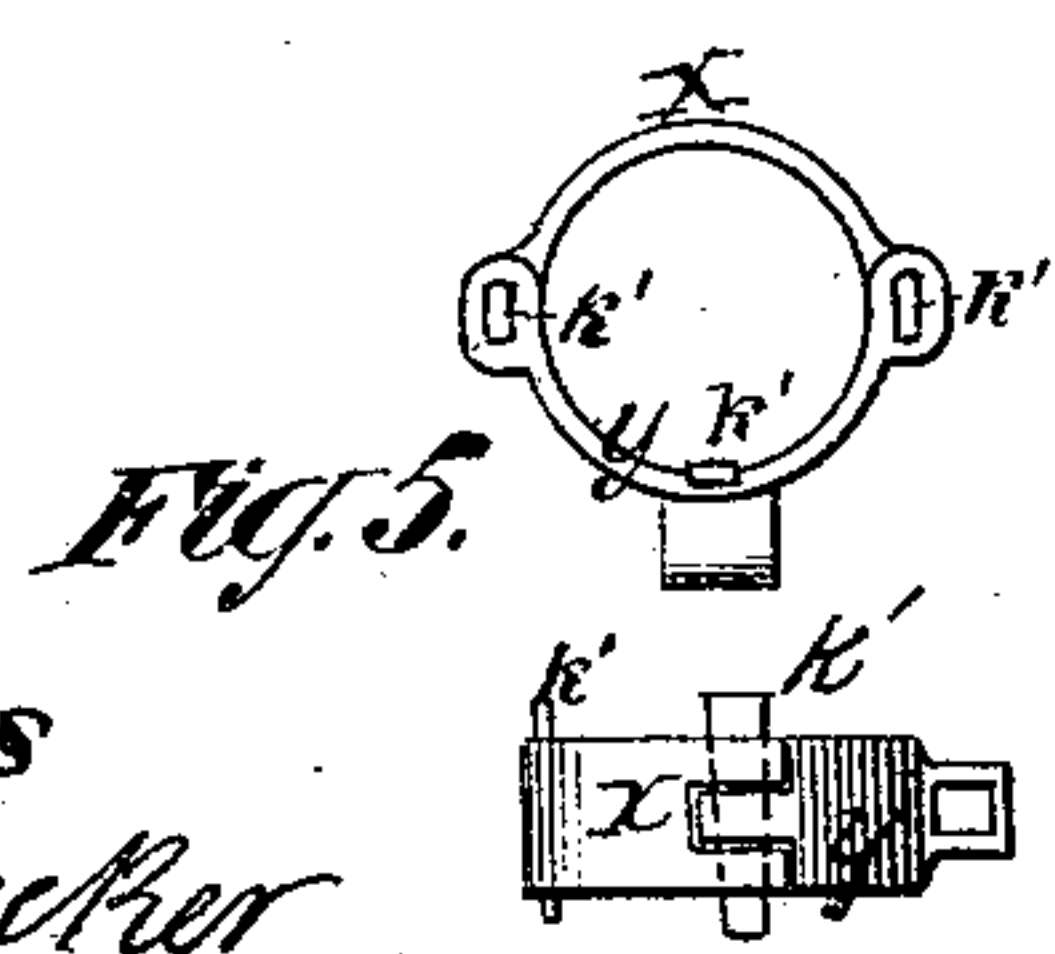
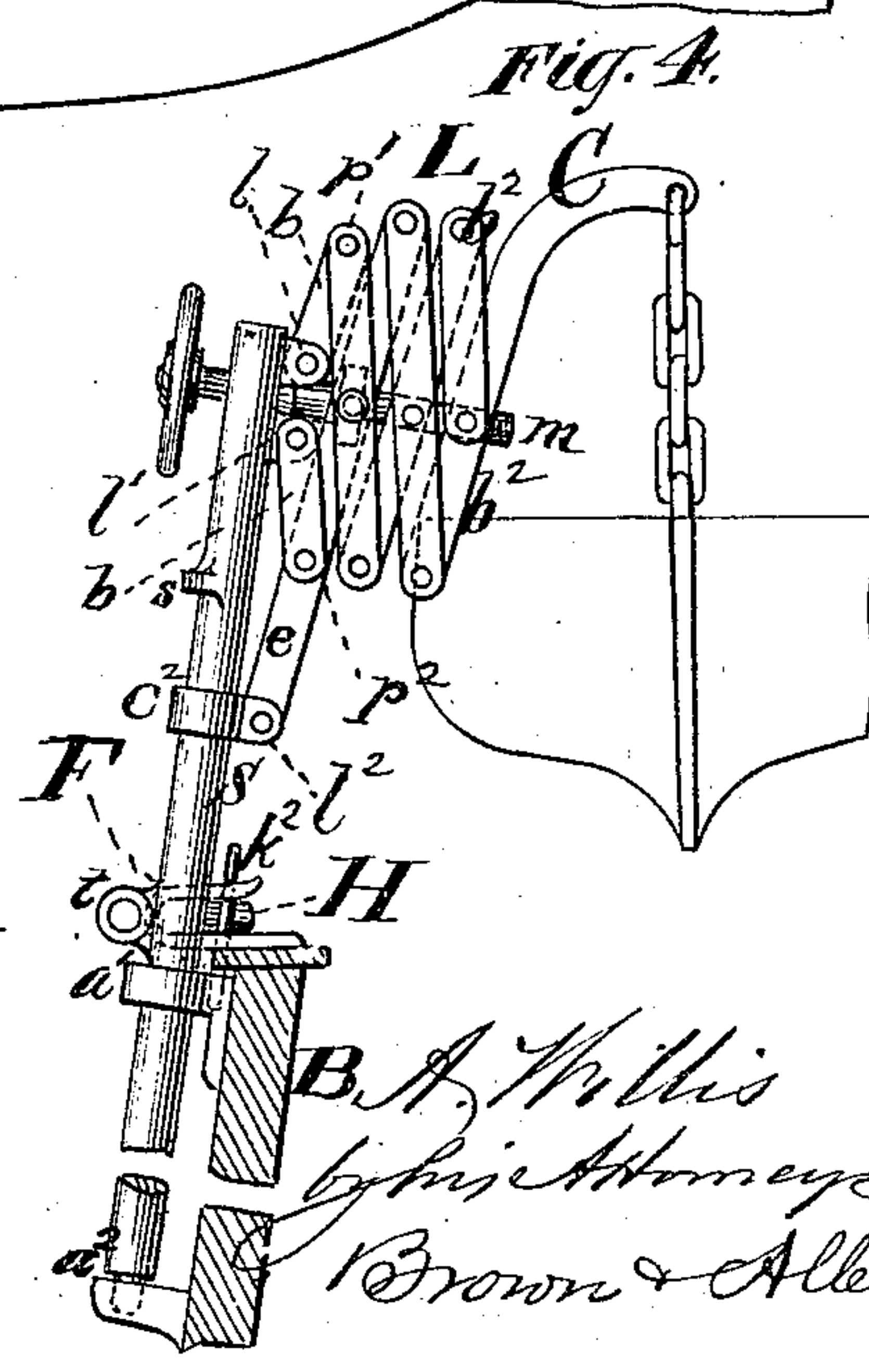
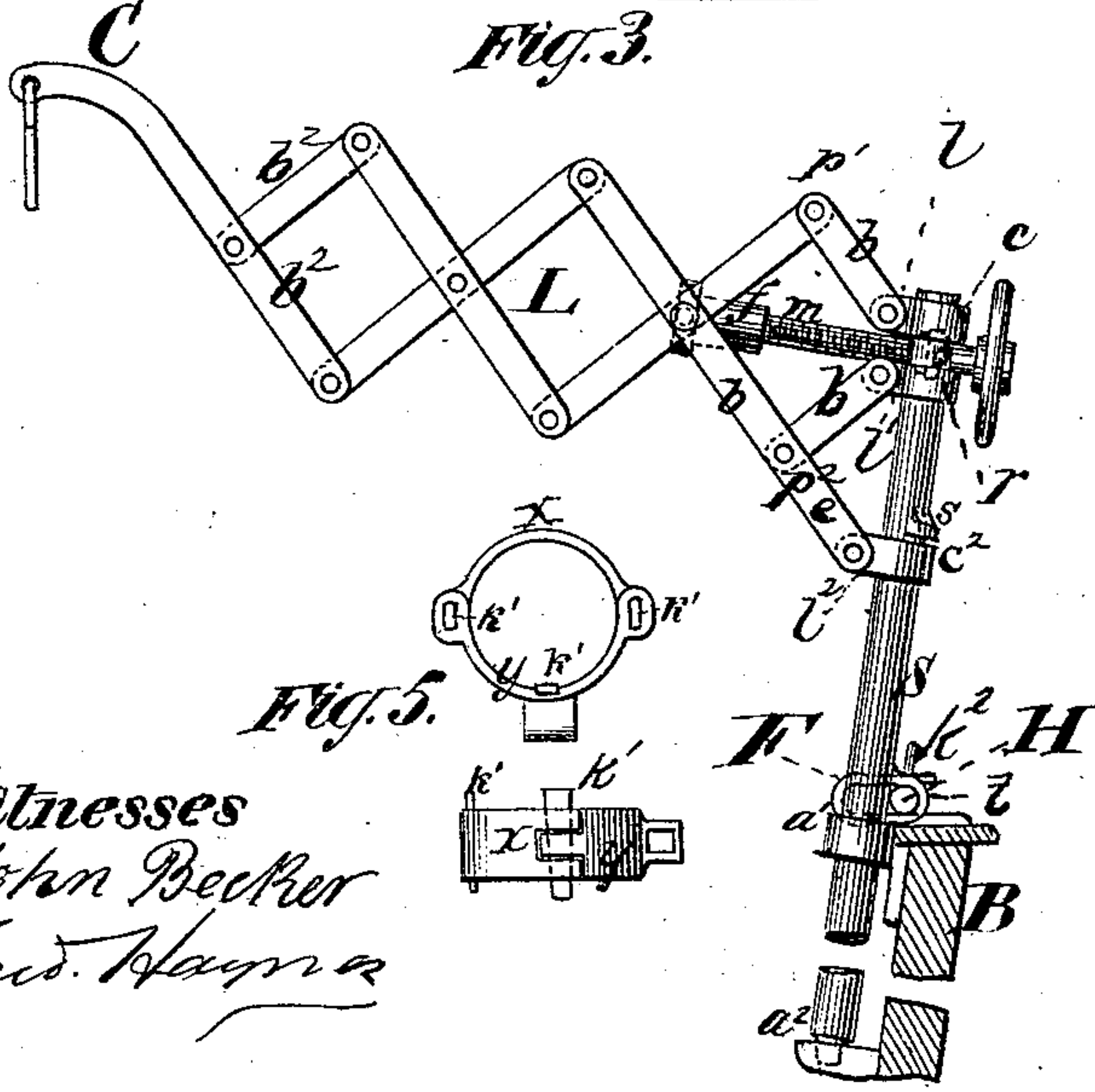
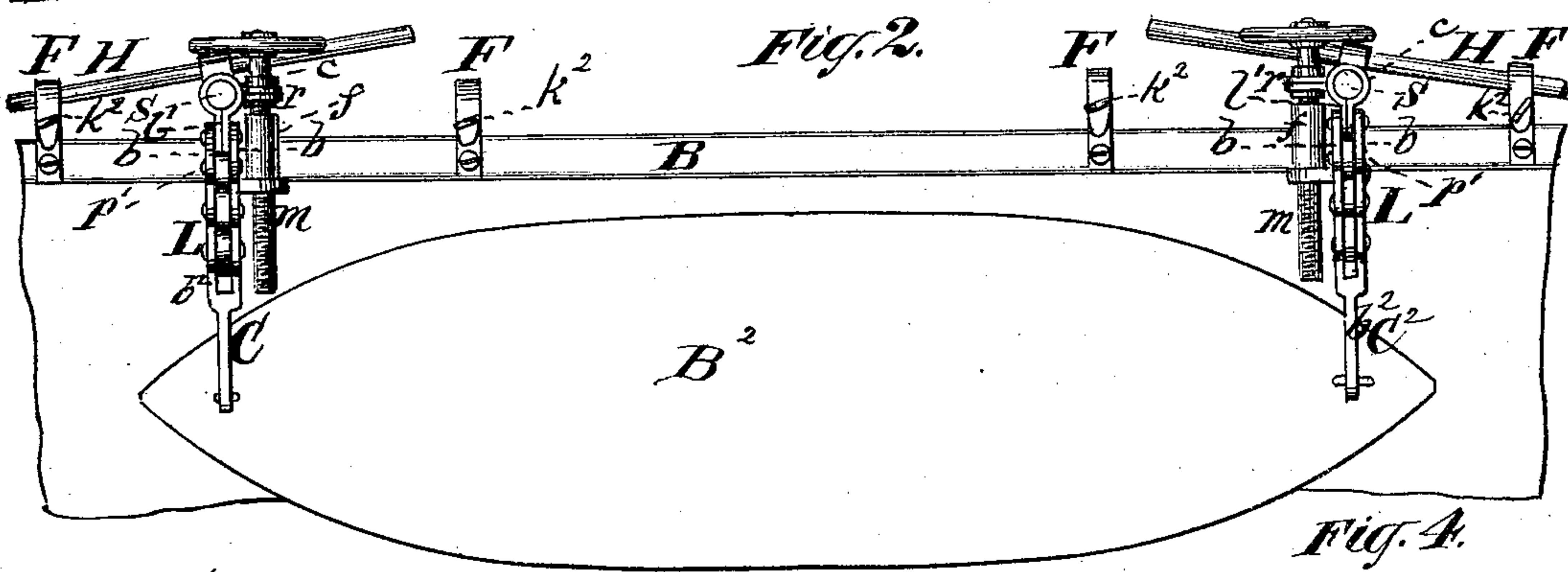
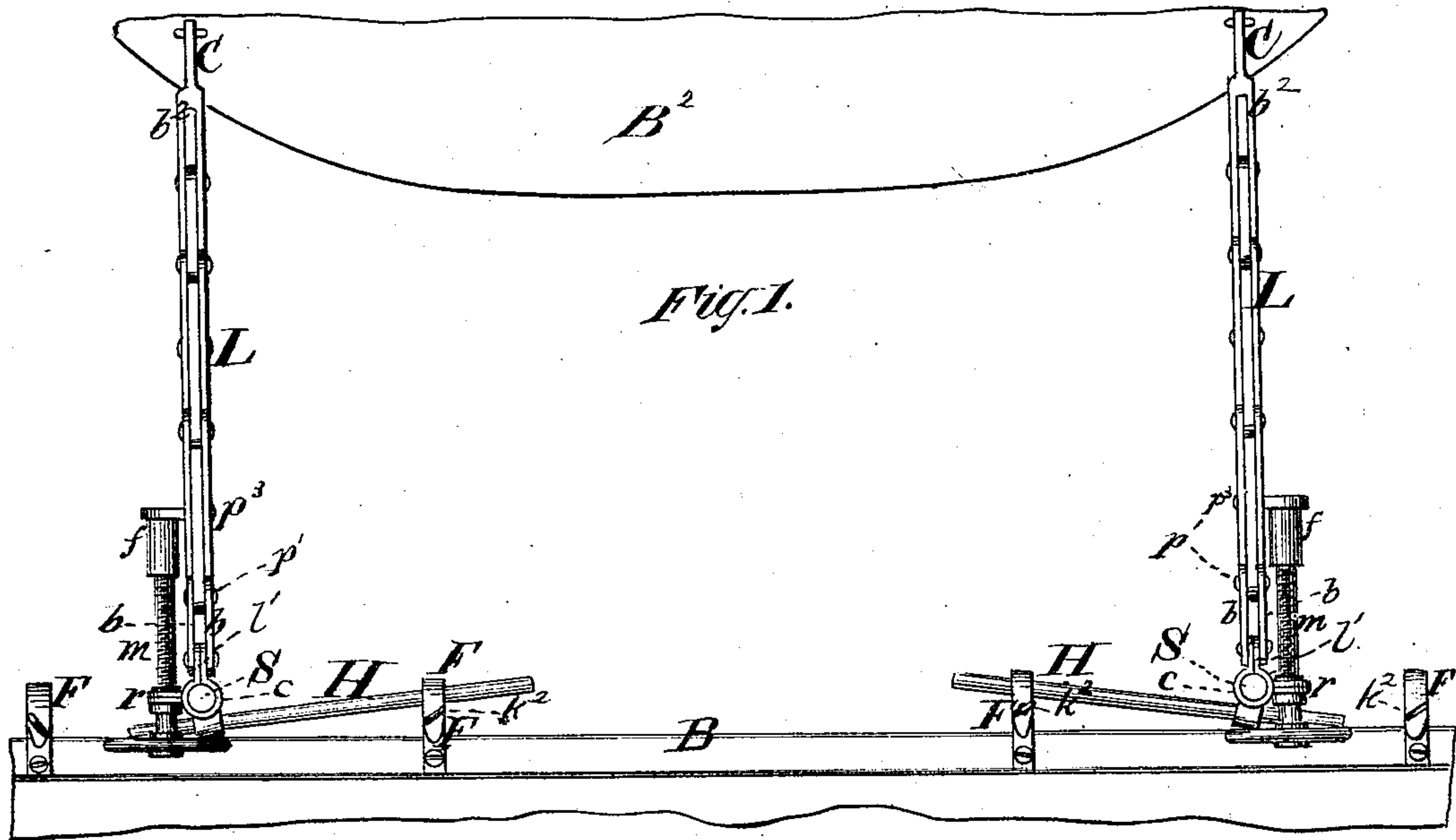


A. WILLIS.

MEANS FOR OPERATING SHIP'S DAVITS.

No. 181,755.

Patented Aug. 29, 1876.



Witnesses
John Becker
Fred. Wagner

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UNITED STATES PATENT OFFICE

ASA WILLIS, OF BROOKLYN, ASSIGNOR OF ONE-THIRD HIS RIGHT TO
THOMAS E. SMITH, OF NEW YORK, N. Y.

IMPROVEMENT IN MEANS FOR OPERATING SHIPS' DAVITS.

Specification forming part of Letters Patent No. **181,755**, dated August 29, 1876; application filed
February 21, 1876.

To all whom it may concern:

Be it known that I, ASA WILLIS, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Davits; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

The object of my invention is to provide means for the lowering and launching of boats at sea, and of hoisting the same on board again, without staving them by blows against the side of the ship in rough seas during such lowering and launching or hoisting. The accident of staving in boats by blows against the ship cannot take place when the boats are lowered or hoisted at a sufficient horizontal distance from the ship's side, which my invention supplies a safe, rapid, and convenient means of accomplishing.

The invention consists, first, in lazy-tongs, attached to and interposed between the standard or upright part of a ship's davit and the upper bent or crane part of such davit, to which the lazy-tongs are also attached, the extension and contraction of the lazy-tongs being effected by a male and female screw.

The invention further consists in improved, effective, and convenient means for turning and holding the upper bent or crane parts of ships' davits outboard or inboard, as circumstances may require.

Figure 1, in the accompanying drawing, is a top view of my improvement in davits, the lazy-tongs of the davit being extended, and the davits, with the boat suspended thereon, being turned and held outboard by my improved appliances for turning and holding the same. Fig. 2 is a top view of the same, the lazy-tongs being contracted, and the davits, with the boat suspended thereon, being turned and held inboard. Fig. 3 is a side view of the davit attached to the side of the vessel, the davit being extended and turned outboard. Fig. 4 is a side view of the same contracted and turned inboard. Fig. 5 is a top and side view of one of the details of the invention.

Similar letters refer to like parts in all the figures.

B is the ship's bulwark, to which the stand-

ard S, or upright part of the davit, is attached at $a^1 a^2$, Figs. 3 and 4, in the usual manner, to turn freely on its vertical axis. The standard S may have lugs l , Fig. 4, formed upon its upper portion, as shown in Fig. 4, to which are pivoted the innermost bars b of the lazy-tongs L; but instead of forming the said lugs upon the said standards, they may be formed upon a collar, c , as shown in Figs. 1, 2, and 3.

The lower one of the two bars of the lazy-tongs L, which are pivoted to the bars b at $p^1 p^2$, is longer than the other, the extension of the same, e , being pivoted to a lug, l^2 , on a sliding collar, c^2 , which slides upon the standard S when the lazy-tongs L are extended or contracted. When the lazy-tongs L are fully extended the collar c^2 is slid up against the stop s , which is a projection from the side of the standard S. This arrangement limits the extension of the lazy-tongs L, and also greatly strengthens and stiffens the said lazy-tongs when extended, as shown in Fig. 3.

One of the bars b^2 , which are the outermost from the standard in the series of bars in the lazy-tongs L, is extended and preferably bent, as shown at C, into the crane-like form usually employed in the iron davits of ships; and to the outer extremity of the said part C are attached the block and other tackle for suspending, hoisting, and lowering the boat B^2 . Attached preferably to the side of the fixed collar c is a fixed bearing, r , in which the male screw m turns on its longitudinal axis, but is prevented from moving endwise by a collar fitting a groove, or by any suitable means. The said male screw m fits a female screw, f , attached to one of the pivots p^3 of the lazy-tongs L. To the end of the screw nearest the collar c is attached a hand-wheel, h . Turning the male screw m causes it to work through the female screw f , causing the said female screw to traverse toward or from the standard S; but it will be evident that the female screw f and the fixed bearing r may have their relative positions interchanged without materially affecting the operation of my invention.

By making the uppermost of the two bars b adjustable in respect of its length, the outer extremity of the lazy-tongs may be raised or lowered, as desired.

The standard S is preferably provided with

an eye, *t*, either formed directly upon the standard *S*, or made with a band or strap to clasp around the said standard, as shown in Fig. 5, in which the method I prefer is indicated, namely, to make the said band or strap in two (2) pieces, (marked *x* and *y*,) and to draw the same together tightly around the standard *S* by keys *k*¹. Into the said eye *t* is fitted the end of a removable lever, *H*, by which the standard of the davit, with all its upper attachments, may be turned so as to carry the said upper attachments outboard or inboard, without requiring the men who are assigned to this duty to climb upon the bulwark *B* to turn the davits by their curved parts—often a dangerous position, and always a less convenient position than the deck of a vessel with any improved means for operating the davits. Instead of the eye *t* and the removable lever *H*, the lever may be attached directly to the standard *S*, if desired.

Turning successively the levers *H* toward the suspended boat *B*², and operating one davit at a time in this way, a boat, with full complement of passengers and provisions, may in a very rough sea be carried outside of the bulwark. The davit is held either out or in board by turning the free end of the lever *H* into a lock, *F*, fastened to the bulwark *B*, where it is held preferably by the insertion of a key, *k*².

When both the davits to which the boat is suspended are turned out, and the davits are fastened securely by the levers *H* and the keys *k*² in the locks *F*, the boat *B*², with its entire complement of passengers and provisions, may be, by working the screws *m* by the hand-wheels *h*, carried in a horizontal direction from the ship's side to such a distance that when lowered the boat cannot possibly strike the ship's side during its descent. When the lazy-tongs are so extended a boat may also be hoisted on the davits without approaching so near the ship's side as to endanger it.

These davits may be used in the same way as the ordinary davits without extending them when so desired.

I claim—

1. The combination of the lazy-tongs *L*, the standard *S*, and bent or crane part *C* of the davit, the male screw *m*, and the female screw *f*, substantially as described.

2. The combination of the standard *S*, the lever *H*, and the lock *F*, substantially as herein set forth.

ASA WILLIS.

Witnesses:

MICHAEL RYAN,
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