

(No Model.)

J. H. NUTE.  
MACHINE FOR SERVING ROPE.

No.275,937.

Patented Apr. 17, 1883.

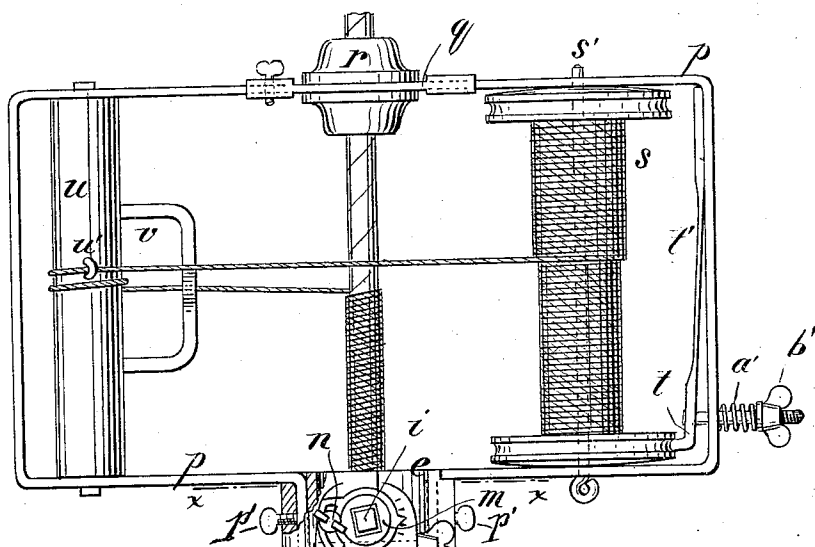


Fig. 1.

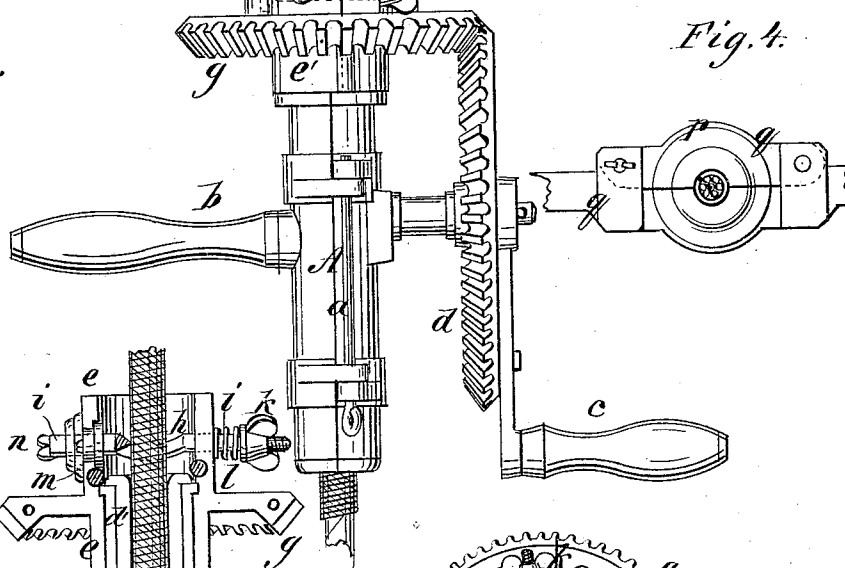


Fig. 4.

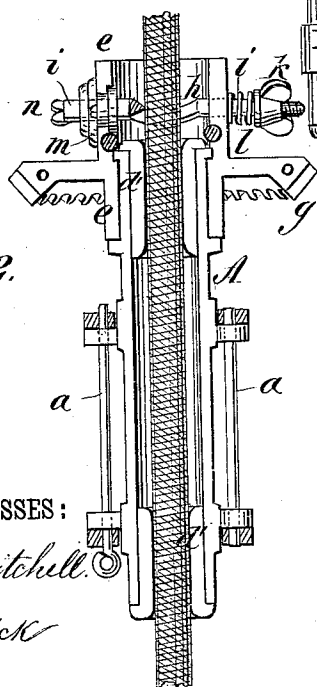


Fig. 2.

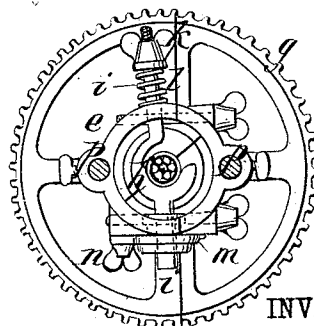


Fig. 3.

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# UNITED STATES PATENT OFFICE.

JOHN HENRY NUTE, OF NEW GLASGOW, NOVA SCOTIA, CANADA, ASSIGNOR  
TO HIMSELF AND ALEXANDER FRAZER DOWNIE, OF SAME PLACE.

## MACHINE FOR SERVING ROPE.

SPECIFICATION forming part of Letters Patent No. 275,937, dated April 17, 1883.

Application filed October 12, 1882. (No model.) Patented in Canada September 8, 1882, No. 15,429.

*To all whom it may concern:*

Be it known that I, JOHN HENRY NUTE, of New Glasgow, in the county of Pictou, Province of Nova Scotia, and Dominion of Canada, have  
5 invented a new and Improved Machine for Serving Rope, of which the following is a full, clear, and exact description.

The object of my invention is to construct a machine which can be operated by hand to  
10 serve rope or other materials with yarn or twine, the operation being automatic, and the feed regulated to suit the size of the yarn used.

My invention consists in a tubular stem divided longitudinally, and hinged so as to open  
15 and receive the rope to be served, and provided with a hand driving gear-wheel meshing with a subdivided gear-wheel on a subdivided hub axially rotating on said stem, the said hub being provided with a hook on a shaft having a  
20 pointer to indicate the pitch of the hook, according to the size of the serving yarn or twine, said hub also carrying a divided spool-frame provided with a brake and tension-bar, which  
25 adjusts the tension of the yarn, so that by steadying the machine with one hand and turning the driving-wheel with the other the spool-frame is rotated around the rope to be  
30 served, the serving-yarn unwinding from the spool and winding around the rope automatically and with accuracy and speed, all as set forth more particularly hereinafter.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate  
35 corresponding parts in all the figures.

Figure 1 is a plan view, partly sectional, of the machine. Fig. 2 is a longitudinal section of the tubular stem. Fig. 3 is a cross-section  
40 on line *x x*, Fig. 1, showing the subdivided hub, gear-wheel, and feed adjustment. Fig. 4 is a face view of the two-part bushing of the spool-frame.

*A* is the tubular stem of the machine, which is divided longitudinally, and the two parts  
45 hinged or connected together by pintles *a a*, on opposite sides of the tube, so that the tube can be opened to admit the rope that is to be served with yarn or twine.

*b* is a handle attached to the stem *A* for  
50 steadying the machine with one hand while operating the crank *c* with the other hand.

The crank-handle *c* is attached to a gear-wheel, *d*, which is on a stud projecting from the tube *A*. In the ends of the stem *A* are subdivided  
bushings *d'*, (shown in Fig. 2,) which are ap- 55  
ertured to fit the rope to be served.

*e* is a tubular hub provided with annular grooves at one end, fitting to peripheral flanges on the end of the stem *A*, so that the hub may revolve and rotate axially on the stem without  
60 endwise movement. The hub *e* is divided longitudinally to admit of being removed from the stem for admission of the rope, and the said hub carries a fixed gear-wheel, *g*, which  
65 meshes with the driving-wheel *d*, and is divided so as to separate with the subdivided hub. The outer end of the hub *e*, projecting from the stem, contains a hook, *h*, which is formed with lugs or pins *i* at its ends, which  
70 project through the sides of the hub. One of these projecting pins is provided with a thumb-nut, *k*, beneath which is a spiral spring, *l*, for regulating the endwise movement of the hook. The other pin of the hook is fitted with a  
75 pointer, *m*, moving over an index on the hub, the said pointer being provided with a thumb-screw, *n*, so that by adjusting the pointer the degree of angularity of the hook with respect to the axis of the rope can be set as required to diminish or increase the feed and the an-  
80 gle or inclination of the serving-yarn to correspond with the size of the said serving-yarn.

To the hub *e* is attached a rectangular spool-frame, *p*, removably attached by means of its bent ends fitting into holes in the end of the  
85 hub. The spool-frame is held to the hub *e* by clamp-screws, *p'*, which bear upon the bent ends that pass into the hub-holes. On this frame, opposite the hub *e*, is a hinged portion, *q*, (shown in Figs. 1 and 4,) between which and the fixed portion of the frame is fitted a two-part bushing, *r*, having a bore corresponding to the size of the rope to be served. The hinged portion *q* is secured by means of a pin, screw,  
90 or other suitable fastening.

*s* is a spool fitted at one end of the frame *p* upon an axial pin, *s'*, which allows removal of the spool, and *t* is a brake-shoe at one end of a plate-spring, *t'*, that is attached to the end  
100 of the frame *p*, the said spring being provided with a spring, *a'*, and thumb-nut, *b'*, for regulating the pressure of the shoe upon the end

of the spool, so that the yarn shall be kept under a regulated tension. The spring *t'* and the spring *a'* exert their power in opposite directions, so that the maximum power of spring *t'* may be diminished to a greater or less extent as the retracting-power of spring *a'* is augmented by screwing down the thumb-nut *b'* more or less. At the opposite end of the spool-frame is fixed a tension-bar, *u*, provided with a guide-staple, *u'*, and loop *v*, through which the yarn from the spool passes before being served to the rope. By passing the yarn around the bar *u* a suitable number of times the tension will be made greater or less, as may be required, the final degree of tension being given by the pressure of the brake-shoe.

In the operation of the machine, the drive-wheel *d* being operated by the crank-handle, while the stem *A* is held by means of its handle *b*, the hub *e* and its attached spool-frame are rotated, and the yarn that is carried around the rope, being held from rotation, is moved endwise by the hook *h*. By the adjustment of the hook *h* the extent of endwise movement of the rope is regulated, and serving-yarn is thus wound at the proper inclination, according to its size.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The two-part hollow hub *e*, having a halved gear-wheel and a pivoted hook, *h*, in combination with a two-part hollow stem, *A*, and a spool-frame, *p*, carrying the spool *s* and tension-bar *u*, as set forth.

2. The two-part spool-frame *p*, having a removable connection with the hub *e*, and provided with tension-bar *u*, spool *s*, and brake *t*, substantially as shown and described.

3. The combination, with the hollow two-part hub *e*, of the hook *h*, substantially as shown and described.

4. The combination, with the hollow two-part hub *e*, of the hook *h*, hung on pins *i*, and provided with devices for adjusting, and a pointer for indicating the position of the said hook, as and for the purpose set forth.

5. The hub *e* and the hook *h*, provided with an end-threaded lug, *i*, passing through one side of hub *e*, in combination with the spiral spring *l* and the thumb-nut *k*, whereby the hook may be drawn with greater or less force, as described.

6. The hook *h*, having a lug, *i*, carrying the pointer *m*, the hub *e*, having an outside index, and the thumb-screw *n*, whereby the pitch or angularity of the hook with respect to the axis of the rope may be regulated, for the purpose specified.

7. The combination, with the bushings *d'* *d'*, the stem *A*, and the hub *e*, carrying the feed-hook *h*, of the frame *p*, having the hinged portion *q* and two-part bushing *r*, arranged between the hinged and the fixed portions of the frame *p* to receive the rope, as described.

8. The combination, with the frame *p* and spool brake-shoe *t*, having a spring, *t'*, of the spiral spring *a'* and nut *b'* on the end-threaded rod attached to said shoe, the spring *a'* being thus adapted to exert a greater or less retracting force upon the shoe, as and for the purpose specified.

9. The combination, with the frame *p* and the pin *s*, adapted to support a spool for holding the rope, of the tension-bar *u*, carrying guide-staple *u'* and loop *v*, whereby the yarn from the spool may be brought to the desired tension, as and for the purpose specified.

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Witnesses:

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