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METAL CORE FOR USE IN CASTING HOLLOW BODIES.
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1,059,620.

Patented Apr. 22, 1913.

Fig. 1.

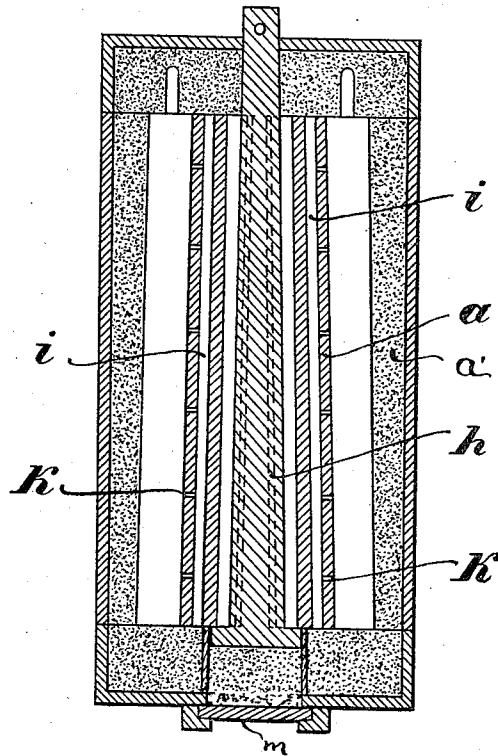
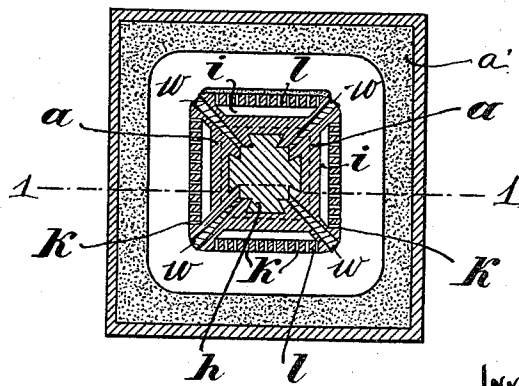


Fig. 2.



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METAL CORE FOR USE IN CASTING HOLLOW BODIES.

1,059,620.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed July 15, 1910. Serial No. 572,152.

To all whom it may concern:

Be it known that I, WILHELM KURZE, of Wilhelmshütte, Neustadt-on-the-Rubensberge, near Hanover, Prussia, in the German Empire, manufacturer, have invented new and useful Improvements in or Relating to a Metal Core for Use in Casting Hollow Bodies, of which the following is a specification.

This invention relates to a longitudinally divided metal core for use in the casting of hollow bodies of the kind in which the separate or individual core sections are held together by a central core or member which can be removed immediately after the casting operation.

According to the present invention contraction spaces are provided between the individual core sections in such a manner that after the removal of the central core the single core sections can immediately yield to the contraction of the casting. Moreover the core sections are each provided with cavities communicating with the outside through appropriate apertures whereby the core parts are not only cooled from the inside as hitherto but a much better cooling effect is attained and the life of the core is substantially increased.

The invention is illustrated by way of example in the accompanying drawing in which:

Figure 1 is a vertical section on the line 1—1 of Fig. 2 of a core constructed according to the present invention, and Fig. 2 is a cross-sectional view thereof.

The individual core sections *a* forming the longitudinally divided metal core, which is placed in the mold in the usual manner, are held together by a central core or member *h*. The latter, as shown in the example illustrated is tapered upwardly, and is provided with dovetail shaped projections which engage with corresponding recesses in the adjacent core sections. Of course the connection of the central core with the core sections can be effected in any other appropriate manner. In order to enable the central core *h* to be removed from the mold, an opening provided with a closing slide *m* or the like is by preference arranged in the lower mold section.

The core sections themselves may be so constructed as to have a snug fit or to tightly

interlock or engage with one another and thus prevent any fluid material from penetrating between them. In the intermediate core spaces conical iron wedges *w* may be fitted, which may be withdrawn together with the central core prior to the contraction of the casting. These wedges bear against the edges of the central core and completely fill the spaces between the adjacent core sections. Of course these wedges are also slightly tapered, longitudinally, so as to enable them to be easily removed from the spaces between the core sections upon the withdrawal of the tapered central core. The surrounding spaces are filled in with refractory earth or the like *a'*. The described construction enables the usual filling mass, such as sand, saw dust, and the like, to be dispensed with.

The single core sections are provided with cavities *i* which communicate with the outside through ports, holes or slots *k*. The cavities or spaces *i* have for their object to receive the gases developed by the core lining, said gases entering the cavities *i* through the ports or holes *k*, while, moreover, they admit cooling air to the outer walls *l* of the core sections. Thus too rapid heating of the core is prevented and consequently the life of the core is rendered unlimited. It is of course immaterial into how many sections the core is divided and what its shape or form may be.

For soft castings the core sections may outwardly be completely coated with an appropriate substance. By preference silicic acid, linseed oil or sugar solution may be used for the purpose, and applied in appropriate layers of, for instance, 20 to 30 mm. in thickness. The contraction spaces may be also filled with suitable substances such as molasses, sand, and saw dust, and the outer spaces with refractory earth. In order to produce steel castings, however, the divided core and central core are, as a rule, used without any lining.

What I do claim as my invention, and desire to secure by Letters Patent of the United States, is:—

1. In a metal core for use in casting hollow bodies, the combination with a series of core sections each having a longitudinal cavity and openings through the outer wall leading into said cavity, of a central core

having an interlocking engagement with said sections and bodily movable from between said sections.

2. In a metal core for use in casting hollow bodies, the combination with a series of core sections set with spaces between their adjacent faces, each section having a longitudinal cavity and openings through the outer wall leading to said cavity, of a central core bodily insertible between said sections to hold them in their spaced relation and bodily removable from between said sections, whereby the sections are freed to move to the extent of said spaces, to accommodate the contraction of the casting.

3. In a metal core for use of casting hollow bodies, the combination of individual core sections, each section having a longitudinal cavity and openings through the outer wall leading into said cavity, and a central core having a sliding locking engage-

ment with the said individual core sections, there being spaces between the individual core sections for the contraction of the castings, substantially as described.

4. In a metal core for use in casting hollow bodies, the combination with individual core sections, there being spaces between the adjacent faces of said sections, of a central core around which said sections are arranged, and wedges filling the spaces between the adjacent faces of the core sections, said core and wedges being bodily removable from between said sections.

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

WILHELM KURZE.

Witnesses:

J. M. BOWCOCK,

ROBERT V. BULON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."