L. DION.

GUARD FOR CHANNELED MARINE VESSELS.

APPLICATION FILED OCT. 20, 1905. RENEWED FEB. 20, 1908.

900,008.

Patented Sept. 29, 1908.

Fig. 1.

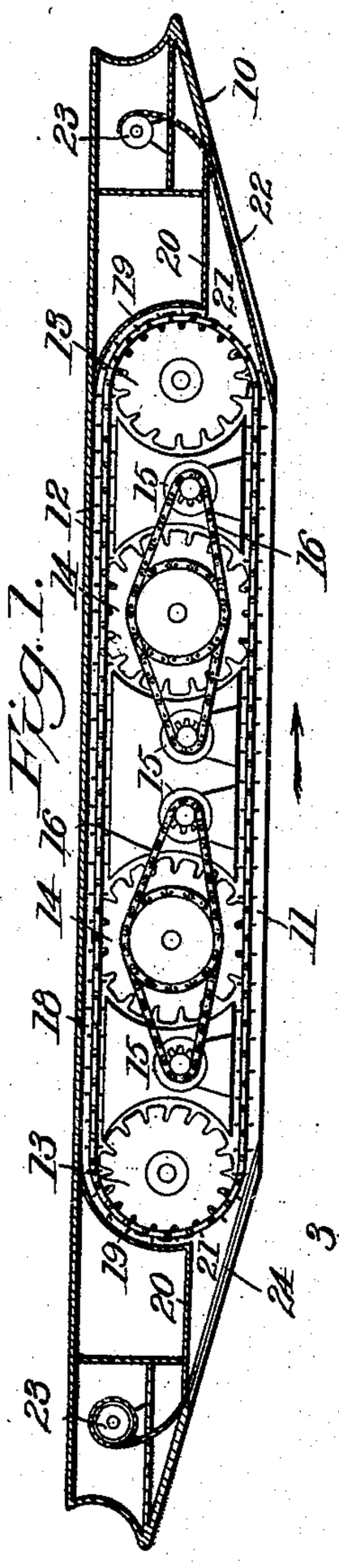


Fig. 3.

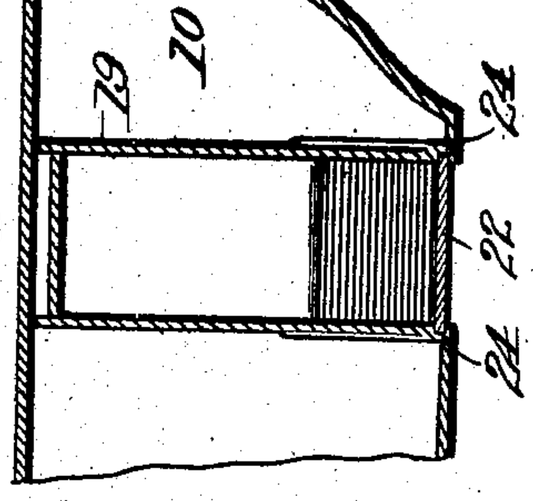


Fig. 5.

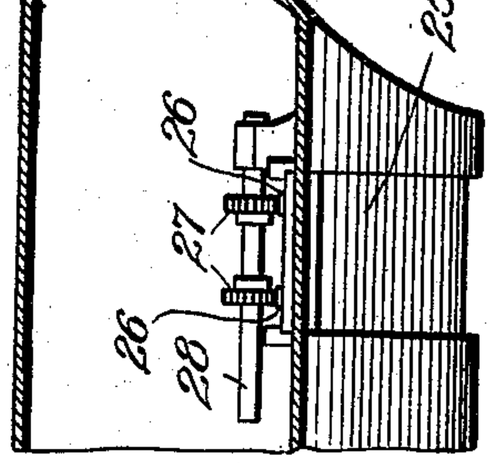


Fig. 2.

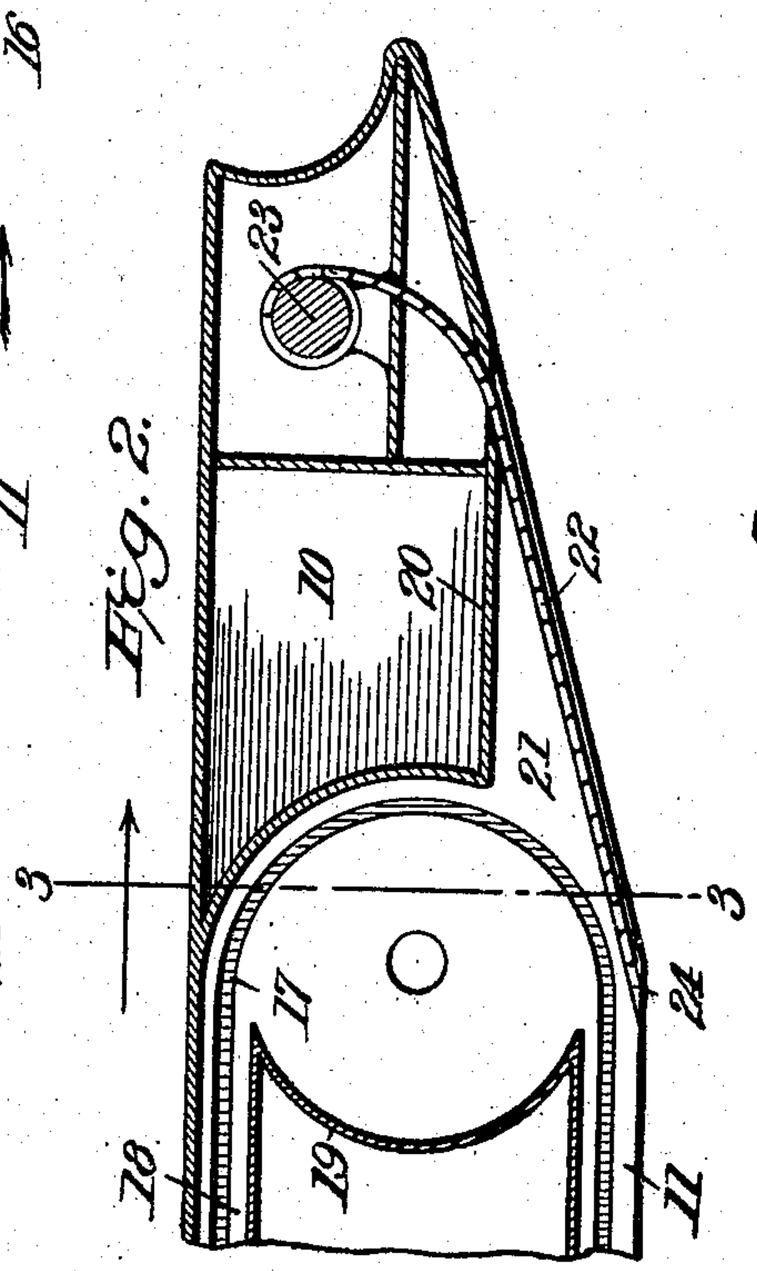
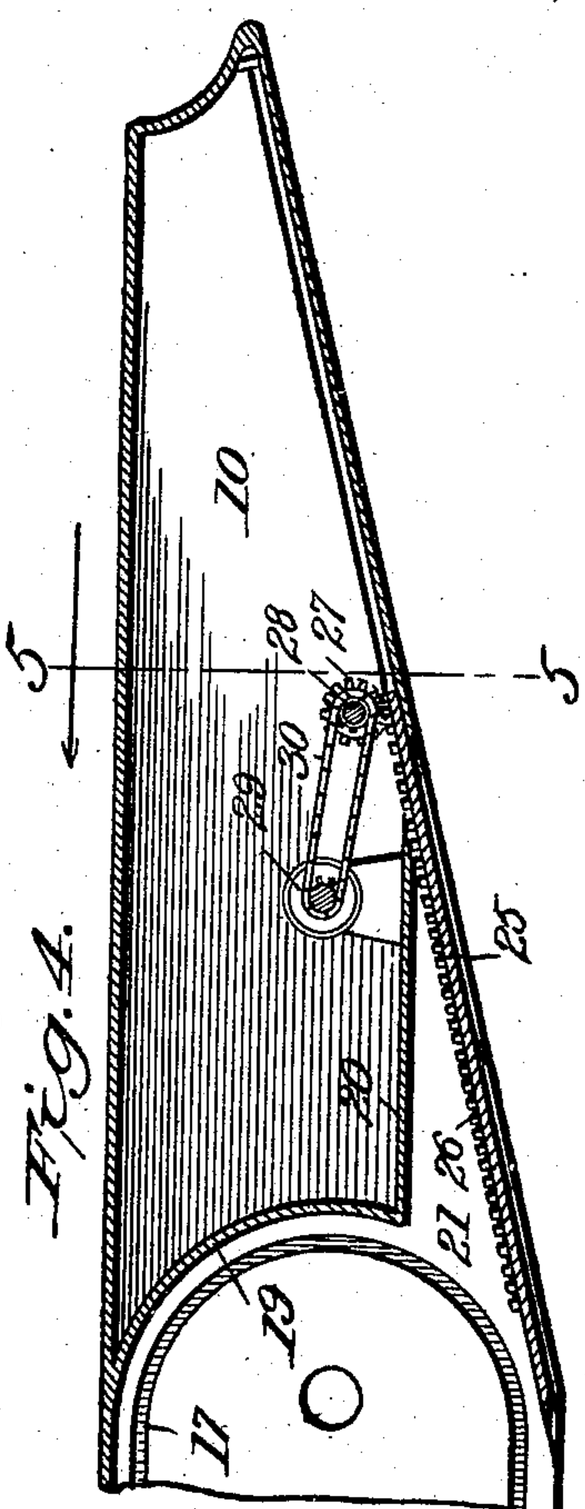


Fig. 4.



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GUARD FOR CHANNELED MARINE VESSELS.

No. 900,008. Specification of Letters Patent. Patented Sept. 29, 1908.

Application filed October 20, 1905, Serial No. 283,676. Renewed February 20, 1908. Serial No. 416,925.

To all whom it may concern:

Be it known that I, LÉON DION, of Wilkes-Barre, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Guards for Channeled Marine Vessels, of which the following is a specification.

This invention relates to navigable vessels of that type having one or more channels extending longitudinally of the bottom, said channels being open at the bottom and closed at top and sides, an endless series of paddles being caused to move along said channels to exert a pulling force on the water to propel the vessel.

One of the objects of the present invention is to provide a vessel of this character with means to prevent the water from offering resistance to the downward movement of the paddles when passing over the forward supporting drum toward the front end of the bottom channel.

Another object is to provide a vessel of this character having both ends alike, each end of the channel or channels being fitted with a movable guard or platform which may be shifted to or from position across the end of the channel to form a chamber at the end of the vessel which is being used as the bow and to open a free space at the other end or stern.

To these ends, the invention consists in the construction and combination of parts substantially as hereinafter described and claimed.

Of the accompanying drawings:—Figure 1 represents a longitudinal section through a double end vessel having my invention, in one of its embodiments, applied thereto. Fig. 2 is a detail view similar to the right-hand end of Fig. 1, but on a larger scale, the end drum and the series of buckets being omitted. Fig. 3 represents a section on line 3—3 of Fig. 2. Fig. 4 is a view similar to Fig. 2, showing a different construction of a slidably-movable guard or platform. Fig. 5 represents a section on line 5—5 of Fig. 4.

Similar reference characters indicate the same or similar views in all the figures.

The hull 10 of the vessel is represented in Fig. 1 as being "double-ended"; that is, both ends are alike similar to a ferry boat. Suitable rudders (not shown) will, of course, be employed. One or more channels 11 are formed in the bottom of the hull. An endless series of paddles 12 is mounted on suitable end drums 13, and engaged by drive-wheels 14 intermediate the drums 13 and arranged in tandem therewith, said wheels 14 being driven by motors indicated at 15, through suitable connections, as sprocket chains 16. Portions of the paddle sections may enter guide grooves 17 in the walls of the channel 11 and in the walls of the upper chute or guideway 18 for the return stretch of the series. The drums and drive-wheels are provided with curved shields or casings 19 to inclose them except at those points where the series of paddles approach and leave said drums and wheels.

At each end of the vessel, beyond the drums 13, are floors, platforms, or horizontal partitions 20 which are above the level of the top or roof of the channel 11 so that the water may freely leave the paddles at the stern, each partition 20 forming the roof of a chamber 21 in line with, and forming a continuation of the channel 11. Each chamber 21 may have its bottom closed, by means which I shall now describe:—

Referring first to Figs. 1, 2 and 3, the guard or sliding closure for the bottom of the chamber 21 comprises a series of strips or slats 22 of steel or other suitable material possessing the necessary strength, said strips being jointed together as by being riveted to a flexible guard or apron adapted to be wound on a suitable drum or reel 23. The edges of this guard or apron, comprising the ends of the strips, enter inclined grooves 24 in the opposing walls of the chamber 21, near the lower edge thereof, whereby the guard, when lowered, will be held in an inclined position such as represented at the right of Fig. 1. Suitable packing may be employed at the opening through which the guard or closure passes to the drum or reel 23.

When the vessel is traveling in the direction of the arrow in Fig. 1, the sliding guard or shield 22 is lowered to the position shown at the right of said figure, that end of the vessel being then the bow, and the other guard or shield will be raised. Therefore, when the paddles are started, the water between the partition 20 and guard 22 will almost immediately be exhausted, after which the paddles encounter little or no resistance when moving downward under the front drum 13. The raised guard or shield 22 at the stern permits the water to escape

freely. When the vessel is to be propelled in the opposite direction, the relative positions of the two guards or shields 22 will be reversed.

Instead of employing flexible guards or closures for the bottoms of the chambers 21, such guards may be continuous plates 25 (see Figs. 4 and 5) fitted to the guide grooves 24 and having rack teeth 26 on their upper surfaces, the rack teeth of each plate 25 being engaged by pinions or gears 27 on a shaft 28 driven by a suitable motor 29 through the medium of drive belts 30. The purpose of the slides 25 is the same as above described in connection with the flexible guards 22, and the operation thereof need not be repeated.

I do not limit myself to the details of construction here shown, and may variously modify the same without departing from the spirit of the invention. For instance, the edges of the guard or shield, instead of fitting in grooves 24, may themselves be grooved to receive ribs located in the place of said grooves 24.

Having now described my invention, I claim:—

1. A navigable vessel having a channel in its bottom, an endless series of paddles movable along said channel, and an inclined guard or shield at the bow extending to a point under the front end of said channel to prevent the entrance of water to the extreme front end of the channel when the vessel is moving forward.

2. A navigable vessel having a channel in its bottom, an endless series of paddles movable along said channel, and an inclined guard or shield at the bow extending to a point under the front end of said channel to prevent the entrance of water to the extreme front end of the channel when the vessel is moving forward, said guard or shield being adjustable.

3. A navigable vessel having a channel in its bottom and formed with a chamber at each end in line with said channel, an endless series of paddles movable along said channel, and inclined guards or shields movable to and from position across the bottom of said chambers.

4. A double-end navigable vessel having a channel in its bottom and formed with a chamber at each end in line with said channel, an endless series of paddles movable along said channel, inclined guides along the bottoms of said chambers, and guards or shields mounted to slide along said guides to close or open the bottoms of said chambers.

In testimony whereof I have affixed my signature, in presence of two witnesses.

LÉON DION.

Witnesses:
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