Dec. 17, 1929. W. WATSON 1,740,052

HYDRAULIC CASTING WASHING APPARATUS

Filed Aug. 20, 1926

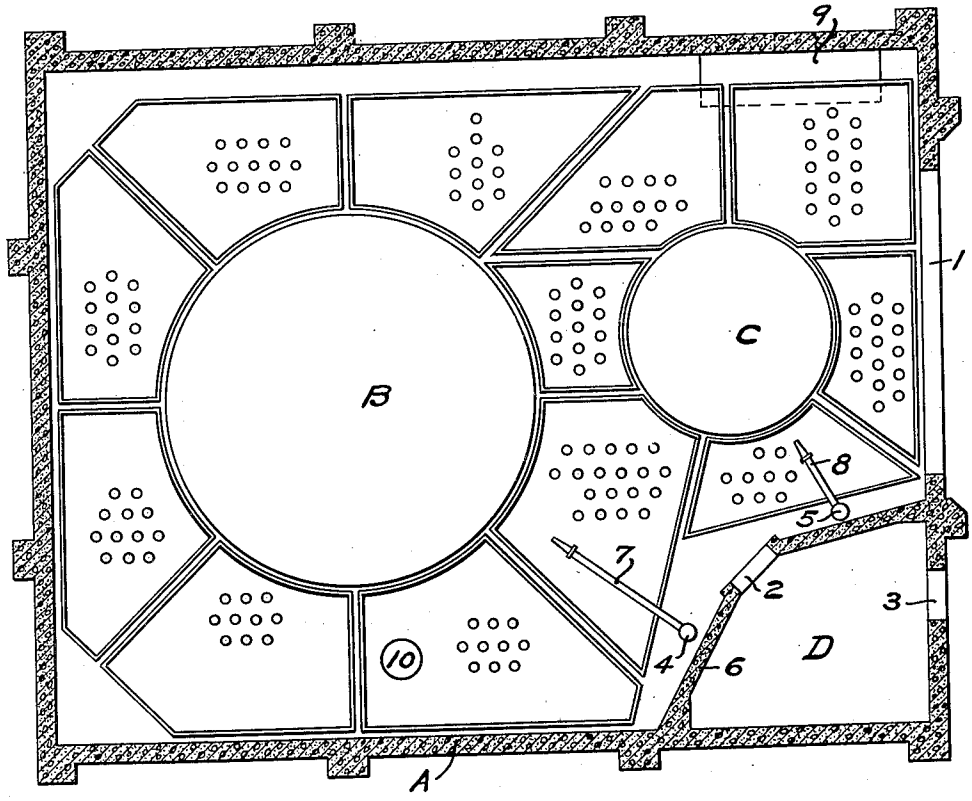


Fig. 1

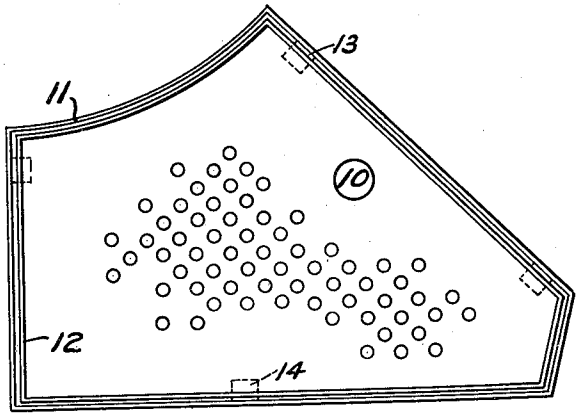
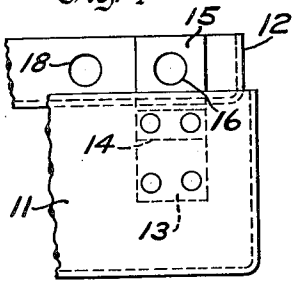


Fig. 2

Fig. 4



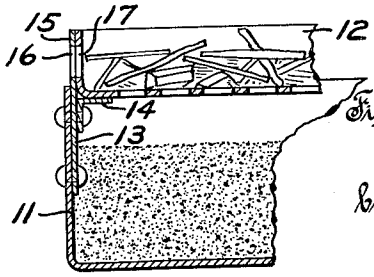


Fig. 3

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UNITED STATES PATENT OFFICE

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HYDRAULIC CASTING-WASHING APPARATUS

Application filed August 20, 1926. Serial No. 130,427.

This invention relates to hydraulic casting washing apparatus in general comprising universal nozzles supplying jets of water at high velocity to a casting located on a turntable within a housing usually located directly in the foundry.

The object of the invention is to provide a better means for collecting débris that collects on the floor of the housing. This débris comprises core sand, core rods, arbors, bricks, coke, etc. If the larger pieces can be separated from fine material this collection and removal of débris can be greatly facilitated. A more specific object of the invention is to automatically provide for a separation of the coarse and fine material of the débris as it is washed out of the casting.

In the drawing forming a part of this specification the same reference characters apply to the same or similar parts in the various views.

Fig. 1 is a sectional plan view of the housing of a hydraulic casting washing apparatus together with essential parts of the same.

Fig. 2 is an enlarged plan view of one of the sectional pans with a similarly shaped screen carried within and above the same.

Fig. 3 is a vertical sectional enlarged detail of the same showing the fine material collected in the pan and the coarse material collected by the screen.

Fig. 4 is a vertical view of a detail of the pan and screen showing the means for crane attachment.

A housing A comprises a chamber having concrete walls, the chamber being preferably built in the clean-up end of the foundry. The housing has a doorway 1 at one end suitably closed by doors, not shown, and opening into the foundry in a direction parallel to the craneway of the foundry, so that castings can be picked up in the foundry by the crane and be transported through the doorway into the housing and deposited on either one of the turntables B, C. For this purpose it should be understood also that the roof of the housing A is in sections and slidable towards the left, in Fig. 1, so as to entirely open the top of the housing so as to get the castings in by means of the crane. A nozzle and control station D is built in the lower right hand end of the housing, Fig. 1. Doorways 2, 3 suitably provided with doors, not shown, are provided for access to the station D. Stand pipes 4, 5 are located in the housing A just in front of the partition 6 cooperating to form the station D. Universal nozzles 7, 8 connect with the stand-pipes 4, 5 respectively, and have suitable operating handles, not shown, extending into the station D. These nozzles 7, 8 are so arranged that jets therefrom may be directed on the castings located on turntables B, C.

The floor of the housing A has a slight pitch towards a discharge pit 9 in the upper right hand end of the housing of Fig. 1. Substantially the entire floor of the housing A is covered by sectional pans 10. These pans fit quite closely the walls of the housing, the turntables and each other, leaving only sufficient space around them so as to conveniently secure attachment to the crane hooks. The pans 10, Fig. 1, are actually compound, being comprised of a lower pan 11 proper, and upper pan shaped screens 12, as better shown in Figs. 2, 3 and 4. Straps 13 and angle pieces 14 are riveted at intervals to the side walls of the pans 11. The straps 13 extend above the side walls of the pan 11 forming ears 15 having perforations 16 therein. The screens 12 are supported on the angle pieces 14 and the side walls of the screens 12 have perforations 17 in alinement with the perforations 16 of the ears 15, and also have perforations 18 out of alinement with the ears 15. These perforations 17, 18 of the screens 12 are located above the side walls of the pans 11. It will thus be seen that there are no crane attaching parts extending above the side walls of the screens 12.

During hydraulic washing of casting with this apparatus, all the débris is forcibly washed from the castings on the turntables B, C, by the jets issuing from the nozzles 7, 8, and is scattered all over the floor of the housing A. Or rather, all this débris is caught by

pans substantially covering the floor of the housing A, the coarse material of the débris being caught by the upper screens 12 while the fine material of the débris passes through the perforations of the screens 12 and is collected in the pans 11. There is thus automatically secured a separation of the coarse and fine material of the débris. After the washing operation proper is completed, the housing is opened up by sliding back the sections of the top and opening up the doors of doorway 1. This is all accomplished from within the nozzle and control station D by suitable electrical control apparatus, not shown. The washed castings can then easily be removed from the turntables B, C, by the crane and taken to the chipping room for further treatment. Many of these casting washing operations can be performed, usually a full day's operation, before it is necessary to clean up by removal of the débris, and this can be conveniently accomplished by bodily removing the sectional compound pans 10 and then separately dumping the contents by lifting the screens 12 alone off the pans 11, after which each can be dumped at any convenient points of collection of the coarse and fine material. The pans are then restored to the floor of the housing A for further casting washing operations.

It should be understood that it is not desired to limit the invention to the exact details of construction and operation herein shown and described, for various modifications within the scope of the claims may occur to persons skilled in the art.

It is claimed and desired to secure by Letters Patent:

1. In a hydraulic washer for castings, means for supporting a casting during washing, and means comprising a plurality of sections each having means for collecting fine material separately from coarse material washed from the casting and from said supporting means, said collecting means substantially covering the adjacent floor space surrounding said supporting means and the sections thereof being independently removable.

2. In a hydraulic washer for castings, means for supporting a casting during washing, means comprising a plurality of sections each consisting of parts for collecting fine material separately from coarse material washed from the casting and from said supporting means, said collecting means substantially covering the adjacent floor space surrounding said supporting means, and means for effecting removal of the parts of each section of said collecting means either separately or collectively.

3. In a hydraulic washer for castings, means for supporting a casting during washing, and means comprising superimposed parts for collecting coarse and fine material respectively washed from the casting and from said supporting means, said collecting means adjoining said supporting means and the upper parts thereof being removable independently of the lower parts.

4. In a hyraulic washer for castings, means for supporting a casting during washing, and means comprising a plurality of sections each consisting of superimposed parts for collecting coarse and fine material respectively washed from the casting and from said supporting means, said collecting means substantially covering the adjacent floor space surrounding said supporting means, and the upper parts of said collecting means being removable independently of the lower parts and of parts of an adjacent section.

5. In a hydraulic washer for castings, means for supporting a casting during washing, said sectional pan adjoining said supporting means for directly collecting material washed from the casting and from said supporting means, and a removable screen in each section of said pan spaced from the bottom thereof.

6. In a hydraulic washer for castings, means for supporting a casting during washing, a sectional pan surrounding said supporting means for directly collecting material washed from the casting and from said supporting means, a removable screen in each section of said pan spaced from the bottom thereof, and means for effecting either independent or simultaneous removal of a screen and of the corresponding pan section.

7. In a hydraulic washer for castings, a turntable for movably supporting a casting to be washed, and means comprising normally stationary superimposed parts for collecting coarse and fine material respectively washed from the casting and from said turntable, said collecting means adjoining said turntable and the upper parts thereof being removable independently of the lower parts.

8. In a hydraulic washer for castings, a turntable for movably supporting a casting to be washed, a sectional normally stationary pan adjoining said turntable for directly collecting material washed from the casting and from said turntable, and a removable screen in each section of said pan spaced from the bottom thereof.

In testimony whereof, the signature of the inventor is affixed hereto.

WILLIAM WATSON.

CERTIFICATE OF CORRECTION.

Patent No. 1,740,052. Granted December 17, 1929, to

WILLIAM WATSON.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, line 85, claim 5, strike out the word "said" first occurrence and insert instead the article "a"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 28th day of January, A. D. 1930.

(Seal)

M. J. Moore,
Acting Commissioner of Patents.