

No. 763,418.

PATENTED JUNE 28, 1904.

C. E. NUTTING.
LOOM HARNESS MECHANISM.

APPLICATION FILED APR. 14, 1904.

NO MODEL.

Fig. 1.

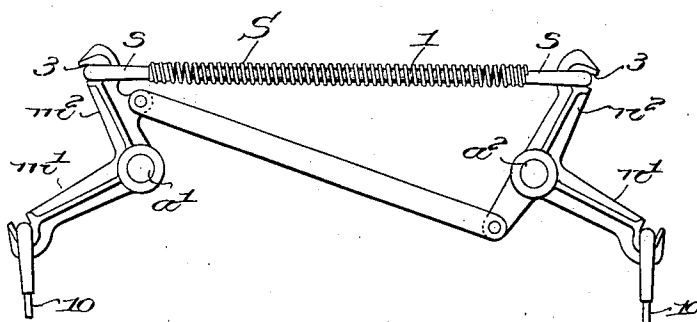
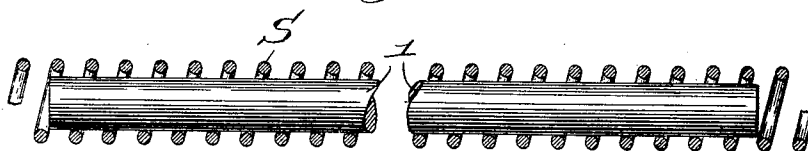


Fig. 2.



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UNITED STATES PATENT OFFICE.

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LOOM-HARNESS MECHANISM.

SPECIFICATION forming part of Letters Patent No. 763,418, dated June 28, 1904.

Application filed April 14, 1904. Serial No. 203,099. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. NUTTING, a citizen of the United States, and a resident of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Loom-Harness Mechanism, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

In certain types of loom-harness mechanism provided with so-called "top motions" to govern the vertical reciprocation of the harness-frames the latter are connected with rocking members mounted on overhead fixed fulcra and spiral springs are directly connected with oppositely-moving pairs of such rocking members to swing them toward each other. One form of mechanism of this type is shown in United States Patent No. 733,089, and in the swing of the connected rocking members the spiral spring tends to curve or bend longitudinally upward and downward alternately. In practice this rapid reversal of the longitudinal curvature of the spring as a whole appears to crystallize or otherwise change the physical structure of the spring at or near its ends, so that breakage occurs when the rest of the spring is in perfect condition.

My present invention has for its object the production of exceedingly simple but thoroughly efficient means to prevent such longitudinal curvature of the spring as a whole. To this end I insert a core, preferably non-metallic, in the central portion of the spring and of sufficient length to prevent the formation of a curve or bend in the direction of the length of the spring. While the spring remains perfectly free to expand and contract as the rocking members connected thereby swing away from and toward each other as the unattached core passes loosely through its coils, the spring as a whole cannot bend or curve, and the breakage hereinbefore referred to is entirely obviated.

Figure 1 is a front elevation of a pair of rocking members of a loom-harness mechanism of the type referred to, with their con-

necting spring, with the core inserted therein; and Fig. 2 is an enlarged longitudinal sectional view of the central portion of the spring with the core shown in elevation therein.

In Fig. 1 a pair of rocking members are shown mounted on fixed fulcra a' a'' , one member having an upturned arm m^2 and an outwardly-extended arm m' , the latter being adapted to be connected by a link 10 with the top of a harness-frame, (not shown,) the other member having corresponding arms n^2 n' , the latter being connected by its depending link 10 with the harness-frame. The arms m^2 n^2 are hooked, as at 3, to enter loops s at the ends of a spiral spring S, which thereby directly connects the two rocking members, all substantially as in the patent referred to. When the spring contracts, the members are swung or rocked on their fulcra toward each other and the harness-frame connected therewith is lifted, and when said frame is depressed the members rock away from each other, expanding the spring.

The rapid movement of the spring-connected rocking members, first in one and then in the other direction, tends to throw the central portion of the spring alternately above and below a straight line between its ends, resulting in bending or curving the spring as a whole between its ends.

The curvature changes with each reciprocation of the harness-frame and appears to crystallize the spring-coils at or near its ends, causing breakage thereat while the major portion of the spring is perfectly intact. I have overcome this very serious objection by extending a cylindrical core 1 through the coils of the spring at the central portion thereof.

The core is preferably made of wood, as it is light, cheap, and elastic enough to prevent any wearing action on the adjacent portion of the spring.

The core is loosely inserted, (see Fig. 2,) so that the spring is perfectly free to expand and contract as may be necessary; but it prevents the longitudinal curvature of the spring hereinbefore described. By means of such core I have found in practice that the breakage of

the spring is entirely prevented, the spring as a whole being maintained substantially straight from end to end as the rocking members swing toward and from each other.

5 Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In loom-harness mechanism including two rocking members mounted on fixed fulcra
10 and adapted to be connected with a harness-frame, a spiral spring directly connecting and to swing the rocking members toward each other, and a centrally-located non-metallic unattached core loosely extended through the
15 spring, to prevent longitudinal curvature thereof.

2. In loom-harness mechanism including

two rocking members mounted on fixed fulcra and adapted to be connected with a harness-frame, a spiral spring directly connecting and
20 to swing the rocking members toward each other, and a centrally-located cylindrical unattached wooden core loosely extended through the coils of the spring, to prevent longitudinal curvature thereof as the rocking members
25 swing back and forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES E. NUTTING.

Witnesses:

GEORGE OTIS DRAPER,
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