

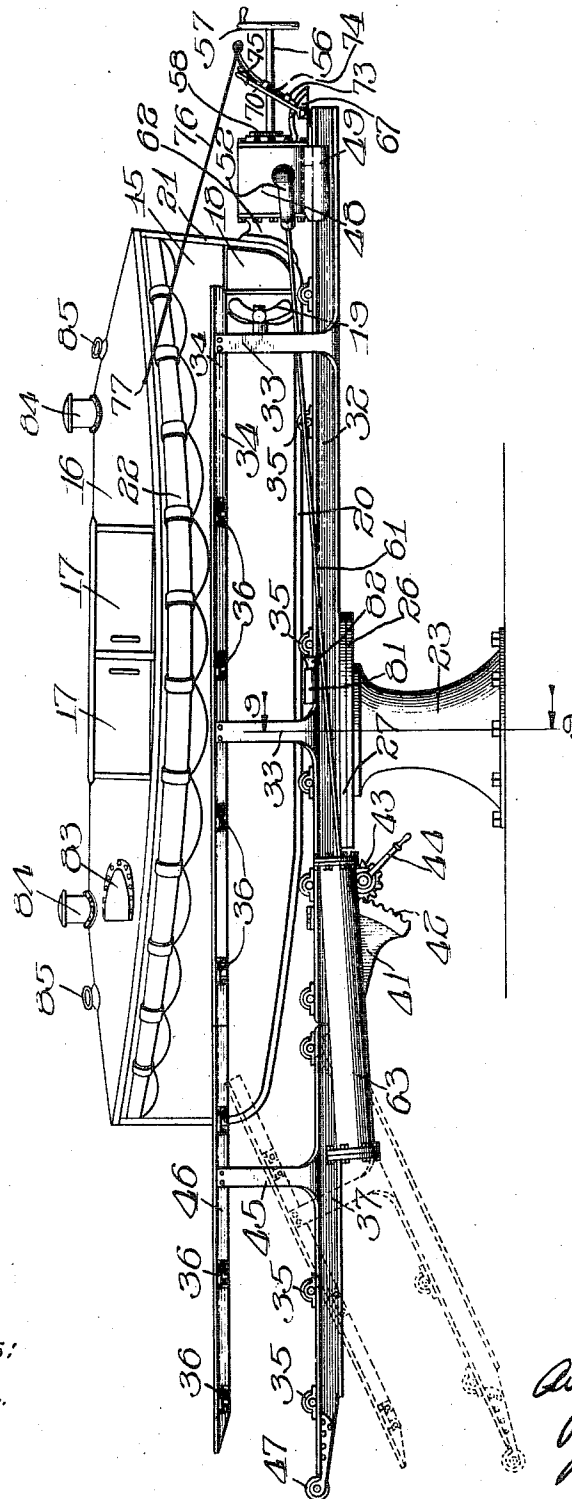
972,809.

A. BRUN.
LIFE BOAT APPARATUS.
APPLICATION FILED JUNE 29, 1909.

Patented Oct. 18, 1910.

4 SHEETS—SHEET 1.

Fig. 1.

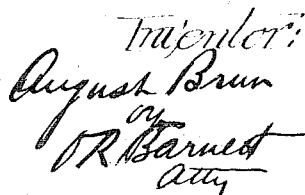


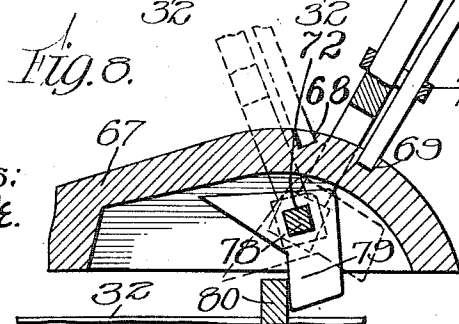
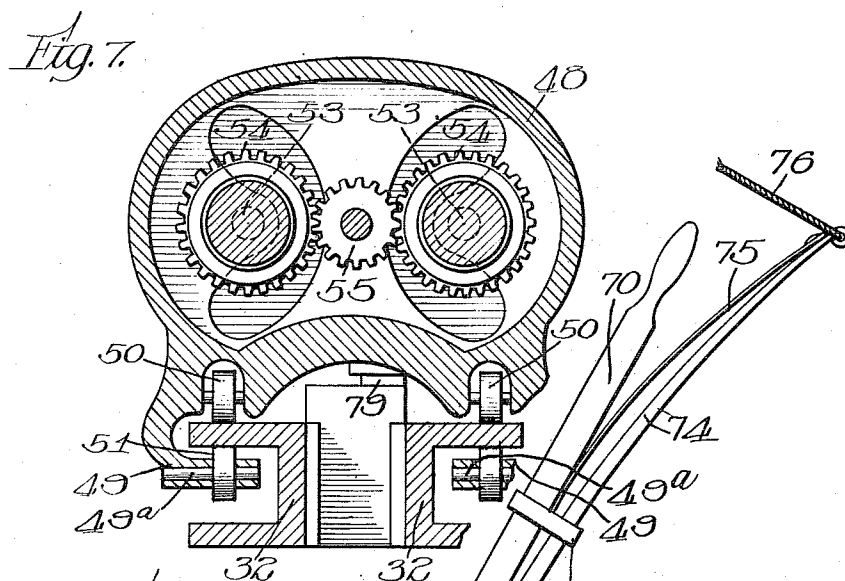
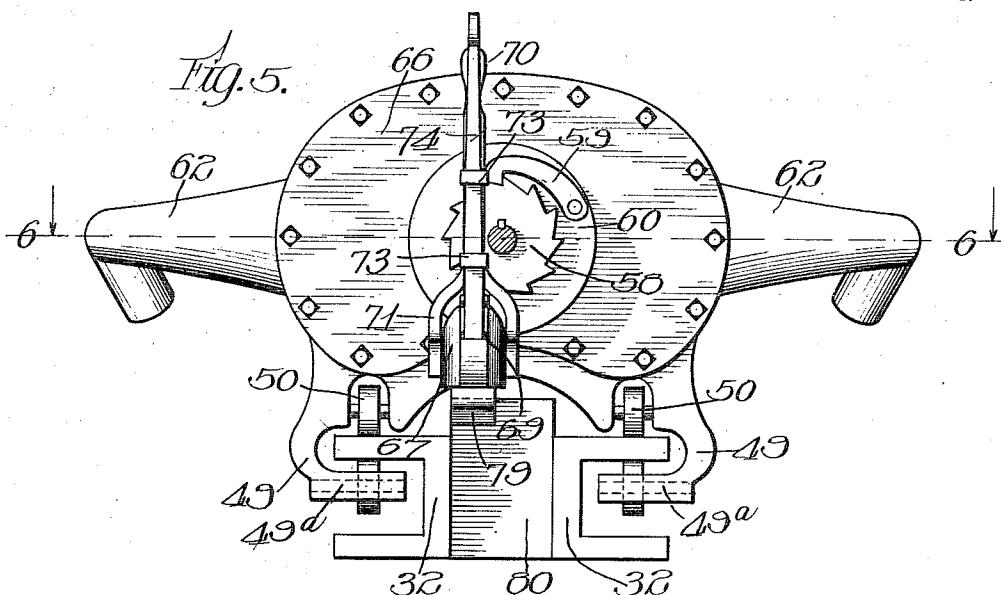
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4 SHEETS—SHEET 2.





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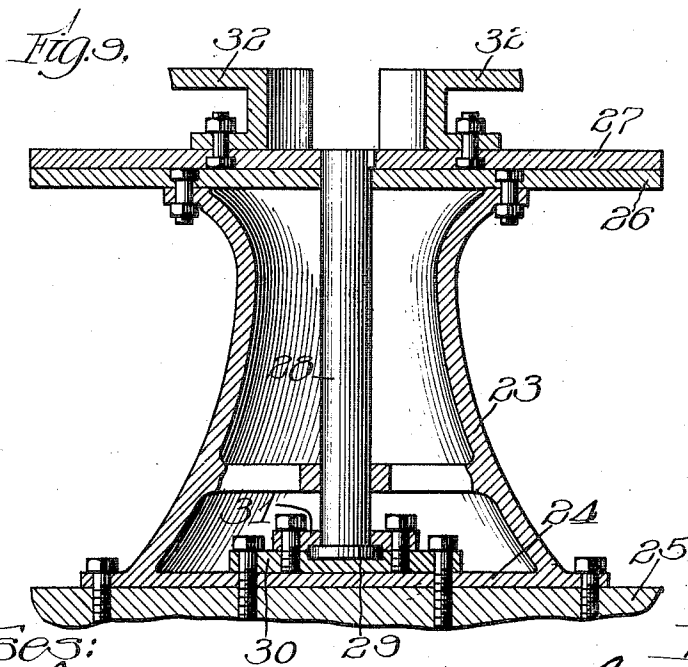
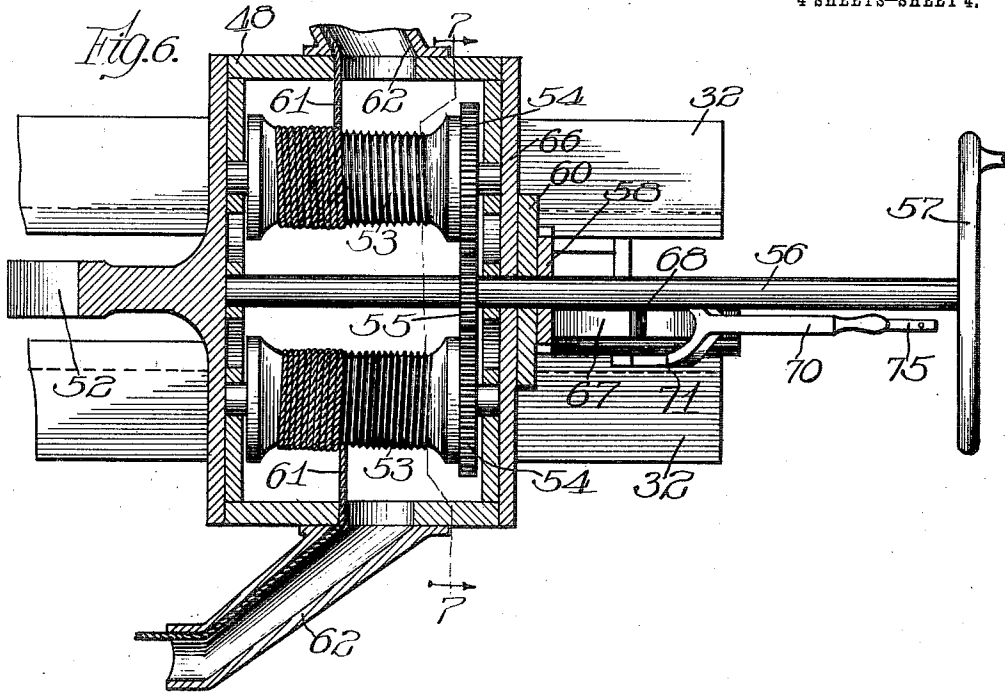
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

AUGUST BRUN, OF CHICAGO, ILLINOIS.

LIFE-BOAT APPARATUS.

972,809.

Specification of Letters Patent.

Patented Oct. 18, 1910.

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To all whom it may concern:

Be it known that I, AUGUST BRUN, a subject of the King of Norway, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Life-Boat Apparatus, of which the following is a specification.

My invention relates to a life boat, or the like, and apparatus for supporting and launching the same, and has for its object to provide certain new and improved constructions and arrangements in devices and apparatus of this character.

One of the principal objects of the invention is to provide means whereby a life boat may in an emergency be almost instantly launched. The usefulness of the life boats carried upon vessels is very frequently impaired by the fact that so much time is required in getting the boats in the water.

My invention provides means whereby the boat may be launched within a few seconds after the occasion has arisen for launching it, and moreover, while the vessel on which the life boat is carried is still in motion. When life boats are hung from davits, as is customary at the present time, the vessel has to be practically stopped before the boats can be lowered.

A further object of the invention is to so construct the launching means that it may be put in operation by those in the life boat.

A further object is to provide a supporting and launching means for the boat which is rotatable so that the boat will normally lie parallel with the rail of the vessel, thus obstructing the deck of the vessel as little as possible, but may be turned with its forward end over the rail of the vessel at any angle to the vessel that may be desirable.

A further object of the invention is to provide a construction of life boat which will be suitable for being so launched.

The invention has for further objects such other new and improved constructions in life boats and in apparatus for supporting and launching the same as will be described in this specification and particularly set forth in the claims appended hereto.

The invention, in a preferred embodiment, is illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation of the boat and its supporting and launching apparatus.

Fig. 2 a plan view of the latter devices with

the boat removed. Fig. 3 a sectional view on line 3—3 of Fig. 2, looking in the direction of the arrows. Fig. 4 a section on line 4—4 of Fig. 2. Fig. 5 a rear end view of the apparatus. Fig. 6 a sectional plan taken on line 6—6 of Fig. 5. Fig. 7 a sectional view on line 7—7 of Fig. 6, looking in the direction of the arrows. Fig. 8 a vertical sectional view illustrating the means employed for releasing the launching or ejecting device, and Fig. 9 a vertical section taken on line 9—9 of Fig. 1.

Like characters of reference indicate like parts in the several figures of the drawings

Referring now to the drawings, 15 represents the life boat which is preferably completely covered and inclosed by the deck 16, provided with openings which may be closed by the slide doors 17, 17. The hull of the boat is preferably made of steel and the upper part of aluminum. In order that the rudder 18 and propeller 19 may be protected from injury due to the shock of launching, the stern of the boat is recessed, the rudder and propeller being located in this recess. The keel 20 of the boat is extended under and rearwardly of these parts as shown at 21. Preferably, the propeller has but two blades diametrically arranged so that they can be made to stand in upright position when the boat is not in use. The boat may be propelled by any suitable form of motor. It may be provided with the usual cork belt 22.

I have shown what I consider a suitable construction of life boat, having in mind the manner, hereafter to be described, in which it is to be launched. It is obvious, however, that my invention is not limited to the particular form of boat, and the construction of the latter may differ considerably, according to the circumstances in which it is to be used.

Preferably, the boat is supported upon a frame work which is mounted so as to rotate and the forward end of which is capable of downwardly inclination. For example, referring particularly to Figs. 1, 2 and 9, I provide a standard 23, the base of which may be bolted to the deck 25 of the vessel. On the stationary top 26 of the standard rests a rotatable plate 27 keyed to a shaft 28, the lower end of which is provided with a collar 29 held, but rotatably, between the plates 30 and 31 by suitable bolts. Bolted

to the plate 27, which constitutes a turn-
table, are the channel beams 32, 32. At-
tached to, or integral with the beams 32 are
the uprights 33, to which are attached the
rails 34, 34, one on each side of the boat.
These parts constitute the supporting means
for the boat. Preferably, grooved rollers 35
are mounted on the beams 32. The keel of
the boat rests upon these rollers. The rails
34 are preferably provided with the rollers
36.

I prefer to provide at the forward end of
the supporting means thus described, a similar
frame which, while normally remaining
in horizontal position, is capable of inclination.
Beams 37, 37 are hinged to the beams
32, 32 by the pivot 38 (Fig. 3), and a lever
39 arranged in the space between the opposi-
tely placed beams is fulcrumed on the same
pivot and is connected at its forward end by
pivot 40 to the forward beams 37, and carries
at its rear end the counter-weight 41,
provided with the sector-gear 42. A gear
wheel 43 mounted between beams 32 meshes
with sector 42. A handle 44 is rigidly connected
with the gear wheel. The beams 37
are provided with the uprights 45 which
support the rails 46, 46, alining with rails
34, 34. The beams 37 are provided with
rollers 35, as in the case of beams 32 and the
rails 46 with the rollers 36. At the forward
end of beams 37 is preferably a roller 47.
A stop 41^a engaged by the counter weighted
part 41 limits the inclination of the forward
sector to about twenty degrees.

The launching or ejecting device is preferably
mounted so as to travel on the rear
ends of beams 32 and is preferably operated
by spring pressure.

48 is a casing formed with the webs 49,
49 (Figs. 1, 5 and 7) which extend under
the upper web of beams 32. In order to decrease
friction, rollers 50 may be mounted in the
under side of casing 48; and if desired,
the rollers 51 may be set into the webs 49 on
axles 49^a so as to run on the under surface of
the upper webs of beams 32. The forward
end of casing 48 is provided with the fol-
lower 52 conformed to the contour of the
stern of the boat.

Within the casing are mounted the two
windlasses 53, 53, provided with the gears
54, 54 between and meshing with which is
the gear 55 rigid on the stem 56, which stem
is provided with the hand-wheel 57. Keyed
to stem 56 is a ratchet 58, and a dog 59 for
the ratchet is pivoted to the plate 60 on the
end of the casing. The cables 61, 61 connect-
ed with the springs to be described hereafter,
pass through the hollow arms 62, 62 on cas-
ing 48, and are wound upon the windlasses 53.

Connected with the forward end of beams
32 are the cylindrical spring casings 63, 63,
one of these being shown in longitudinal
section in Fig. 4. Within each of these cas-

ings is a very strong spiral spring 64 an-
chored to the end of the casing and attached
at the other end to a plunger follower 65.
The cables 61 are suitably connected with
this follower and the corresponding one on
the other side of the apparatus.

From the back plate 66 of casing 48 pro-
jects a concaved web 67 in the upper sur-
face of which is formed the forward notch
68 and the rearwardly placed notch 69. A
handle 70 forked at 71 is connected by shaft
72 to the web 67 and connected with this
handle by guides 73, 73 is a squared rod 74,
the end of which is adapted to extend into
the notches 68 or 69. A flat spring 75 is
attached to the upper end of rod 74 and
bears against the handle 70. The space be-
tween the rod and the handle is sufficient
so that when the spring is flattened out
against the handle, rod 74 will rise out of the
notch in web 67. A cord 76 may be attached
to the end of rod 74 and lead into the inter-
ior of the boat through the perforation 77
in the deck. On the squared portion 78 of
the shaft 72 connecting the forks of handle
70 is a detent 79 which engages with a
plate 80 which is set between beams 32, 32.
When the rod 74 is in the slot 69, the de-
tent 79 engages with the stop plate 80.
When rod 74 is in slot 68 the detent is turned
out of the path of the stop plate. Cushioned
stops are preferably provided to limit the
forward movement of the launching or
ejecting device. Preferably, I provide on
each side of the boat an air cylinder 81 at-
tached to beam 32 and having a plunger 82
which is engaged by casing 48. The deck
16 of the boat should be provided with the
glass covered port holes 83 and the ventilat-
ing jacks 84. Rings 85 may be provided by
means of which the boat can be hoisted in
the usual way.

The operation of the apparatus above de-
scribed is as follows: Under ordinary cir-
cumstances the life boat will be supported
on the deck so as to lie parallel with the
rail. The springs 64 will be kept under ten-
sion, the tension being regulated by means of
the hand-wheel 57. The squared rod 74 con-
nected with handle 70 will be in the rear
notch 69 so that the engagement of detent
79 with the stop plate 80 holds the ejecting
or launching device, consisting of the fol-
lower 52, casing 48 and associated parts, in
the rearward position, as shown in Fig. 1.
If a motor boat is used, it will be operated
by a motor which can be started instantly.
Now if occasion arises for launching the
life boat, for example, if a man falls over-
board, the persons whose duty it is to oper-
ate the life boat get into the boat at once,
closing shutters 17 after them. By pulling
on the cord 76, the rod 74 is drawn out of
slot 69 and the tension of springs 64 thrusts
the ejecting device against the stern of the

boat, causing the latter to move forward upon the rollers. As soon as the weight of the boat is brought to bear upon the tilting forward end of the supporting means, the latter tilts downwardly and the boat slides over the rail into the water. It will be understood that before the men who operate the life boat have gotten inside they will have turned the life boat at the proper angle, or this may be done by others on board the vessel. If the vessel is in motion, the life boat should be turned about so that it can be launched, as nearly as may be, in the direction from which the vessel is traveling. The boat is strongly built so that it will stand the shock of the launching. The rudder and propeller, the parts most easily broken, are protected by the extended portion 21 of the keel. The ejecting device is stopped and cushioned against the cushioning devices 81, 82.

On the return of the life boat, it may be hoisted up in the usual way, replaced on its support, which may be turned back to its normal position, parallel with the rail of the vessel after the forward or tilting end has been lifted into alinement with the rear portion of the supporting frame by means of handle 44. The ejecting device will, of course, be reset.

I do not limit myself to the particular devices, constructions and arrangements shown and described, as modifications might be devised which would come within my invention as defined by the claims. I have described the life boat apparatus as it is intended to be used upon a vessel, but it is obvious that the same form of supporting and launching apparatus might be used for launching a boat from a pier or dock. While I consider the boat herein shown and described as being the most suitable in view of the manner in which it is to be launched, the apparatus might be used in connection with boats of different description.

I claim:

1. In life boat launching apparatus, the combination with a boat, of a supporting device which supports the keel and the sides of the boat and holds said boat in substantially horizontal position, an ejecting device which is movably mounted on said supporting device so as to engage one end of said body, and means for moving said ejecting device so as to force said boat lengthwise of said supporting device and eject the same therefrom.

2. In life boat launching apparatus, the combination with a boat, of a supporting device which supports the keel and the sides of the boat and holds said boat in substantially horizontal position, an ejecting device which is movably mounted on said supporting device so as to engage one end of said boat, and means for moving said eject-

ing device, comprising a spring, so as to force said boat lengthwise of said supporting device and eject the same therefrom.

3. The combination with a boat, of a supporting device for the same on which it is supported so as to be capable of movement lengthwise, a spring operated ejecting device adapted to engage with one end of the boat by means of which the boat may be moved from said supporting device, and means for adjusting the tension of the spring element of said spring operated device.

4. In life boat launching apparatus, the combination with a boat, of a supporting device which supports the keel and the sides of the boat and holds said boat in substantially horizontal position, an ejecting device which is movably mounted on said supporting device so as to engage one end of said boat, means for moving said ejecting device comprising a spring, so as to force said boat lengthwise of said supporting device and eject the same therefrom, and releasing means for said ejecting device.

5. The combination with a boat of a supporting device for the same on which it is supported so as to be capable of movement lengthwise, a spring operated ejecting device adapted to engage with one end of the boat by means of which the boat may be moved from said supporting device, and releasing means operable from inside the boat for releasing said spring operated device.

6. In life boat launching apparatus, the combination with a boat, of a supporting device provided with rollers which support the keel and with rollers which bear against the sides of the boat, said supporting device holding said boat in substantially horizontal position, an ejecting device which is movably mounted on said supporting device so as to engage one end of said boat, and means for moving said ejecting device so as to force said boat lengthwise of said supporting device and eject the same therefrom.

7. In life boat launching apparatus, the combination with a boat, of a supporting device provided with rollers which support the keel and with rollers which bear against the side of the boat, said supporting device holding said boat in substantially horizontal position, an ejecting device which is movably mounted on said supporting device so as to engage one end of said boat, means for moving said ejecting device so as to force said boat lengthwise of said supporting device, and locking means for said ejecting device which is adapted to be released when said boat is to be launched.

8. The combination with a boat, of a supporting device for the same on which it is supported so as to be capable of movement lengthwise, said device comprising a rear section substantially horizontal on which

the boat normally rests and a forward section hinged to the rear section so as to be capable of downward inclination; and means for moving said boat from the rear section of the supporting device to the hinged forward section, for the purpose described.

9. The combination with a boat, of a supporting device for the same on which it is supported so as to be capable of movement lengthwise, said device comprising a rotatable rear section on which the boat normally rests and a forward section hinged to the same so as to be capable of downward inclination; and means for moving said boat from the rear section of the supporting device to the hinged forward section, for the purpose described.

10. The combination with a boat, of a supporting device for the same on which it is supported so as to be capable of movement lengthwise, a movable ejecting device which engages the stern of the boat, and means located forwardly of the same on each side of the boat for imparting movement to said ejecting device.

11. The combination with a boat, of a supporting device for the same on which it is supported so as to be capable of movement lengthwise, a movable ejecting device which engages the stern of the boat and springs at each side of the boat for imparting movement to said ejecting device.

12. The combination with a boat, of a supporting device for the same on which it is supported so as to be capable of movement lengthwise, spring cylinders located on the supporting device at each side of the boat, springs in said cylinders, a follower which is movably mounted on the supporting means and engages the stern of the boat, and cables connecting the follower with said springs.

13. The combination with a boat, of a supporting device for the same on which it is supported so as to be capable of movement lengthwise, spring cylinders located on the supporting device at each side of the boat, springs in said cylinders, a follower which is movably mounted on the supporting means and engages the stern of the boat, cables connecting the follower with said springs, a casing on said follower, windlasses in said casing on which said cables are wound, and means for rotating said windlasses.

14. The combination with a boat, of supporting means for the same comprising a standard, a rear supporting section rotatably mounted on the standard which is substantially horizontal and which normally supports the boat, and a forward section hinged to the rear section so that it is capable of forward inclination.

15. The combination with a boat, of sup-

porting means for the same comprising a standard, a rear supporting section rotatably mounted on the standard which is substantially horizontal and which normally supports the boat, a forward section hinged to the rear section so that it is capable of forward inclination, and rollers on said supporting means over which the keel of the boat travels.

16. The combination with a boat, of supporting means for the same comprising a standard, a rear supporting section rotatably mounted on the standard which is substantially horizontal and which normally supports the boat, a forward section hinged to the rear section so that it is capable of forward inclination, rollers on said supporting means over which the keel of the boat travels, and rollers on said supporting means which engage the sides of the boat.

17. The combination with a boat, of supporting means for the same comprising a standard, a rear supporting section rotatably mounted on the standard which is substantially horizontal and which normally supports the boat, a forward section hinged to the rear section so that it is capable of downward inclination, the rear end of said forward section being counter-weighted, a segment gear on the forward section, and a gear having a handle on the rear section, whereby the said forward section may be returned to its horizontal position.

18. In life boat apparatus, the combination with a life boat, of supporting means for the same comprising a standard, a rear supporting section rotatably mounted on the standard, a forward section hinged to the rear section so as to be capable of downward inclination; and a launching device comprising a follower which engages the stern of the boat and is movable upon said rear supporting section, springs arranged on said supporting means, cables attached to said springs, means connected with said follower upon which the cables may be wound, a stop on said supporting means, a movable detent connected with said follower, and a releasable lock which holds said detent in engagement with said stop.

19. The combination with a boat, of supporting means for the same comprising a standard, a rear supporting section which is rotatably mounted on the standard and which is substantially horizontal and normally supports the boat, and a forward tilting section which is counterweighted so as to be held normally in horizontal position; and means which engages the boat and moves the same from said rear supporting section upon the forward section, for the purpose described.

20. The combination with a boat, of supporting means for the same comprising a standard, a rear supporting section rota-

ably mounted on the standard, which is substantially horizontal and which normally supports the boat and a forward tilting section; and means for moving the boat from
5 said rear section upon said tilting section, for the purpose described. supports the boat, and the forward tilting section; and a spring-operated ejecting device on the rear section which engages with the stern of the boat and moves it from said
15 rear section upon the forward section, for the purpose described.

21. The combination with a boat, of supporting means for the same comprising a standard, a rear supporting section rotatably mounted on the standard, which is substantially horizontal and which normally

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