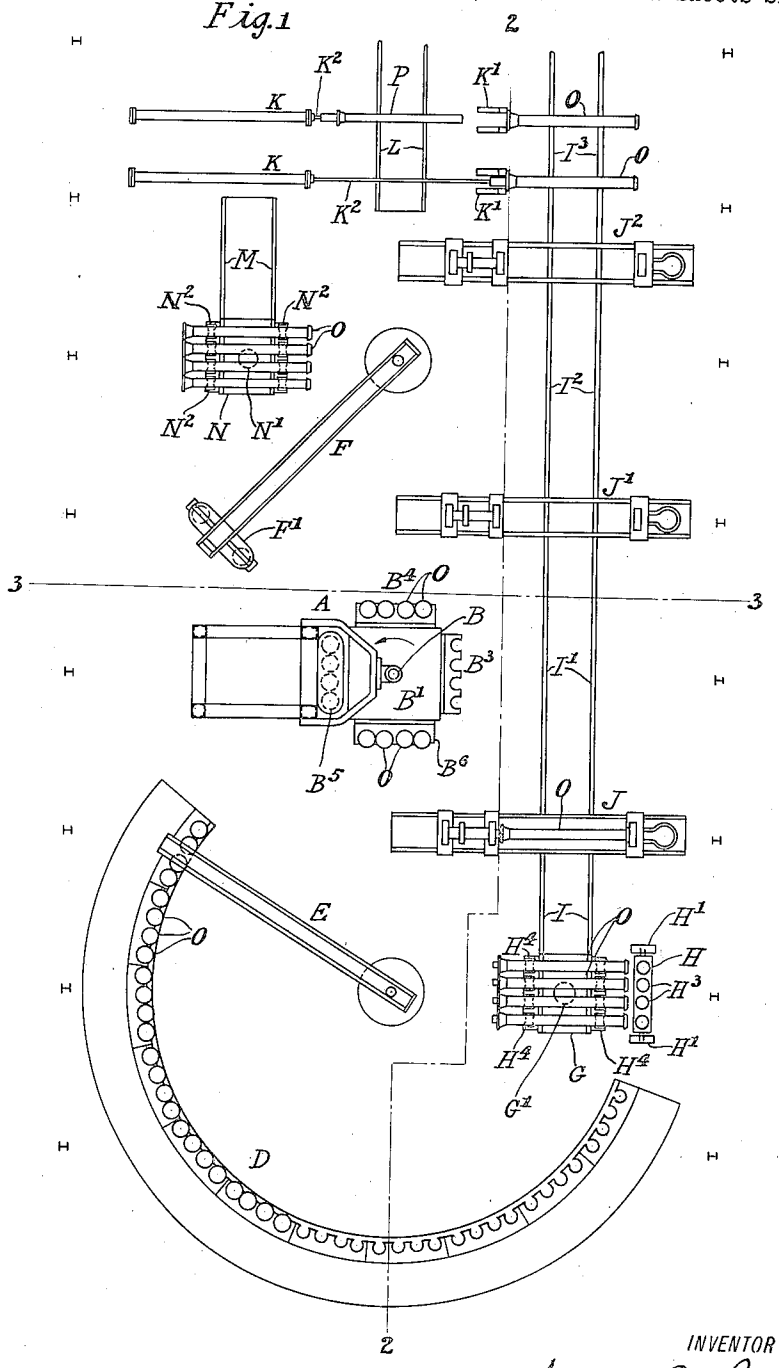
Aug. 21, 1923. 1,465,276

J. B. LADD

FOUNDRY PLANT

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Fig. 1



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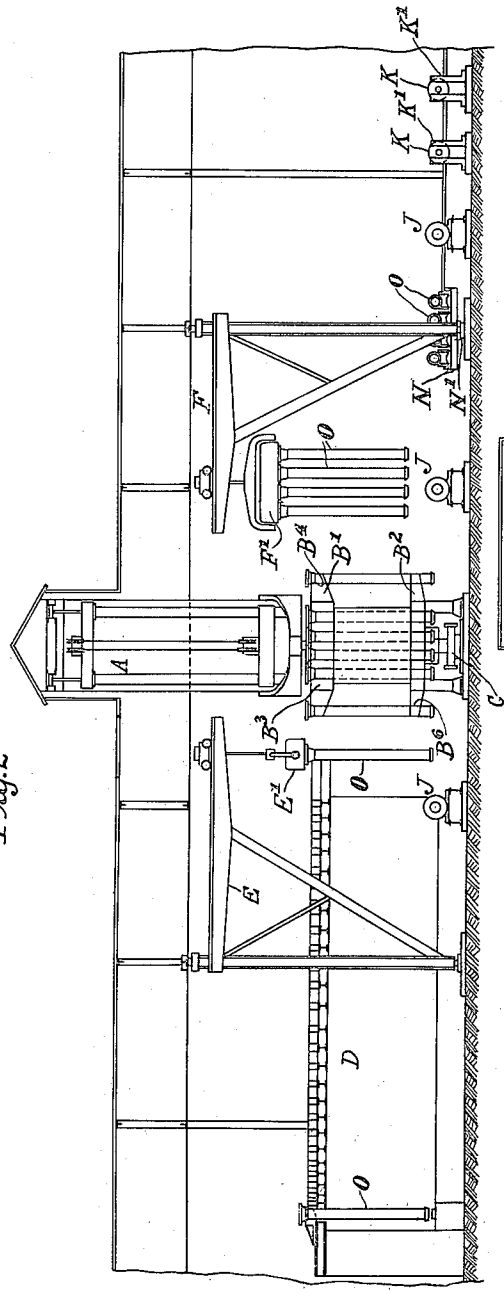


Fig.2

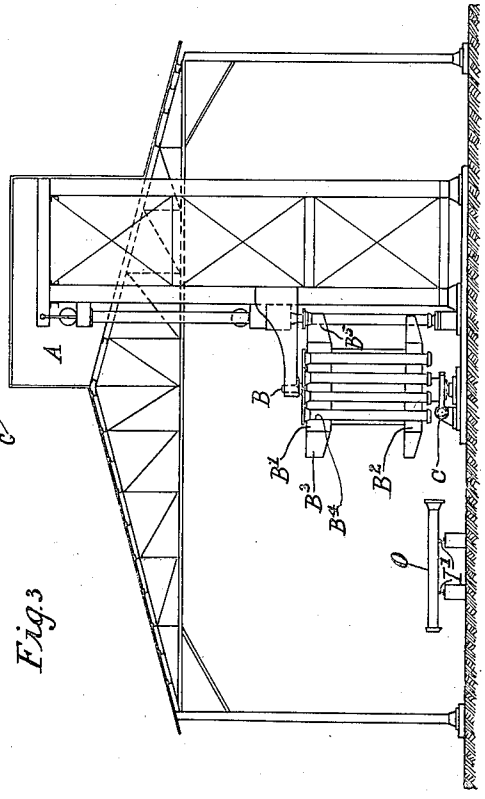


Fig.3

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UNITED STATES PATENT OFFICE.

JAMES B. LADD, OF ARDMORE, PENNSYLVANIA, ASSIGNOR TO UNITED STATES CAST IRON PIPE & FOUNDRY COMPANY, OF BURLINGTON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

FOUNDRY PLANT.

Application filed November 5, 1921. Serial No. 512,982.

To all whom it may concern:

Be it known that I, JAMES B. LADD, a citizen of the United States of America, and resident of Ardmore, in the county of Montgomery, in the State of Pennsylvania, have invented certain new and useful Improvements in Foundry Plants, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My invention relates to the designing of a foundry plant especially designed and adapted for the handling of mold flasks used in the operation of the centrifugal casting of pipes. The object of my invention is to devise a mold handling plant in which the necessary handling of the flasks can be carried out by the action of two jib cranes arranged to combine with other operating parts and devised for the rapid, economical and efficient handling of the flasks.

The nature of my improvements will be best understood as described in connection with the drawings in which they are illustrated and in which

Figure 1 is a plan view of a plant constructed in accordance with my invention.

Figure 2 is a sectional elevation on the line 2—2 of Fig. 1 and

Figure 3 a sectional elevation on the line 3—3 of Fig. 1.

A indicates a flask ramming machine which may be of any convenient construction and is shown as one adapted for the simultaneous ramming of groups of four flasks. In operative relation with the ramming machine is a rotatable rack support indicated as consisting of a pivot center B with two rack supporting platforms B′ and B^2 attached to it. These rack supporting platforms support four racks indicated at B^3, B^4, B^5 and B^6, each rack being adapted to receive a group of four flasks and being arranged so that each rack lies at an angle of 90° with the adjacent ones. C indicates the actuating mechanism by which the rotatable racks are progressively rotated through an angle of 90° at a time. E is a jib crane, the operative radius of which extends to the rotating rack support and to a drying rack indicated at D and also to a flask receiving structure which, as shown in Fig. 1, consists of a head H rotatably held in supports H′, H′, and having formed in it a series of flask receiving cavities H^3 which lie opposite to a series of flask receiving rolls H^4 H^4, etc. in connection with which operates a platform G supported on a vertically movable plunger G′ and by which the flasks can be lifted from the rolls and rolled onto the track section indicated at I. J, J′, J^2, indicate centrifugal casting machines; the track sections I′ and I^2 lying between the machines and the track section I^3 lying beyond the machine J^2. K, K, are pipe pulling cylinders; K′ K′ flask holding devices arranged opposite to each of the cylinders; K^2 K^2 the pulling rods of the cylinders. L is a track section for receiving pipes and M a track section for receiving the flasks at the end of which is arranged a gripping device consisting of a platform N supported on a vertical plunger N′ and carrying spacing rolls N^2 by which a group of four flasks is properly spaced for engagement with an electromagnet supported by the jib crane F. This jib crane having a radius which includes the rotary rack support B, B′, the gripping mechanism indicated at N and the track section I^3 on which the flasks rest when the pipes are pulled from them. O, O, etc. indicate the flasks and P a pipe casting formed in the flasks.

In operation a group of flasks partly spaced on the mechanism indicated at N is lifted by the jib crane F and transported to the rotary rack indicated at B^4. This rack is then rotated through an angle of 90° into operative position with regard to the ramming mechanism where the group of flasks is properly filled and rammed with molding sand. Another 90° movement of the rotary rack carries it to the position indicated at B^6 where the group of rammed flasks is engaged by the jib crane and carried to and deposited in a rack D. After the flasks are properly dried the jib crane E lifts them from the rack D and transports them to the receiving mechanism indicated at H^3 the ends of the flasks being lowered into the cavities of the pivot head H and then let down in the rollers H^4. From these rollers the flasks are lifted by the platform G and rolled onto the track section I from which in operation they are lifted by the crane E to the rotary casting machine J and after the casting operation lifted onto the track section I′ and rolled into a position within reach of the crane F. Other flasks in the construction indicated are lifted

by the crane E from the track section I and delivered onto the track section I′ from which they are lifted by the crane F and delivered to the casting machines J′ or J² and after the casting operation is complete the molds are carried by the crane F to the track section I³ where they are engaged by the holders K² and the pipes engaged by the pulling rods K′ of the pulling cylinders K, K. The pipes being pulled out on to the track L the flasks are then transported by the crane F to track section M where after being properly cleaned they are moved onto the group platform N and after being properly grouped, engaged by the crane F and carried by it to the rotary rack holding mechanism B, B′.

The feature of the plant above described which consists of constructing the handling, ramming and drying elements of the plant so as to act upon groups of flasks held in spaced relation and the same plane is described and claimed in my application filed and is therefore not claimed in this application.

Having now described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A foundry plant for the centrifugal casting of pipes comprising two jib cranes, a flask ramming machine lying between and within the operating radius of both cranes, a drying rack lying within the operating radius of one crane, a flask receiving structure lying within the radius of the last mentioned crane, a series of centrifugal casting machines each one of which lies within the operating radius of one or the other crane, pipe pulling machines the flask holding devices for which lie within the radius of the crane remote from the rack and a flask grouping device within the radius of the last mentioned crane.

2. A foundry plant for the centrifugal casting of pipes comprising two jib cranes, a flask ramming machine lying between and within the operating radius of both cranes, and comprising a rotary table carrying four rotary racks each adapted to receive a group of flasks in one position, move the group to rammer operating position and then move the group to delivery position, a drying rack lying within the operating radius of one crane, a flask receiving structure lying within the radius of the last mentioned crane, a series of centrifugal casting machines each one of which lies within the operating radius of one or the other crane, pipe pulling machines, the flask holding devices for which lie within the radius of the crane remote from the drying rack and a flask grouping device within the radius of the last mentioned crane.

JAMES B. LADD.