

J. W. KERR.
LACE OR RIBBON HOLDER.
APPLICATION FILED JULY 23, 1910.

980,534.

Patented Jan. 3, 1911.

Fig. 1

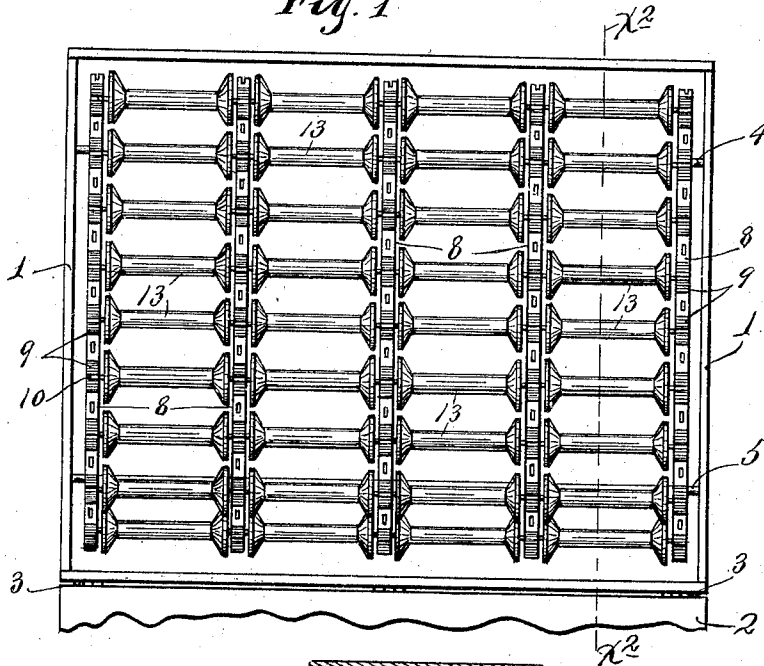


Fig. 3.

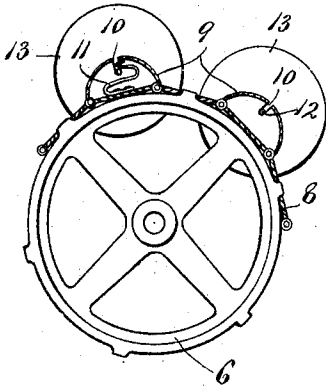


Fig. 2

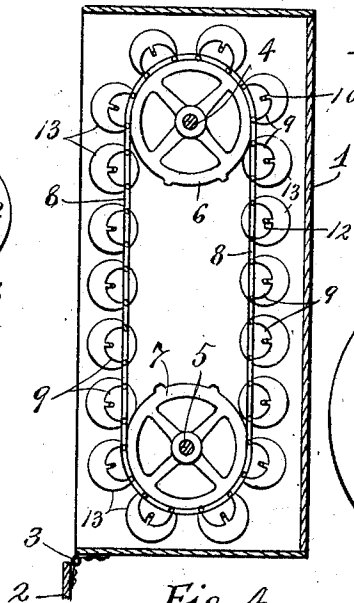


Fig. 5

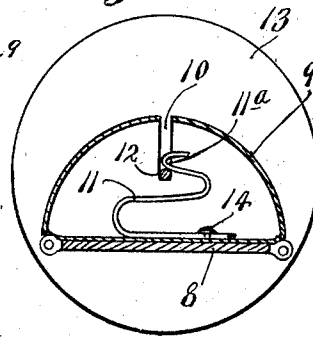
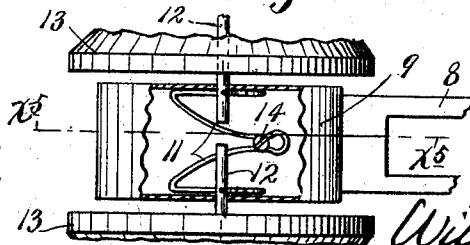


Fig. 4.



Witnesses.
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JOHN W. KERR, OF MINNEAPOLIS, MINNESOTA.

LACE OR RIBBON HOLDER.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN W. KERR, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Lace or Ribbon Holders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its especial object to provide an improved lace and ribbon holder adapted to movably support in compact arrangement a large number of spools or spindles.

To the above end the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claim.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts, throughout the several views.

Referring to the drawings: Figure 1 is a front elevation showing a cabinet or case with my improved ribbon holder mounted therein. Fig. 2 is a vertical section taken on the line $x^2 x^2$ of Fig. 1. Fig. 3 is a detailed view showing one of the driving sprockets and several of the sprocket chain links, the latter being sectioned. Fig. 4 is a fragmentary plan view showing one of the chain links with trunnion box applied thereto and showing also portions of spools connected to the said trunnion box; and Fig. 5 is a detail in section taken on the line $x^5 x^5$ of Fig. 4.

The cabinet or case 1 is as shown of rectangular form and the front plate 2 thereof is shown as connected to the bottom of said cabinet by hinges 3. The construction of this cabinet, however, constitutes no part of the present invention. Suitably journaled in the sides of the cabinet 1 is an upper shaft 4 and a lower shaft 5, one of which will in practice be provided at an outer end with an operating crank not shown. The upper shaft 4 is provided with a multiplicity of laterally spaced sprockets 6 that aline vertically with a corresponding series of laterally spaced sprockets 7 carried by the lower shaft 5. Sprocket chains 8 run over the vertically alined sprockets 6 and 7. Alternate links of the chains 8 are as shown provided with so called trunnion boxes 9, which constitute novel features of the pres-

ent links. These trunnion boxes 9 are preferably made from sheet metal, and approximately semi-cylindrical in form and in width preferably the same as the width of the chain links to which they are secured. These so called trunnion boxes 9 are formed with radial trunnion seats 10 formed by slots that cut through the outer shell and outer portions of the sides of the said boxes.

The numeral 11 indicates trunnion retaining spring sprockets within the trunnion boxes 9 and secured at one end to the back of the corresponding trunnion box. The free ends of the springs 11 are crooked or bent to form yielding detents 11^a which normally engage with the trunnions 12 of the spools 13. The lace or ribbon or other material is adapted to be wound upon the spools 13 and the said spools are adapted to be supported, free for rotation, in a multiplicity of vertical stacks, and with the spools of the several stacks assembled in axially alined horizontal rollers. The trunnions of adjacent spools engage with the same trunnion box and hence are brought into the closest possible engagement both in a horizontal and vertical direction. The greatest possible number of spools is therefore supported in the least possible space. Each spool is always free for rotation, but is put under slight friction by the engagement therewith of the cooperating springs 11, so that they will not accidentally move and unwind the lace or ribbon.

By reference particularly to Fig. 4 it will be noted that the springs 11 are preferably formed each with two prongs and that these spring prongs engage independently with the two trunnions 12 which are inserted into the trunnion box 9. Also as shown, the springs 11 are detachably secured to the backs of the spring boxes 9 by small screws 14.

Any one of the spools may be very easily removed from the cooperating trunnion boxes or applied in working position in respect thereof, simply by pressing the spool laterally.

The device while simple and of small cost is efficient for the purpose had in view and is adapted to hold a maximum quantity of lace, ribbon or similar material within the minimum of space.

What I claim is:

In a device of the kind described, the combination with a multiplicity of parallel chains, of hollow semi-cylindrical trunnion

boxes secured to said chains in vertically and horizontally alined rows, said trunnion boxes having radial trunnion seats opening at the sides and front thereof, forked springs
5 applied within said trunnion boxes and having crooked ends normally projecting into the plane of said trunnion seats, and spools provided with trunnions insertible into trunnion seats from the opposite sides of
10 said trunnion boxes and adapted to be en-

gaged by the said forked springs and thereby detachably held with freedom for rotation, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN W. KERR.

Witnesses:

F. D. MERCHANT,
HARRY D. KILGORE.