G. D. PIERCE.

TWINE-HOLDER FOR STRINGING HOP-YARDS.

No. 193,033. Patented July 10, 1877.

Fig. 1.

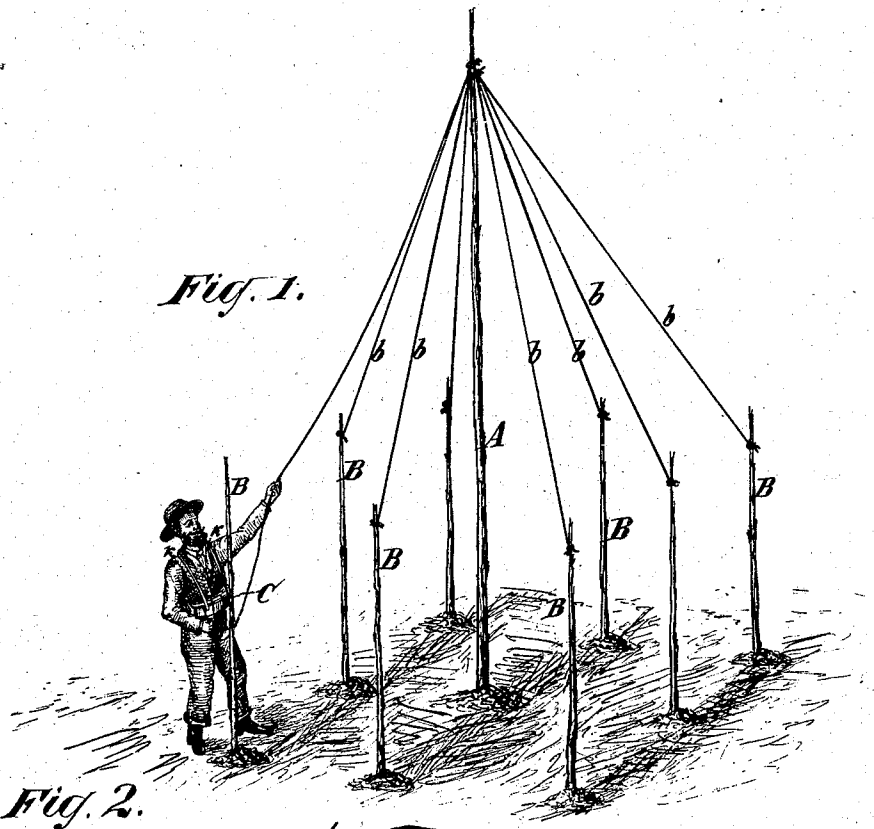


Fig. 2.

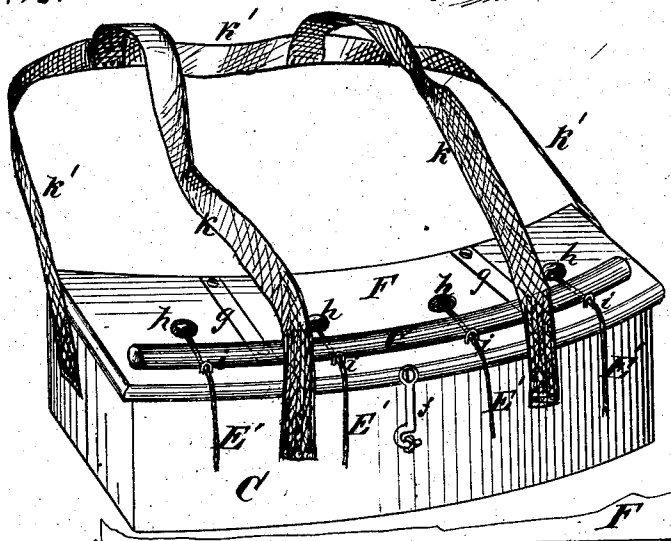


Fig. 3.

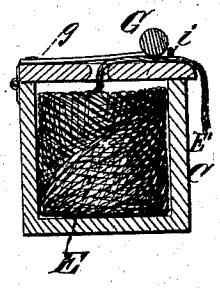
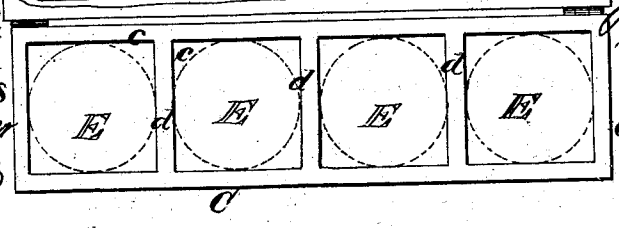


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE D. PIERCE, OF SANGERFIELD, NEW YORK.

IMPROVEMENT IN TWINE-HOLDERS FOR STRINGING HOP-YARDS.

Specification forming part of Letters Patent No. **193,033**, dated July 10, 1877; application filed June 2, 1877.

To all whom it may concern:

Be it known that I, GEORGE D. PIERCE, of Sangerfield, in the county of Oneida and State of New York, have invented an Improved Twine-Holder for Stringing Hop-Yards; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

Figure 1 in the accompanying drawing represents my improved twine-holder attached to the person of a workman engaged in stringing a hop-yard. Fig. 2 is an enlarged perspective view of the twine-holder detached from the person. Fig. 3 is a transverse section of the same. Fig. 4 is a top view of the twine-holder with the cover or lid thereof removed.

The object of my invention is to greatly facilitate the stringing of hop-yards by obviating the inconveniences experienced in the operation as hitherto practiced.

The invention consists in certain novel constructions and combinations of parts in a twine-holder for stringing hop-yards, whereby said holder may be conveniently carried about the person without necessitating the setting of it down and taking it up while the stringing operation is being conducted, the balls of twine are prevented from being jerked from the holder, and the ends of the twine from becoming entangled; also, the twine is prevented from being paid out with too great freedom.

The cost of poles for a hop-yard, when poles alone are used to support the vines, is very heavy, often nearly approaching or equaling the cost of the land. To lessen this heavy item of cost in the establishment and maintenance of a hop-yard, the practice of what is called "stringing" has become widely extended.

A strung hop-yard is a yard in which poles or stakes, or both, and strings of twine, are employed to support the growing hop-vines, the number and cost of poles required being largely reduced by this system.

There are various ways of stringing a hop-yard; but that which is, perhaps, most popular is what is called the "tent-pole" method, (illustrated in Fig. 1 of the drawing,) in which method a tall central pole, A, is placed in the ground at a "hill" of hops, and, generally, eight other hills are connected with it by stakes B and strings *b*.

To perform this operation the ends of eight balls of twine are ordinarily first attached to the top of the pole A, which is then set up or stuck in the ground. The several twines are next tied to the tops of the stakes B and cut off, leaving the ends of the balls free for the next tent-pole.

It has hitherto been the custom to carry the twine balls in an open basket, and the entanglement of the ends, the frequent jerking of the balls out of the basket, and the necessity of frequently setting down and taking up the basket, are inconvenient and delaying incidents of the work which my invention entirely removes.

My improved twine-holder consists of a box, C, made of wood, sheet metal, basket-work, or any other suitable material, and which may be straight, but which is preferably curved to adapt it to the form of the workman, as shown in Fig. 1.

The interior of said box is multi-chambered, as shown in Fig. 4, the chambers *c* being separated by partitions *d*, each chamber being adapted to hold a ball, E, of hop-twine.

The box C is supplied with a lid, F, preferably hinged to the box, and supplied with a hook, *f*, or other suitable fastening to keep it closed when not required to be opened for putting the twine balls E in the box.

For each of said chambers I form an eye, *h*, in the box for the passage of each of the twines E′ as unwound from the balls E, said eyes being preferably in the lid F, one over each chamber *c*.

To prevent the too easy passage of the several twines E′, I place on the lid F a curved bar, G, attached to springs *g*, fastened to said lid, which bar presses upon the twines as they are drawn out of the twine-holder, and forms a friction device.

In or on the lid F, I also insert or attach guides *i*, preferably staples, through which each twine E′ passes after passing under the bar G. These guides keep the free ends of the twines apart, and prevent entanglement of the same.

To the front side of the box I attach flexible

shoulder-straps or bands *k*, connected by the back-strap *k'*, which in use passes across the back of the workman, and down under his arms to the ends of the box C, to which ends said strap or band is firmly attached.

But I do not confine myself to the precise construction of the bar G, springs *g*, and straps *k k'*. A separate friction device may be supplied for each twine, instead of having one such device, G, for all in common. The box may, moreover, be attached to the body of the workman by a belt, or by a strap or straps arranged otherwise than those described, and it may be worn at the side of the body instead of at the front, as shown in Fig. 1.

The attachment of the box to the person and its peculiar construction, when used in the manner described, prevents all entanglement or kinking of the twines, obviates the necessity of taking up and setting down baskets, keeps the ends of the twines always separate, and, in fact, obviates all the inconveniences and delays hitherto attendant upon the operation of stringing hop-yards.

I claim—

1. A multi-chambered twine-holder for stringing hop-yards, provided with one or more straps or bands for attaching the same to the person, and having eyes for the separate passage of the twines from the chambers of the said holder, substantially as and for the purpose specified.

2. The combination, with the eyes for the passage of the twines, and guides for keeping the free ends of the twines separate, of a friction device or devices for preventing the too easy passage of the twines, substantially as and for the purpose described.

3. The combination, with the box C, provided with straps for attaching it to the person, and having a series of separate twine-holding compartments or chambers, *c*, eyes and guides for the passage of the twine from the box, of the spring clamp or bar G, constructed to control the delivery of the several twines from the box, essentially as shown and described.

GEORGE D. PIERCE.

Witnesses:
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