

No. 704,358.

Patented July 8, 1902.

J. McCULLOUGH.

BILGE BLOCK.

(Application filed Nov. 14, 1901.)

(No Model.)

Fig. 1.

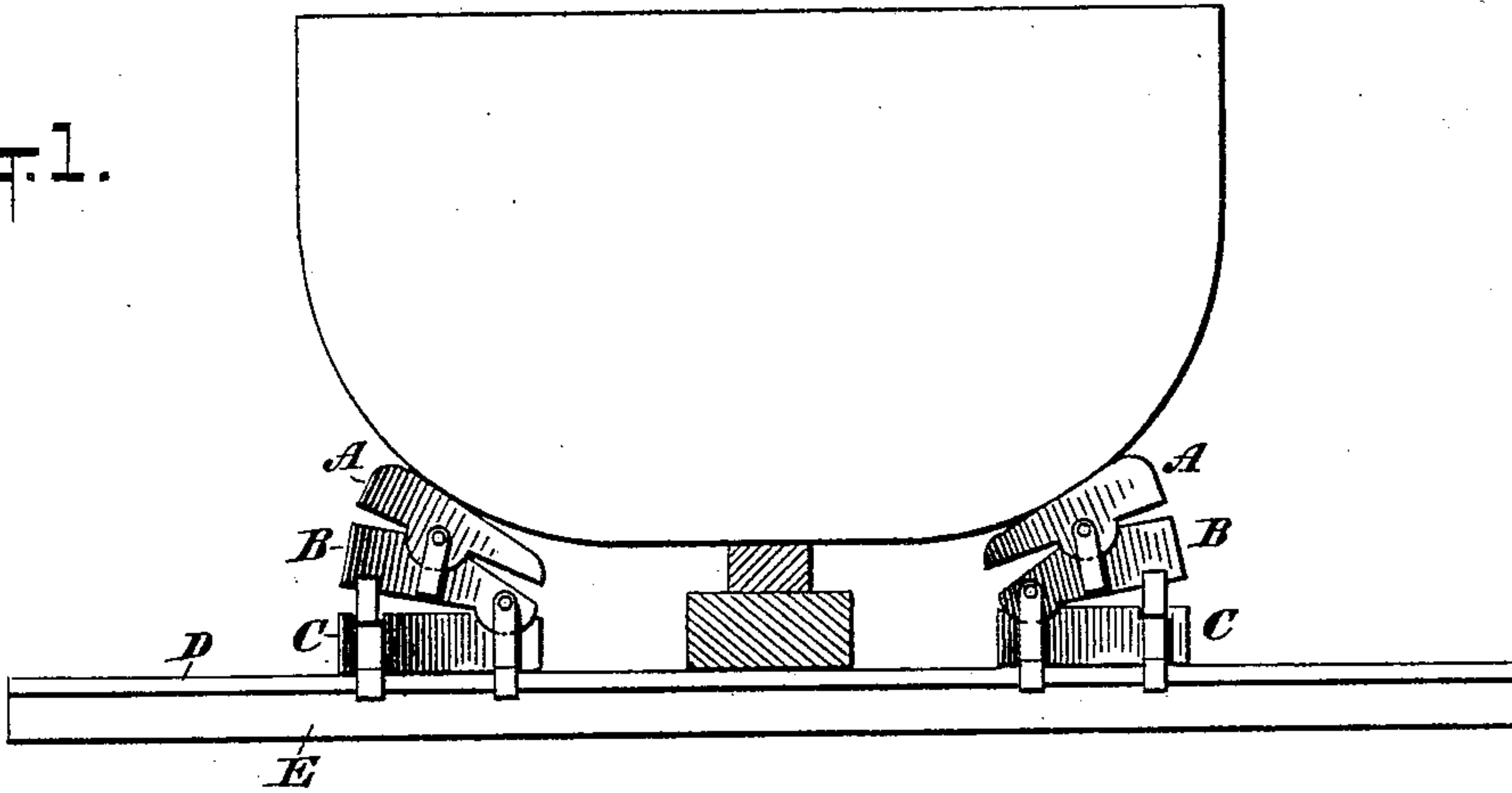


Fig. 2.

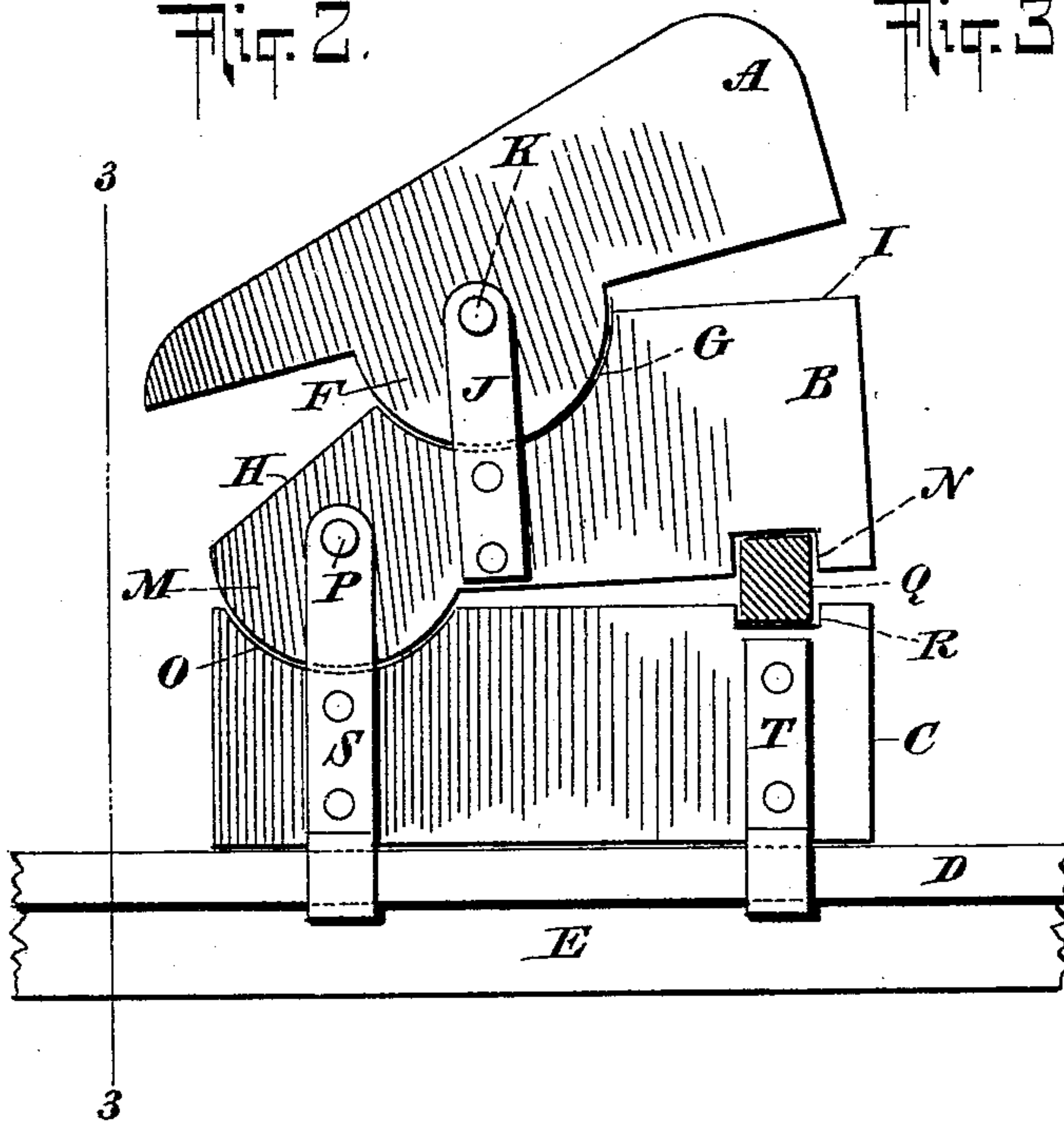
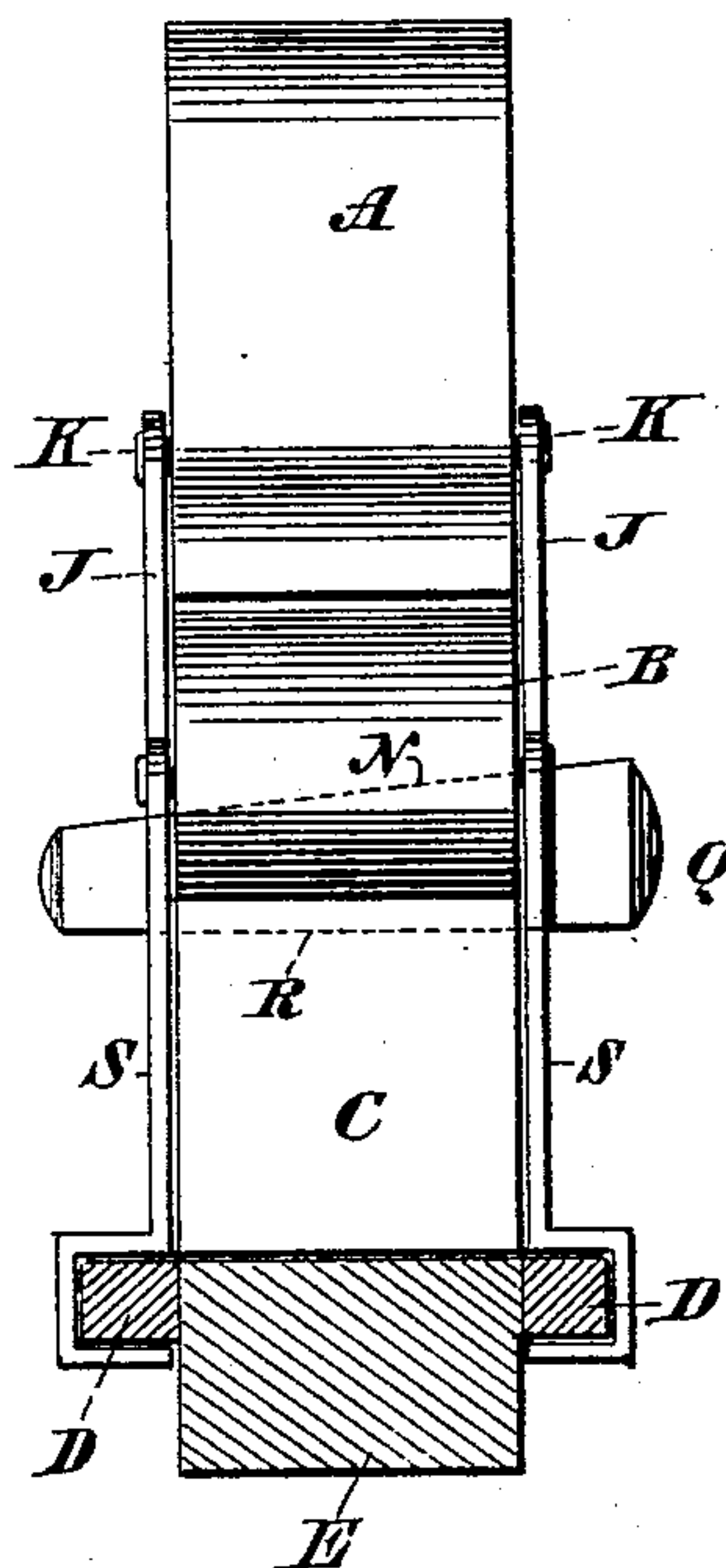


Fig. 3.



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## BILGE-BLOCK.

SPECIFICATION forming part of Letters Patent No. 704,358, dated July 8, 1902.

Application filed November 14, 1901. Serial No. 82,199. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES McCULLOUGH, a citizen of the United States, and a resident of Rosebank, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Bilge-Blocks, of which the following is a specification.

My invention relates to certain simple and easily constructed and operated bilge-blocks upon which vessels may be supported when removed from the water for repairs or otherwise.

The object of my invention is to provide a self-adjusting bearing or block that will conform to the bilge of a vessel's bottom when the vessel is removed from the water and form a solid foundation for the vessel to rest upon and prevent damage to its hull.

When a vessel is removed from the water, it is necessary to have it rest securely upon blocks that bear uniformly at numerous points and conform with the various curves of its bottom. Should one of these bearings be out of place or present an edge and the vessel rest upon it before meeting the other bearings, there is great danger of staving a hole in the vessel's bottom. By my invention I obviate all such danger and assure a solid foundation that will always present a flat surface to the vessel's hull and conform to each and all curves upon the hull.

In the drawings which form part of this specification, Figure 1 represents diagrammatically a mid-ship section of a vessel removed from the water and resting upon my improved bilge-blocks. Fig. 2 is a side elevation, partly in section, of the complete block in position on a dock-timber; and Fig. 3 is an end view of same, the dock-timber being in section on the dotted line 3 3 of Fig. 2.

The bilge-block comprises the upper tiltable block or section A, the intermediate adjustable section B, and the lower supporting-section C, which rests upon the dock-timber E and may be guided while moved thereon by the engagement of the guides D on said timber, with the lower box ends of the side

straps S T secured to the opposite sides of said section C.

The upper block or section A is formed at its lower side with the substantially central curved bearing F, fitting within a correspondingly-formed bearing-recess G in the upper surface of the intermediate section B, and said upper block or section A is substantially of wedge shape, as shown, while the upper surface of the intermediate section B to one side of the recess G is inclined, as at H, and at the other side of said recess G is substantially flat, as at I. The block or section A is capable of a tilting or rocking motion on the intermediate section B by reason of the shape of the facing surfaces of said sections, said section A, while having its tilting or rocking action, being supported and guided by the constant engagement of the curved bearing F with the walls of the recess G. The block A is further maintained in position upon the intermediate section B by means of the side bars J, secured to said section B, and the pin K, which passes through the upper ends of said bars J and also through the block or section A, wherein said pin K may act as an axis for the block A.

The upper block or section A has by means of the curved bearing F a substantial support within the recess G and when in its several positions is prevented by the walls of the said recess from sliding off from the intermediate section B.

In the drawings I illustrate the upper block or section A in a tilted or inclined position adapted to the outline of the vessel represented diagrammatically in Fig. 1, and when the block or section A is thus in a tilted position it will be observed that the weight of the vessel is exerted on a line through the bearing F, whereby the force exerted by the vessel is directed centrally of the bilge-block. The inclined surface H of the intermediate block or section B permits of a liberal extent of tilting action in the upper block or section A, while the horizontal surface I of the intermediate section B, substantially corresponding with the adjacent lower surface of the upper block or section A, furnishes a firm



bearing-surface for the outer portion of the said block or section A when the latter is not required to be placed in a tilted position, as when the bilge-block is under a less inclined part of the vessel, so that the surface I of the block B and the adjoining surface of the block A may come together.

At its lower side the intermediate section B is at one end formed with the curved bearing M and at its other end with the groove N, and at its upper surface the base-section C is formed with the curved-bearing recess O to receive the said curved bearing M and at its other end with the recess R, which matches the recess N in the intermediate section B, so that said recesses N R are adapted to receive the wedge Q, by which to adjust the position of the intermediate section B. The recess N has an inclined surface to conform to the upper face of the wedge Q, and the wedge Q is of such size that when driven endwise into the recesses N R it will force the outer end of the intermediate section B upward, so that said section B shall stand in an inclined position, as illustrated in Fig. 2. The intermediate section B may rest flat upon the lower or supporting base-section C, under which condition the said section B will be firmly supported; but the entire tilting or adjusting action of the bilge-block to the surfaces of the vessel will then depend wholly upon the upper block or section A. It is desirable that a part of the adjustment of the bilge-block to the vessel may be accomplished by inclining to a greater or less extent the intermediate block or section B, and this adjustment of the intermediate block or section B is accomplished by the wedge Q and the facing surfaces of the grooves or recesses N R. The curved bearing M of the intermediate section B affords very convenient and secure means, in connection with the recess O, for permitting the tilting or adjusting of the intermediate section B, and when the section B is in an inclined or tilted position the curved bearing M is securely held within the recess O and supports one end of the section B, while the other end of the said section is firmly supported upon the wedge Q. As a further means for securing the intermediate section B upon the base-section C, I provide a rod P, which passes through the inner end of the said section B and is held within the upper ends of the straps S, the latter extending upward upon opposite sides of the inner end of the block B to receive said rod P and also to afford means for preventing any lateral displacement of the bearing M from the recess O.

The bilge-block as a whole is mounted upon the dock-timber E, the upper surface of said timber being flat to correspond with the lower surface of the supporting or base section C of the bilge-block. The dock-timber E is provided at opposite sides with the guiding ribs or beams D, and when the bilge-block is in position the lower portions of the straps S T

are upon the upper, outer, and lower surfaces of said guides D and serve to prevent any lateral displacement of the bilge-block and also to securely hold said block down upon the dock-timber E, as well as to afford means for guiding the bilge-block along the dock-timber when said block is moved toward or from its operative position.

When a vessel is removed from the water, the keel meets the keel-blocks first, and as soon as they touch one another the bilge-blocks are drawn along the dock-timbers E by ropes or otherwise until the upper blocks or sections A come into contact with the hull. As the blocks or sections A are pivotally mounted by means of the bearings F and recesses G, the continued pull upon the bilge-blocks will cause the upper sections or blocks A to tilt until they become tangent to the curve of the hull, and the upper central portion of the surfaces of the blocks or sections A then form solid foundations for the support of the vessel. As the vessel gradually settles upon the keel-blocks the bilge-blocks are drawn up to the hull and receive the vessel upon a perfectly fitting support.

It will be seen that when the upper blocks or sections A of the bilge-blocks meet the vessel they will tilt from a substantially horizontal to an inclined position and automatically adapt themselves to the curve of the vessel's hull. Whenever necessary in order to adapt the blocks to the shape of a vessel, the intermediate section B may be inclined as much as desired by means of the wedges Q, so that the upper block or section A may assume when drawn to the vessel a much greater inclination than would be possible if the lower surface of the intermediate section B were resting flat upon the upper surface of the supporting or base section C.

While repairing a vessel it is often necessary to remove one of the bilge-blocks in order to get at the surface covered by such block, and in carrying out this operation the bilge-block may be quickly released from the vessel by simply driving out the wedge Q, whereby the intermediate block or section B is allowed to settle upon the base or supporting section C, and the pressure of the vessel is removed from the upper block or section A, thus taking the weight of the vessel entirely off of the bilge-block and allowing the latter to be moved outward upon the dock-timber E with ease. When replacing the bilge-block, it may be moved into contact with the vessel and the wedge Q then driven back into place until the proper strain comes upon the upper block or section A.

It will be observed that the upper surface of the inner end of the upper block or section A is curved or rounded, and this is for the purpose of causing said end of the block or section A to freely slide on the surface of the hull of the vessel until said block A assumes its proper inclined position to receive the vessel upon its flat surfaces.



What I claim as my invention, and desire to secure by Letters Patent, is—

1. A bilge-block comprising the tiltable upper section A, the intermediate section B and the base-section C, said upper section A having the curved bearing F to enter and turn within the recess G in the intermediate section B, and said intermediate section B having at its inner end the curved bearing M to enter and turn within the recess O in the lower section C, combined with means for inclining and maintaining in an inclined position said intermediate section B, substantially as set forth.

2. A bilge-block comprising the tiltable upper section A, the intermediate section B, and the lower or supporting section C, said section A having the central curved bearing F to engage the bearing-recess G in the intermediate section B, and said section B having at its inner end the curved bearing M to engage the recess O in the base-section C, combined with a wedge intermediate the outer ends of said sections B, C, said sections B, C, being respectively provided with the grooves N, R, to receive said wedge; substantially as set forth.

3. A bilge-block comprising the tiltable upper section A, the intermediate section B and the lower section C, said section A being substantially of wedge outline and centrally pivotally supported upon the section B, the upper surface of said section B being at its inner end inclined so as to permit of the automatic tilting action of the section A and

also to receive the lower surface of the inner end of the section A when necessary upon a sufficient inclination of said section A, combined with means hinging the inner end of the section B, and means for elevating and permitting the lowering of the outer end of said section B; substantially as set forth.

4. In a bilge-block the upper section A of wedge outline and having at the central part of its lower surface the curved bearing F, combined with the section B having in the central portion of its upper surface the bearing-recess G to receive said bearing F, and also having at the inner side of said recess G the inclined surface H and at the other side of said recess the substantially horizontal surface I, whereby the outer end of said block or section A may when said section is in a substantially horizontal position, find a firm support upon said surface I, and when said section is tilted to its other extreme the inner end of said block A may find a firm bearing upon said inclined surface H, and whereby also when said block A is tilted in any of its intermediate positions, it will find a firm support through the bearing F upon the walls of the recess G; substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 18th day of April, A. D. 1901.

JAMES McCULLOUGH.

Witnesses:

F. S. PERRIN,  
GEO. S. SCOFIELD.