Russell & Walker,

Windlass.

No. 5,115. Patented May 15, 1847.

Fig: 2.

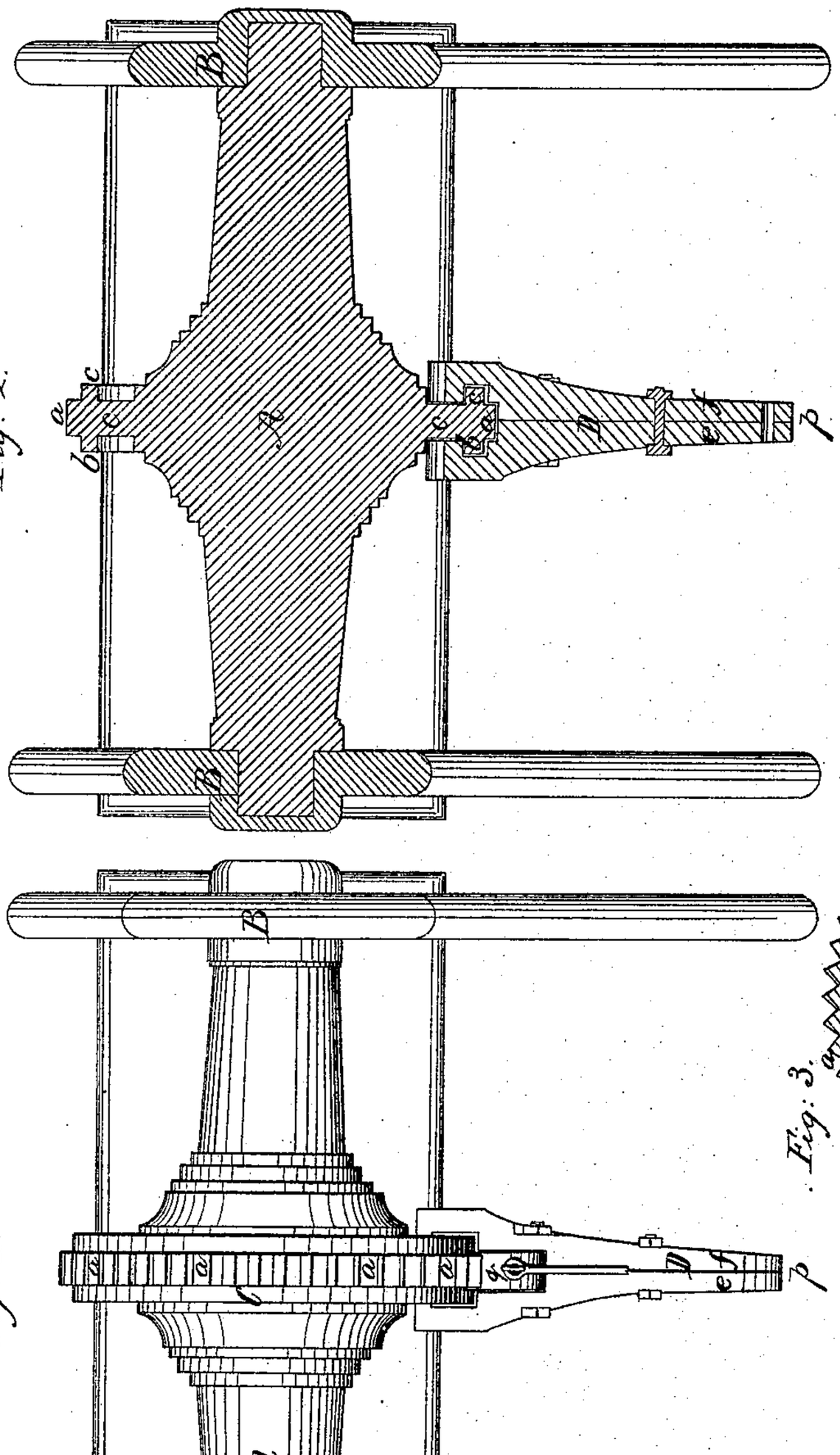


Fig: 4.

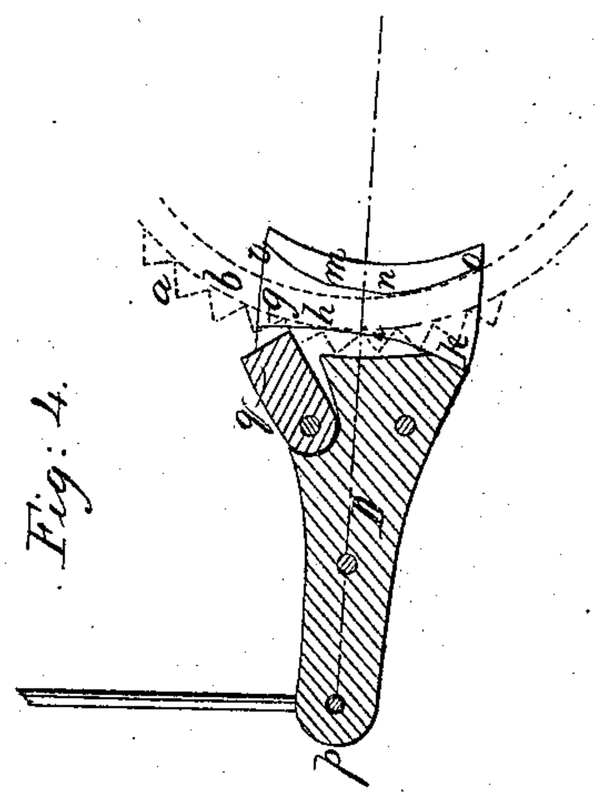
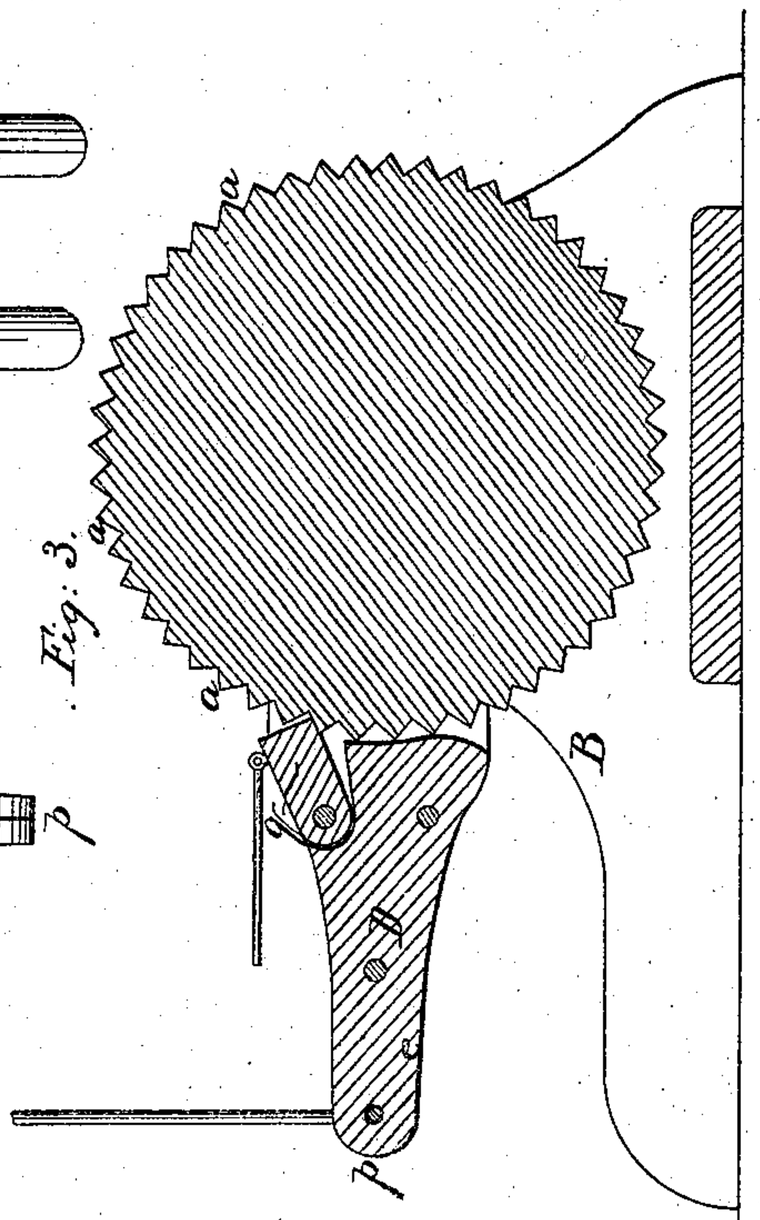


Fig: 1.

Fig: 3.



UNITED STATES PATENT OFFICE.

ALBERT RUSSELL AND ELEAZER R. WALKER, OF NEWBURYPORT, MASSACHUSETTS.

SHIP'S WINDLASS.

Specification of Letters Patent No. 5,115, dated May 15, 1847.

To all whom it may concern:

Be it known that we, ALBERT RUSSELL and ELEAZER R. WALKER, of Newburyport, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Windlasses for Vessels; and we do hereby declare that the same is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of said drawings, Figure 1 represents a top view of our improved windlass divested of its brakes, they being applied to it in the same manner, in which they are usually applied to other windlasses. Fig. 2 represents a horizontal section of it. Fig. 3 a vertical and central section, and Fig. 4 a vertical section of the nipper purchase, and pawl, to be hereinafter described.

In said drawings A denotes the barrel of the windlass, and B, B, the cheeks or supports, in which it revolves, and by which it is sustained in position. C is a wheel or pulley, fitted upon the windlass, in its central part, or in any other proper part of it. The said wheel has a series of teeth *a*, *a*, &c. made upon and entirely around its periphery as seen in the drawings. It has also two flanches *b* and *c*, cast or otherwise made to project from it laterally in opposite directions. These flanches constitute part of what is termed the "nipper purchase."

D is the nipper purchase lever, which is made in two parts or halves *e*, *f*, confined together by screws and nuts, or other proper contrivances. The said nipper lever is applied to the wheel as seen in Fig. 2 and in such manner, that each half of it operates on one of the flanches *b*, *c*. The part of each half of said nipper lever which receives the flanch operated by it—is shaped as seen at *g*, *h*, *i*, *k*, *o*, *n*, *m*, *l*, in Fig. 4—the same being a depression in the portion or half of the lever, having a uniform depth, equal to that of the flanch. In Fig. 4 a portion of the flanch of the wheel and some of the teeth thereof—are denoted by dotted lines, the lever D being represented in the position it assumes on the flanch in the act of "nipping" it. The portions *h*, *i*, *m*, *n*, of the depression in which the flanch is inserted, may be termed the jaws of the nipper lever. They are made nearly if not quite straight lines or planes, and are very short both above and below the center line of the lever D, as seen in Fig. 4. They are placed at a distance apart, a little greater than the width of the flanch, but are not intended to be parallel to each other. From these the space which receives the flanch is flared off or made to increase in width as seen at *g*, *h*, *m*, *l*, *k*, *i*, *n*, *o*. Now when the lever D is lifted up by power applied to its outer end *p*, the two diagonal corners or angular parts *h*, *n*, bear against the outer and inner edges respectively of the flanch, and by so doing nip or grip the flanch, in such manner as to rotate the wheel and windlass. As soon as the force by which the lever D is lifted ceases to act, the lever drops and slides down on the flanches. In connection with the aforesaid nipper purchase, we use a pawl *q*—which we fix in the lever D, and so as to act in contact with the teeth of the wheel as seen in the drawings. We do not use or employ the pawl and teeth for the purpose in which they are generally used in windlasses, but we use them in combination with the nipper purchase, so as to work the windlass without the usual "back lash" and in case the nipper purchase should not be sufficient to overcome the strain on the windlass the pawl and teeth will prevent the lever D from slipping on the flanches, further than for the pawl to abut against the tooth immediately above it. The nipper purchase and pawl and teeth, will thus act in conjunction, in turning the windlass—the strain being thrown partly on each.

There are many advantages in the employment of the aforesaid combination, over the usual expensive windlass operated by the pawls and toothed wheels only—or without the nipper purchase. There is not that liability to break the cogs of the wheel that exists, where they and pawls alone are depended upon to work the windlass. The breaking of the teeth is often fatal to the vessel, as well as destruction to the windlass.

The division of the power between the nipper and pawl purchases—renders us able to operate the windlass most of the time by the nipper purchase alone, and when any unusual strain takes place a part of it, or all that portion of it, beyond what can be overcome by the nipper purchase, will be borne by the pawl and teeth.

We are well aware, that a nipper purchase, and a pawl purchase, have been used

separately on windlasses, therefore we make no claim to them when used separately, but that which we claim as our invention is—

The combination of the nipper and pawl purchases, in the manner substantially as specified.

In testimony whereof we have hereto set our signatures this fifth day of February A. D. 1847.

ALBERT RUSSELL.
ELEAZER R. WALKER.

Witnesses:
WILLIAM MOULTON,
JOHN COOK.