No. 697,202. Patented Apr. 8, 1902.

L. DONNE.

MECHANISM FOR TRANSFERRING BOATS.

(Application filed May 29, 1901.)

(No Model.) 3 Sheets—Sheet 1.

FIG. 1.

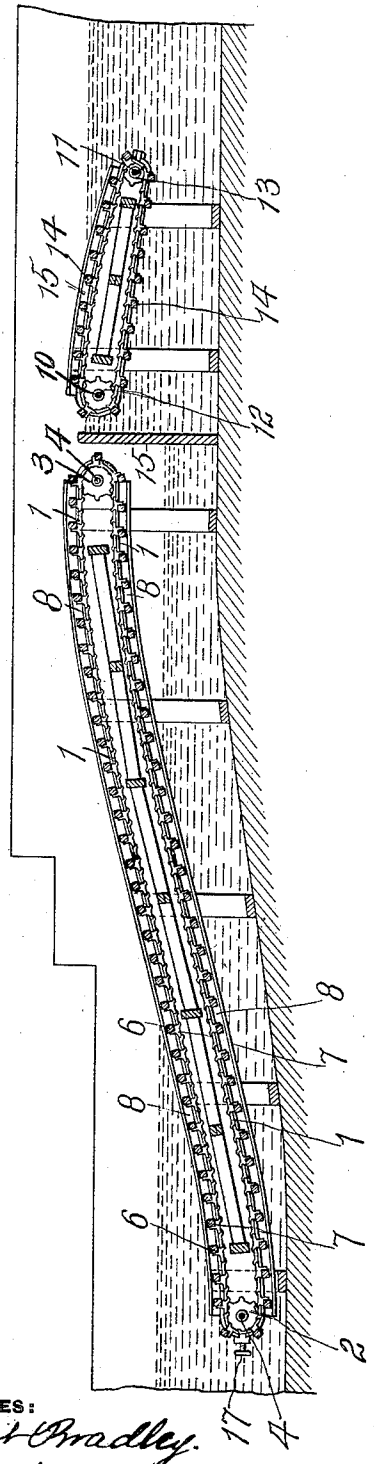

FIG. 2.

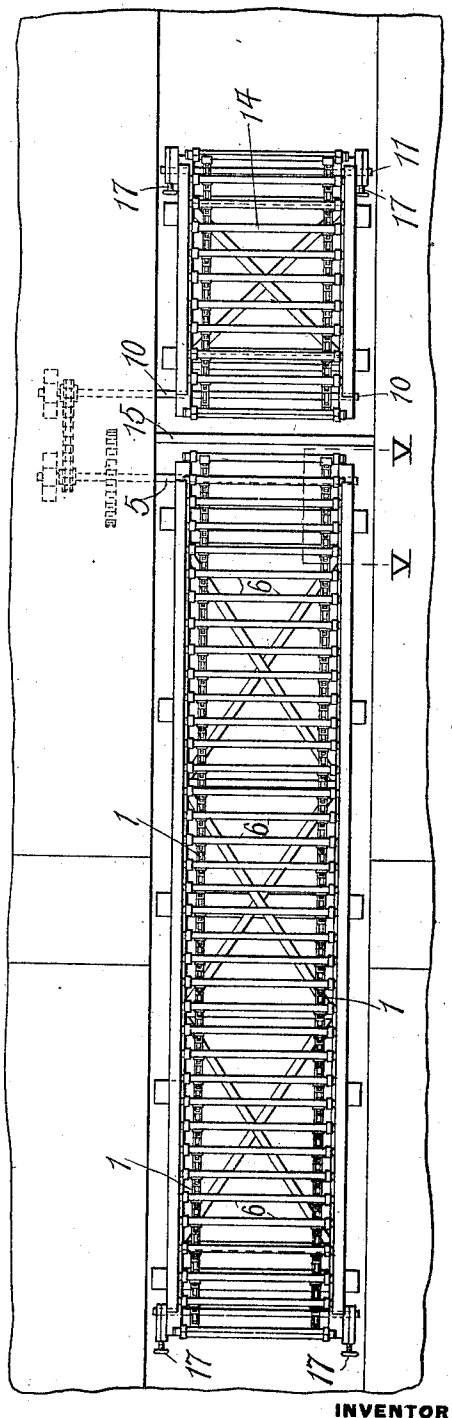

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FIG. 3.

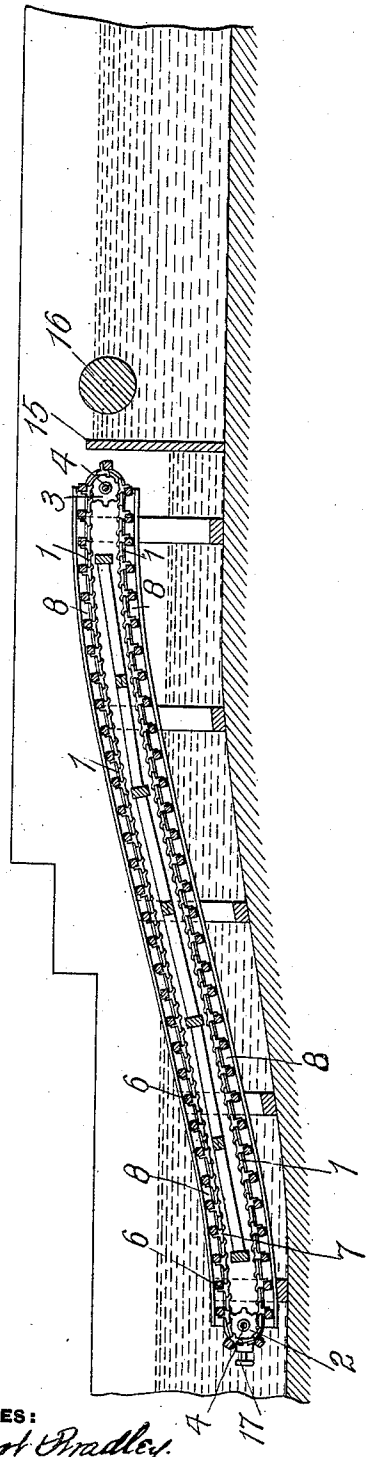

FIG. 4.

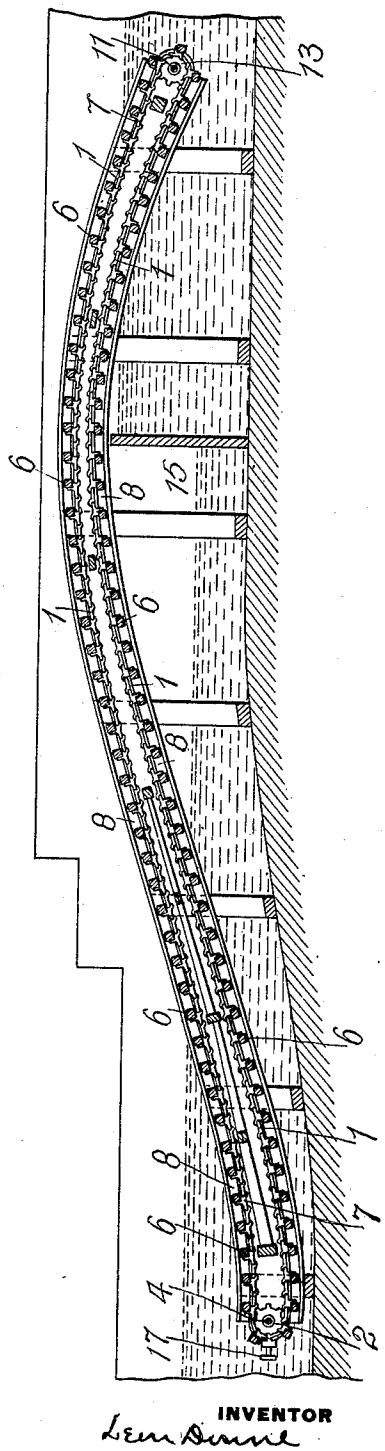

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FIG. 5.

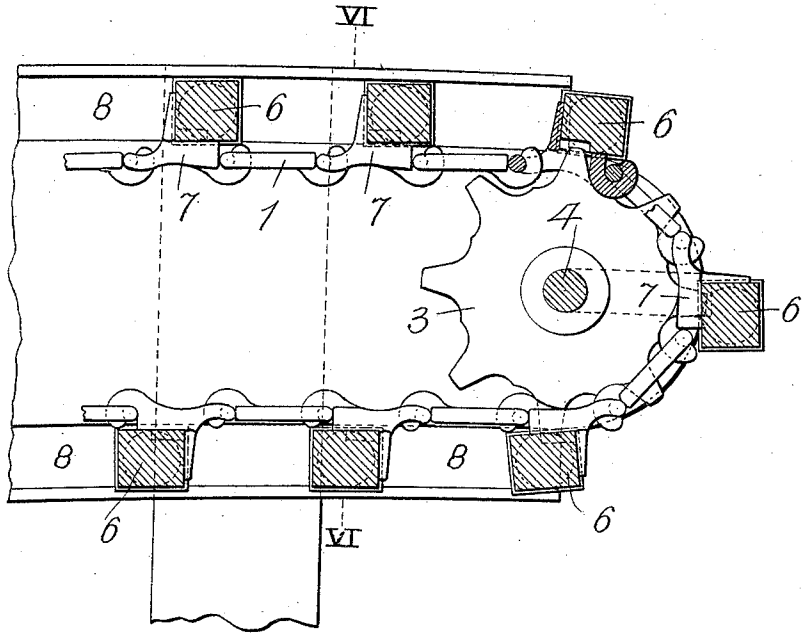
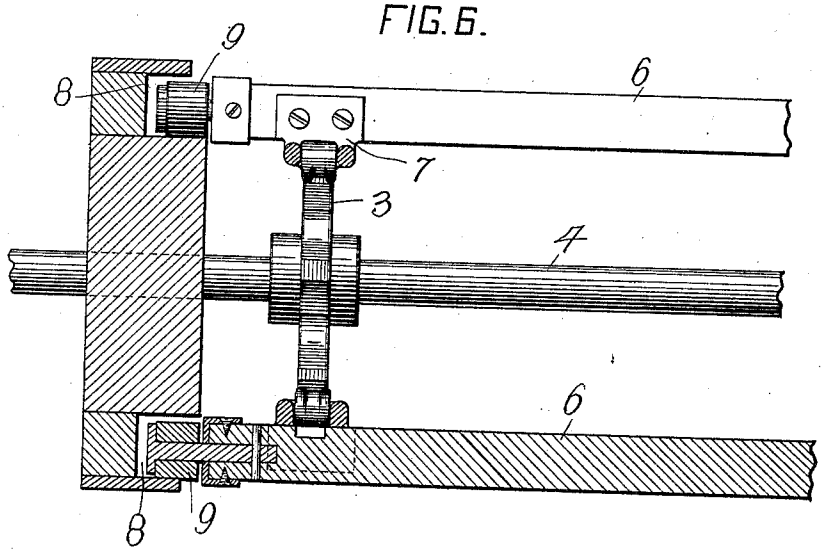


FIG. 6.



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UNITED STATES PATENT OFFICE.

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MECHANISM FOR TRANSFERRING BOATS.

SPECIFICATION forming part of Letters Patent No. 697,202, dated April 8, 1902.

Application filed May 29, 1901. Serial No. 62,299. (No model.)

To all whom it may concern:

Be it known that I, LEON DONNE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented or discovered certain new and useful Improvements in Mechanism for Transferring Boats, of which improvements the following is a specification.

The invention described herein relates to certain improvements in mechanism for shifting boats from water at one level and placing them in water at another level; and the invention consists in general terms in the combination of two or more endless belts carrying supporting-blocks for the boats, portions of said belts or aprons being submerged in the two bodies of water and other portions of the belts being arranged in such relation to each other that the boat will be shifted automatically from one belt or apron to the other.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a sectional elevation of my improved mechanism. Fig. 2 is a top plan view of the same. Figs. 3 and 4 are views similar to Fig. 1, illustrating modifications of my improvement. Fig. 5 is a sectional detail view, on an enlarged scale, on a plane indicated by the line V V, Fig. 2; and Fig. 6 is a transverse section on a plane indicated by the line VI VI, Fig. 5.

In the practice of my invention endless belts, preferably formed of interlocking links 1, are passed around sprocket-wheels 2 and 3, keyed on shafts 4 and 5, respectively. The shaft 4 is so arranged in the channel-way from which the boat is to be lifted that the depth of water above the peripheries of the wheels 2 is greater than the draft of the boat. The shaft 5 is arranged at the highest point the boat is to be raised. A series of supporting-blocks 6 are arranged transversely of the belts or chains and are secured in angular seats 7, formed on a portion of the links. It is preferred that every other link should be formed with seats 7. The ends of the supporting-blocks are supported and guided in grooves 8, formed in the side walls of the channel, to prevent any sagging of the carrying portion of the endless belt, thereby supporting the boat uniformly from end to end at all times during its transfer. It is preferred that the portions of the blocks projecting into the grooves 8 should be formed by rollers 9, loosely mounted on the ends of the blocks, as shown in Fig. 4.

It will be observed that the supporting-blocks 6 form an inclined platform, onto which the boat is floated. As the blocks rise they will bear against the bottom of the boat near its front end and succeeding blocks will take a bearing at regular intervals toward the rear, the boat being carried forward by the moving blocks. As the front shaft and sprocket-wheels are submerged a distance only a little greater than the draft of the boat, the lifting of the front end of the boat cannot cause sufficient dipping of the rear end to permit the inflow of water.

In order to lower the boat into an adjacent channel, it is preferred to employ a similar mechanism consisting of shafts 10 and 11, having sprocket-wheels 12 and 13 keyed thereto, chains or belts passing around the sprocket-wheels, and having supporting-blocks 14 secured thereto, with their ends projecting into grooves 15 in the sides of the channel. The shaft 10 is arranged in close proximity to the shaft 5, so that the boat will be carried forward by the blocks 6 onto the blocks 14 and will be carried by the latter down into the water of the next channel, the shaft 11 and its sprocket-wheels being submerged a depth greater than the draft of the boat.

In order that the boat may be always efficiently supported, the guide-grooves 8 are made horizontal for a short distance at the highest elevation of the lifting and transferring mechanisms. As the two mechanisms should move at the same speed, it is preferred that the shafts 5 and 10 be connected by gearing or belt and a suitable motor connected to one of said shafts.

In lieu of employing two mechanisms for raising and lowering the boat the sprocket-chains can be passed around the wheels on shafts 4 and 11, as shown in Fig. 4. In such case power would be applied to the shaft 11, which would be extended out through a stuff-

ing-box in the side wall of the channel. In order to reduce as far as possible the vertical lift, the guideways 8 for the ends of the supporting-blocks are brought as close to the upper edge of the dam 15, separating the channels.

As shown in Fig. 3, a loosely-mounted roller 16 may be employed as it passes from the lifting mechanism into the upper level of the channel. In the form of apparatus shown in Figs. 1 and 3 the upper ends of the lifting and delivering mechanisms are preferably arranged only slightly above the level of the edge of the dam, so as to avoid unnecessary lifting of the boat and its load.

The idler-shafts 4 and 11 in the construction shown in Fig. 1 and shaft 4 in the forms shown in Figs. 3 and 4 have their bearings so constructed and arranged as to permit of their being shifted by the screws 17 or other suitable means to adjust the tension of the sprocket-chains.

It is characteristic of my improvement that a nearly continuous support is provided for the boat during its transfer, thereby avoiding any liability of straining the same while being shifted with its load.

I claim herein as my invention—

1. As a means for moving boats from one level to another the combination of two shafts provided with wheels, one of said shafts being located below the level from which the boat is to be moved, and the other shaft at a higher level, an endless belt or apron provided, arranged around the wheels on said shafts and provided with supports for the boat, and means for preventing a sagging of the carrying portion of the endless belt or chain, substantially as set forth.

2. As a means for moving boats from one level to another, the combination of two shafts provided with wheels, one of said shafts being located below the level from which the boat is to be moved, and the other shaft at a higher level, an endless belt or apron passing around the wheels on said shafts, supporting-blocks secured to the belts or apron, and guideways or supports for the blocks extending from one level to the other, substantially as set forth.

3. The combination of two water-channels located on different levels, two pairs of shafts provided with wheels, one shaft of each pair being located below the levels of water in the respective channels, and the other shafts of each pair being located in a plane above the water in the higher channel, endless belts or aprons arranged around the wheels on said pairs of shafts, supporting-blocks secured to said belts, and guideways or supports for the ends of the blocks extending between the shafts of each pair, substantially as set forth.

4. The combination of two water-channels located on different levels, two shafts provided with wheels, one of said shafts being located below the level of the water in the lower channel, and the other shaft above the level of the other channel, an endless belt or chain arranged around the wheels on said shafts, boat-supports secured to the belt or chain, means for preventing a sagging of the carrying portion of the endless belt or chain, and means for receiving the boat from said supports and directing it into the other channel, substantially as set forth.

In testimony whereof I have hereunto set my hand.

LEON DONNE.

Witnesses:
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