No. 637,726. Patented Nov. 21, 1899.

# A. D GARRETSON.

## CRIB FOR DOCKS.

(Application filed Mar. 28, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

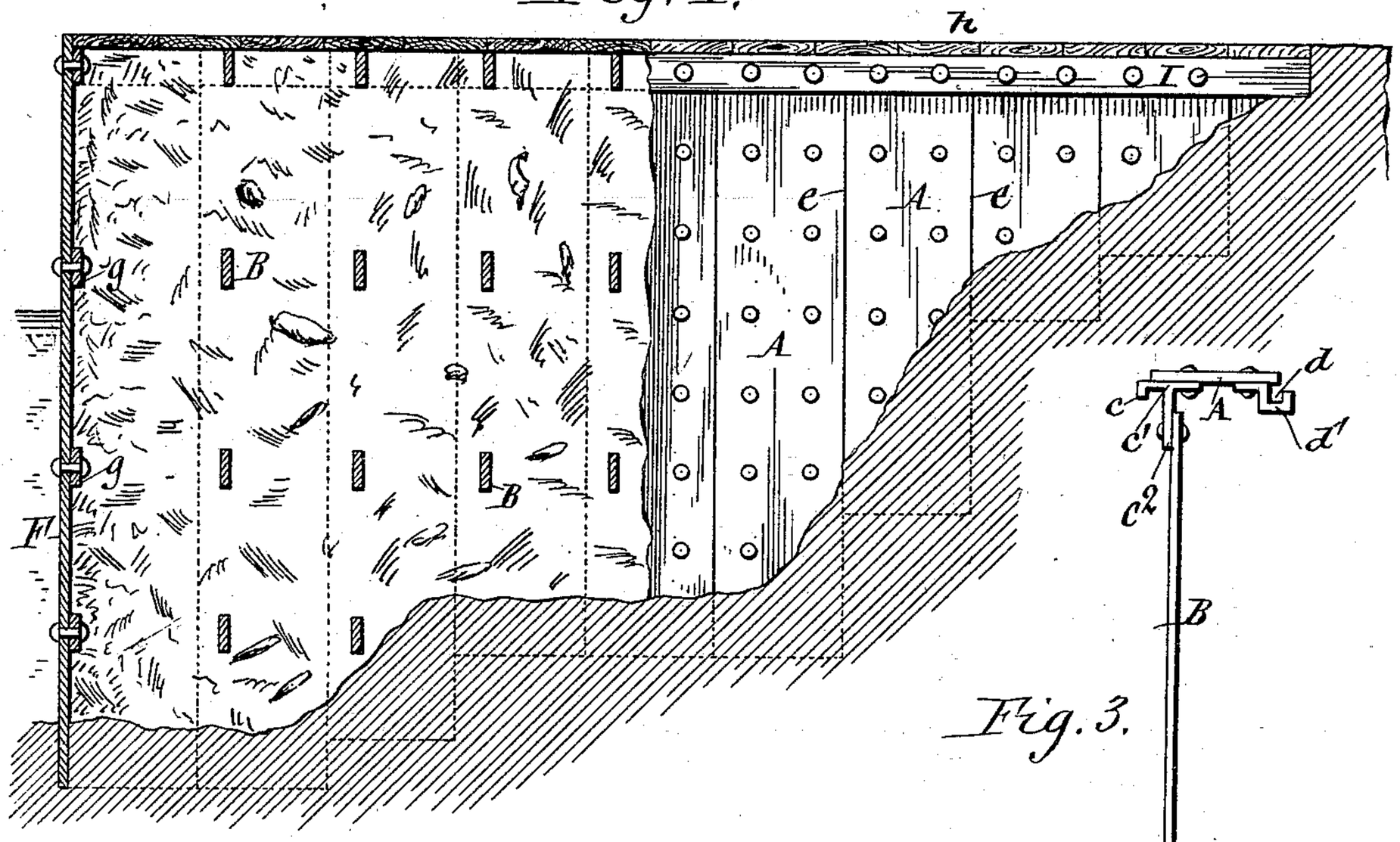
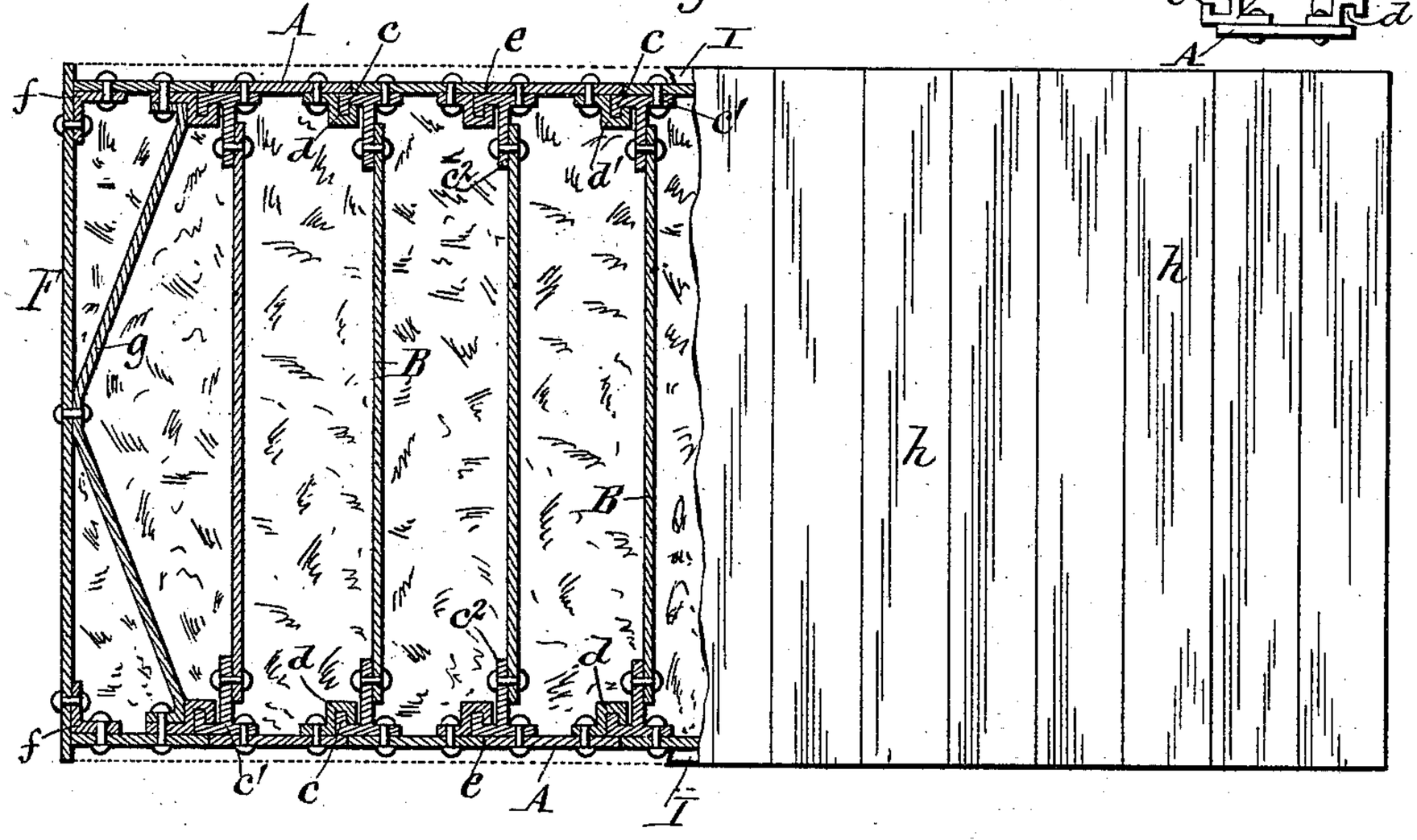



Fig. 3.




Fig. 2.




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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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(No Model.) 2 Sheets—Sheet 2.

Fig. 4.

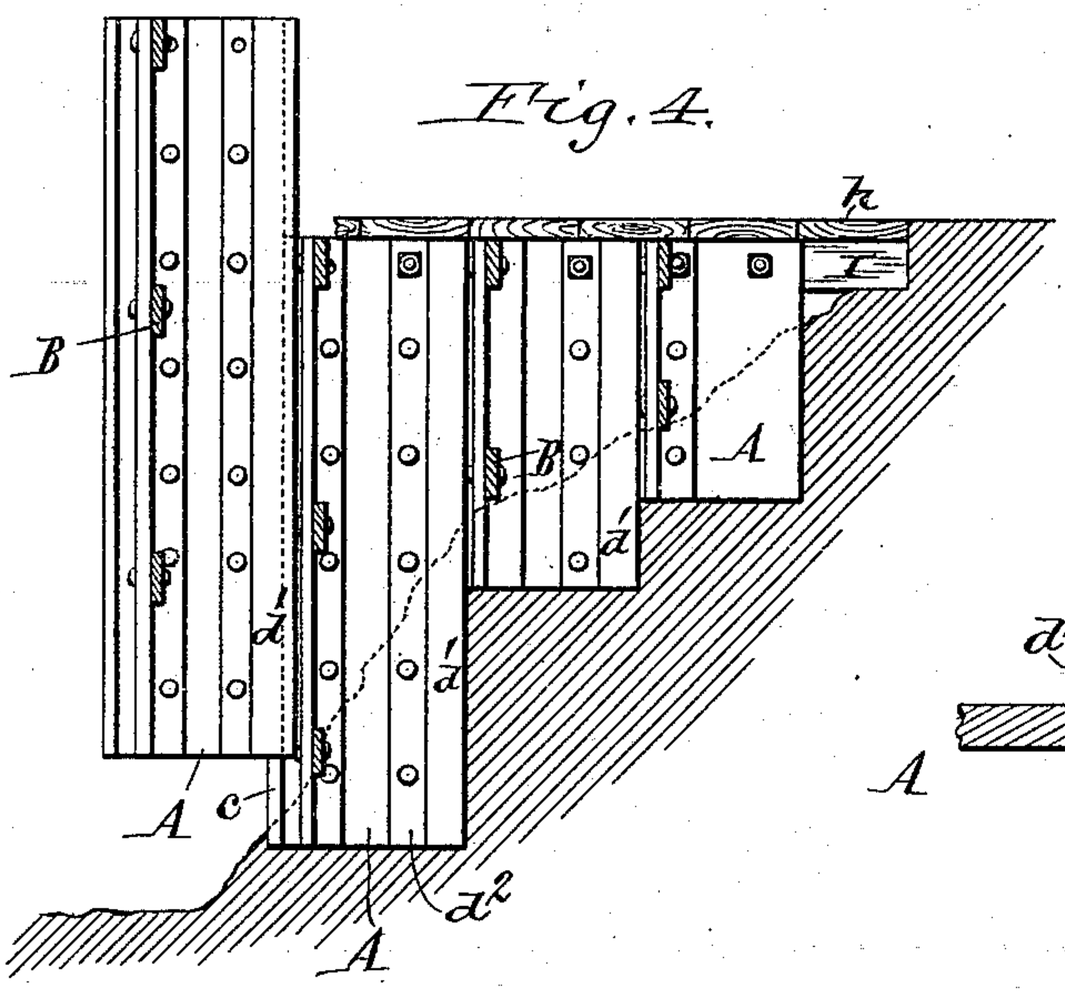



Fig. 5.

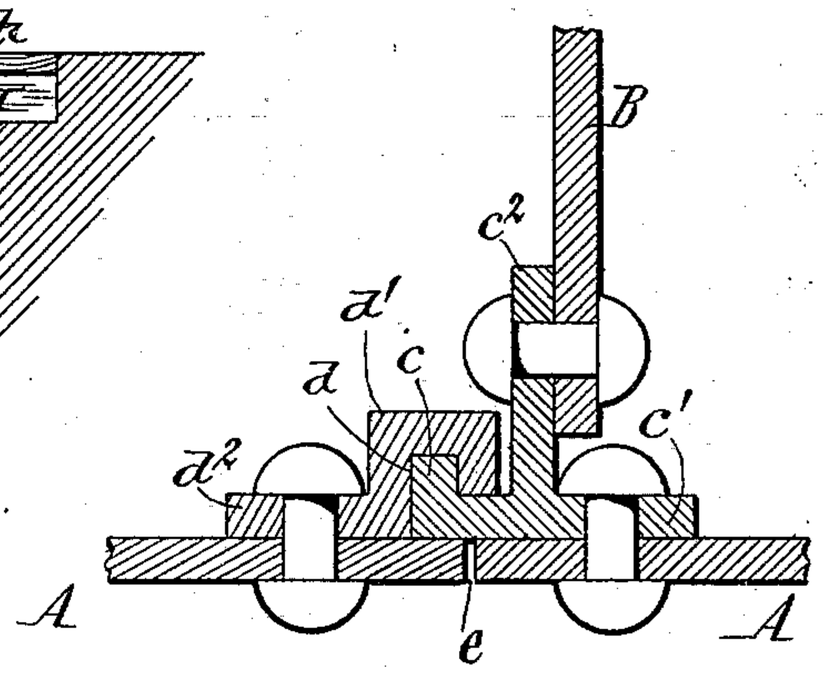



Fig. 6.

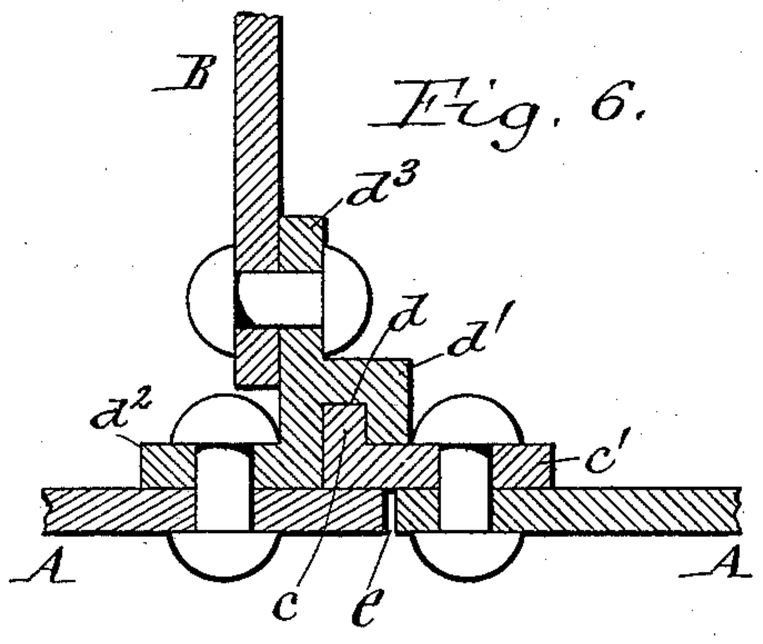



Fig. 7.

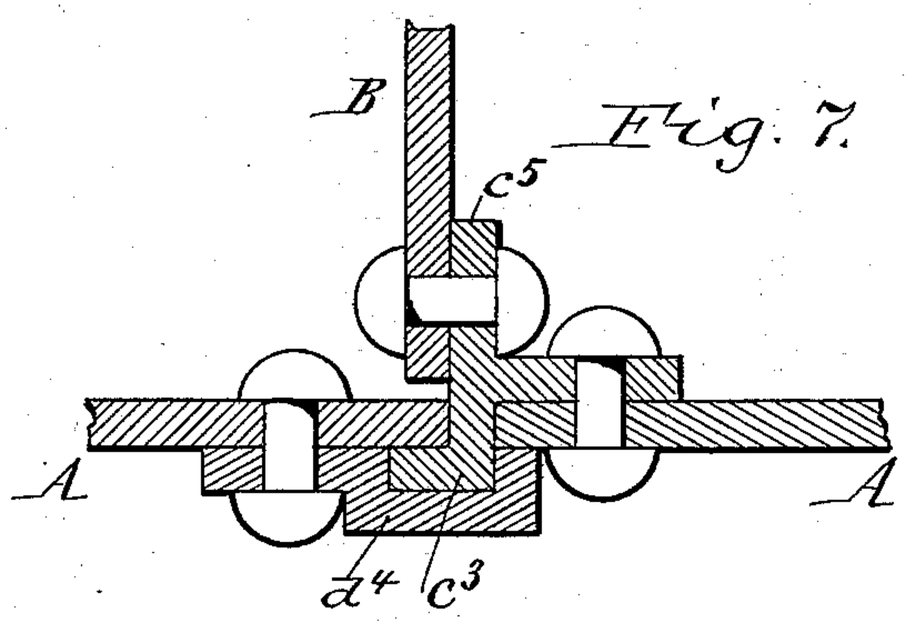
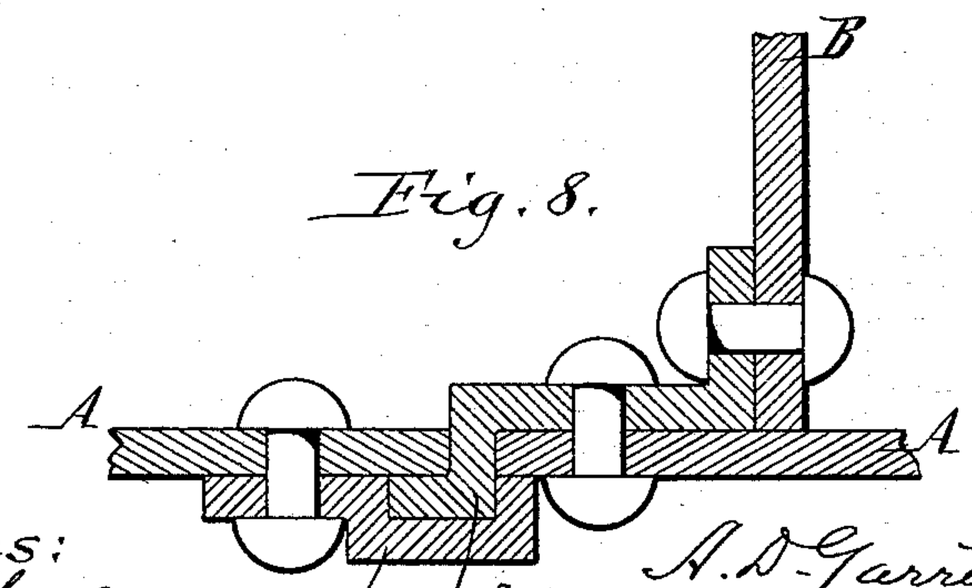



Fig. 8.




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# UNITED STATES PATENT OFFICE.

ALBERT D. GARRETSON, OF BUFFALO, NEW YORK.

## CRIB FOR DOCKS.

SPECIFICATION forming part of Letters Patent No. 637,726, dated November 21, 1899.

Application filed March 28, 1899. Serial No. 710,742. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT D. GARRETSON, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Cribs for Docks, &c., of which the following is a specification.

This invention relates to a crib or caisson for docks, wharves, breakwaters, and similar marine structures, and more particularly to a crib composed of a series of similar metallic sections which are connected together end to end by vertical sliding joints, the interlocking parts of which are formed on adjoining sections, so that by joining one section to another a crib or pier may be constructed of any desired length.

One of the objects of my invention is to construct the crib-sections in such manner that they can be built complete at the factory and readily assembled where the dock or similar structure is to be erected and so that the sections can accommodate themselves to any slight imperfection of the joints which connect the same, thus permitting the parts of the joints to be made with less exactness and reducing their cost of production.

My invention has the further object to provide a strong and reliable joint for the crib-sections which is simple in construction and cheaply produced.

In the accompanying drawings, consisting of two sheets, Figure 1 is a longitudinal sectional elevation of a dock or pier embodying my invention. Fig. 2 is a top plan view thereof, partly in section. Fig. 3 is a detached top plan view of one of the crib-sections. Fig. 4 is a vertical longitudinal section of the dock in process of construction. Fig. 5 is an enlarged horizontal section of one of the interlocking slip-joints which connect adjoining crib-sections. Figs. 6, 7, and 8 are similar sections of modified constructions of said joints.

Like letters of reference refer to like parts in the several figures.

Each section of my improved crib or caisson consists of a pair of upright metallic side plates A A, which are securely connected together at or near one of their upright edges, preferably their front edge, by a number of cross bars or ties B, which are arranged at suitable intervals throughout the depth of the side plates, as shown in Figs. 1 and 4, forming a practically three-sided crib-section open at its upper and lower ends, as most clearly shown in Fig. 3. The crib is made up of a series of such sections, which are arranged end to end or one in advance of another, and the adjoining sections are connected together by interlocking joints, preferably upright slip or sliding joints. The form of joint preferred for this purpose is shown in Figs. 2 and 5, and consists of an upright rib or tenon *c*, arranged on or secured to the inner side of one of the interlocked plates at one of its upright edges, and a corresponding upright groove or mortise *d*, arranged on the inner side of the adjoining plate, receiving the tenon of the other plate. Each tenon *c* is preferably formed on a vertical angle-bar *c'*, which is riveted or otherwise secured to the inner side of the adjacent side plate A and extends from the top to the bottom thereof. The neck of the tenon extends across the flush joint *e*, between the side plates of adjoining crib-sections, and the head of the tenon bears at its outer side against the inner side of the opposing side plate. The corresponding groove of the slip-joint is formed by a vertical channel-bar *d'*, which opens outwardly and which is provided with a laterally-extending flange $d^2$, which is riveted or otherwise secured to the adjacent side plate A of the crib-section. This channel-bar extends rearwardly beyond the flush joint *e*, between the side plates of adjoining crib-sections, so as to coincide with the tenon *c* of the adjoining section, and the flange forming the outer wall of the channel terminates at a distance from the side plates to leave the necessary intervening space for the neck of the adjacent tenon *c*. By extending the tenons of one crib-section beyond the joint between the side plates of adjoining crib-sections in this manner the tenon is confined in a lateral direction between the channel-bar *d'* and the opposing inner side of the side plate A, to which the channel-bar is fastened, thus utilizing the side plate as a part of the joint. This simplifies the construction of the joint and enables the bars forming the tenon and the groove to be rolled at a correspondingly-reduced cost. In this joint the

interlocking parts are both arranged on the inner side of the side plates A, leaving the latter substantially flush and smooth on their outer sides.

The bars $c'$, carrying the tenons $c$, are preferably formed with the upright inwardly-extending flanges $c^2$, to which the ends of the cross-bars B are secured by rivets or other means. If desired, such an attaching-flange may be formed on the channel bar or groove member of each joint, as shown at $d^3$ in Fig. 6.

The side plates of the foremost or outermost crib-section are connected at their front edges by a tight plate F, which extends throughout the depth of the plates and forms the closed outer end of the pier or dock. This front plate is secured to the side plates preferably by upright angle-bars $f$, arranged in the front corners of said section, as shown in Fig. 2, and this plate is preferably stiffened by a series of horizontal braces $g$, extending from the central portion of the plate to the inner sides of the side plates of the foremost crib-section.

My improved crib-sections are preferably constructed wholly of sheet metal, and the sections are made of different lengths, as may be required by the varying depths or undulations of the bed of the river or other body of water in which the crib is to be built.

In building a crib in accordance with my invention a crib-section of approximately the required length is sunk into the bed of the lake or stream, preferably with its open side toward the rear or inner end of the dock, as shown in the drawings. After properly placing this section another crib-section is lowered in the same position in front of the first-named section and interlocked therewith by properly engaging the lower ends of the channel-bars $d'$ of the second section with the upper ends of the tenons $c$ of the first section and sliding the second section down into place on the first section, whereby the two sections are conveniently and reliably connected together and at the same time properly alined without requiring special care. The remaining crib-sections are successively added in the same manner until all the sections are assembled, and when the sections are united in this manner the adjoining side plates of the series of sections form two parallel side walls, connected at intervals by the cross-bars B and at their front ends by the tight plate F. The rectangular channel or inclosure so formed is filled with earth, stone, concrete, or other suitable material to complete the crib.

The usual floor-planks $h$ of the dock or pier may be supported upon the upper ends of the side plates A and the uppermost cross-bars B or by other stringers or longitudinal floor-beams I, secured to the outer side of said plates at their upper ends.

My improved crib-sections can be built complete at the factory, enabling the same to be readily assembled when required. By constructing the sections of side plates which are originally connected together only at one edge—say their front edge—the free rear portions of the plates can be sprung laterally to a limited extent to facilitate the interlocking of the parts of the section-joints in case the fit of the parts is somewhat imperfect. Although the side plates are securely connected by the cross-bars B, the width of the plates affords sufficient elasticity to permit of their being sprung as described. This yielding feature of the sides of the sections allows the joints to be made less exact and permits a less skilled class of labor to be employed in the manufacture of the sections, thereby reducing their cost correspondingly.

Other forms of joints may be employed for connecting the crib-sections instead of the joint shown in Figs. 2 and 5. For example, the tenon of the joint may be L-shaped, as shown at $c^3$ in Fig. 7, and the head of the same and the channel-bar $d^4$ be arranged on the outer side of the side plate of the crib-sections. In this case the neck of the tenon passes outwardly between the opposing edges of adjoining side plates.

In the modified construction of the joint shown in Fig. 8 substantially a Z-shaped tenon $c^4$ is employed, which has its head arranged on the outer side of the side plates, and the channel-bar $d^5$, which receives the tenon, is also located on the outer side of the plate, as the joint shown in Fig. 7. In the joint shown in Fig. 7 the bar carrying the tenon has at its front edge an upright flange $c^5$ for the attachment of the cross-bars B, while in the joint shown in Fig. 8 said flange is formed at the rear edge of the bar which carries the tenon. In both of these modifications, as in the joint shown in Figs. 2 and 5, the head of the tenon is confined laterally between the channel-bar and the opposing side of the side plate to which the channel-bar is secured.

I claim as my invention—

1. A crib for docks, &c., composed of separate sections, each of which consists of a pair of upright side plates and a cross bar or tie which connects said plates near one end of the section, the section being provided at its front and rear ends with locking devices adapted to engage with corresponding locking devices of adjoining crib-sections, substantially as set forth.

2. In a sectional crib for docks, &c., a crib-section composed of upright side plates and a cross bar or tie which connects the side plates near one of their upright edges, whereby said plates are allowed to yield laterally to a limited extent at their opposite free edges, said plates being provided at their free edges with locking devices which are adapted to engage with corresponding locking devices of an adjoining crib-section, substantially as set forth.

3. The combination of a pair of adjoining crib-sections, each having upright side plates which are connected with the plates of the adjoining section by an upright tenon-and-

mortise joint, the mortise member of the joint being arranged on one of the interlocked plates and the tenon being arranged on the adjoining plate and confined in a lateral direction between the mortise member and the opposing side of the plate which carries the mortise member, substantially as set forth.

4. The combination of a pair of adjoining crib-sections, each having upright side plates which are connected with the plates of the adjoining section by an upright tenon-and-mortise joint, the mortise member consisting of a channel-bar secured to the inner side of one of the interlocked plates, and the tenon being secured to the inner side of the adjoining plate and having a neck which extends across the joint between the interlocked plates and a head which engages with the groove of said channel-bar and the inner side of the plate which carries the bar, substantially as set forth.

Witness my hand this 25th day of March, 1899.

ALBERT D. GARRETSON.

Witnesses:
THEO. L. POPP,
ELLA R. DEAN.