and the arms 7, 8 and 9 allow of the previously made links being placed in position, and open to the air, so that they do not get highly heated, as is 50 the case when within the mold.

By this invention, each link is cast practically smooth on the outside, without any sharp projecting edge caused by the meeting surfaces of the sections, and the only part 55 to be removed after casting is a small portion which generally fills the passages 11.

What I do claim and desire to secure by Letters Patent is:—

An apparatus for casting chain links comprising a mold formed of a pair of lower and a pair of upper sections, each of said lower sections provided with three upright arms arranged in longitudinal alinement, the intermediate arm being formed with a pair of 65 grooves which extend in the body of each lower section, said outer arms each provided with a groove terminating in a groove of an intermediate arm, each of said upper sections provided with grooves having the 70 lower terminus adapted to register with the upper terminus of the grooves of a lower section, the grooves of the lower sections adapted to oppose each other and the grooves of the upper sections adapted to oppose each other 75 so that when the grooves in the upper sections register with the grooves of the lower sections a pair of continuous channels are formed, said upper sections provided with means constituting a receiver and which 80 communicates with the grooves in said upper sections, and means for moving the sections together and for insuring the registering of said grooves, combined with a suitable support for the mold. 85

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

CHARLES SHIELDS MCINTIRE.

Witnesses:

RICHARD CORE GARDNER,
LYNWOOD F. GARDNER.