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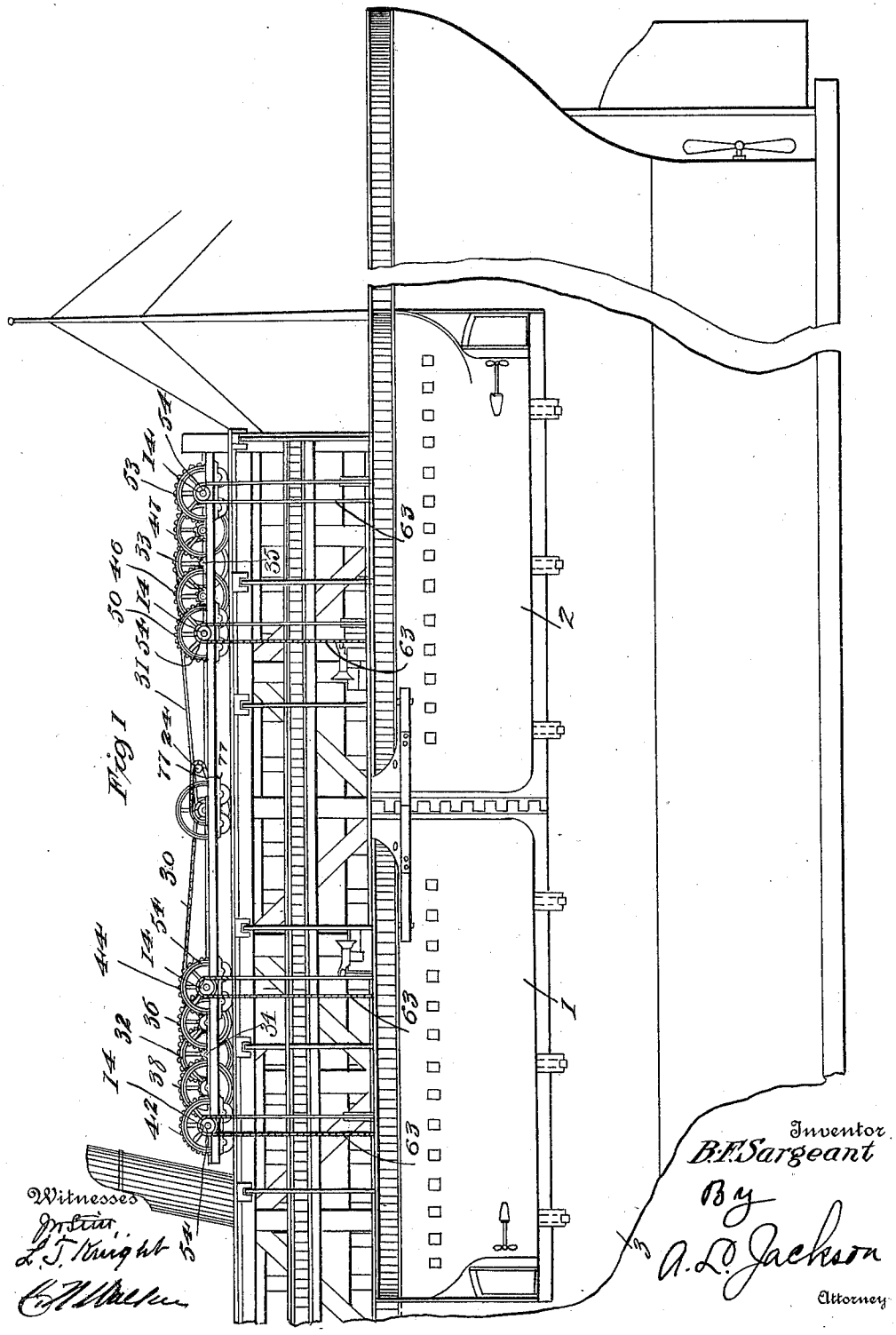
HOISTING AND LAUNCHING MACHINERY FOR LIFE BOATS.

APPLICATION FILED SEPT. 21, 1912.

1,067,276.

Patented July 15, 1913.

5 SHEETS—SHEET 1.



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HOISTING AND LAUNCHING MACHINERY FOR LIFE BOATS.

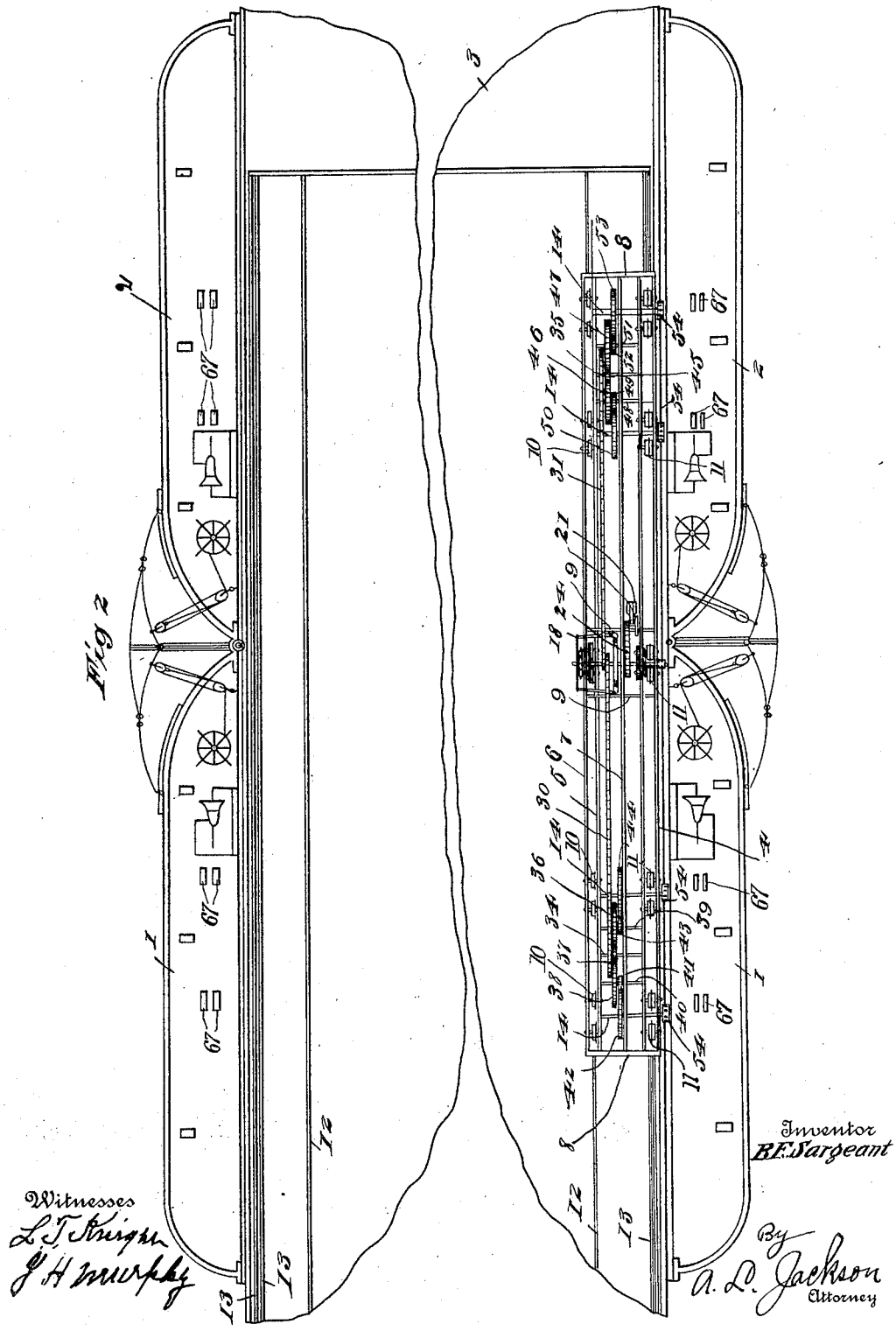
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5 SHEETS—SHEET 2.

Fig 2



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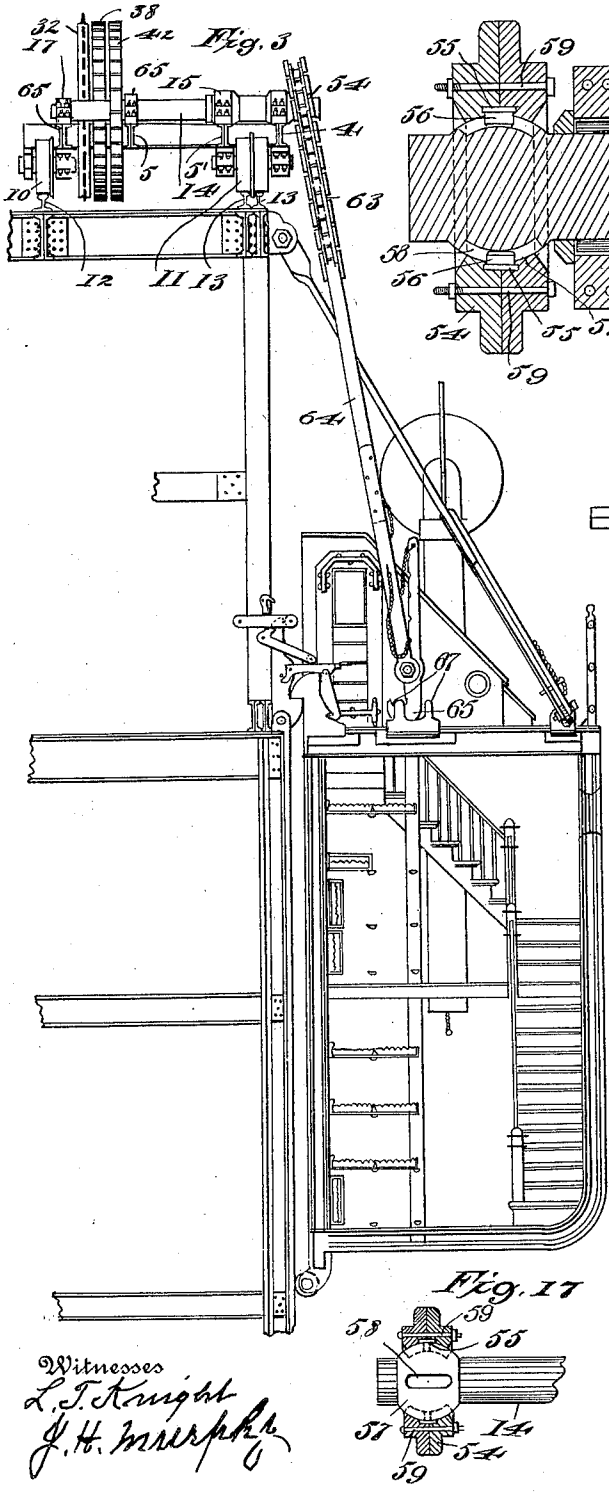
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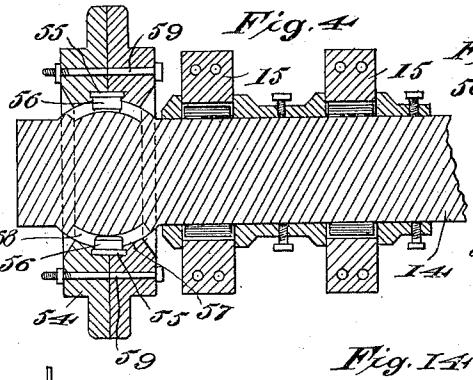
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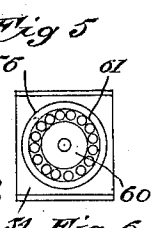
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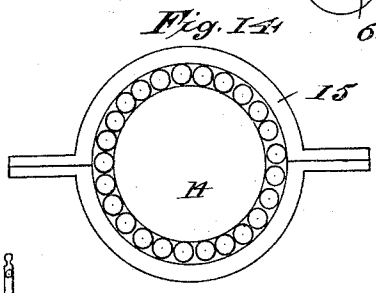
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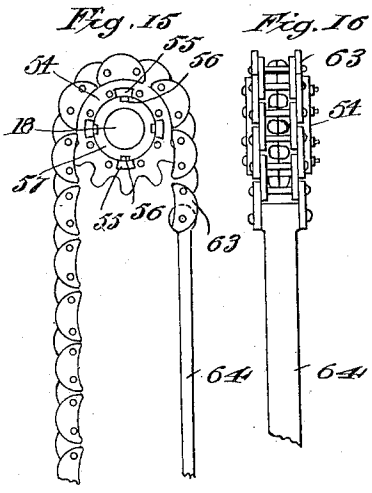












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5 SHEETS—SHEET 4.

Fig. 7

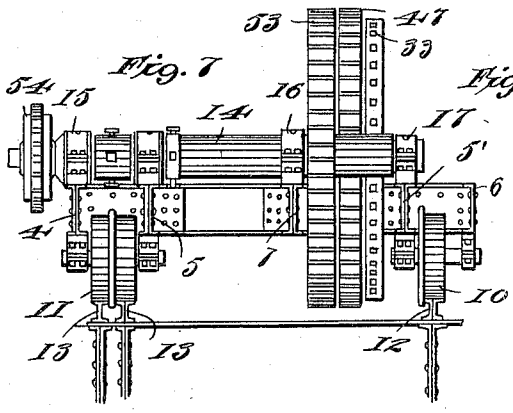


Fig. 8



Fig. 9

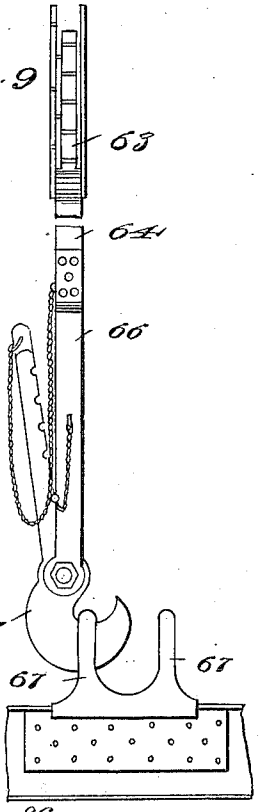
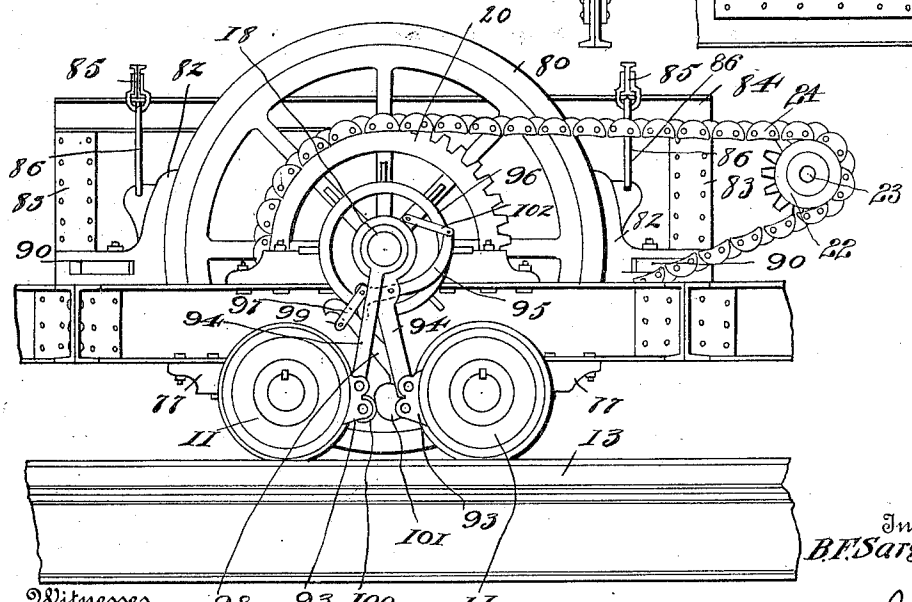


Fig. 10



Witnesses

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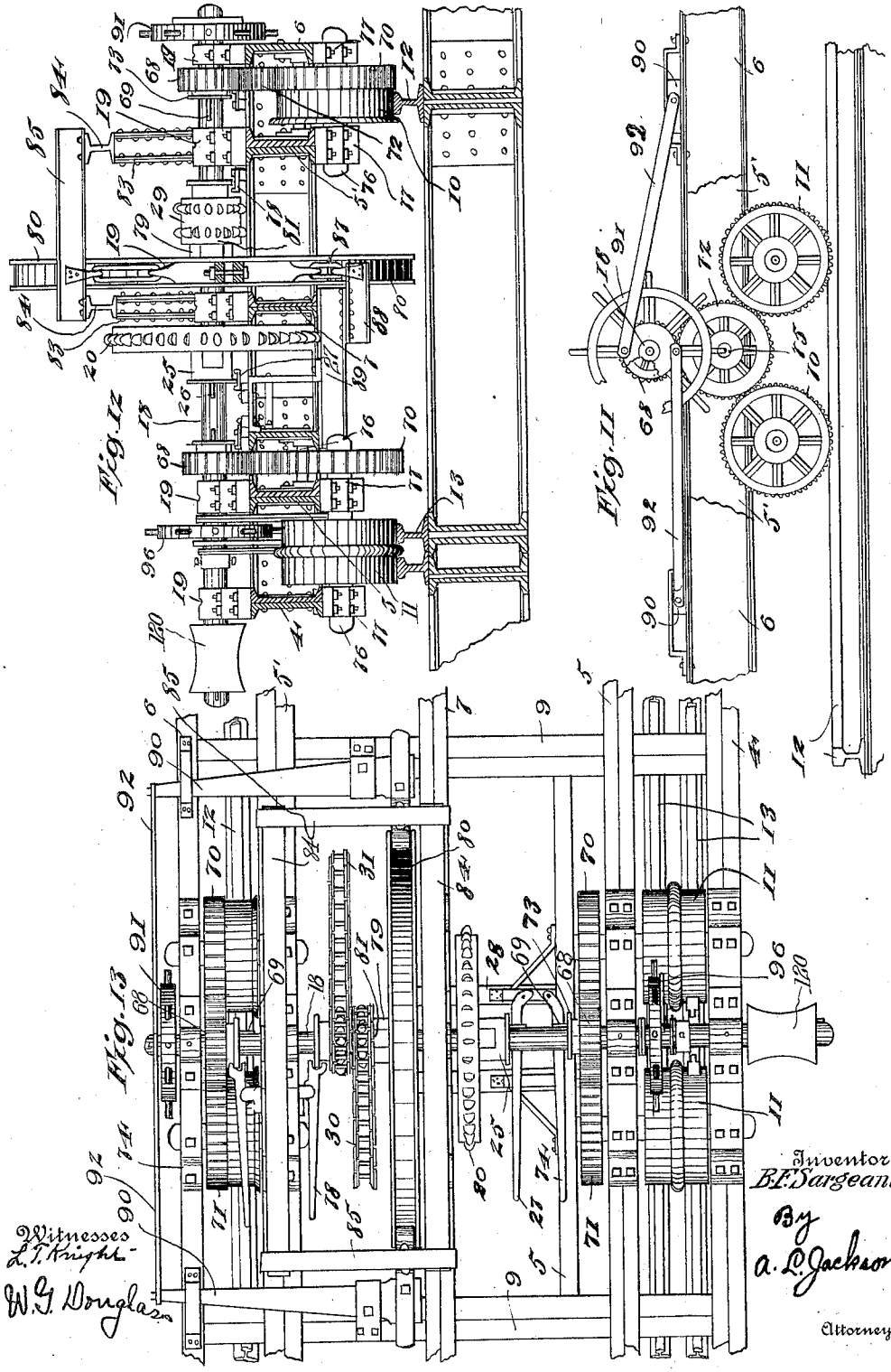


Fig. 12

Fig. 11

Fig. 13

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UNITED STATES PATENT OFFICE.

BENJAMIN F. SARGEANT, OF FORT WORTH, TEXAS.

HOISTING AND LAUNCHING MACHINERY FOR LIFE-BOATS.

1,067,276. Specification of Letters Patent. Patented July 15, 1913.

Application filed September 21, 1912. Serial No. 721,553.

To all whom it may concern:

Be it known that I, BENJAMIN F. SARGEANT, a citizen of the United States, residing at Fort Worth, in the county of Tarrant and State of Texas, have invented certain new and useful Improvements in Hoisting and Launching Machinery for Life-Boats, of which the following is a specification.

My invention relates to life-boats and more particularly to mechanism for hoisting life-boats on a main ship and for lowering the life boats, and the object is to provide efficient means for quickly and easily lowering life boats from a main ship in case of accident and is particularly adapted for use with such life boats and ships as are illustrated in my co-pending application for life boats which is executed of even date herewith.

Other objects and advantages will be fully explained in the following description and the invention will be more particularly pointed out in the claims.

Reference is had to the accompanying drawings which form a part of this application.

Figure 1 is a side elevation of a life-boat suspended on a main ship which is shown in a broken view, and the hoisting mechanism is shown in side elevation. Fig. 2 is a broken plan view of the deck of a main ship with two life-boats hung thereon,—one on each side, showing on one side a track for hoisting machinery and on the other side, hoisting machinery mounted on tracks which are attached to the deck of the main ship. Fig. 3 is a vertical section of a portion of a main ship and a section of the life-boat carried thereby and showing an end elevation of the hoisting mechanism. Fig. 4 illustrates a portion of the main hoisting shaft with sections of the main hoisting sprocket wheel and sections of the roller bearings in the boxes. Fig. 5 is a detail view of the roller bearings in the main hoisting sprocket wheels. Fig. 6 is a detail view of the cap which holds the rollers in place in the wheel shown in Fig. 4. Fig. 7 is a detail view of the main hoisting shaft and part of the truck. Figs. 8 and 9 are detail views of the rods and chains used in hoisting and lowering or launching the life boats. Fig. 10 is a detail view of the center shaft with a portion of a truck with its brake wheels and brakes and the brake or friction wheel for launching the boat. Fig. 11 is another view of the center shaft, being an end elevation and showing the opposite end of the center shaft from that shown in Fig. 10. Fig. 12 is a vertical section of the truck, showing the center shaft complete with all attachments. Fig. 13 is a plan view of the same, showing also the clutch levers. Fig. 14 is a detail view of the roller bearing boxes for the main shaft. Figs. 15 and 16 are detailed views of the hoisting and launching sprocket wheel and chain. Fig. 17 is a detailed view of the sprocket wheel and its bearing.

Similar characters of reference are used to indicate the same parts throughout the several views.

The principal parts of the hoisting mechanism consist of tracks on the main ship, one on each side of the deck close to the edges, and machinery carrying trucks which run on these tracks. The object of the trucks and tracks is to provide for shifting the hoisting machinery to different parts of the deck of the main ship so that life-boats which are hung on different parts of the main ship can be hoisted and launched at their proper places. The drawings show only one life boat to a side of the main ship and the life boat is in two parts 1 and 2 hung on the sides of the main ship 3. The truck is composed of double side beams 4, 5, 5′ and a single beam 6 and a center beam 7 running from end to end of the truck with cross beams 8 at the ends and beams 9 intermediate the ends. The truck is provided with wheels 10 and double truck wheels 11. These run on tracks 12. The object of having double beams 4 instead of single beams 6 and double truck wheels 11 and double tracks 13 therefor is to provide the parts on which the greatest strain will be in hoisting the life boats and these doubled parts are on the side of the truck next to the life-boats 1 and 2. On one side of the truck the wheels 10 are provided with shafts which are journaled in the beams 5′ and 6 and on the other side of the truck the wheels 11 are provided with shafts which are journaled in beams 4 and 5. Each truck is provided with four main hoisting shafts 14 which are journaled in boxes 15, 16, and

17. The boxes 15 are attached to the beams 4 and 5 which are on the side of the truck next to the life boat. The boxes 16 are attached to beams 7, and boxes 17 are attached to the beams 5 which are adjacent to beams 6.

A center shaft 18 is journaled in boxes 19 which are attached to beams 4, 5, 6, and 7. A main drive wheel 20 is loosely mounted on the main driving shaft. The wheel 20 is driven from the reversible engine 21 by means of a sprocket wheel 22 which is rigid with the engine shaft 23 and by a sprocket chain 24. The wheel 20 is locked to the shaft 18 for driving purposes by a clutch 25 which moves on a key 26 and the clutch 25 is actuated by a lever 27 which is fulcrumed on a short beam 28 which is attached to beams 5 and 7 and the lever is pivotally connected with the clutch 25. When the wheel 20 is locked in operative position, it drives the shaft 18 and the shaft 18 drives a double sprocket wheel 29. The wheel 29 drives the sprocket chains 30 and 31 and these chains drive sprocket wheels 32 and 33 which drive the shafts 34 and 35. Shaft 34 is provided with a pinion 37 which drives a cog wheel 36 which is rigid with shaft 39 and also drives a cog wheel 38 which is rigid with a shaft 40 which drives a pinion 41 and pinion 41 drives a cog wheel 42 which is rigid with the hoisting shaft 14. Shaft 39 drives a pinion 43 and pinion 43 drives a cog wheel 44 which is rigid with another hoisting shaft 14. The object of the shafts 39 and 40 and the gearing operating therewith is to drive the two shafts 14 in the same direction. The shaft 35 drives a pinion 45 which is rigid therewith and pinion 45 drives cog wheels 46 and 47. Cog wheel 46 drives shaft 48 and pinion 49 which is rigid therewith and pinion 49 drives cog wheel 50 which is rigid with shaft 14. Cog wheel 47 drives shaft 51 and pinion 52 which is rigid therewith and pinion 52 drives cog wheel 53 which is rigid with another shaft 14. With the gearing thus shown together with a reversible engine the hoisting shafts 14 can be driven in either direction for hoisting or launching the life-boats. Sprocket wheels 54 are mounted on the shafts 14 and locked thereto by roller bearing keys 55 or keys which have bearings 56. The shaft 14 has a swell 57 and four slots 58 are made in the swell 57 and the rollers 56 run in the slots 58. The wheels 54 are made in two parts and the parts are attached together by bolts 59. Each part of the wheel carries one-half of each tooth. By making the wheel in two parts the keys 55 can be set in the cavities within the wheel hub. One part of the wheel is put on the swell. Then the keys are set in the half hub with the rollers 56 in the grooves 58. The other half of the wheel 54 is then put on the swell 57 and the bolts 59 are then used to bind the two parts together. The wheel cannot be removed without taking out the bolts 59. With this construction, the wheels 54 can be inclined as may be necessary in launching or hoisting a life boat. (See Fig. 3.) The keys 55 are dovetailed on two sides so that they will not drop toward the bottom of the slots 58. The keys 55 have spindles 60 and the roller bearings 61 are mounted between the circular band or roller 56 and the spindle 60 and a cap 62 is attached to the spindle 60 to inclose the roller bearing 61. Sprocket chains 63 are mounted on the wheels 54 and the chains are heavy enough to prevent displacement of themselves during operation. The chains 63 have bars 64 attached to their lower ends and lever hooks 65 are fulcrumed in hangers 66 which are attached to the bars 64. Eyes 67 are attached to the life boats 1 and 2 to be engaged by the hooks 65.

Referring to the center shaft 18 (see Fig. 15), a cog wheel 68 is loosely mounted on the shaft 18 and is locked thereto for driving purposes by a key 69 which is rigid with the shaft 18. The wheel 68 is for the purpose of driving the cog wheels 70 and 71 and this is done through a cog wheel 72. The wheel 68 is moved axially to be thrown in and out of mesh with the wheel 72. The wheel 68 has a flange 73 and a lever 74 is pivotally connected to a yoke which engages the flange 73 for movement of the wheel 68. The wheel 72 is provided with a shaft 75 which is journaled in bearings which are attached to beams 5 and 6. The wheels 70 and 71 on one side of the truck are rigid with the truck wheels 10. Thus the power of the center shaft is transmitted to the truck through the wheels 68, 72, and 70 and 71. The other side of the truck has similar wheels 68, 72, and 70 and 71, the wheels 70 and 71 being rigid with the truck wheel shaft 76 which is journaled in boxes 77 attached to the bottom parts of the truck beams 4, 5, 6, and 7. By the gearing thus described the trucks are run back and forth on the tracks of the main ship. When the trucks have been positioned for hoisting or launching purposes, the wheels 68 must be thrown out of mesh with the wheels 72 by the levers 74 so that the trucks will not move during a launching or hoisting operation, it being necessary to drive the center shaft 18 for driving the hoisting mechanism. For a similar reason the hoisting mechanism must be ungeared from the center shaft while the trucks are being moved. For the purpose of ungearing the hoisting mechanism a lever 78 is used to throw the double sprocket wheel 29 in and out of gear. A clutch 79 is formed on the hub of the brake wheel 80 and a coöperating clutch 81 is formed on the hub of the sprocket wheel 29. When the clutch on the hub of wheel

29 is thrown out of mesh with the clutch 79 on the hub of the brake wheel 80, the hoisting mechanism will not be driven by the center shaft 18.

The brake wheel 80 is principally for controlling the launching of the life boats. When the double sprocket wheel 29 is geared to the brake wheel 80, the brake wheel can control the speed of the hoisting mechanism and consequently the descent of the life boats. Brake shoes 82 are mounted in position to bear against the periphery of the brake wheel 80. Posts 83 are mounted on the truck frame. Longitudinal beams 84 are attached to the posts 83 and short cross beams 85 are mounted on the beams 84. Links 86 are swingingly mounted on the beams 85 and pivotally connected to the brake shoes 82 for suspending the brake shoes. Similar links 87 are pivotally connected to the lower sides of the brake shoes 82 to prevent upward displacement of the brake shoes and these links 87 are swingingly connected to beams 88 which are connected to beams 89 which are attached to the bottom of the truck frame. The brake shoes 82 are operated by brake levers 90. A hand wheel 91 is loosely mounted on the center shaft 18 and link bars 92 are eccentrically connected to the wheel 91 and pivotally connected to the levers 90. The hand wheel 91 is thus used to control the launching of the life boats. A brake mechanism is also provided for the truck. Brake shoes 93 are suspended to engage the wheels 11 by hangers 94 which are loosely mounted on the center shaft 18, and pivotally connected to the brake shoes 93. A lever 95 is fulcrumed on one hanger 94 and a handwheel 96 is loosely mounted on the center shaft 18. A link bar 102 is pivotally connected to the lever 95 and to the wheel 96. A stirrup 97 is pivotally connected to the short arm of the lever 95 and engages a cam lever 98, the stirrup 97 having an antifriction roller 99. The cam lever 98 is pivotally connected to one brake shoe 93 and has a cam which bears against a roller 100 mounted in the other brake 93. The lever 98 has a cam 101 which bears against the roller 100. By the mechanism thus described the hand wheel 96 can be used to operate the truck brakes.

A crab 120 for hoisting with a rope or cable is mounted on the center shaft 18 for general hoisting purposes, as packages of goods, or even a person. This crab is also operated by the center shaft 18. It will thus be seen that the center shaft is the most important feature of the operating mechanism, because it drives the launching and hoisting shafts in either direction and carries clutch mechanism for connecting and disconnecting the center shaft from the hoisting and launching shafts. This center shaft 18 also carries gearing for driving the truck gearing and clutch mechanism for connecting and disconnecting the gearing on the center shaft to and from the truck gearing.

I claim:—

1. A hoisting and launching mechanism for lifeboats comprising a track mounted on the deck of a main ship, a truck adapted to run on said track, a plurality of launching and hoisting shafts journaled in said truck, gear wheels mounted on said shafts and each shaft having a globe bearing and a sprocket wheel mounted thereon, operative connections coöperating with said gear wheels, a central operating shaft for driving said hoisting and launching shafts in either direction, and a brake wheel mounted on said operating shaft for controlling the movement of said hoisting and launching shaft.

2. A hoisting and launching mechanism for lifeboats comprising a wheeled truck for moving on the deck of a main ship, hoisting and launching shafts journaled in said truck, a central operating shaft, means for driving said shaft, gearing for connecting said shaft with said hoisting and launching shafts, means for shifting the operation of said operating shaft from the truck driving gear to said hoisting and launching driving gear, each hoisting and launching shaft having a sprocket wheel mounted thereon and a bearing permitting the driving of the sprocket wheel at different inclines, and sprocket chains and hooked bars coöperating with said gear wheel.

3. A hoisting and launching mechanism for lifeboats comprising a wheeled truck for moving on the main deck of a main ship, a plurality of hoisting and launching shafts journaled in said truck, a central operating shaft for driving the truck and for driving said hoisting and launching shafts, means for shifting the operation of said central shaft from operating the truck to operating the hoisting and launching shafts, each hoisting and launching shaft having a globe bearing and a sprocket wheel mounted on said globe bearing.

4. A hoisting and launching mechanism for lifeboats comprising a wheeled truck for moving on the decks of a main ship, a plurality of hoisting and launching shafts journaled in said truck, means for driving said shafts carried on said truck, each shaft having a slotted globe bearing, a sprocket wheel mounted on each globe bearing, and roller bearings carried in the inner face of the sprocket wheel and projecting in the slots in said globe bearing.

5. A hoisting and launching mechanism for lifeboats comprising a wheel truck for moving on the deck of a main ship, a plurality of hoisting and launching shafts journaled in said truck, means for driving said shafts, each shaft having a slotted globe bearing, a sprocket wheel in two parts mounted

on said bearing, roller bearings carried in the inner face of the hub of said sprocket wheel and projecting into said slotted bearing, and a sprocket chain and a hooked bar coöperating with said sprocket wheel.

6. A hoisting and launching mechanism for lifeboats comprising a wheeled truck for moving on the deck of a main ship, driving gear for said truck, a plurality of hoisting and launching shafts journaled in each end of said truck, each shaft having a globe bearing and a sprocket wheel mounted thereon, a central operating shaft journaled in said truck, gearing connecting said operating shaft with the shafts on each end of said truck, means for throwing said gearing into and out of operative connection with said hoisting and launching shafts, means for connecting said operating shaft with the truck gearing, means for throwing the operating shaft into and out of operative connection with the truck gearing, and a brake wheel mounted on said operating shaft for controlling the movement of said hoisting and launching shafts.

7. A hoisting and launching mechanism for lifeboats comprising a wheeled truck for moving on the deck of a main ship, driving gear for said truck, a plurality of hoisting and launching shafts journaled in each end of said truck, each shaft having a globe bearing and a sprocket wheel mounted thereon, a central operating shaft journaled in said truck, a gearing connecting said operating shaft with the hoisting and launching shafts on each end of said truck, means for throwing said gearing into and out of operative connection with said hoisting and launching shafts, means for connecting said operating shafts with the truck gearing, means for throwing the operating shaft into and out of operative connection with the gearing mounted on said operating shaft, a brake wheel mounted on said operating shaft, brake shoes swingingly mounted on the truck frame, and adapted to engage the periphery of said brake wheel, and brake levers and a hand wheel mounted on said operating shaft and coöperating with said brake lever for controlling said brake shoes.

In testimony whereof, I set my hand in the presence of two witnesses, this 13th day of September, 1912.

B. F. SARGEANT.

Witnesses:
A. L. JACKSON,
L. T. KNIGHT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."