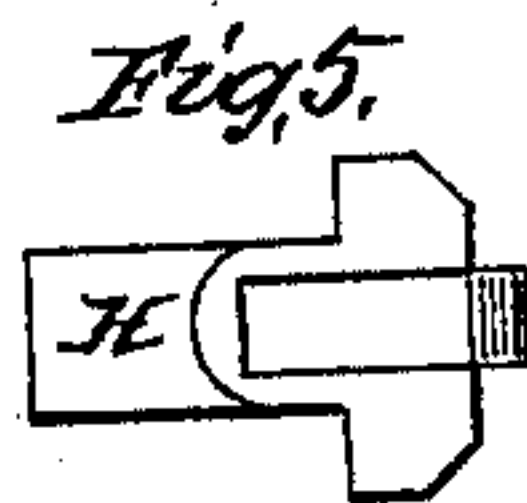
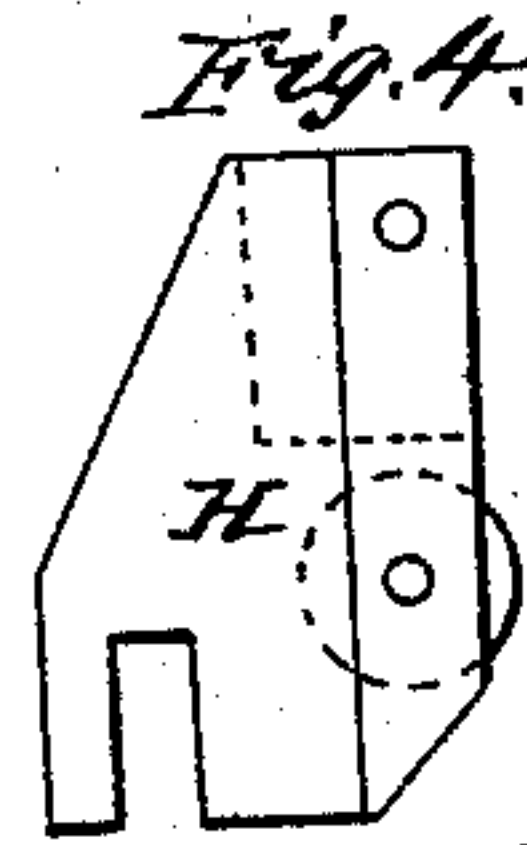
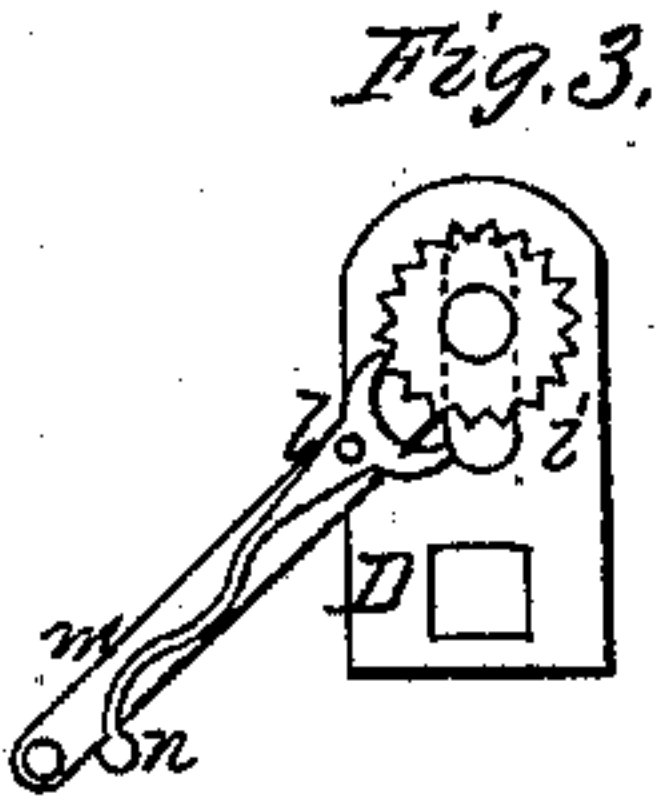
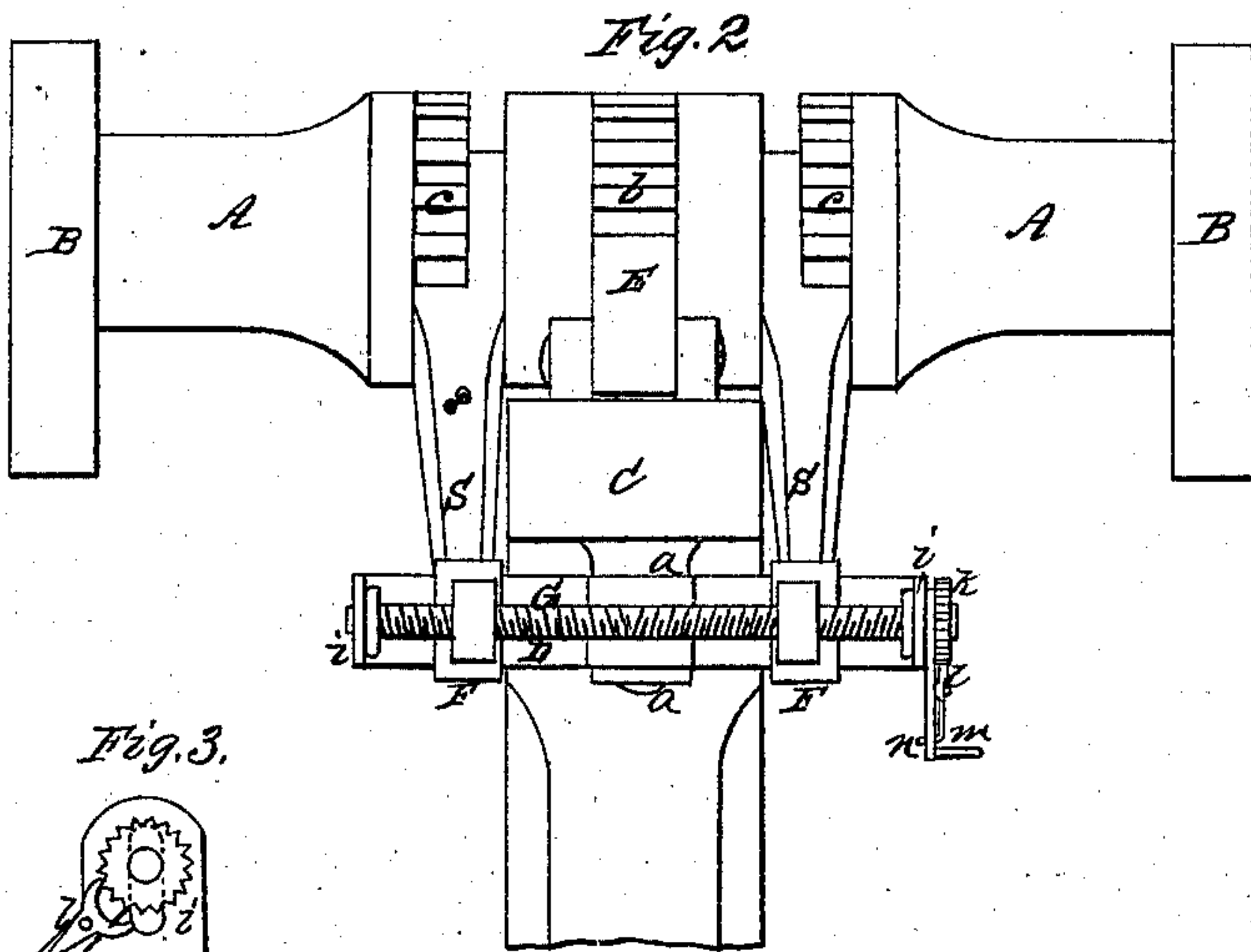
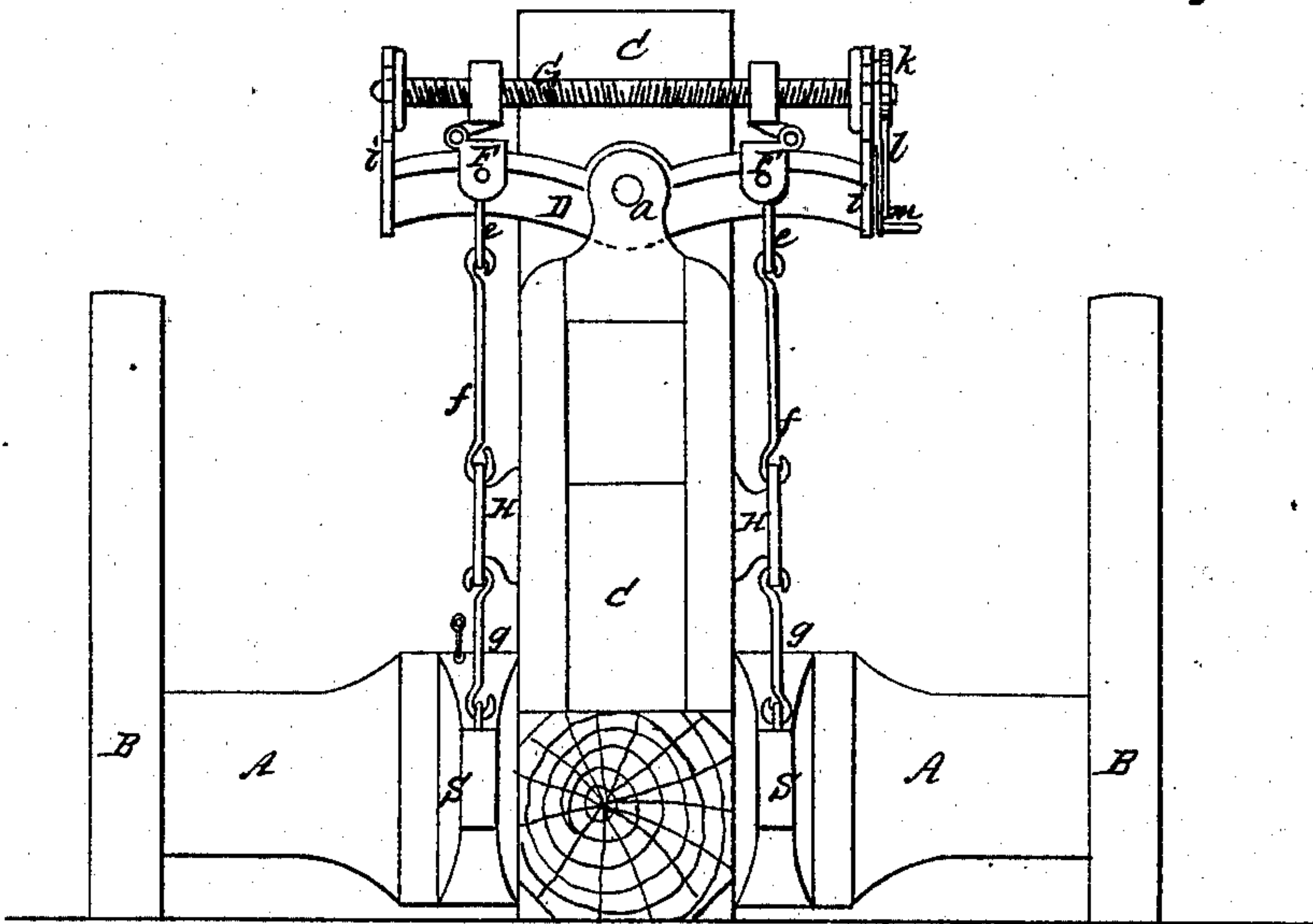


Jameson & Ripley,

Windlass,

No 68,083,

Fig. 1. Patented Aug. 27, 1867.



Witnesses
McCormick
W. Reed

Inventor
J. A. Jameson
C. W. Ripley
per their Attorneys
Brown & Combs

United States Patent Office.

F. A. JAMESON AND CYRUS W. RIPLEY, OF KINGSTON, MASSACHUSETTS.

Letters Patent No. 68,083, dated August 27, 1867.

IMPROVED LEVER FOR WINDLASSES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, F. A. JAMESON and CYRUS W. RIPLEY, both of Kingston, in the county of Plymouth, and State of Massachusetts, have invented a new and useful Lever Improvement for Ships' and other Windlasses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings which form part of this specification, and in which—

Figure 1 represents a front elevation of a ship's windlass constructed according to our improvement.

Figure 2, a plan of the same.

Figure 3, an end view of the rocking-beam, with certain appendages for altering the power or speed of the windlass-barrel, and

Figures 4 and 5 side and end views of a modification of the slide or traveller used in transmitting the motion to the pawl-boxes.

Similar letters indicate corresponding parts.

Our lever improvement, applicable to ships' windlasses, of the kind which use the lever or lever purchase, has for its main object a ready and wide variation in the power and speed of the barrel to adapt it with facility to light or heavy and variable strains or lifts without resorting to objectionably long brakes or altering their length, and the nature of our invention, in such connection, consists in a novel combination with the rocking-beam of sliding-saddles made to rest on the upper curved surface of the rocking-beam for variation of the leverage to the pawl-boxes. Said invention also consists in a combination, with the adjustable sliding-saddles, of upper and lower rods and sliding-connections running in grooved ways, and which, through the lower rods, transmit motion to the pawl-boxes, whereby a straighter or more direct lift is obtained for the latter under varied adjustments of the saddles.

Referring to the accompanying drawing, A represents the barrel of a ship's windlass; B, its sides or uprights or "windlass-bits;" C is the central upright or "pawl-bit," known also as the Samson-post, carrying the rocking-beam D, pivoted as at *a*, and which should be constructed to receive in gear with its end the usual or any suitable brake-levers; also carrying the locking or bit-pawls E that drop into ratchet-teeth *b*, arranged around the centre of the barrel. S are the operating pawl-boxes biting on ratchet formations or teeth, *c*, for giving motion to the barrel, as in previous arrangements. The rocking-beam D has fitted on its two arms, in an adjustable or sliding manner along them, saddles F, which adjustment, accordingly as the latter are moved in or out, increases or diminishes, without altering the length of the brakes, the speed or power of the windlass to suit different strains or lifts, said saddles being connected by links *e* and upper and lower rods *f* and *g* through slides or travellers H working in grooved ways in the post C, with the pawl-boxes S. This divided rod attachment or connection and use of slides and travellers H serve, under all in or out adjustments of the saddles, to secure a direct or straight lift on the pawl-boxes. It is designed that the saddles F should be moved only when the beam D is "square," that is, when its two ends stand at an equal height, in which position the upper surface of said beam forms arcs of circles to which the upper rods *f* are radii, and the lower points of attachment of the latter are centres from which said arcs are struck. The adjustment of the saddles F, in or out along the beam D, which should be simultaneous, and in opposite directions, to uniformly vary the lifting leverage of the beam on opposite sides of its axis, it is proposed to effect by means of a right and left-handed threaded screw, G, made to work boxes which are connected, preferably, in a jointed manner, to the saddles, and made to form part of them. This screw, arranged to lie longitudinally over the beam, is freely supported at its ends in uprights *i*, so as to freely rise and fall in conformity with the curvature of the beam. On one, and what may be termed the fulcrum end of the screw, its other end playing in a vertical slot, is a double ratchet or toothed wheel, *k*, which has gearing with it, so as to operate it and the screw in reverse directions as required, a double pawl, *l*, pivoted to a crank, *m*, hung loose on the end of the screw, said pawl being provided with a tail, *n*, that, accordingly as it is made to lie against or over the one side or other of the crank, serves to throw either one end of the double pawl into lock and gear with the wheel, and thereby, on turning the crank in a direction as against the tail, to give motion to the screw in one direction, and so to operate the saddles in or out; a changed position of the tail *n*, so as to lie on the opposite side of the crank, putting the opposite end of the double pawl in gear, when a reverse movement of the crank will give an opposite motion to the screw and saddle operated by

it. This mode of gearing or operating the screw avoids the necessity of unshipping the brakes to give the screw a full rotation or series of turns. Thus, suppose the saddles *F* to be near the centre of the beam-arms on which they slide, in which position a small movement gives the required change of power, and when the beam (say) lies square or horizontal the crank may be turned a half circle or more, after which, and while the beam is being worked by the brakes, the crank, which is prevented from passing the brake, may be run back to get another hold or bite on the wheel, so that when the beam is again square the screw may be worked by the crank another half circle or more in the same direction. In this way the saddles are moved in either direction without stopping the brakes. The starboard pawl-box may be provided with the usual pawl-tripper to lift the purchase-pawls. The slides or travellers *H*, which may be of *V* or plain form, not merely serve to establish a straight lift, but meet the requirements of the pawl-boxes, which must rise in the same plane, while the upper rods *f* swing freely along or under the beam-arms in different planes. Where the pawl-boxes are far apart, then, instead of the *V* or other plain side or traveller *H*, slides or travellers, such as represented by *H'*, in figs. 4 and 5, may be substituted, the same being provided with anti-friction rollers that run in or against the central post, and being constructed so as to admit of the lower ends of the upper rods *f* being attached thereto inside instead of over the pawl-boxes, thereby reducing and rendering less objectionable the angle formed by the rods when the saddles are near the fulcrum or centre of motion of the beam. For small vessels, where the beam is too low to allow of the use of travellers, the rods may be run from the beam direct to the pawl-boxes, to the ends of which should be attached rollers running on guides curved to conform to the motion of the ends of the pawl-boxes.

What is here claimed, and desired to be secured by Letters Patent is—

1. The combination of the curved beam *D*, adjustable or sliding-saddles *F*, and screw *G*, having right and left-handed threads, all for operation together substantially as and for the purpose specified.
2. The combination, with the beam *D*, sliding-saddles *F*, and screw *G*, of the wheel *k*, crank *m*, and double pawl *l*, with its reversible tail *n*, or the equivalents of these devices for operation of the saddles without unshipping the brakes, essentially as specified.
3. In combination with the beam *D* and sliding-saddles *F*, the traveller *H* or *H'*, and upper and lower rods *f g*, substantially as herein set forth.

F. A. JAMESON,
CYRUS W. RIPLEY.

Witnesses:

WILLIAM SYMMES,
FRANK J. SYMMES.