

No. 835,139.

PATENTED NOV. 6, 1906.

A. A. MORRIS.

MEANS FOR ASSEMBLING BLOCKS FOR MARINE DRY DOCKS.

APPLICATION FILED OCT. 4, 1905.

Fig. I.

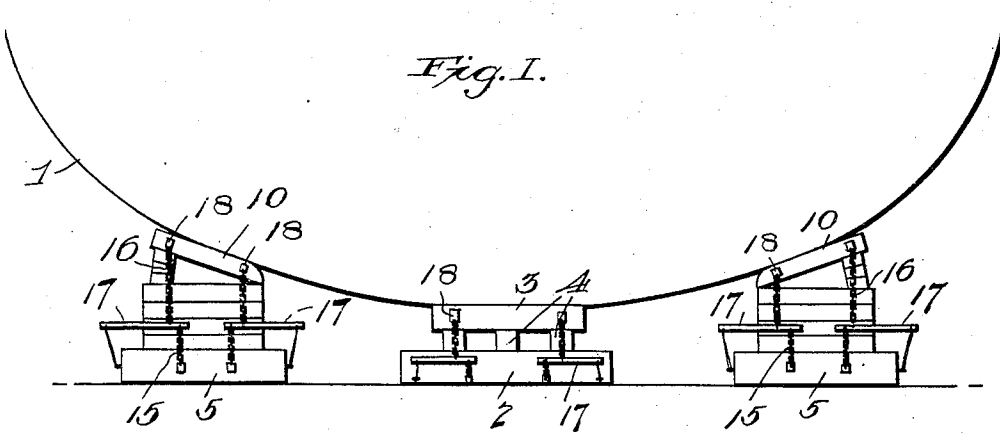


Fig. II.

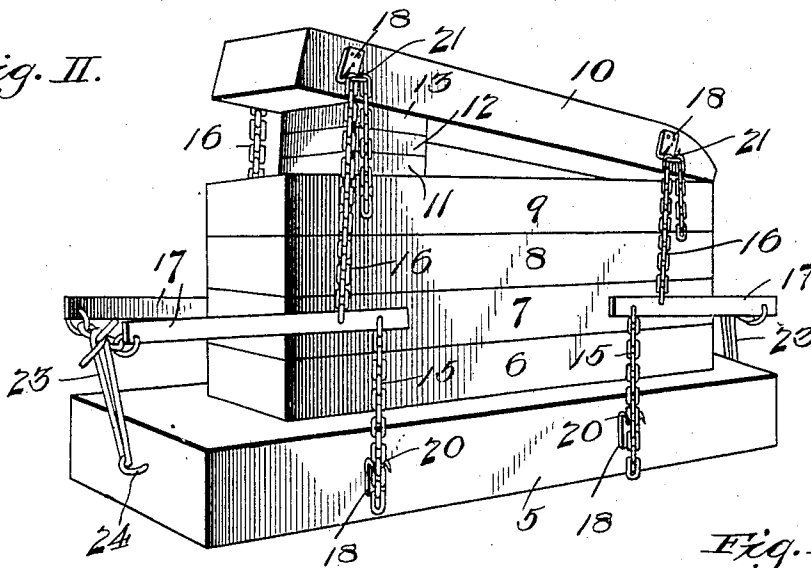
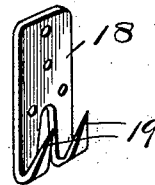
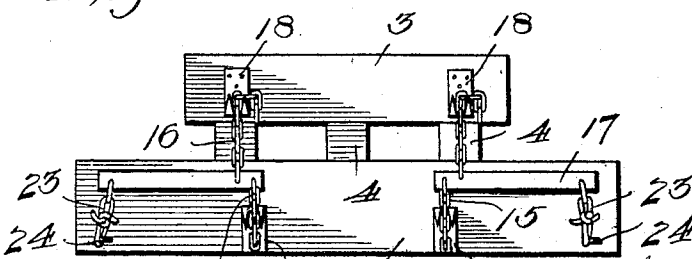


Fig. IV

Fig. III.



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UNITED STATES PATENT OFFICE.

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MEANS FOR ASSEMBLING BLOCKS FOR MARINE DRY-DOCKS.

No. 835,139.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed October 4, 1905. Serial No. 281,304.

To all whom it may concern:

Be it known that I, ARTHUR A. MORRIS, of San Diego, county of San Diego, State of California, have invented certain new and useful Improvements in Means for Assembling Blocks for Marine Dry-Docks, of which the following is a specification.

The object of my invention is to produce simple, efficient, and readily-adjustable means for securely assembling a plurality of blocks together for the support of vessels in a dry-dock.

For the purpose specified blocks for the support of the keel and sides of the hull of a ship have been employed, the blocks being secured together by the use of dogs driven into the blocks themselves. The use of dogs is objectionable because of the imperfect union which they afford to the blocks and of the fact that they very soon wear out the blocks by being repeatedly driven into and withdrawn from them. By my invention I not only provide readily-adjustable means by which a series of blocks may be built up to any desired height, but by which also when they have attained the required height they may be united by instrumentalities which not only serve to unite them, but which draw them snugly and immovably together into a close union.

In the accompanying drawings, which constitute a part of this specification, Figure I represents diagrammatically a mid-ship section of a vessel supported upon a keel-block and lateral or bilge blocks, respectively, united by my devices, as in a dry-dock. Fig. II is a perspective view of one of the bilge-blocks shown in Fig. I. Fig. III is a side elevation of the keel-block shown in Fig. I. Fig. IV is a detail view of the grab or hook by which the uniting mechanism of the blocks is adjustably secured to them.

Referring to the numerals on the drawings, 1 indicates a hull of a ship; 2, a base-block; 3, landing-blocks, and 4 splitting-blocks, which constitute a series, said series being designated as a "keel-block." The bilge-block is constructed substantially the same in principle as the keel-block, being provided with a base-block 5, intermediate blocks 6, 7, 8, and 9, and a topmost block or supporting member 10. The bilge-block being provided for the support of the sides of the hull, it is necessary to impart to its topmost member a cant, which may be accomplished by the introduc-

tion underneath one end of spacing-blocks 11, 12, and 13.

My invention relates to means for assembling blocks of the class above described, whether intended for the support of the keel, sides, or other part of a vessel, and consists of means connecting the topmost block and lowermost block of a series—for example, the blocks 5 and 10, as shown in Fig. II, or the blocks 2 and 3, as shown in Fig. III—and adapted to constrain them with their intermediate members into close union, so as to render each series of blocks, in effect, for the time being while in use a solid unitary member. The connecting means referred to, which constitutes the uniting mechanism, preferably consists of connecting members 15 and 16, operatively connected by an intermediate lever 17. The connecting members 15 and 16, respectively, for the purposes of adjustment immediately hereinafter specified preferably consist each of a section of chains. The adjustment referred to in the last sentence may be conveniently obtained by the use of grabs 18, consisting of angular plates of metal secured to the outermost blocks of each series and terminating in a pair of jaws 19. Between these jaws may be introduced any link of a chain, for which reason the chain is preferred as an embodiment of the connecting member of my device, as specified. One link of the chain being inserted between the jaws 19, the next link being disposed at right angles to said link is caught by said jaws and securely held. The lever 17 is secured to the respective chains 15 and 16, as indicated at 20 and 21, respectively, and the distance between the points of connection between said respective chains and the lever determines the leverage which will be exerted when the chains are adjusted in position by the depression of the long arm of the lever. The long arm of the lever projects, preferably, toward the end of the series of blocks to which the device is adjusted and may be of any suitable length to afford the desired leverage. When the required number of blocks is built up to the desired height and in proper relative positions for the performance of the function required of them, all that is necessary is to slip the chains 15 and 16 into proper position in their respective grabs, and afterward by depression of the long arm of the lever 17 the chains may be drawn taut and all of the blocks united as

firmly together as if the composite structure were one piece. When the required strain upon the chains by depression of the lever is obtained, the levers may be secured in position by any suitable means. The means illustrated is a rope 23, uniting the ends of the levers as to a suitable projection 24 in the end of the lowermost block and securely tied in place. In practice I employ to advantage four of my fastening devices for each bilge-block, and in such case the rope 23 may be made to answer for two levers 17, as shown, for example, in Fig. II of the drawings.

The mode of the application and of the operation of my device having already been specified, I deem further description in that direction to be unnecessary. I desire it to be understood, however, that I do not limit myself to mere details of construction, but reserve the right to modify and vary the same at will within the scope of the principle of my invention as hereinbefore set forth.

What I claim is—

1. In a device of the kind described, the combination with the outermost blocks of a series, of connecting members united thereto at one end, respectively, and a lever to which

they are operatively united at their other respective ends, and means for securing the lever in operative positions as required. 30

2. In a device of the kind described, the combination with the outermost blocks of a series, of connecting members adjustably united thereto at one end, respectively, and a lever to which they are operatively united at their other respective ends, and means for securing the lever in operative positions as required. 35

3. In a device of the kind described, the combination with a pair of chains, of grabs adapted to be secured to the outermost members of a series of blocks so as to engage the chains adjustably at one end thereof, respectively, and a lever operatively connecting the chains at their other ends, respectively, substantially as and for the purpose specified. 45

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ARTHUR A. MORRIS.

Witnesses:

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