A. B. CRUICKSHANK.

SPRING-CLEATS FOR VESSELS, &c.

No. 183,144. Patented Oct. 10, 1876.

Fig. 1.

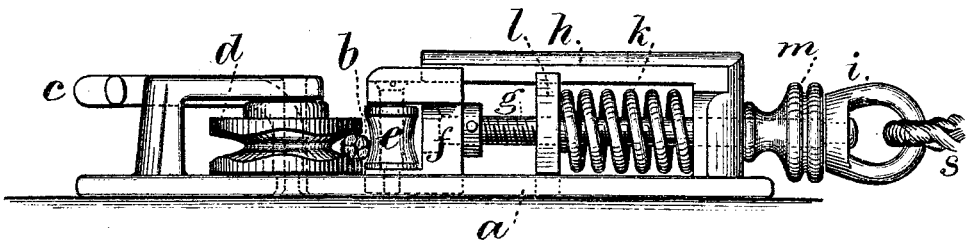
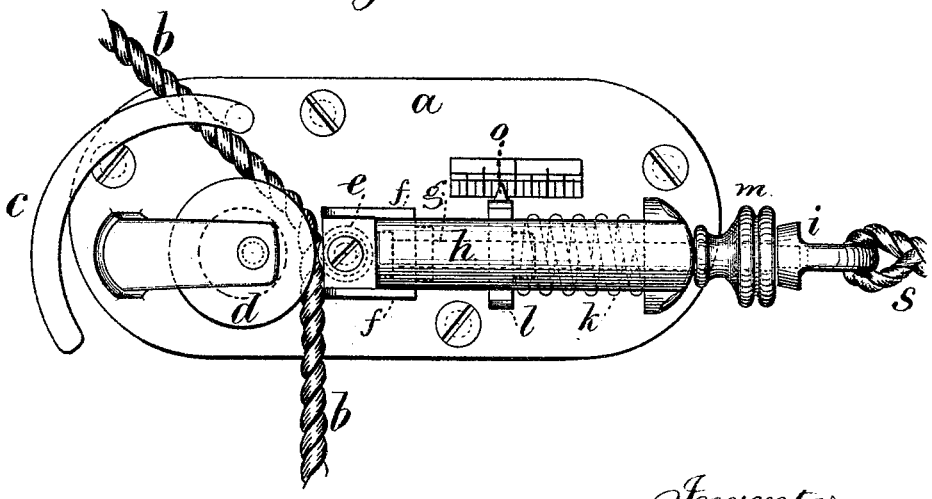


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

ARTHUR B. CRUICKSHANK, OF DUNDEE, SCOTLAND, ASSIGNOR TO HIMSELF AND GEORGE C. BELL, OF NEW YORK, N. Y.

IMPROVEMENT IN SPRING-CLEATS FOR VESSELS.

Specification forming part of Letters Patent No. **183,144**, dated October 10, 1876; application filed September 11, 1876.

To all whom it may concern:

Be it known that I, ARTHUR BENJAMIN CRUICKSHANK, of Dundee, Scotland, have invented an Improvement in Cleats for Holding the Sheets of Sailing-Boats and other Ropes, of which the following is a specification:

Cleats for holding the sheets in sailing-boats have been made to yield when undue pressure is exerted upon the sail by the wind, as shown in Letters Patent granted to me in Great Britain January 7, 1874.

The present invention is an improvement upon the devices heretofore in existence, and this improvement has not been patented in any country before my present application.

I make use of a zigzag-grooved wheel, into which the sheet or rope is pressed, so that the rope cannot move without turning the wheel, and this wheel is mounted eccentrically, and hence cannot revolve without pushing back a roller that is in yielding bearings pressed upon adjustably by a spring. Hence the power exerted to hold the rope can be adjusted by regulating the spring-pressure brought to bear against the wheel to prevent its turning.

This improvement is especially intended for use upon sailing-boats to slack out or let up the sheet when there is too much pressure upon the canvas, and thereby lessen the risk of the vessel capsizing. This occurs automatically, so that there is very little risk in sailing, of accidents occurring in consequence of sudden pressure of wind on the sails.

In the drawing, Figure 1 is an elevation of the improved cleat, and Fig. 2 is a plan of the same.

The main plate *a* of the cleat is bolted to the deck, or to the gunwale, or a chock of wood thereon, or supported in any convenient position for the rope or sheet *b* to be passed through a fair-leader block or beneath the fair-leader bar *c*, and partially around the wheel *d*, and between said wheel and the yielding roller *e*. The wheel *d* has a grooved periphery, which is adapted to receive the rope *b*, and hold the same. For this purpose it is preferable to make the groove narrower than the thickness of the rope, and slightly zigzag, so that the yielding roller *e* will press the rope firmly into the groove, and insure the turning of the wheel *d* when the pull upon the rope *b* is sufficient. The roller *e* is set in a jaw, *f*, that slides between the stationary arm *h* and the plate *a*, there being a recess or mortise in such plate *a* for that side of the jaw *f*. There is a screw, *g*, passing through the head portion of the arm *h*, and provided with a swivel-collar, *i*, connecting the jaw and screw. Around the screw *g* is a helical or spiral spring, *k*, and there is a nut, *l*, to the screw *g*, by which the spring *k* can be compressed more or less, and exert its power to press the roller *e* against the rope. By the head *m* the screw *g* can be revolved, and the nut moved either way to adjust the pressure of the roller *e* on the sheet or rope, and this adjustment is denoted by a point or indicator, *o*, and graduations on the plate *a*. The axis of the roller *d* is eccentric, so that it cannot revolve without moving the roller *e* and compressing the spring.

It will now be understood that when in use the pressure of the roller *e* is so adjusted that the sheet will revolve the roller *d*, and draw through the cleat and relieve the sail, if the pressure upon that sail becomes dangerously excessive, and by a lanyard, *s*, leading to the helmsman he is enabled to draw back the roller *e*, and liberate the sheet at any time. The eccentric roller *d* will partially revolve by the strain upon the sheet and relieve the parts from undue or sudden strain and still retain the sheet until an excess of pressure occurs beyond the safe maximum pressure.

I claim as my invention—

1. The combination of the eccentric grooved wheel *d*, yielding roller *e*, sliding jaw *f*, and adjustable spring *k*, substantially as set forth.

2. The wheel *d*, having a zigzag groove for receiving the rope, and an eccentric axis, in combination with the roller *e*, jaw *f*, spring *k*, screw *g*, nut *l*, and lanyard *s*, substantially as and for the purposes set forth.

Signed by me this 8th day of September, A. D. 1876.

ARTHUR B. CRUICKSHANK.

Witnesses:

GEO. T. PINCKNEY,

CHAS. H. SMITH.