Nov. 10, 1931. A. P. SCHAT 1,830,890

WINDING APPARATUS FOR THE FALL OF SHIPS' LIFE BOATS

Filed Dec. 7, 1929 2 Sheets-Sheet 1

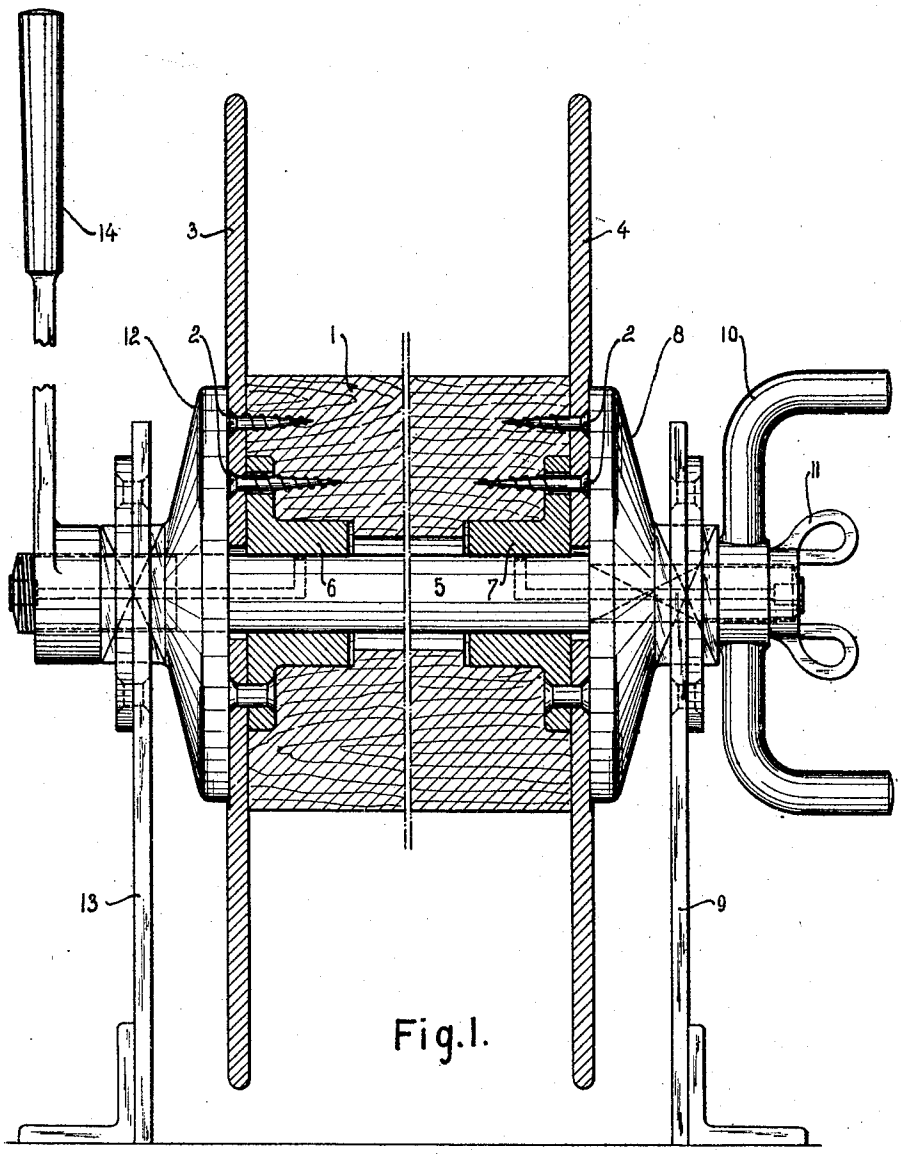


Fig. 1.

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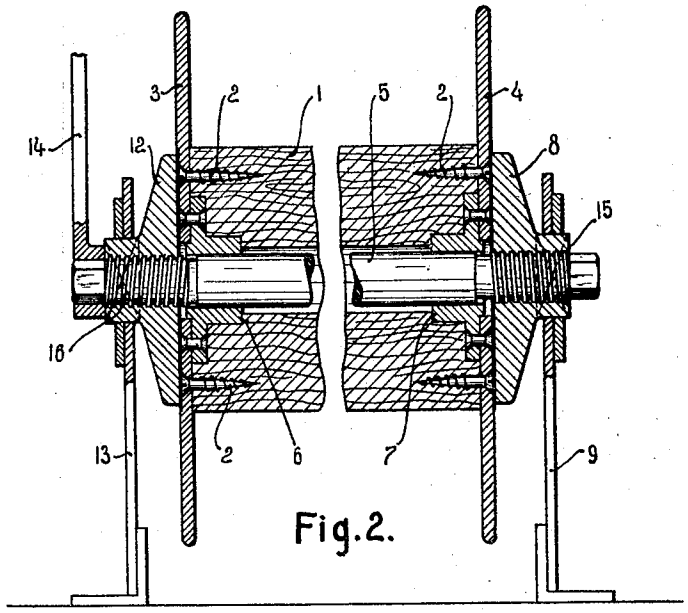


Fig.2.

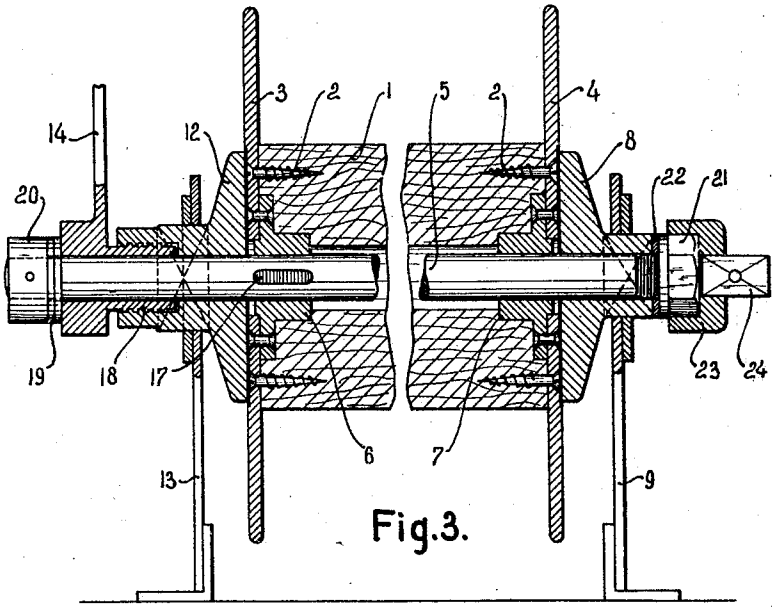


Fig.3.

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UNITED STATES PATENT OFFICE

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WINDING APPARATUS FOR THE FALL OF SHIPS' LIFE BOATS

Application filed December 7, 1929, Serial No. 412,344, and in the Netherlands September 26, 1928.

The fall of a life boat is ordinarily wound on a drum mounted for rotation in brackets secured to deck. When the fall is being paid out, the same is passed over a bollard or a cleat, whereby the tension in the hauling part is reduced to such an extent that said part can be held by hand. Said drum only serves the purpose to prevent the fall from fouling, because the resistance required to keep the speed of the descending boat within suitable limits is entirely supplied by the bollard or cleat, and by the crew.

The object of my present invention is a winding apparatus of the above type, provided with a special brake mechanism by means of which the hauling part of the fall can be held against the gravity pull of the boat, without the fall being passed over a bollard or cleat. The novel construction meets the condition, fundamental on board ships, that the gear may not require any supervision—as otherwise it might fail to properly operate in the crucial moment—and that its appearance may not appreciably differ from that of the conventional winding drums, as otherwise the apparatus might excite the sailor's well-known aversion against mechanical appliances.

In order that my invention may be fully understood, I shall now proceed to describe the same with reference to the annexed drawings, Figs. 1, 2 and 3 of which illustrate sectional elevations of three different embodiments thereof and in which equivalent parts are designated by the same reference numerals throughout.

In Fig. 1, the apparatus comprises a wooden roller 1, to the end faces of which are secured, by means of countersunk screws 2, sheet iron side plates 3 and 4, respectively. This system is freely revoluble about a shaft 5 through the medium of cast iron flanged collars 6, 7 sunk into the end faces of the wooden roller and secured to the side plates 3, 4.

That portion of the shaft which projects from the side plate 4 is square through part of its length, said square having a sliding fit within a square aperture in the hub portion of a brake disk 8 which, in turn, has a sliding fit within a square aperture of a bracket 9 secured to deck. The right hand side end of shaft 5 is gas screw threaded to receive a stem nut 10 and a lock nut 11.

The left hand side end of shaft 5, which is provided with screw thread having a relatively steep pitch to receive the threaded hub of a hand lever 14, is supported within the hub portion of a second brake disk 12 having a square slidably fitting within a square aperture of a second bracket 13.

By means of the stem nut 10, the described apparatus is adjusted so that, when lever 14 assumes a substantially vertical position, one quarter of a turn thereof suffices to pull shaft 5—which, as will be understood from the above description, is prevented from rotation—to the left to an extent as to cause the brake disks 8, 12 to firmly clamp the roller 1 with its side plates and thus to prevent the fall from being paid out. In this connection it is pertinent to remark that winding apparatus of the type referred to may as a rule occupy very little deck space and that it is often placed close to the railing at a minimum distance from the life boat. Moreover, care should be taken that the brake handle of said apparatus under all conditions clears the cranks by means of which the davits are to be handled, and as said apparatus must be mounted in close proximity of a davit it will be understood that adjustability of the braking position of said handle is of great importance.

During the braking action, the wooden roller 1 is under axial strain of pressure, whereas shaft 5 is under axial strain of tension, i. e. both parts are loaded in the most favourable manner. The construction of the device is of the utmost simplicity and the operation is so easy that even unskilled persons cannot make a mistake.

With the use of the described apparatus it is not absolutely necessary to pass the hauling part of the fall over a bollard or cleat, although this may and in most cases will be done. In emergency cases the boat can be held poised exclusively by means of the brake disks 8, 12 which, when forcibly pressed towards one another by means of the lever 14,

counteract any tendency of the roller 1 to rotate.

Fig. 2 shows an apparatus in which the wooden roller 1 is rotatably mounted on shaft 5 and the brake disks 8, 12 are slidably but non-rotatably supported by the brackets 9, 13, in exactly the same manner as illustrated in Fig. 1. In this instance, however, the shaft 5 engages the brake disks 8, 12 through right and left hand screw threads 15, 16 and is provided on both ends with a hexagon to receive in a suitable angular position the hand lever 14, the hub portion of which has an aperture of corresponding shape. Thus, rotation of the shaft 5 by means of the lever in the one or in the other direction results in an axial movement of the brake disks towards or away from one another, whereby the roller 1 is braked or released, respectively. Also with this apparatus the parts should be so adjusted that, when lever 14 is substantially vertical, one quarter of a turn thereof will cause the roller to be firmly held against rotation.

The device illustrated in Fig. 3 differs from those according to Figs. 1 and 2 in that the system comprising the wooden roller 1, the iron side plates 3, 4 and associate parts is secured to shaft 5 by means of a key 17 and that the shaft is freely revoluble within bearings of the brake disks 8, 12. The hub of hand lever 14, which is revoluble on shaft 5 and has freedom of sliding movement over the same, has a screw connection 18 with the hub of brake disk 12, and, as shown, abuts with its left hand side face against a gun metal ring 19 locked by a collar 20 against displacement to the left.

The projecting right hand side portion of shaft 5 carries a nut 21 serving as an abutment for a gun metal ring 22 engaging the right hand side end face of brake disk 8, said nut being prevented from rotation on shaft 5 by a lock nut 23 passed on the square end 24 of said shaft.

Also with the construction shown in Fig. 3, angular motion of lever 14 results in axial movement of the brake disks towards or away from another so as to brake or release the roller 1, but this gear has the advantage that the roller can be turned by means of a crank to be placed on the square 24, whereby the empty fall after the launching of the boat, can be wound on the roller quicker than it can be done with the apparatus shown in Figs. 1 and 2.

As a matter of course, the hand lever 14 in all embodiments could be replaced by its equivalent, such as a hand wheel.

What I claim is:—

1. Winding apparatus for the fall of a ship's life boat, comprising two vertical fixed brackets, a horizontal shaft supported by said brackets by the intermediary of a pair of brake discs slidably but non-rotatably mounted in said brackets, a reel mounted on said shaft between said brake discs in adjustable frictional engagement with the active surfaces thereof, a braking handle mounted on one end of said shaft for actuating said discs and means mounted on the opposite end of said shaft for adjusting the braking position of said handle.

2. Winding apparatus for the fall of a ship's life boat, comprising two vertical fixed brackets, a horizontal shaft provided with screw thread at both ends and supported by said brackets by the intermediary of a pair of brake discs slidably but non-rotatably mounted in said brackets, a reel consisting of two bearings mounted for free rotation on said shaft, of a wooden drum and of two iron side plates secured to the faces of said bearings and of said drum respectively, said plates being in adjustable frictional engagement with the active surfaces of said brake discs, a braking handle screwable on the one threaded end of said shaft for actuating said discs and a stem and lock-nut device acting on the opposite threaded end of said shaft for adjusting the braking position of said handle.

3. Winding apparatus for the fall of a ship's life boat, comprising two vertical fixed brackets, a horizontal shaft supported by said brackets by the intermediary of a pair of brake discs slidably but non-rotatably mounted in said brackets, a reel consisting of two bearings mounted for free rotation on said shaft, of a wooden drum and of two iron side plates secured to the faces of said bearings and of said drum respectively, said plates being in adjustable frictional engagement with the active surfaces of said brake discs, a braking handle secured at one end of said shaft for actuating said discs, a right and left hand screw connection between said shaft and said discs in such a manner that angular movement of said handle results in axial movement of said discs toward or away from one another and a nut screwable on the opposite end of said shaft so as to press more or less on the brake disc remote from the handle and thus adjust the braking position of said latter.

4. Winding apparatus for the fall of a ship's life boat comprising two vertical fixed brackets, a horizontal shaft supported by said brackets by the intermediary of a pair of brake discs slidably but non-rotatably mounted in said brackets, a reel consisting of two bearings keyed on said shaft, of a wooden drum and of two iron side plates secured to the faces of said bearings and of said drum respectively, said plates being in adjustable frictional engagement with the active surfaces of said brake discs, a braking handle, mounted for free rotation on one end of said shaft between one of said discs and an axial abutment, for actuating said discs, a screw

connection between said handle and the adjacent brake disc in such a manner that angular movement of said handle results in axial movement of said discs toward or away from one another, a nut screwable on the opposite end of said shaft so as to press more or less on the brake disc remote from the handle and thus adjust the braking position of said latter and locking means for securing said nut in its setting position.

In testimony whereof I affix my signature.

ANE PIETER SCHAT.