United States Patent

[11] **3,547,066**

[72] Inventors **Boris Andreevich Bugaenko**
Prospekt Lenina, 30, kv. 32;
Georgy Ivanovich Vladinets, Prospekt
Lenina, 30, kv. 13, Nikolaev, U.S.S.R.

[21] Appl. No. **796,970**
[22] Filed **Feb. 6, 1969**
[45] Patented **Dec. 15, 1970**

[54] **ANCHOR CHAIN ARRESTER**
3 Claims, 2 Drawing Figs.

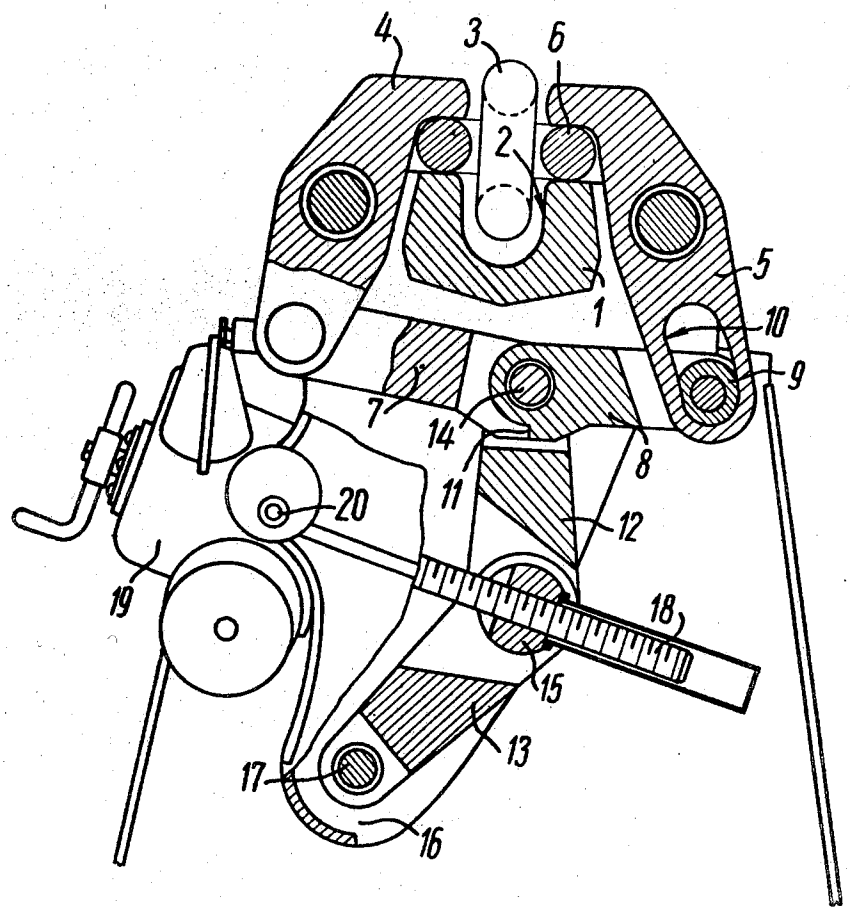
[52] **U.S. Cl.** **114/200**
[51] **Int. Cl.** **B63b 21/18**
[50] **Field of Search** 114/200

[56] **References Cited**
UNITED STATES PATENTS

311,573	2/1885	Emery	114/200
620,438	2/1899	Fouts	114/200X

Primary Examiner—Andrew H. Farrell
Attorney—Waters, Roditi, Schwartz & Nissen

ABSTRACT: An anchor chain arrestor having a linkage which extends the closing or clamping limit of the arrester comprising a pair of pivotally mounted holddown levers actuated by a pair of shackles connected together for limited angular motion wherein one shackle has an end pivoted to one of said levers and the other shackle is pivotally and slidably connected to the other of said holddown levers.



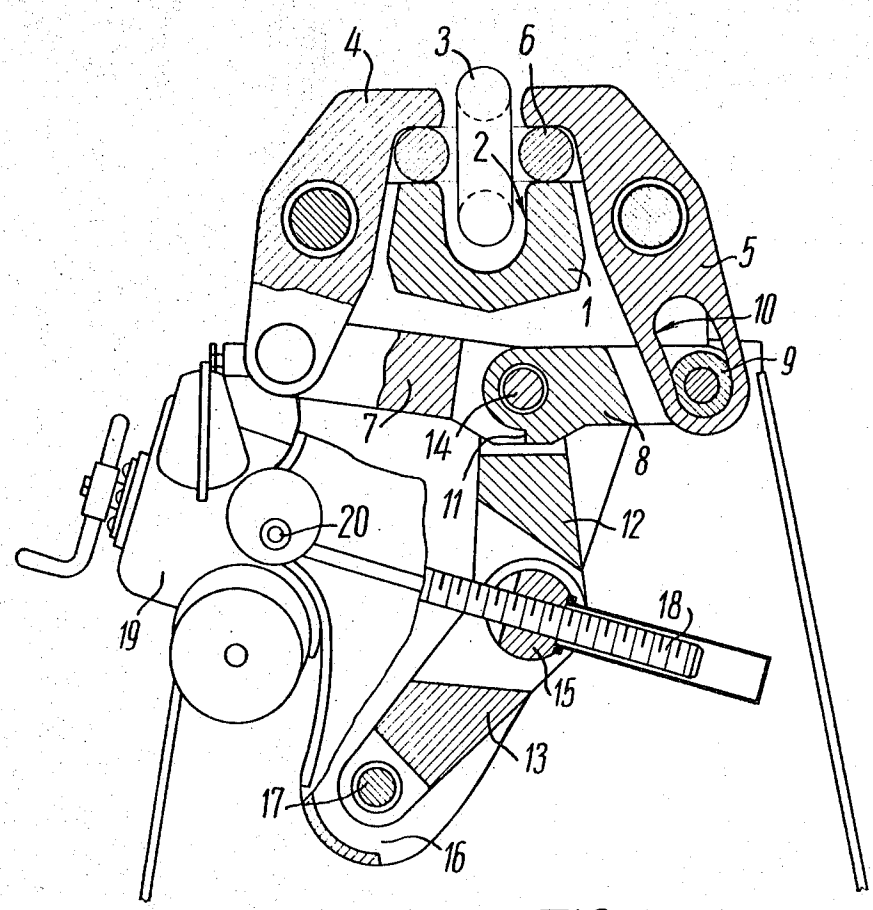


FIG. 1

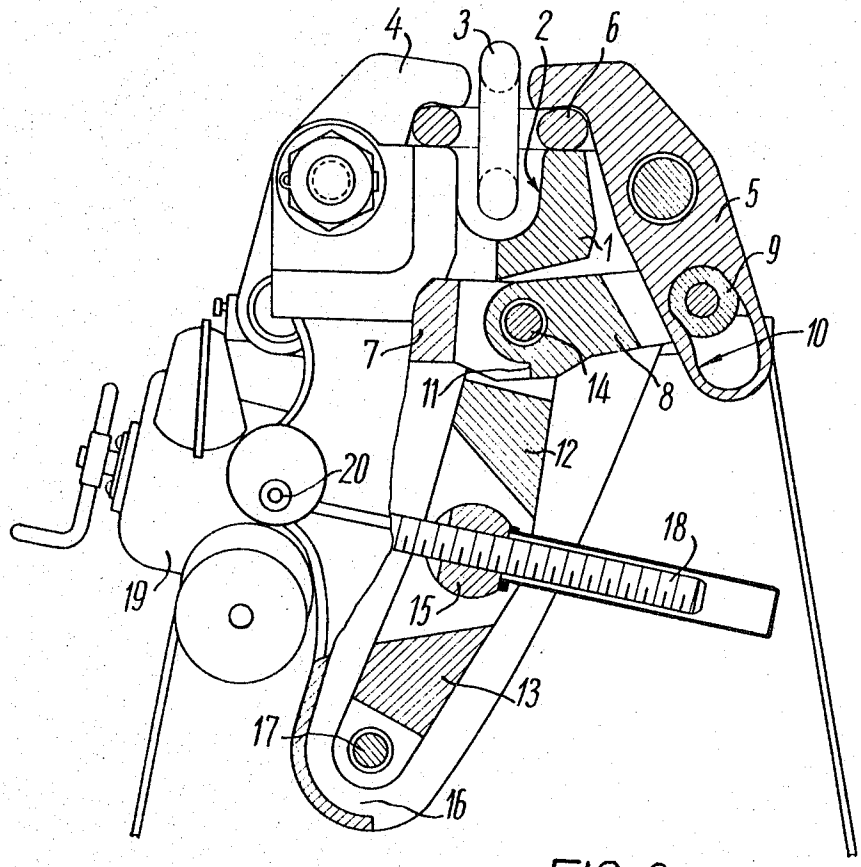


FIG. 2

ANCHOR CHAIN ARRESTER

The present invention relates to marine auxiliary deck machinery and more particularly it relates to anchor chain arresters.

Known in the art are anchor chain arresters, comprising a plate with pivoted two-arm holddown levers whose ends located farther from the chain are articulated to the ends of two shackles the opposite ends of these shackles being articulated to each other and operatively connected to the electric motor shaft. Owing to this connection the shackle joint can move vertically, actuating the holddown levers which either lock or release the anchor chain.

Due to the vertical movement of the joint of these shackles which form a pair, the drive has to be arranged under the arrester, below the upper deck, and the deck is provided with apertures for the output member of the drive. Besides, the system of arrester levers and shackles fails to provide a considerable gain in the power of the drive and does not ensure reliable locking of a chain with worn links.

An object of the present invention resides in eliminating the aforesaid disadvantages and in providing an anchor chain arrester which would combine a relatively simple design with a deck-mounted drive of a comparatively low power rating. Another object of the invention is to ensure reliable locking of the worn chain.

These objects are achieved by providing an anchor chain arrester with a pair of two-arm holddown levers whose ends, located farther from the chain, are articulated to the ends of the pair of shackles, the other ends of said shackles being connected to each other by a joint which can move in a vertical plane. According to the invention, said joint is connected to the end of one shackle out of the next articulated pair, while the end of the second shackle of the second pair is articulated to the arrester body and the shackle joint of the second pair is operatively connected to the arrester drive.

It is practicable to make said first pair of shackles with a provision for limiting their opening angle, and make the joint connecting one of the shackles of this pair with the holddown lever so that it would be able to move towards the axis of rotation of said holddown lever at a fixed opening angle of the first pair of shackles.

It is also practicable to provide the joint which connects one of the shackles of said first pair to the holddown lever with a slide accommodated in a shaped hole of the holddown lever.

Given below is a detailed description of the invention by way of example with reference to the accompanying drawings (in which):

FIG. 1 shows a cross section of an anchor chain arrester according to the invention, in locked position, a new chain;

FIG. 2 shows the same, a worn chain.

Pivoted on an arrester plate 1 (FIG. 1) which has a groove 2 for vertical chain links 3 are two-arm holddown levers 4 and 5, whose upper arms are intended to holddown a horizontal link 6 while the lower arms located farther from the chain are connected to two shackles 7 and 8 forming the first pair. The holddown lever 5 is connected to the shackle 8 so that the slide 9 of the shackle 8 can move in a shaped hole 10 of the holddown lever 5. The ends of the shackles 7 and 8 have stops 11, fixing the opening angle of said shackles.

The shackles 7 and 8 are connected to the shackles 12 and 13 of the second pair by an axle 14. The shackles 12 and 13 are interconnected by means of an axle 15, one end of the shackle 13 being connected to the arrester body 16 by an axle 17.

The axle 15 has a threaded hole receiving a screw 18 of the output member of a drive 19. The drive 19 is installed on the arrester body 16 by means of half-axles 20.

To lock the chain, the axle 15 is rotated by the screw 18 thus setting in motion the system of shackles.

Turning around the axle 17, the shackle 13 moves the shackle 12 upwards. The latter, in turn, actuates the shackles 7 and 8 of the first pair via the axle 14; these shackles 7 and 8, turning about the axle 14 until they come in contact with the stops 11, actuate the holddown levers 4 and 5, which lock the anchor chain.

While locking a new another chain, which bears no traces of wear or corrosion and is manufactured with a positive tolerance on the link size, the slide 9 will come to the lower part of the shaped hole 10.

While locking a worn or corroded chain, the slide 9 (FIG. 2) will come to the middle or upper position in said hole, depending on the degree of the chain wear.

To release the chain, the screw 18 of the drive 19 should be rotated in the opposite direction.

An experimental specimen of the anchor chain arrester of 34 mm gauge has a holding force of 4,000 kg, overall dimensions (with the drive) of 820×615×620 mm, and weighs 160 kg (without the drive).

We claim:

1. An anchor chain arrester comprising: a body and a pair of two-arm holddown levers interacting with the anchor chain; a first pair of shackles, and one end of each shackle being connected to those ends of said holddown levers which are farther from said anchor chain while the other ends of this pair of shackles are connected to each other by a joint which can move in a vertical plane; a second pair of articulated shackles the end of one of which is connected to said joint of the first pair of shackles while the second end of this shackle is articulated to said arrester body; and arrester drive operatively connected to the joint connecting said second pair of shackles.

2. An anchor chain arrester according to claim 1 wherein the first pair of shackles has a provision for limiting their opening angle and the joint connecting one of the shackles of this pair with the holddown lever can move with relation to the axis of rotation of said holddown lever at a fixed opening angle of the first pair of shackles.

3. An anchor chain arrester according to claim 2 wherein the joint connecting the first pair of shackles with the holddown lever has a slide moving in the shaped hole of the holddown lever.