

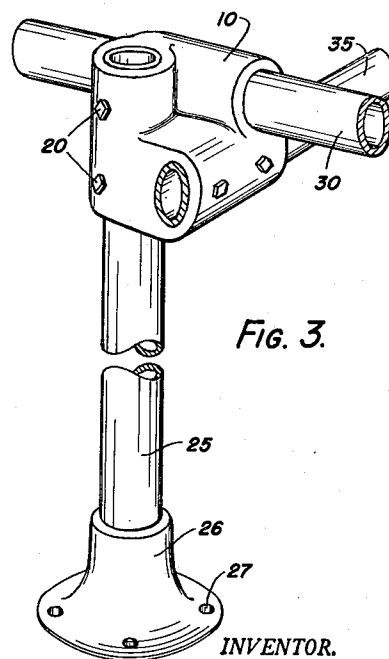
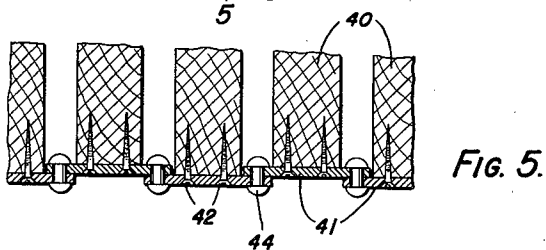
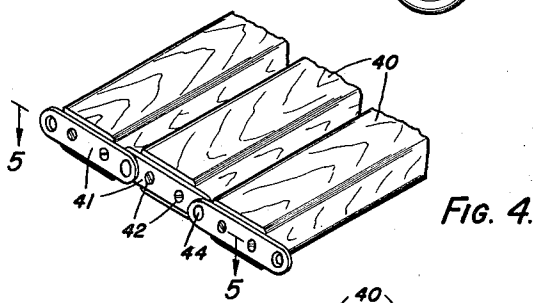
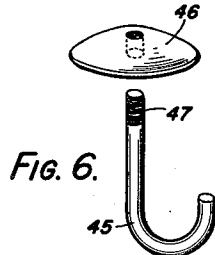
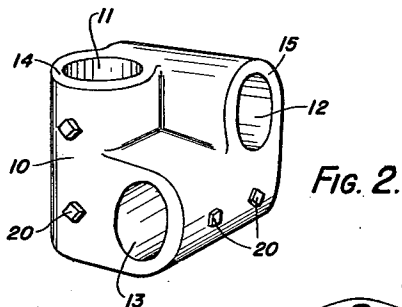
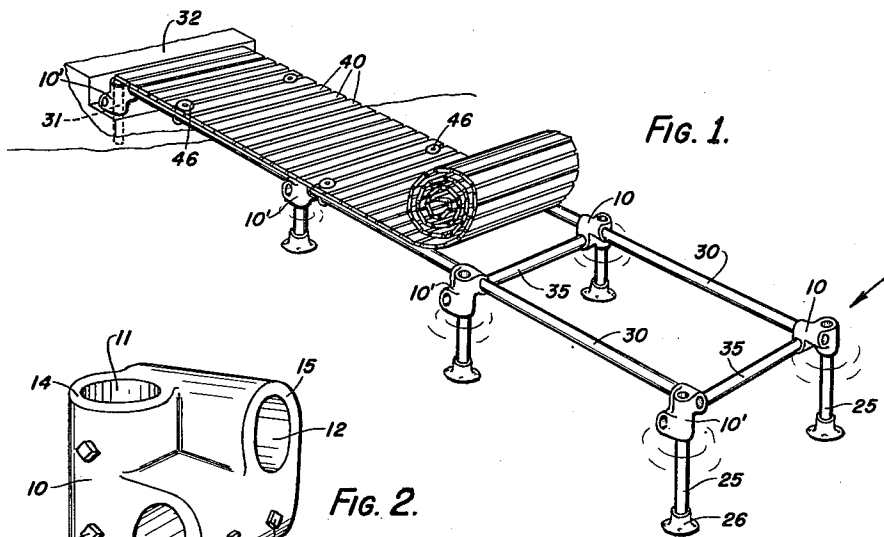
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BOAT DOCK AND THE LIKE

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BOAT DOCK AND THE LIKE

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6 Claims. (Cl. 61—48)

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The present invention relates to boat docks and particularly to a knockdown type of dock.

One object of the invention is to provide a knockdown type of boat dock, especially for private use, that can be disassembled completely for storage during winter months and quickly assembled again for summertime use.

Another object of the invention is to provide a knockdown type of dock which has a floor or decking that can be laid down in a few minutes and rolled up for storage just as quickly where the owner of the dock intends to be away for only a short while during the boating season.

A further object of the invention is to provide a dock structure which can easily be built, by even the most unskilled of help, from a few lengths of pipe by using simple assembly fittings or brackets, a wrench and a hacksaw.

Another object of the invention is to provide a fitting for use in the assembly of a knockdown dock, which is safe, economical and convenient, and by the use of which any size structure can readily be formed from the required length of pipe.

Still a further object of the invention is to provide a fitting of the character described which is useful not only in the erection of docks, but of scaffolding, hoists, and similar structures.

Other objects of the invention will be apparent hereinafter from the specification and from the recital of the appended claims.

In the drawings:

Fig. 1 is a perspective view of a dock constructed according to one embodiment of the present invention and showing the dock-decking or floor partly rolled up;

Fig. 2 is a perspective view on a greatly enlarged scale of one of the novel brackets or fittings used in the construction of the dock;

Fig. 3 is a perspective view on enlarged scale illustrating how one of these brackets or fittings may be used in the building of the dock or other structure, the view being taken looking in the direction of the arrow in Fig. 1;

Fig. 4 is a fragmentary perspective view on enlarged scale showing the construction of the floor or decking;

Fig. 5 is a fragmentary sectional view taken on the line 5—5 of Fig. 4; and

Fig. 6 is a perspective view showing disconnected one pair of the hooks and cooperating washers by which the floor or decking may be fastened to the framework of the dock.

Referring now to the drawings more particularly by numerals of reference, 10 and 10' denote

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the brackets or fittings which serve as the connecting members of the framework of the dock. These may be semi-steel castings. In the erection of the dock both right-hand and left-hand fittings are employed.

Each fitting or bracket has three cylindrical holes or apertures 11, 12 and 13 extending therethrough. These holes are offset from one another and are at right angles to one another. For compactness and ease of manufacture, each fitting is preferably so cast that the holes therethrough have common boundary walls along their adjacent sides. For appearance and also for simplicity in manufacture, the fittings are preferably made, also, so that the planes of the end faces of each hole 11, 12 and 13 are tangent to the outside surface or wall of the adjacent holes. Thus, as shown in Fig. 2, the plane of the upper end face 14 of hole 11 is preferably tangent to the outside of the wall of hole 12; the plane of the lower end face of hole 11 is preferably tangent to the outside of the wall of hole 13; the plane of the left-hand end face of hole 12 is preferably tangent to the outside of the wall of hole 11; the plane of the right-hand end 15 of hole 12 is preferably tangent to the outside of the wall of hole 13; and the planes of the two end faces of hole 13 are preferably tangent to the outsides of the walls of holes 11 and 12, respectively.

The right-hand fittings differ from the left-hand fittings simply in the relative locations of the holes. Their structure is otherwise the same. For purposes of distinction the two hands of fittings are designated at 10 and 10', respectively.

The framework of the dock comprises the supporting pipe sections 25, the longitudinal pipe sections 30, the transverse pipe sections 35 and the connecting fittings 10 and 10'. For erecting a dock, suitable lengths of pipe are inserted in the fittings 10 and 10' and secured in place by set-screws 20. These set-screws thread into the fittings and are preferably made with saw-teeth at their inner ends to more firmly grip the pipe. There are preferably two set-screws for each hole of a fitting.

To obtain the desired height of the dock above the bottom of the lake or stream, on which it is to be used, suitable lengths 25 of pipe are cut; and these are inserted in corresponding holes of the fittings 10 and 10', for instance, the holes 11. These pipe lengths extend vertically and are arranged in pairs as shown. Foot-pieces 26 may be threaded on the lower ends of the pipes 25 to form a solid foundation on a gravel or rock bot-

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tom lake or stream. If the lake or stream has a mud-bottom the feet 26 may be secured to planks that rest on the bottom. Holes 27 are provided in the feet for the securing bolts or screws. The pipe sections 25 will ordinarily increase progressively in length from the shore end of the dock to suit the conformation of the lake or stream bottom and its dip from shore.

To obtain the desired length of dock, suitable lengths 30 of pipe are cut and inserted in corresponding holes of the right and left-hand fittings, for instance the holes 12. If the dock does not project too far from shore two parallel sections 30 of pipe may be used of suitable length. But ordinarily each of the side bars 30 of the dock will be made of several pipe sections whose abutting ends fit into a common hole 12 of a fitting 10 or 10'. The shoreline ends of the pipes 30 should be secured by fittings 10 and 10' to posts or uprights 31 that are firmly anchored in a cement base 32 or to ground stakes.

To obtain the desired width of dock, suitable lengths 35 of pipe are cut to provide the transverse struts or supports. These are secured in corresponding holes of the fittings 10 and 10', for instance the holes 13.

When the various pipe sections have been secured in place and the framework has been erected, as shown in Fig. 1, the floor or decking is rolled out on top thereof and secured thereto. This floor or decking consists of pieces of hardwood 40 which are arranged in parallel strips and secured together by folding steel or other metallic connecting links 41. There is a link 41 secured to each end of each hardwood strip 40 by screws 42; and each link is connected to the next two adjacent links 41 by riveted pivot pins 44. Alternate strips 40 may be made of different lengths to permit overlap of the links 41 as shown in Fig. 5, or all strips 40 may be made of the same length and the connecting links be disposed at the two ends of the strips to suit. In either case, with the construction described it will be seen that the floor or decking can readily be rolled up or unrolled.

When the floor or decking has been laid down on the framework, it may be secured thereto by hooks 45 and hold-down washers 46 which are adapted to thread onto the long legs of the hooks. The hooks 45 are adapted to engage under the longitudinal pipe struts 30 and to be disposed in the spaces between adjacent hardwood flooring strips 40. The washers 46 are adapted to engage over the upper faces of two adjacent flooring strips 40 and to be threaded onto the portions 47 of the hooks. The hooks and cooperating washers are inserted at suitable intervals along the dock, for instance, every two feet or so. Thus, the flooring may be secured firmly and rigidly to the framework.

With the present invention it will be seen, then, that it is a relatively simple matter to erect a dock. Any handy man with a wrench, a hacksaw, a few lengths of pipe and sufficient three-way fittings, can build the framework in the space of a few hours. It is an easy matter, then, to roll the decking out over the framework and fasten it securely in place; and the dock is completed. If the dock-owner is going to be away for a short time during the boating season and wishes to protect his dock against use by intruders, he can, in a matter of minutes, loosen the washers 46, remove the hooks 47, roll up the decking, and store it away until his return. It takes but a few minutes to put it in place again.

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At the end of the season, both framework and decking can be stored away if desired. To knock down the framework, all that is required is to loosen the set-screws 20 and pull the pipe sections out. The shore post 31 can be left in place.

Obviously, the invention is not restricted to erection of the simple dock structure shown in Fig. 1. The vertical pipe sections can be extended if desired a sufficient height above the floor or decking to provide supports for pipe sections which extend longitudinally of the dock and which may be coupled with the vertical pipe sections by fittings 10 to form hand rails along the longitudinal sides of the dock. Boat hoists, boat house framework, scaffolds, etc., can be erected also by using the brackets or fittings of the present invention and suitable lengths of pipe as will be evident to those skilled in the art.

In general it may be said that while the invention has been described in connection with a particular embodiment thereof it is capable of further modification, and this application is intended to cover any variations, uses, or adaptations of the invention following the principles of the invention and including such departures from the present disclosure as come within known or customary practice in the art to which the invention relates and as may be applied to the essential features hereinbefore set forth and as fall within the scope of the invention or the limits of the appended claims.

Having thus described my invention, what I claim is:

1. A knockdown dock comprising a supporting framework having upper longitudinal sides made up of pipe lengths, a decking comprising a plurality of spaced parallel flooring strips, and a plurality of links, each of which is rigidly fastened to a flooring strip between its ends and each of which has its ends projecting laterally beyond opposite sides of the flooring strip, pins for pivotally connecting the adjacent ends of adjacent links to each other for hinging movement about axes parallel to the flooring strips, a plurality of hooks which are adapted to be engaged under the pipe lengths between adjacent parallel flooring strips, and a hold-down plate secured to each hook and engaging over the upper faces of two adjacent flooring strips.

2. A knockdown structure comprising a plurality of parallel, vertically-disposed pipe sections, a plurality of horizontal, parallel, longitudinally-disposed pipe-sections which are arranged at right angles to the first-named pipe sections, a plurality of horizontal parallel, transversely-disposed pipe-sections which are arranged at right angles to the first and second named pipe sections, a plurality of fittings for connecting said pipe sections, each fitting being a single casting and having three holes extending completely therethrough, each of said holes being disposed at right angles to and offset from the other two holes to receive, respectively, a vertical, a longitudinal and a transverse pipe section, and means for securing said pipe sections in said fittings.

3. A knockdown structure comprising a plurality of parallel, vertically-disposed pipe sections, a plurality of parallel, longitudinally-disposed pipe sections which are arranged at right angles to the first-named pipe sections, a plurality of parallel, transversely-disposed pipe sections which are arranged at right angles to the first and second named pipe sections, a plural-

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ity of fittings for connecting said pipe sections, each fitting being a single casting having three holes therein disposed at right angles to and offset from one another to receive, respectively, a vertical, a longitudinal, and a transverse pipe section, means for removably securing said pipe sections in said fittings, a decking supported on the longitudinal and transverse pipe sections and comprising a plurality of parallel flooring strips which are hingedly connected together to permit rolling up of the flooring, hooks disposed between adjacent flooring strips engaging the longitudinal pipe sections, and plates secured removably to the hooks overlapping the upper faces of adjacent flooring strips to secure the decking to the longitudinal pipe sections.

4. A knockdown dock comprising a plurality of longitudinally disposed rigid metal pipes arranged in pairs, one pipe of each pair being disposed at one side of the dock and the other pipe of the pair being arranged parallel thereto at the other side of the dock, a plurality of transverse rigid metal pipes disposed between the longitudinal pipes, a plurality of vertically disposed rigid metal pipes, fittings for detachably connecting longitudinal, transverse and vertical pipes to form a rigid framework, and a decking removably mounted on said framework, said decking comprising a plurality of flooring strips which are parallel to and spaced from one another, a plurality of links fastened to the flooring strips, pivot pins for securing adjacent ends of the links together, and means for removably securing the decking to the framework.

5. A knockdown dock comprising a plurality of longitudinally disposed rigid metal pipes arranged in pairs, one pipe of each pair being disposed at one side of the dock and the other pipe of the pair being arranged parallel thereto at the other side of the dock, a plurality of transverse rigid metal pipes disposed between the longitudinal pipes, a plurality of vertically disposed rigid metal pipes, fittings for detachably connecting longitudinal, transverse and vertical pipes to form a rigid framework and a decking removably mounted on said framework, said

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decking comprising a plurality of flooring strips which are parallel to and spaced from one another, a plurality of links fastened to the flooring strips, pivot pins for securing adjacent ends of the links together, and means for removably securing the decking to the framework, said last-named means comprising hooks which are disposed between adjacent flooring strips and whose hooked ends engage around the longitudinal pipes, and a plate removably secured to the other end of each hook which overlaps the upper faces of two adjacent flooring strips.

6. A knockdown dock comprising a plurality of longitudinally disposed rigid metal pipes arranged in pairs, one pipe of each pair being disposed at one side of the dock and the other pipe of the pair being arranged parallel thereto at the other side of the dock, a plurality of transverse rigid metal pipes disposed between longitudinal pipes, a plurality of vertically disposed rigid metal pipes, fittings for detachably connecting longitudinal, transverse, and vertical pipes to form a rigid framework, and a decking removably mounted on said framework, said decking comprising a plurality of flooring strips which are parallel to and spaced from one another, a plurality of links, each link being fastened between its ends to a flooring strip and having its ends projecting laterally beyond opposite sides of the flooring strip, and pins pivotally connecting the adjacent ends of adjacent links together.

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