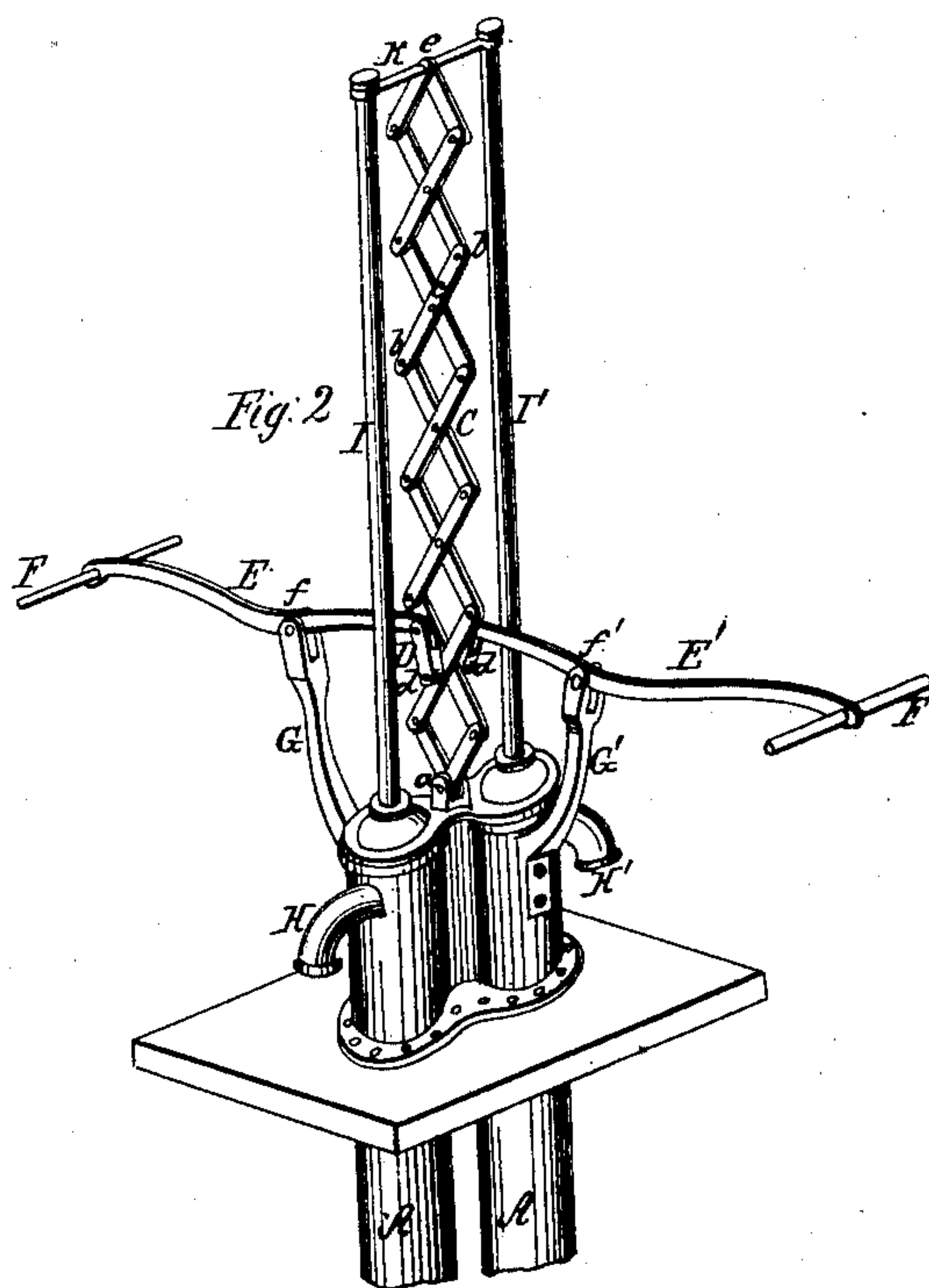
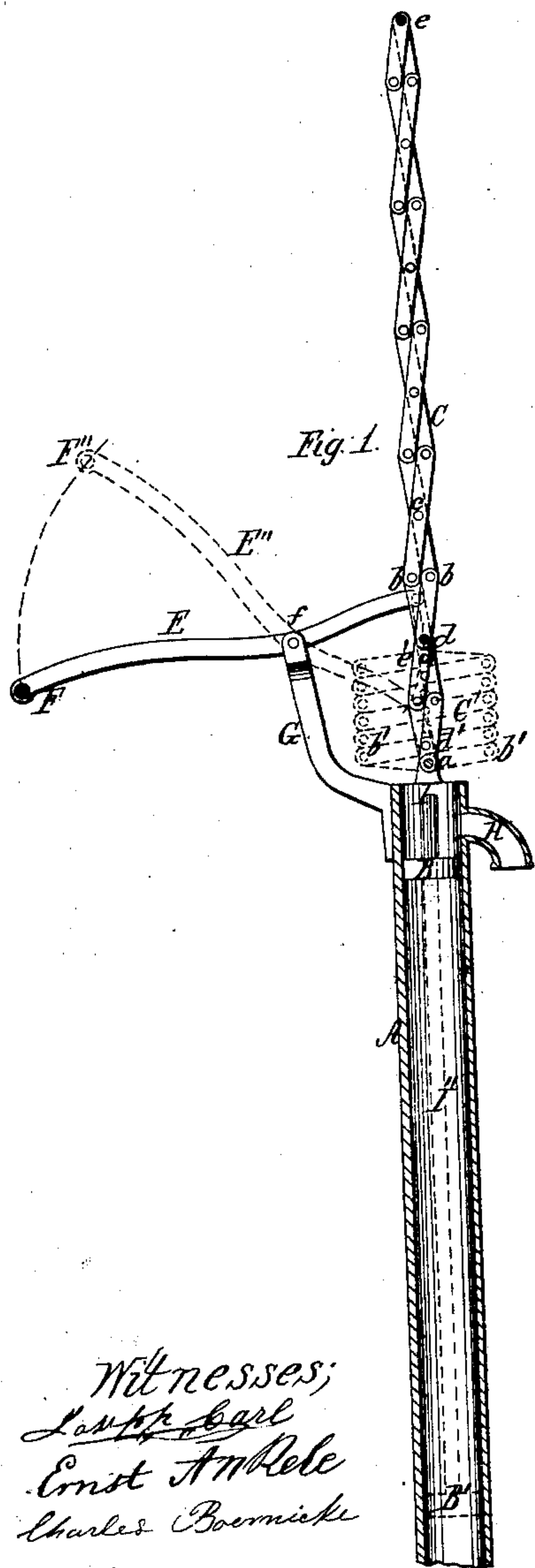


No. 23,314.

PATENTED MAR. 22, 1859.

L. B. SCHÄFER.
SHIP PUMP.



Inventor;
L B Schäfer.

Witnesses;
Lump Carl
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UNITED STATES PATENT OFFICE.

L. B. SCHÄFER, OF BALTIMORE, MARYLAND.

PUMP.

Specification of Letters Patent No. 23,314, dated March 22, 1859.

To all whom it may concern:

Be it known that I, L. B. SCHÄFER, of Baltimore, in the State of Maryland, have invented a new and useful Improvement in Ships' Pumps; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

10 In the drawings Figure 1 represents a vertical section and Fig. 2, a perspective view of my improved ship-pump.

My improvement relates to that class of pumps, which are used on board of ships in case of accidents, and it consists in a peculiar arrangement and combination of levers which cause the piston of the pump to travel a greater distance by every stroke of the hand lever, as in common pumps, without increasing the circumference of the same.

To the upper end of the pump barrel A an arm G and G' is firmly attached, which serves as fulcrum for the hand levers E and E', which are provided with handles F and F'.

30 In the case where two pump barrels are combined, as shown in Fig. 2 the top plate which covers both barrels is provided in the center with the projection *a* to receive the first pair of links of the shear lever C. In case that only one pump barrel is used, this projection *a* is cast on one side of the barrel. The pin *d* which forms the first crossing point of the shear lever C above the projection *a* is united with the levers E and E' by means of the link D. This link D secures a vertical motion, or better, a motion in a vertical straight line, of the pin *d* and therefore of the shear lever itself, while the levers E and E' are turned around their fulcrums *f* and *f'*. The uppermost end *e* of the shear lever C is united with the two piston rods I and I' by the cross bar or rod K, which serves at the same time as fulcrum for the last two links of the said shear lever.

50 In Fig. 1, the lowest position of handle F which causes the highest position of point *e* of the shear lever and therefore also of the piston B, is shown in black lines, while the highest position of the handle, marked with F'', causes the end of the

shear lever to move down to *e'* and also the piston B to take the position marked with B'. This position is drawn in red lines. From this it will be seen, that while the handle of the lever E moves through the distance from F to F'', the piston B of the pump is caused to move the distance from B to B'. This distance B B' through which the piston moves may be increased or decreased, and depends merely on the number of links which constitute the shear lever.

65 It is evident that the quantity of water discharged by a pump, by every stroke of the handle depends only on the way traveled by the piston and also on the diameter of the pump barrel. The way traveled by the piston of a pump, constructed after my invention is at least six times larger than the way made by the end point of the lever E which is also equal to the space traveled by the piston of a common pump and therefore will a pump of my construction by the equal number of strokes, or at the same time, discharge six times the quantity of water as a common pump with the same dimensions.

80 The space occupied by my pump, if not in use, is not greater than that occupied by a common ship pump, and when in use only the vertical dimensions are increased.

85 Considering that three or four of my pumps do the work of eighteen or twenty four common pumps, not occupying more space than three or four of them, it will be perceived that by the use of my invention not only many ships with their valuable freights but also many human lives may be saved, which is still more important.

I am aware that shear levers have been used in different machines and I therefore do not claim any part of my ship-pump separately and for itself.

I claim—

The arrangement for operation together of the pump barrel A, shear lever C, link D, hand brake E, and piston rod I, substantially as and for the purpose herein set forth.

L. B. SCHÄFER.

Witnesses:

JOSEPH CARL,
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