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R. LIBANI

LOWERING GEAR FOR LIFEBOATS

Filed March 8, 1927

Fig. 1.

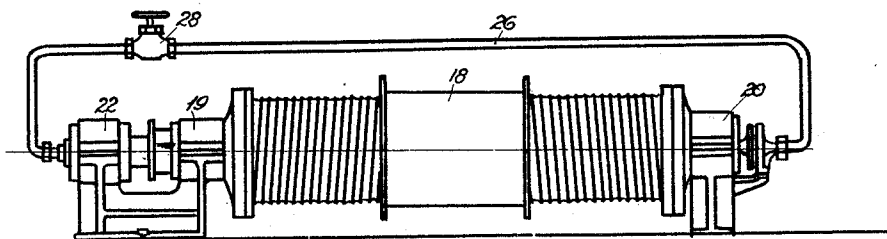


Fig. 2.

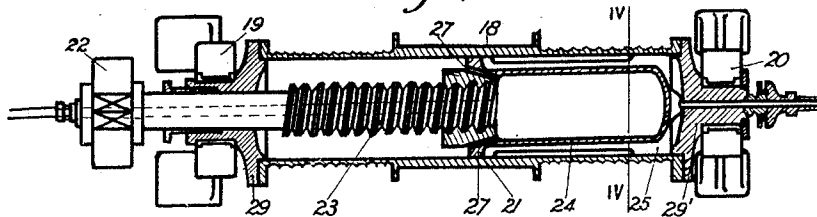


Fig. 3.

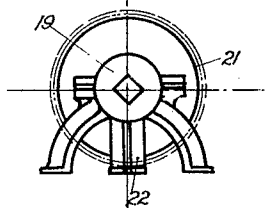
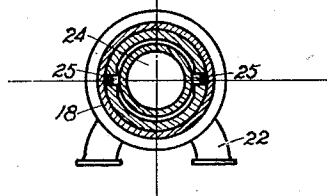


Fig. 4.



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LOWERING GEAR FOR LIFEBOATS.

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The present invention relates to an improved lowering gear for lifeboats, and its object is to provide a new system which shows certain advantages as regards to the known systems, as they will be better seen hereinafter.

The invention substantially consists in replacing the usual davits by two supporting frames having a hinged portion and formed at the upper portion as a continuous inclined plane provided with railways, the boat, when not in use remaining suspended on a transversal beam carrying wheels at its ends, engaging the upper part of the inclined railways. In that position the hinged parts are generally turned inwardly, in order as not to project overboard, but when the boat has to be lowered, and is allowed to run down the inclined railways near the end of the outer part of the frames, it is automatically allowed to descend into the sea.

The invention consists further in a hydraulic brake and cable-drum combined, especially adapted for use in connection with lowering gears for lifeboats.

An embodiment of the invention is described hereinafter, with reference to the accompanying drawings, in which:

Figure 1 shows in enlarged scale a longitudinal or front elevation of the combined braking- and cable-coiling-device.

Figure 2 is an horizontal axial section through the body of the device as shown in Figure 1;

Figure 3 is a side elevation of the device shown in Figure 1; and

Figure 4 is a transverse section taken on line IV—IV of Figure 2.

A hollow cylinder 18, on the surface of which the drums for coiling cable are formed, is fitted at its ends with two end pieces ending with two hollow journals 29, 29', rotatably mounted in suitable bearings 19, 20. In the calibrated internal space of the cylinder 18, a piston body 21 is fluid-tightly mounted, a threaded perforation being bored through the central part of the piston in which the screw-threaded portion of a fixed shaft 23 is screwed. This shaft 23 is co-axial with the cylinder 18 and is not allowed to turn, either with the cylinder or separately, because of its outer square head fitted in a corresponding recess in an external fixed supporting member 22. Integral with the piston body 21, or tightly attached thereto by the side opposite to that of the screw-threaded shaft, is a cylin-

drical member, closed at its outer end, or blind cylinder 24. Narrow passages 27 bored through the piston body 21 put in communication the space in the blind cylinder 24 with that portion of the cylinder 18, in which the threaded fixed shaft is fitted. The blind cylinder is formed at its outer end with a suitable number of outwardly radially projecting guide members or wings 25, slidable in corresponding longitudinal grooves in the corresponding half of the cylinder 18, so as to make the cylinder 18 rotate together with the piston body 21, though this latter is allowed to slide within the said cylinder 18. The screw-threaded fixed shaft 23 is axially bored, so as to have an internal conduit, one end of this conduit opening to the interior of the blind cylinder 24, while the other end is in communication with an external conduit 26 tightly fitted by one of its ends to the external head of the screw-threaded shaft 23, attached by the other end to a sleeve tightly jointing this conduit to the conduit in the hollow journal 29' and thus communicating with the chamber bounded by the grooved half of the cylinder 18 and the outer surface of the blind cylinder 24. The passage of the fluid through the conduit 26 is controlled by a suitable cock 28, which is mounted in suitable position on the said conduit 26.

The cylinder 18, blind cylinder 24 and conduit 26 are always filled with glycerine or oil or with other suitable liquids, when the device should be ready for working.

The operation of the whole device is as follows:

Generally, when idle, the drum 18 could also be maintained blocked against rotational tendencies also by some other mechanical contrivance, as a pawl or the like, and the boat is suitably supported on chocks (not shown), but, in absence of these, the drum will not be allowed to rotate, by action of the weight of the boat, unless cock 28 is opened, as the cylinder being rotatable with the piston body 21, by way of the wings 25 attached to the blind cylinder 24, will cause the said piston to screw itself on the threaded shaft 23, thus being forced to move axially, but as the cylinder 18 and shaft 23 are filled with glycerine, oil, or the like, the axial displacement of the piston will be only possible when the liquid is allowed to pass from one chamber to the other, and for instance, in the example as shown in Figures 1 and 2, from the interior of the cylinder 24, through passages 27 in the piston body and

from the ungrooved chamber in cylinder 18, to the grooved part of same. Thus, when the cock 28 is closed, as no liquid will be allowed to pass from one chamber to the other, the rotation of the drum and descent of the boat will not be possible.

When the boat should be launched, the gripes are removed away and the cock 28 is suitably opened. Thus the drum 18, by action of the weight of the boat will be allowed to turn, and the boat will be allowed to descend into the sea, until the cock 28 of the conduit 26 is somewhat open. When the boats should be hauled again on board, the ropes are coiled again on the brake drum through a windlass or other suitable means (not shown).

Constructional variations will be possible to the above lowering gear for lifeboat, though remaining within limits of the invention.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. In a lowering gear for lifeboats, a combined braking- and cable-coiling-device comprising an internally hollow calibrated rope-coiling drum; hollow journals at the ends of the said drum; bearings for the said journals; a fixed threaded beam passed through one of the journals into the drum; a piston body fluid-tightly mounted within the drum; guide wings attached to the said piston and longitu-

dinal grooves in one part of the cylinder, engaging the wings fastened to the piston body; a threaded bore at the centre of the piston body; a conduit through the fixed threaded shaft, and a cock-controlled tube fluid-tightly connected to the conduit in the fixed threaded shaft and to the bore in the opposite journal of the coiling-drum and brake-cylinder.

2. In a lowering gear for lifeboats a braking- and cable-coiling-device comprising a hollow calibrated combined piston-cylinder and rope-coiling drum; hollow journals at the ends of the said drum; bearings for the said rotatable journals, a fixed threaded shaft suitably supported outwardly and passing into the piston cylinder through one of the hollow journals; a piston-body and attached blind cylinder tightly fitted within the cylinder; small passages through the piston body putting in communication one of the side halves of the main cylinder with the interior of the blind cylinder; a central threaded hole through the centre of the piston body, and adapted to screw itself onto the threaded portion of the fixed shaft; an axial conduit within the fixed shaft opening into the said blind cylinder and into one end of a cock-controlled tube having the other end suitably attached to a sleeve tightly jointed to the hollow journal at the opposite end of the cylinder.

In witness whereof I affix my signature.

ROMOLO LIBANI.