

(No Model.)

6 Sheets—Sheet 1.

F. BARATHON, AINÉ.
LIFE BUOY.

No. 541,340.

Patented June 18, 1895.

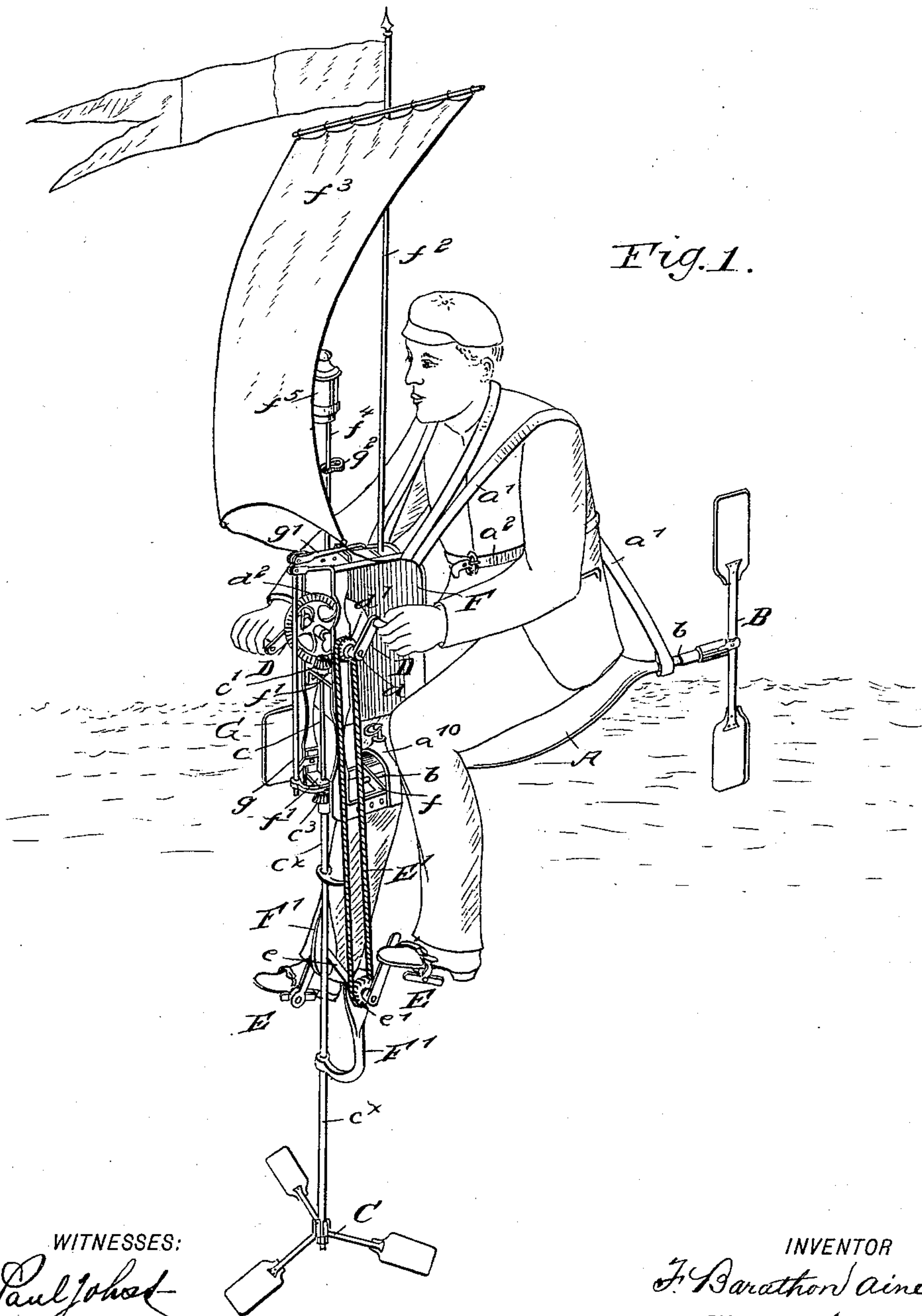


Fig. 1.

WITNESSES:

Paul J. Hest
J. H. Caplinger

INVENTOR

F. Barathon Aine

BY

Munn & Co

ATTORNEYS.

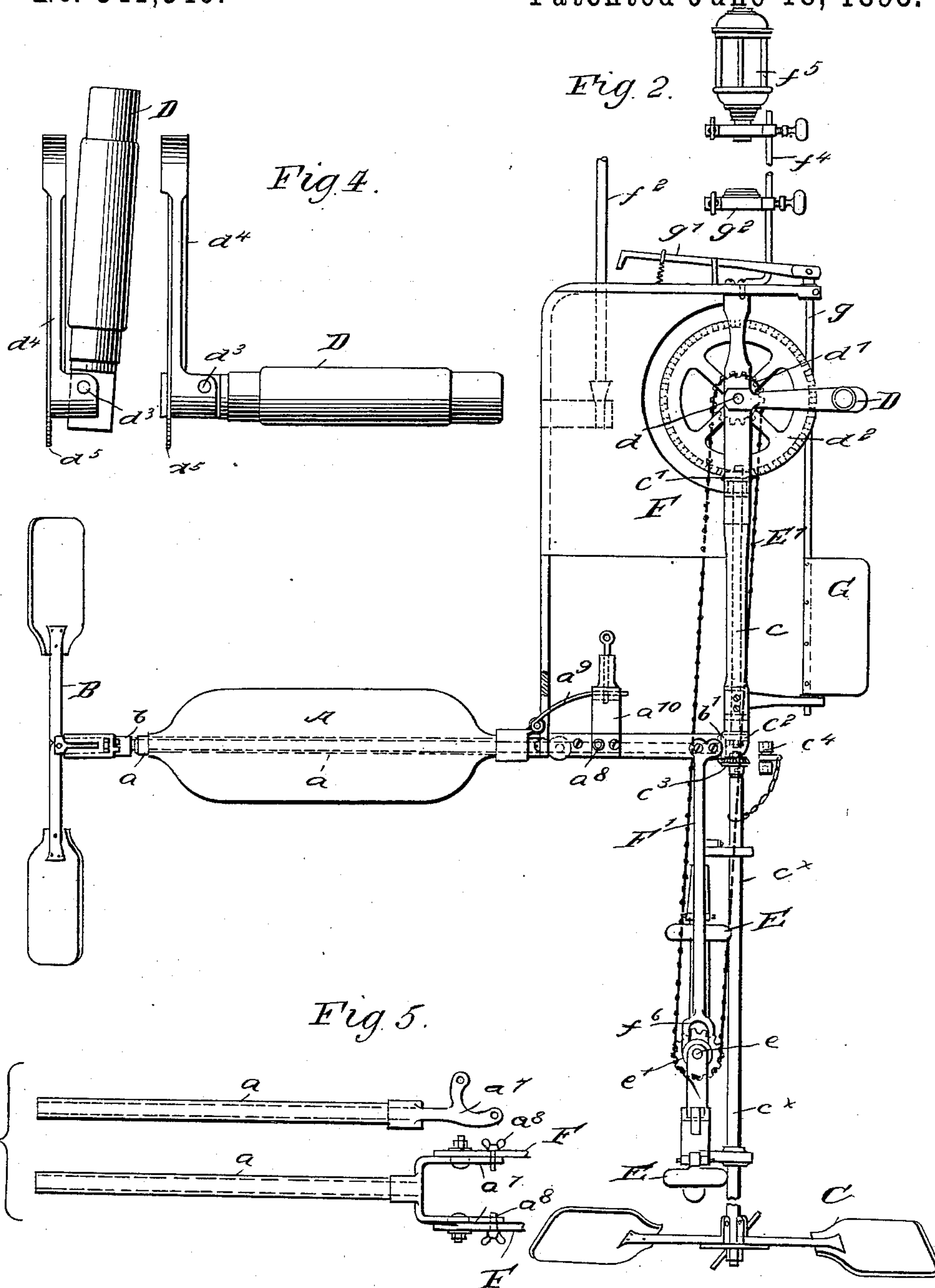
(No Model.)

6 Sheets—Sheet 2.

F. BARATHON, AINÉ.
LIFE BUOY.

No. 541,340.

Patented June 18, 1895.



WITNESSES:

Paul J. Hot
J. H. Caplinger

INVENTOR

F. Barathon aine

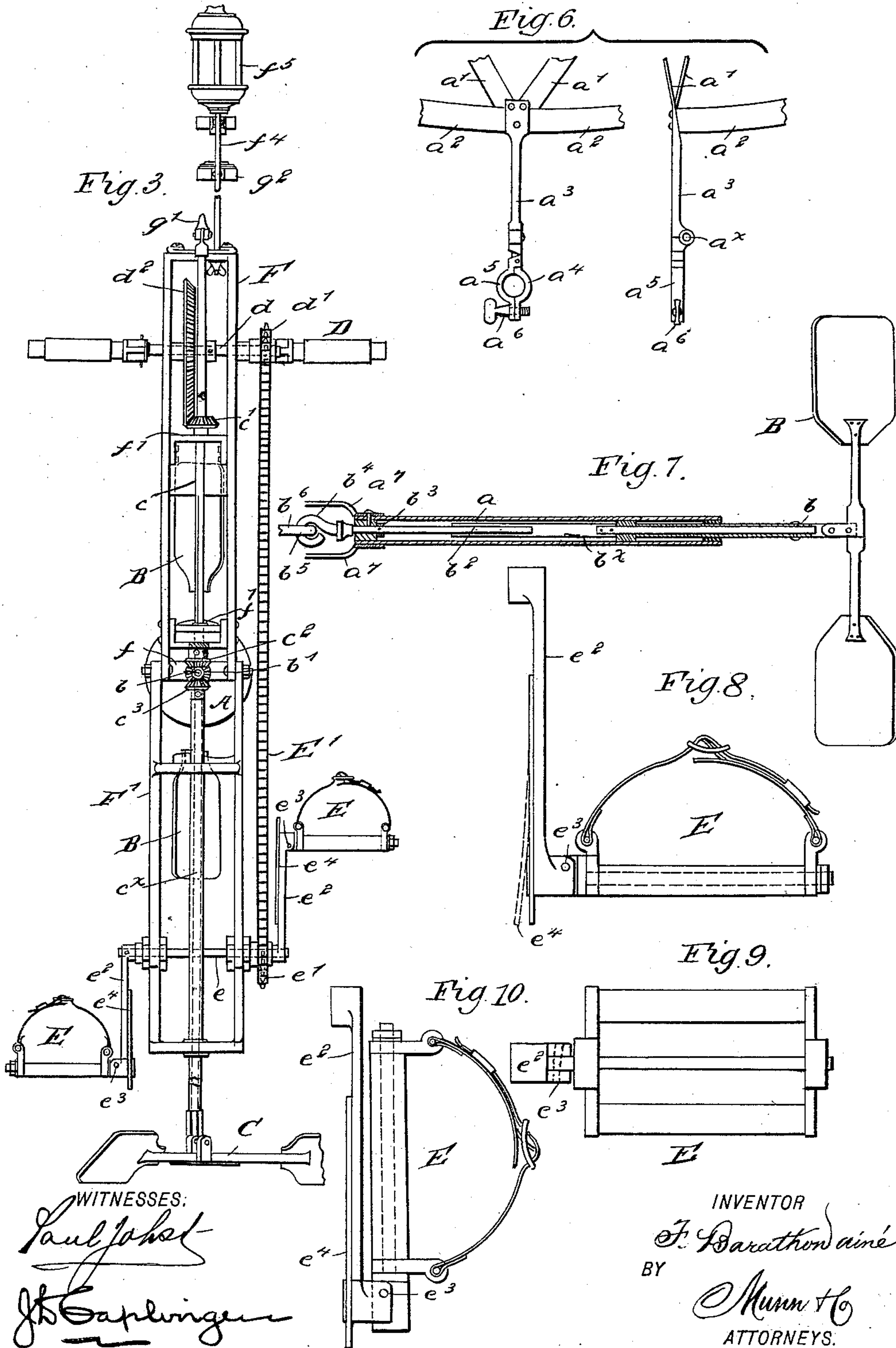
BY

Munn & Co
ATTORNEYS.

F. BARATHON, AINÉ.
LIFE BUOY.

No. 541,340.

Patented June 18, 1895.



WITNESSES:
Paul J. Schell
J. H. Caplinger

INVENTOR
F. Barathon aine
BY
Munn & Co
ATTORNEYS.

(No Model.)

6 Sheets—Sheet 4.

F. BARATHON, AINÉ.
LIFE BUOY.

No. 541,340.

Patented June 18, 1895.

Fig. 12.

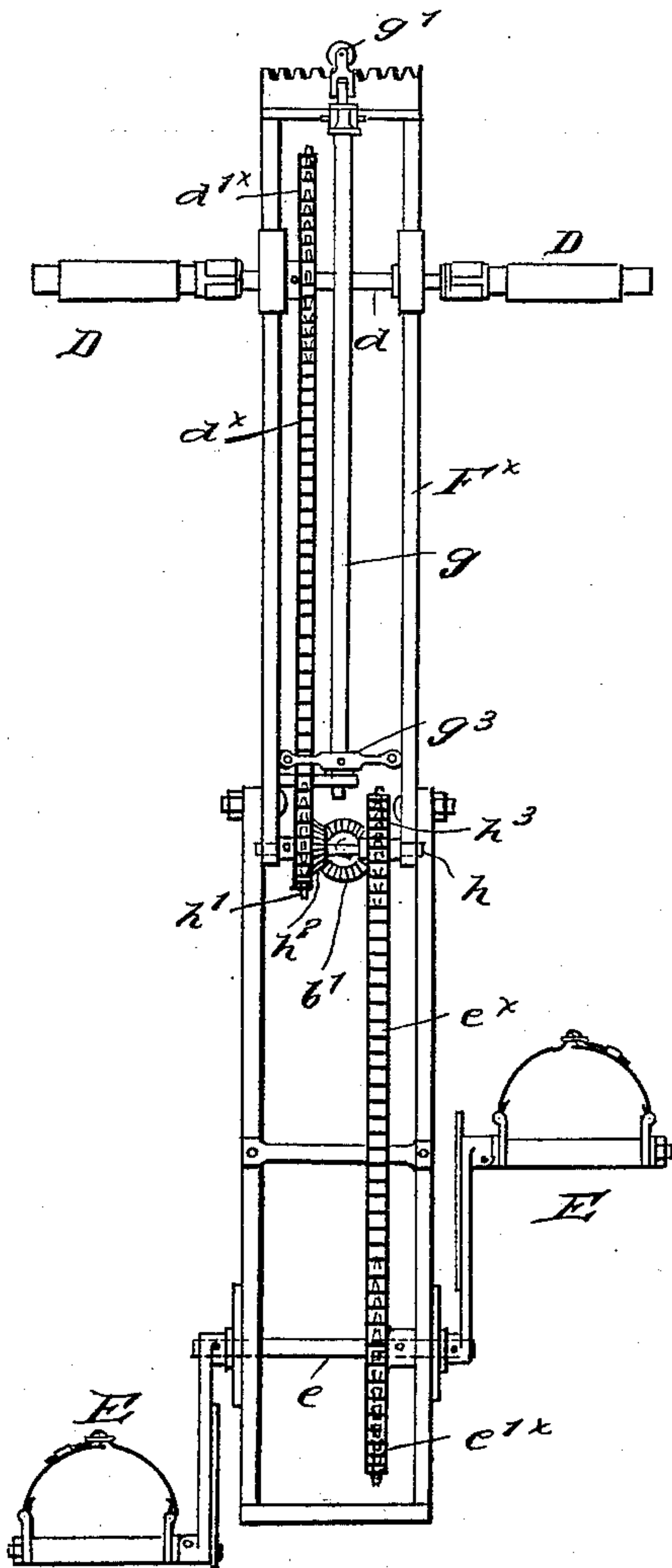
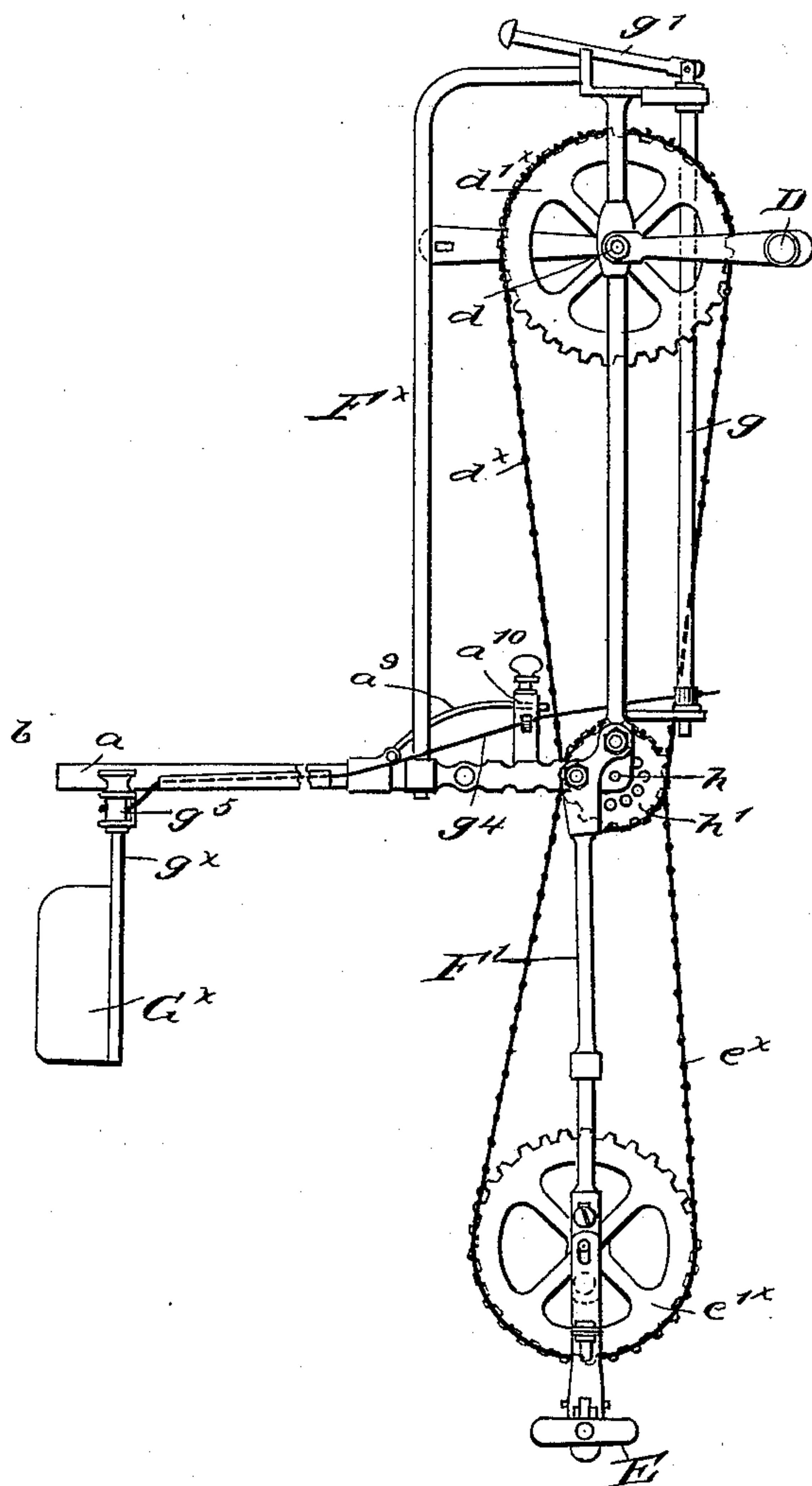


Fig. 11.



WITNESSES:

Paul J. West
H. Caplan

INVENTOR

F. Barathon Ainé
BY *Munn & Co*
ATTORNEYS.

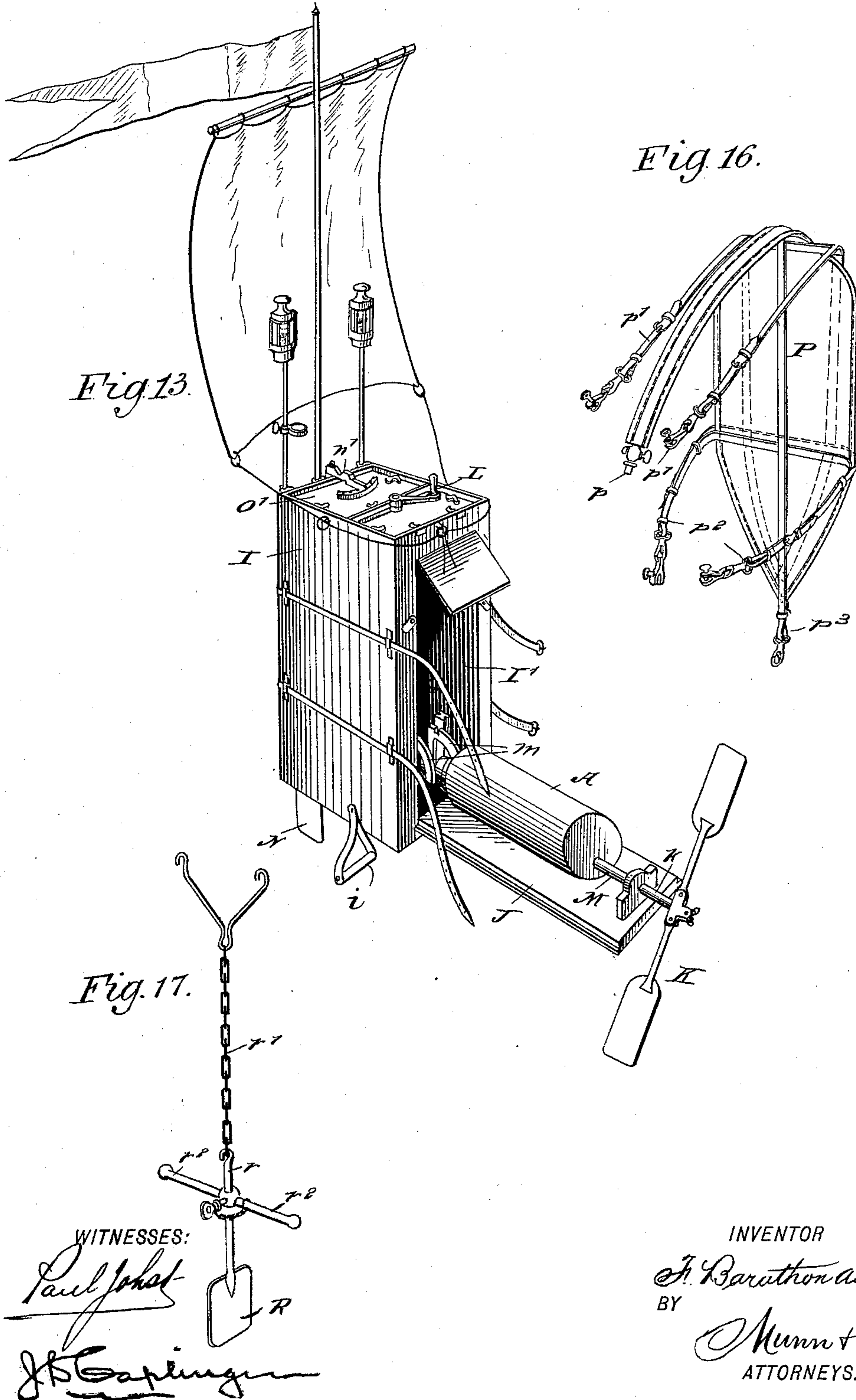
(No Model.)

6 Sheets—Sheet 5.

F. BARATHON, AINÉ.
LIFE BUOY.

No. 541,340.

Patented June 18, 1895.



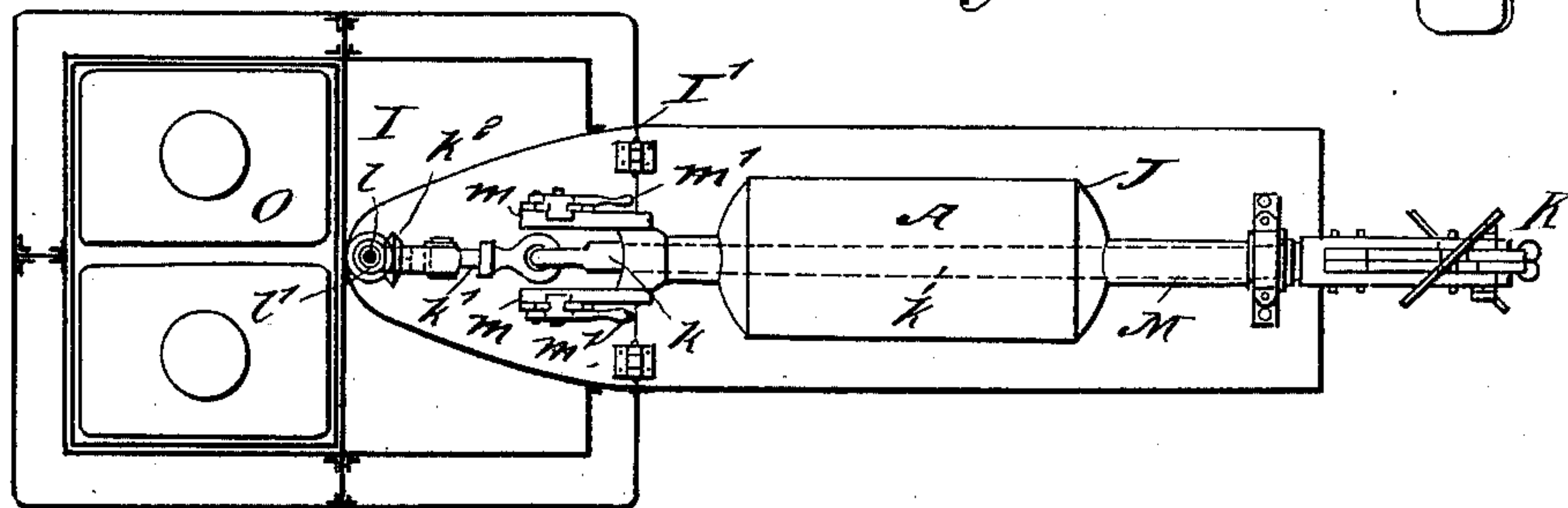
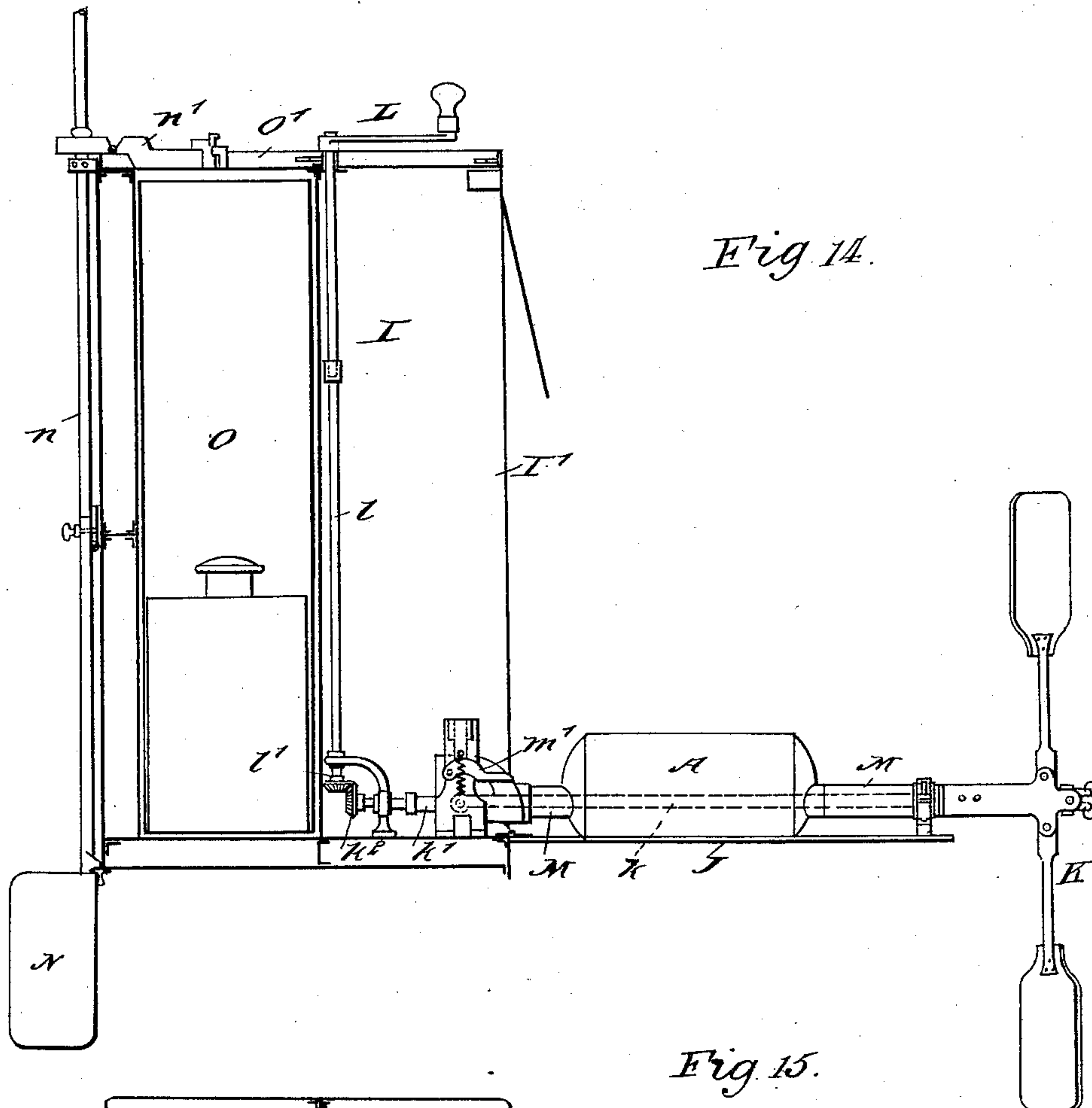
(No Model.)

6 Sheets—Sheet 6.

F. BARATHON, AINÉ.
LIFE BUOY.

No. 541,340.

Patented June 18, 1895.



WITNESSES:

Paul J. Kohler
J. B. Gahlinger

INVENTOR

F. Barathon Ainé
BY *Munn & Co*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

FRANÇOIS BARATHON, AINÉ, OF PARIS, FRANCE.

LIFE-BUOY.

SPECIFICATION forming part of Letters Patent No. 541,340, dated June 18, 1895.

Application filed January 24, 1895. Serial No. 536,064. (No model.)

To all whom it may concern:

Be it known that I, FRANÇOIS BARATHON, Ainé, a citizen of the Republic of France, residing at Paris, France, have invented certain
5 Improvements in Life-Buoys, of which the following is a specification.

This invention relates to that class of devices which are adapted for use in case of shipwreck as a means of saving life, and the
10 object of the invention is to provide a buoy or device of a simple and inexpensive nature which shall be adapted to support a person in the water, and which shall be provided with means whereby the person using the buoy
15 may propel and steer the same.

The invention also comprises certain features of construction all as will be hereinafter fully described.

The novel features of the invention will be
20 carefully defined in the claims.

In order that my invention may be the better understood, I have illustrated the same in the accompanying drawings, wherein—

Figure 1 is a perspective view showing the
25 life-buoy in use. Fig. 2 is a side elevation, drawn to a larger scale, showing the device complete. Fig. 3 is a front view of the device as seen in Fig. 2. Fig. 4 is an enlarged detail view showing one of the cranks in its folded
30 and open positions. Fig. 5 is a view representing in side elevation and plan the supporting-sleeve for connecting the seat with the casing of the apparatus. Fig. 6 is a view showing the preferred arrangement of the
35 body-straps for securing the operator to the buoy. Fig. 7 is a sectional view taken longitudinally through the supporting-sleeve and propeller-shaft, showing the telescopic construction of the latter. Fig. 8 is a side elevation, and Fig. 9 is a plan, of the pedal detached.
40 Fig. 10 is a view similar to Fig. 8, but showing the pedal in its closed position. Figs. 11 and 12 are respectively a side elevation and front view showing a modified construction
45 of the device. Fig. 13 is a perspective view showing another form of life-buoy constructed according to my invention. Figs. 14 and 15 are vertical and horizontal sections taken through the same, and Figs. 16 and 17 are
50 perspective detail views showing attachments designed for use with the life-buoy.

In the construction illustrated in Figs. 1 to 10 the life buoy comprises a buoyant seat A in the form of an inflatable rubber bag having an air valve whereby it may be inflated
55 and deflated in the usual manner, and the said seat A is provided with a metallic bearing sleeve *a*, wherein is revolubly mounted a shaft *b*, bearing at its rear end a paddle wheel or screw B, as clearly seen. The seat A is also
60 provided with straps *a'*, *a'*, adapted to pass over the shoulders of the person using the buoy, to which is connected a waist strap or band *a*², whereby the operator may be prevented from being washed off the buoy. The
65 forward end of the bearing sleeve *a* is bifurcated and its forks *a*⁷ are pivoted at *a*⁸ (Figs. 2 and 5) to the rear side of a casing F, and said sleeve *a* together with the seat A is normally held in a horizontal position relatively
70 to the said casing by means of a spring *a*⁹, connected at its rear end to the sleeve and having a perforation at its forward end adapted to receive a pin or projection mounted on a tie piece or strut *a*¹⁰ on the casing F. Thus
75 it will be understood the seat A may be folded up against the rear side of the casing when the device is not in use.

In order to permit the seat to be folded it is evident that the connection between the
80 shaft *b* and the casing should also be flexible, and therefore I prefer to form said shaft *b* in a number of sections arranged to telescope with one another, as seen in Fig. 7. The rear section *b*^x to which the screw B is fixed, is ar-
85 ranged to slide in the sleeve *a* to a limited extent, and its forward end is open to form a socket to receive the sliding section *b*² having a collar *b*³ adapted to be set fast in the sleeve *a* when the device is in use. The forward
90 end of section *b*² has a ring *b*⁴ to receive a ring or hook *b*⁵ on the forward section *b*⁶ of said shaft, which section *b*⁶ is journaled on the casing F.

The casing F is in the form of an air tight
95 or buoyant, chest or box, which not only aids in supporting the device but serves as a support for the mechanical propelling devices of the buoy, being provided at its lower or under side with bearings *f*, *f*, for the horizontal
100 propeller shaft *b* and on its front side with other bearings *f'*, *f'*, for the vertical shaft,

comprising a main portion c and a lower section c^x , carrying at its lower end the screw C , adapted when rotated to uphold the buoy in the water. See Fig. 2.

5 The casing F extends upward above the seat A a sufficient distance to bring a crank shaft d , having cranks D for manual operation within easy reach of the hands, and at its upper part said casing is connected to the front ends of the shoulder straps $a' a'$, before referred to.

15 A mast f^2 is stepped on the casing F , and a sail f^3 is provided to be set thereon, so that when possible advantage may be taken of the wind for propelling the buoy, and a post f^4 is also fixed to the casing and provided with means for supporting a signal light f^5 , as clearly seen in Fig. 2.

20 At its lower part the casing F is provided with a frame F' extending down just behind the shaft c , and at the lower part of said frame F' , a slot f^6 is provided in which a pedal shaft e , is journaled having at its ends pedals E adapted to be engaged by the feet of the operator in order to propel the buoy. Sprocket wheels d' and e' are mounted on the respective shafts d and e and a chain E' extends over said wheels whereby the said shafts are driven in unison. The crank shaft d is provided with a bevel gear d^2 meshing with a bevel pinion c' , mounted on the main portion c of the vertical shaft, whereby the said portion c is driven from the crank shaft, and at the lower part of casing F the shaft c is also provided with a bevel pinion c^2 meshing with a bevel gear b' , fixed on the forward end of shaft b , whereby the latter shaft b may be driven from the said vertical shaft c . The lower section c^x of shaft c is also provided with a bevel gear c^3 , meshing with wheel b' on shaft b , whereby said section c^x carrying the screw C is normally indirectly connected to the main portion c of the vertical shaft, so as to permit said screw C to be driven at increased speed; but this is not essential and in Fig. 2 I have shown a short intermediate section or coupling c^4 attached by a chain to the section c^x and provided with sockets at its ends to receive the adjacent ends of the main shaft c and section c^x , whereby when it is desired, the lower gear c^3 may be removed and the coupling section c^4 arranged in place thereof to form a rigid connection between main shaft c and section c^x .

55 A rudder G is mounted at the forward side of the casing F , being held on a vertical rod g , rotatively mounted in bearings on said casing as clearly seen, and said rod g is provided at its upper end with an operating lever g' , adapted to be set fast to the casing F . A compass g^2 is also mounted on the rod f^4 just below the lantern f^5 .

65 The pedals E are arranged to fold against the pedal levers e^2 , to which they are pivoted at e^3 , being held in operative position by springs e^4 as clearly seen in Figs. 8 and 10,

when the device is in use, and a similar arrangement is employed with the crank handles D , which as seen in Fig. 4 are pivoted at d^3 to the arms d^4 and held in position by perforated springs d^5 .

The blades of the screws B and C are also pivoted to fold down upon the shafts b and c when not in use, whereby it will be seen the device is made to occupy the least possible bulk.

The preferred arrangement of the straps for securing the operator to the buoy is shown clearly in Fig. 6 which shows said device in side and rear elevation. The straps a' and a^2 in this construction are secured at their ends to a vertical standard a^3 , pivoted at its lower end to a clamping device, so as to accommodate the movements of the operator. The clamping device consists of two members a^4, a^5 pivoted at their upper ends and adapted to grip on the end of the sleeve a , the free ends of the members being connected by a screw a^6 .

In Figs. 11 and 12, I have illustrated, in side and front elevation, a modified form of the construction shown in Figs. 1 to 10, and this construction I will now describe, premising that I have not deemed it necessary to illustrate in these views certain parts of the device, as for instance, the seat A , screws B, C , and sectional shaft a , which would be mere duplications of the parts seen in Figs. 1 to 10. In this construction the casing F is removed to show the framework F^x thereof, at the upper part of which is journaled the crank shaft d , having cranks D to be operated by hand. The wheel d' is replaced by a larger wheel d'^x geared by a chain d^x to a sprocket wheel h' , on a shaft h journaled at the lower part of the frame F^x at right angles to the shaft b , and geared thereto by means of bevel gears h^2, b' , on the respective shafts. The upper or main portion of the vertical shaft c seen in Fig. 1, will be omitted in this form of the device and the lower section c^x will be driven from wheel b' by gearing similar to that shown in Fig. 1. The pedal shaft e carries a large sprocket wheel e'^x , geared by a chain e^x , with the wheel h^3 on shaft h whereby the device may be actuated either by hand or foot power or both as desired. The rudder G^x in this construction is mounted on a vertical rod g^x journaled at the rear end of the sleeve a and provided with a cross rod g^5 to the opposite ends of which are connected cords or wires g^4 , the forward ends of which are connected to the ends of a cross piece g^3 fixed on the lower end of the vertical rod g , journaled in the frame F^x and provided with an operating lever g' , as clearly seen.

In Figs. 13 to 17, I have shown yet another construction wherein the device is shown adapted to be compactly folded into an enclosing casing similar in form to a trunk. In this form of my invention, the casing or trunk I , has double walls, as seen in Figs. 15, so as

to be buoyant, and in one side thereof is an opening I' having a cover J, hinged at one end and adapted to be extended horizontally as shown in Fig. 13. The seat A, is mounted on the hinged cover J, and the screw K, similar to the screw B before described, is mounted on a shaft k , journaled on the cover J and extending through the seat A. The shaft k is sectional and its inner section k' inside the casing I, is journaled on the bottom or end wall thereof, and carries a bevel gear k^2 , meshing with a similar gear wheel l' , on a vertical shaft l , the upper end of which extends through the casing I and is provided with a crank L whereby the shaft l may be turned. The sleeve M in this construction is similar to the sleeve a in the construction shown in Fig. 1 and is provided with forks m pivoted in the casing I and provided with locking levers m' adapted to hold the cover in its extended position. The rudder N is mounted on a vertical rod n , journaled on the front side of the casing I, and provided with an operating lever n' , at its upper end, as seen in Fig. 13. The device is also provided with a mast, sail, signal light and compass, similarly to the device seen in Fig. 1. The screw C is however, omitted and in order to provide rests for the feet, stirrups i , are secured to opposite sides of casing I. The casing contains in its front a compartment O, adapted to contain water, provisions, clothing or other articles, and this compartment has a removable top-plate O' held in place by the rudder operating lever n' or other convenient means.

In Fig. 16 I have shown a device to take the place of the straps a' , a^2 before described, for securing the operator to the float. This device consists of an inflatable body portion P, adapted to be held on the back of the wearer and having a valve tube p , shoulder straps p' , waist band p^2 and clamping device p^3 , for attachment to the float.

In Fig. 17, I have shown a form of rudder or steering device which may be employed in lieu of the devices above described and which consists of a blade R having a stem r , suspended by means of a chain r' from the buoy. The stem r is provided with a cross piece r^2 to receive the feet of the operator whereby the buoy may be steered by the feet while propelled by hand.

From the above description it will be seen that my invention is susceptible of considerable alteration in its details without material departure from its spirit, and therefore I do not wish to be understood as limiting myself to the precise construction and arrangement shown in carrying the same into effect.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a life buoy, the combination of the frame, a screw and its shaft mounted thereon, a crank shaft geared to the screw shaft, crank arms on the crank shaft, crank handles piv-

oted on the arms, and perforated springs mounted on the arms and adapted to hold the crank handles in position, substantially as set forth.

2. In a life buoy, the combination of a frame, and a screw and its shaft journaled on the frame, said shaft being longitudinally movable, and said screw being composed of a series of pivoted blades adapted, when the shaft is moved longitudinally to be folded against the same, substantially as set forth.

3. In a life buoy, the combination of a frame, a sleeve pivoted thereto, a buoyant seat held on said sleeve, a screw shaft extending through the sleeve, a screw on said shaft, and operating mechanism on the frame geared to said screw shaft, substantially as set forth.

4. In a life buoy, the combination of a frame, a sleeve pivoted thereto, a buoyant seat held on the sleeve, a telescopic sectional screw shaft extending through the sleeve, a screw on one end of the shaft, a pivoted connection between the members of said shaft whereby one section is adapted to fold with the sleeve while the other section is held on the frame, and operating mechanism for the shaft held on the frame, substantially as set forth.

5. In a life buoy, the combination of a buoyant casing having an opening in one side, a seat hinged at one side of the opening and adapted to form a cover to close said opening in the casing, a screw shaft mounted on said cover, a screw on the end of said shaft, and means for operating the shaft, substantially as set forth.

6. In a life buoy, the combination of a frame, having propelling devices, a seat pivoted to the frame at one side thereof and adapted to be folded against the outer side of the same, and means for holding the seat in an unfolded position when the life buoy is in use, substantially as set forth.

7. In a life buoy, the combination of a frame, a sleeve pivoted thereto, a buoyant seat held on said sleeve, a longitudinally movable screw shaft extending through the sleeve, operating mechanism on the frame geared to the screw shaft, and a screw mounted on the shaft and composed of pivoted blades adapted, when the shaft is moved longitudinally, to be folded down against the same, substantially as set forth.

8. In a life buoy, the combination of a frame, a sleeve pivoted thereto, a buoyant seat on the sleeve, a screw shaft rotatively mounted in the sleeve, operating mechanism geared to the screw shaft, said screw shaft being adapted to move longitudinally in the sleeve when the same is folded, and a screw mounted on said shaft and composed of pivoted blades adapted, when the shaft moves longitudinally in the sleeve, to be folded flat against said shaft, substantially as set forth.

9. In a life buoy, the combination of a frame having propelling devices, a folding seat on a screw shaft carried by said frame and pro-

vided with a screw, and gearing for driving said screw shaft from said propelling devices when said seat is in position for use, substantially as set forth.

- 5 10. In a life buoy, the combination of a frame having propelling devices, a folding seat pivoted thereto, a telescopic screw shaft carried by said seat and provided with a screw, and gearing for driving said screw shaft from the

propelling devices on the frame, substantially as set forth.

In witness whereof I have hereunto set my hand this 4th day of December, 1894.

FRANÇOIS BARATHON, AINÉ.

Witnesses:

LEON FRANCKLEN,
CLYDE SHROPSHIRE.