

(No Model.)

J. & J. NIGHTINGALE.

METHOD OF AND APPLIANCE FOR LOCKING SEPARATE SKEINS OF SILK.

No. 287,705.

Patented Oct. 30, 1883.

Fig 2

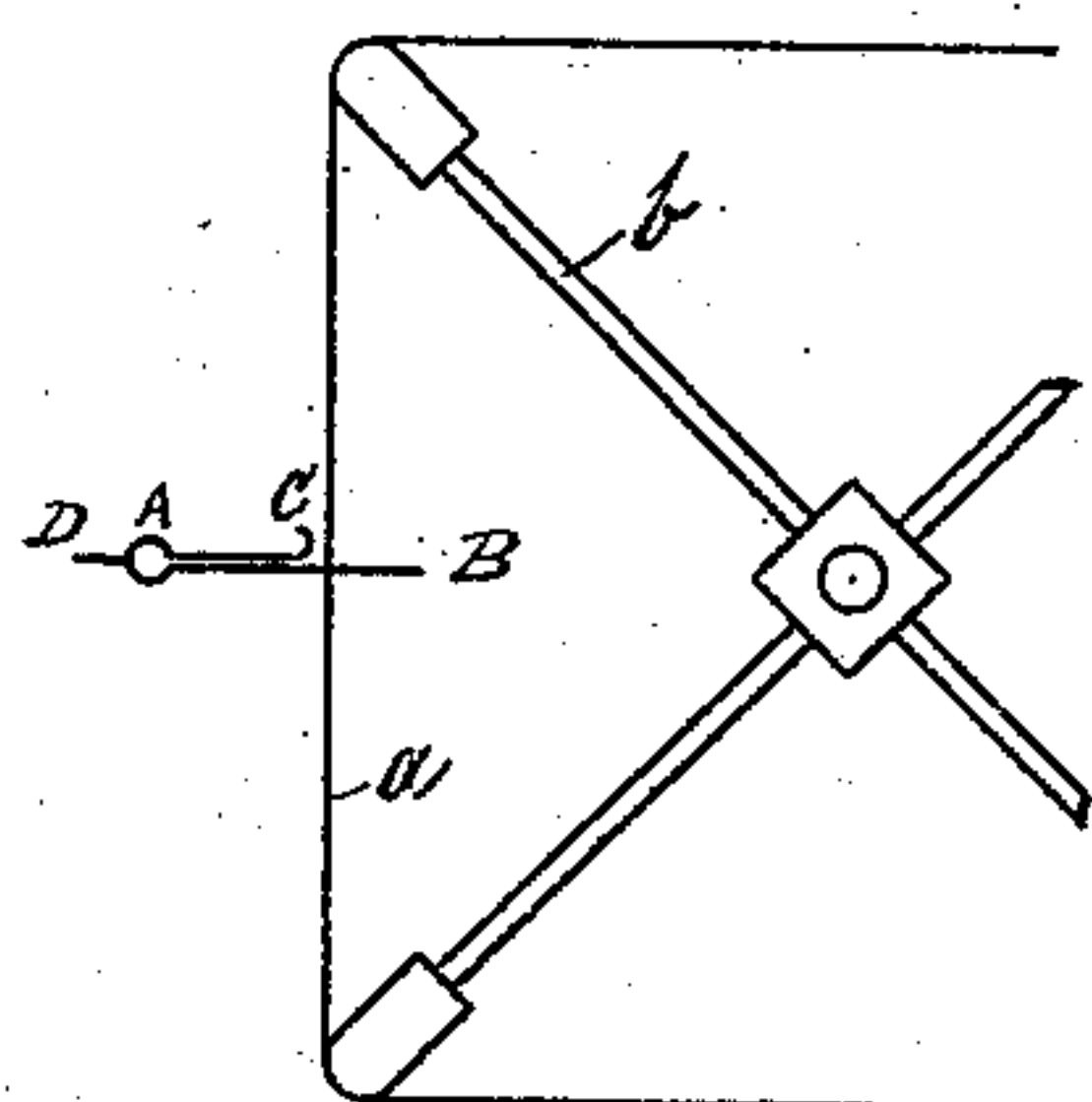


Fig 1

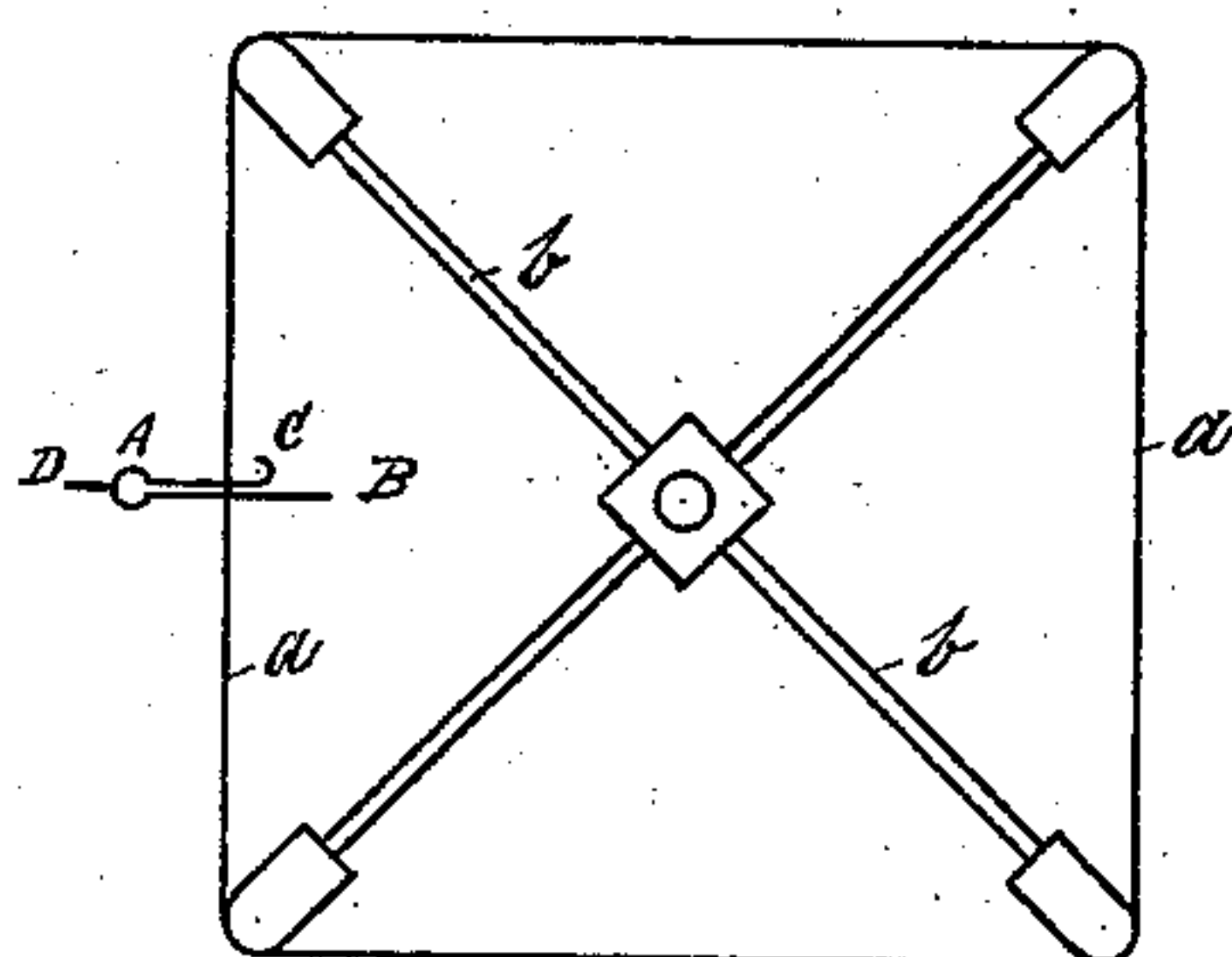


Fig 3

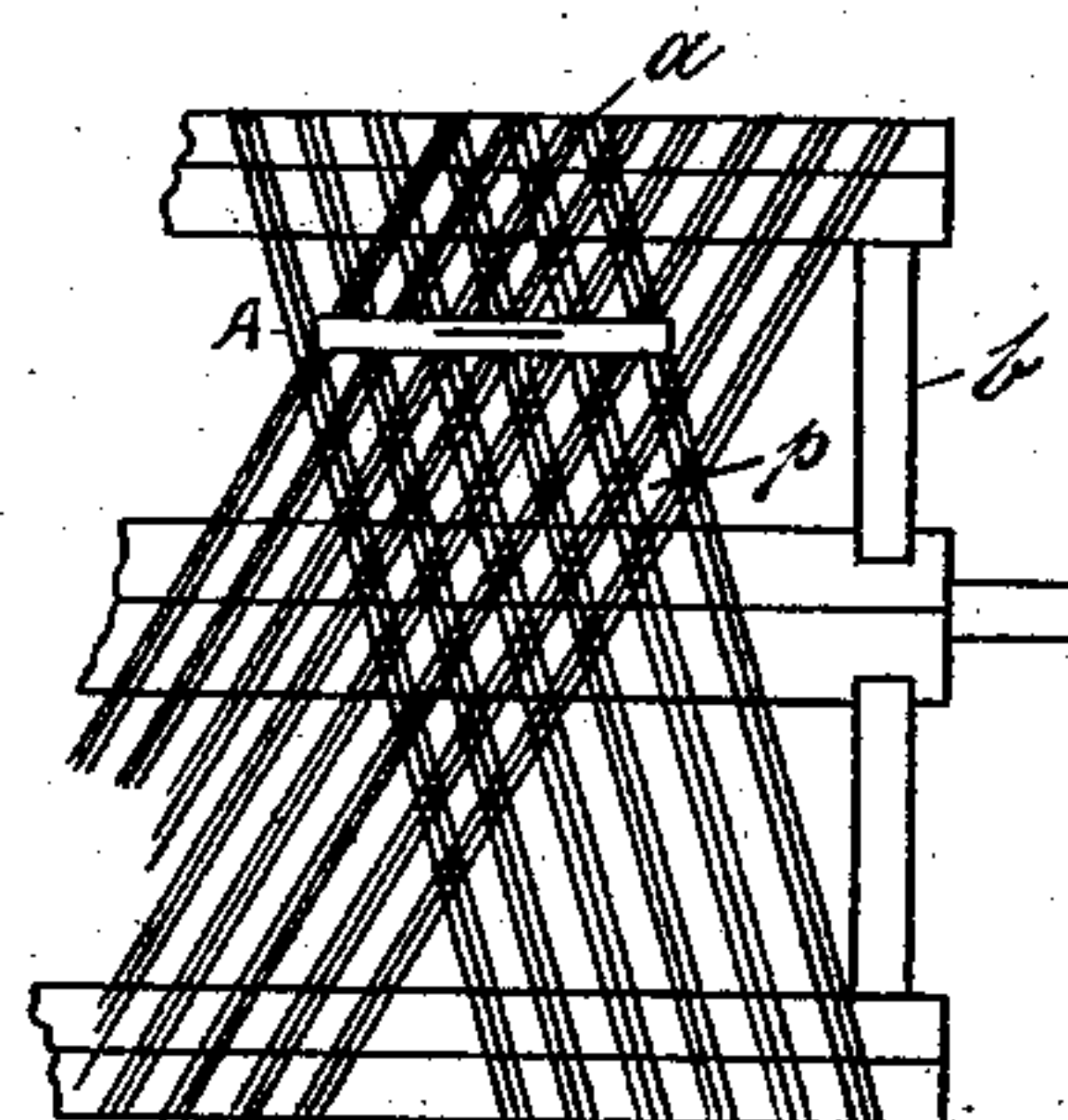


Fig 4

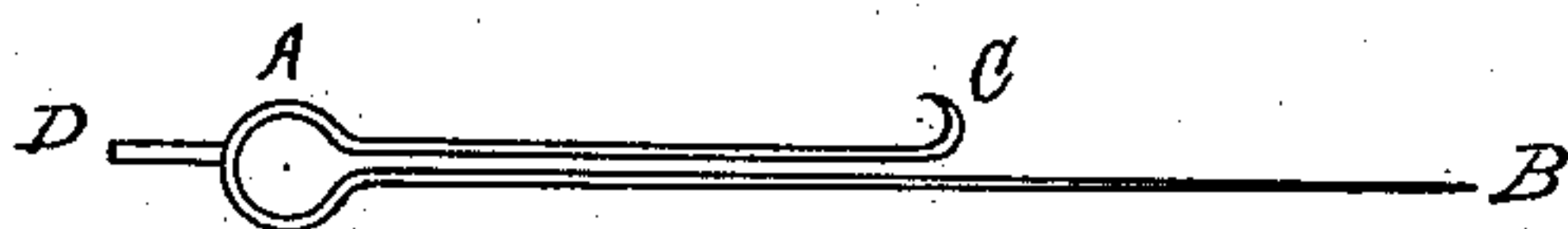


Fig 5

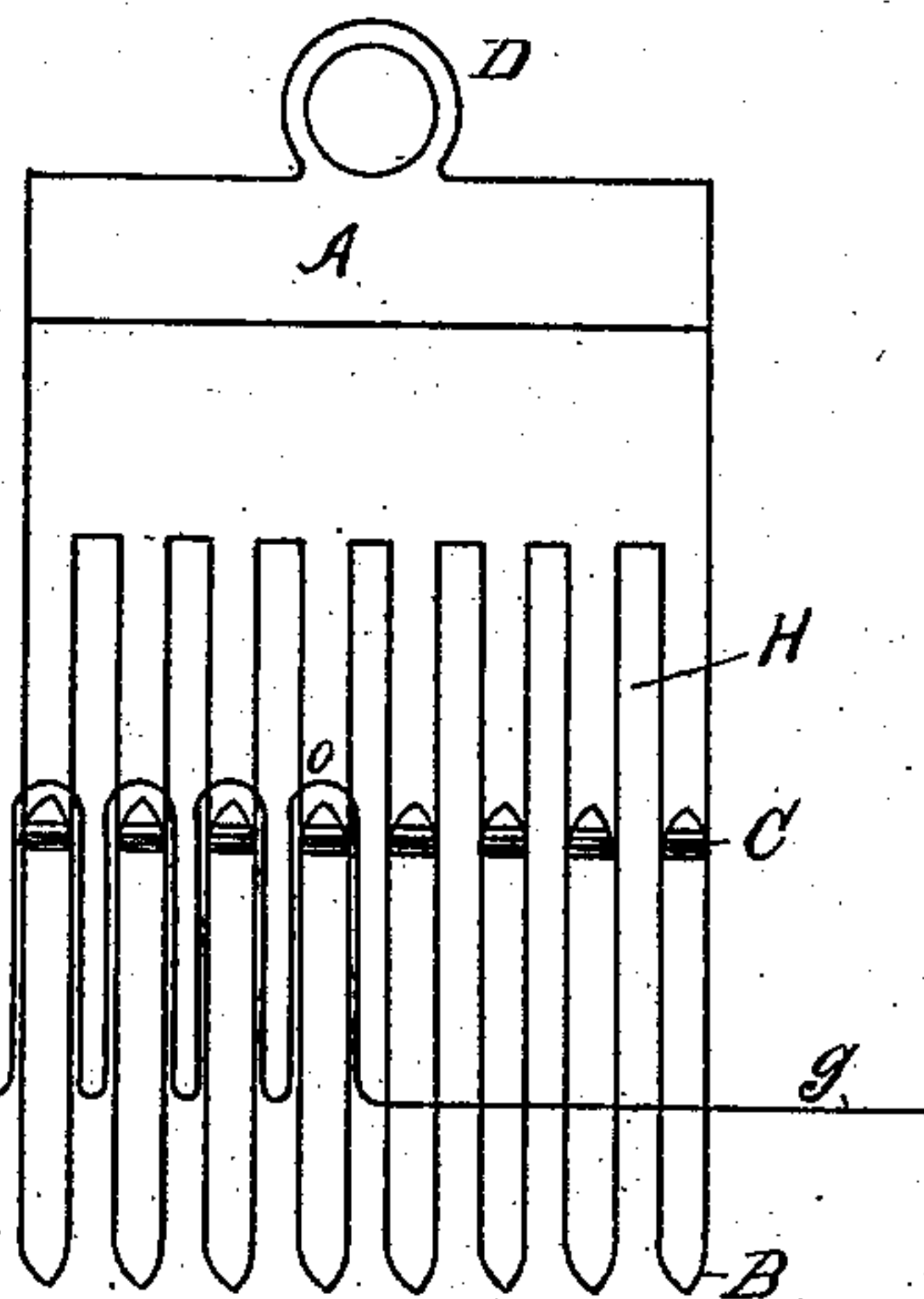


Fig 6

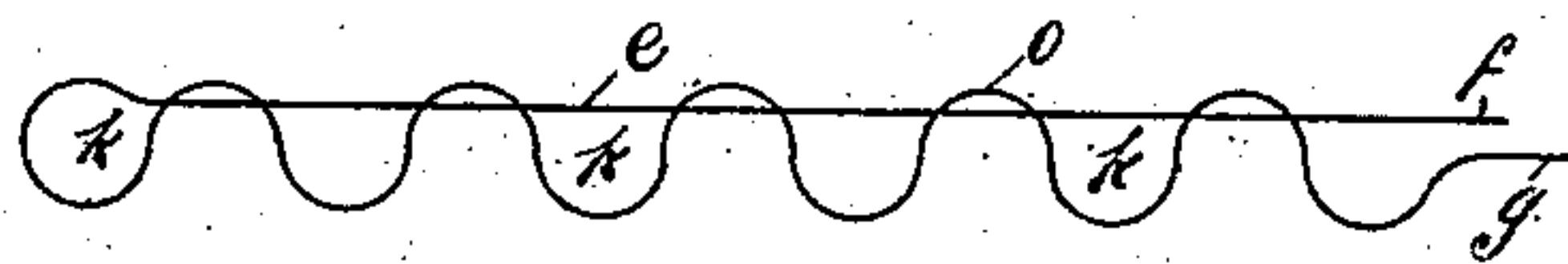
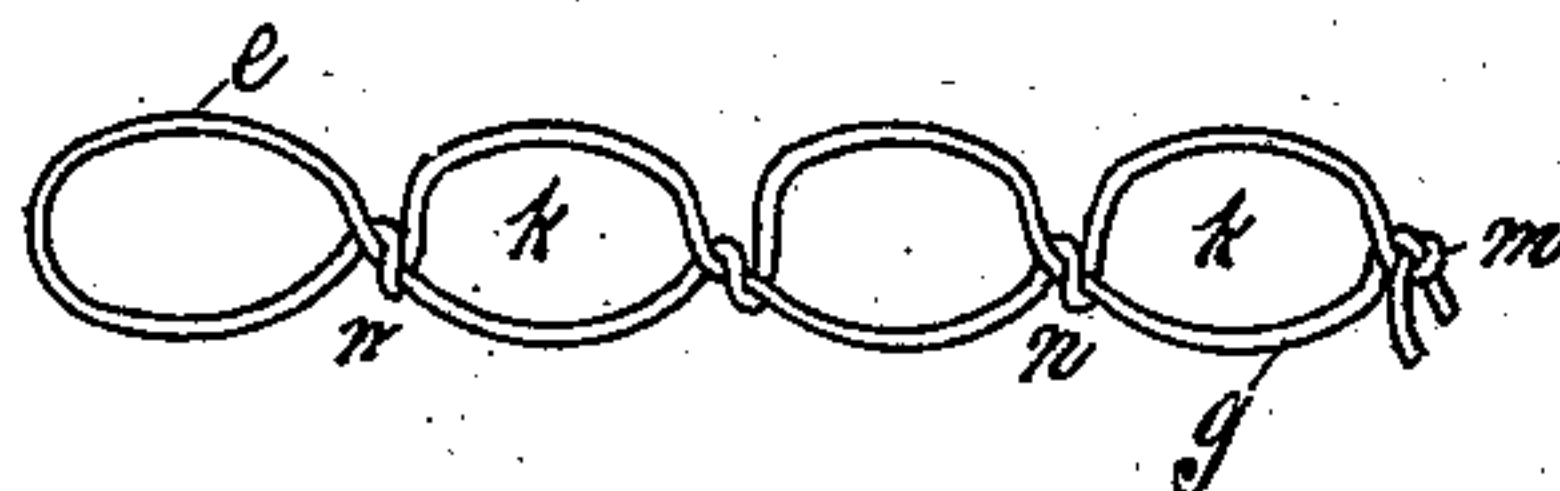


Fig 7



Witnesses

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METHOD OF AND APPLIANCE FOR LOCKING SEPARATE SKEINS OF SILK.

SPECIFICATION forming part of Letters Patent No. 287,705, dated October 30, 1883.

Application filed February 3, 1883. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH NIGHTINGALE and JOHN NIGHTINGALE, citizens of the United States, residing at Paterson, Passaic county, State of New Jersey, have invented a new and useful Improvement in the Methods of and Appliances for Locking Separate Skeins of Silk, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

The object of our invention is to securely lock and hold separate from one another the separate and individual skeins of silk wound upon a reel.

Figure 1 of the drawings is an end view of a reel containing silk to be skeined, showing the appliance inserted. Fig. 2 is a part end view of a reel having silk to be skeined with the appliance partly withdrawn. Fig. 3 is a front view of the reel and silk thereon, showing the appliance inserted in through the openings. Fig. 4 is a side view of the appliance. Fig. 5 is a plan of the appliance, showing the loops formed on the locking-strand by the withdrawal of the hooks. Fig. 6 is a view of the locking-strand, showing the free end of the same taken through the loops formed by withdrawing the appliance; and Fig. 7 is a view of the separate skeins of silk securely locked.

A represents the appliance, which is formed of sheet metal of a suitable kind and thickness, having a series of leaders, B, and hooks C. The hooks C are made somewhat shorter than the leaders B. The appliance is provided with a ring, D, that is arranged in the handle of the same.

In constructing the appliance A we take a piece of sheet metal of a suitable length and width to form the same, and mark out on one end of the same the leaders B and on the opposite end the hooks C, after which we take a suitable cutting-tool and cut the metal in the lines formed for the leaders and hooks, removing therefrom the strips of metal from between the leaders B and hooks C, forming thereby the openings H. The hook-prongs and leaders are then pointed and made smooth, so as not to injure the silk in their contact therewith. The hook-prongs are next placed in a vise and the metal turned over to form the

hooks proper. A suitable form is next used to form a swell or handle for the appliance, as at A, Fig. 4. When bending the metal over the form, care is taken to give a suitable length to the hooks, that the cut lines for removing the strips to form the openings H are even with each other, and the leaders project beyond the hooks sufficiently to keep the skeins separated after the hooks C have been withdrawn above the silk *a*.

The appliance may be constructed with any suitable number of hooks for practical purposes.

In practice the appliance A is inserted in through the silk *a* in the openings P until the hooks C are below the silk *a*, as shown in Fig. 1. The end of a locking-strand of suitable length is then passed through under the silk *a* and between the same and the hooks C, after which action the appliance is partly withdrawn, and occupies the position shown in Fig. 2, the hooks C being above the silk *a*, the hooks having in their withdrawal from below the silk *a* brought up with them the locking-strand *g*, forming thereby the loops *o* and separate skeins *k* out of the silk *a*. The unoccupied part *e* of the locking-strand is then fastened at the end *f* to an ordinary thread-hook, and passed through the several loops *o* between the hooks C and the silk *a*, after which action the appliance A is thrown over forward, which action places the hook-points in a downward position, throwing the leaders B upwardly out from between the skeins and releasing the locking-strand *g* from the hooks C, placing the parts *g e* of the locking-strand in the position shown in Fig. 6. The part *e* of the locking-strand having been taken through the loops in the manner stated, the ends *g f* of the locking-strand are together, and are drawn simultaneously in the same direction, which tends to draw the loops *o* down between the skeins *k*, separated by the appliance A and locking-strand *g*. The loops *o* in their downward motion, being loosely obstructed by the part *e* of the lock-strand, causes the part *g* of the lock-strand to draw down the part *e*, while the slight obstruction offered by the part *e* causes the loops *o*, when the strands *e* and *g* reach the centers between the separated skeins *k*, to form a half-turn on

the parts at *n*, securely locking thereby the separate skeins *k*. The ends of the locking-strands *f g* are then tied at *m*, which completes the operation of locking.

5 The silk locked by this our new method may be taken from the reel and be handled, dyed, and pass through the various movements, changes, &c., without damage therefrom, as the fibers are securely kept as locked and cannot escape from within their own locking-fold.

10 We are aware that skeins of silk have long been laced by the in-and-out process of lacing, as shown in the Patent No. 267,192, November 7, 1882, where the lacing-threads simply pass
15 each other between the skeins, the objection to which is that the lacing-threads are loose and independent of each other, by which they may move laterally from each other, in which event more or less freedom would be given to
20 the skeins to become loose, matted, snarled, &c., under their various handlings, dying, &c., which could not occur when locked by our method of locking the separate skeins, as the
25 fibers are securely held within their several and separate locking-folds and the parts of the locking-strands locked together, and must remain so.

Having described our invention, we claim and desire to secure by Letters Patent—

1. The method of locking and holding separate from one another the separate and individual skeins of silk wound upon a reel, herein described, which consists in passing a locking-strand across the inner side of the entire series of skeins, drawing a loop of such strand between every two skeins upon said reel, then passing the end of said strand around the outer skein, then over the upper or outer side of said series of skeins and through the loops formed between the individual skeins, then drawing upon the two ends of such strands until a half-turn is formed in the same between each of said skeins, and then tying the ends of the said strand together around the opposite outer strand, as set forth.

2. The appliance A, provided with leaders B, hooks C, and ring D, for holding the appliance, substantially as set forth.

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Witnesses:

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