

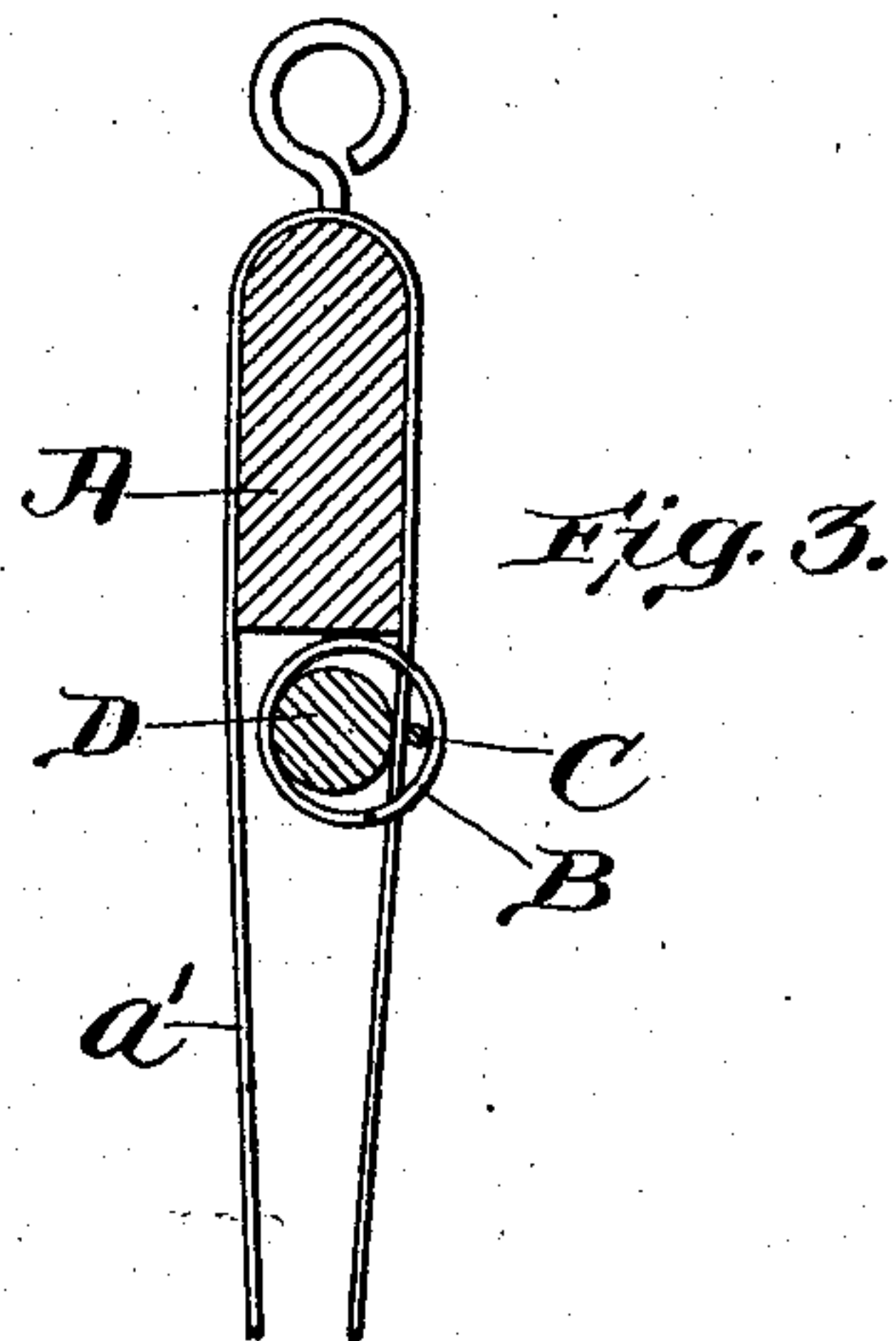
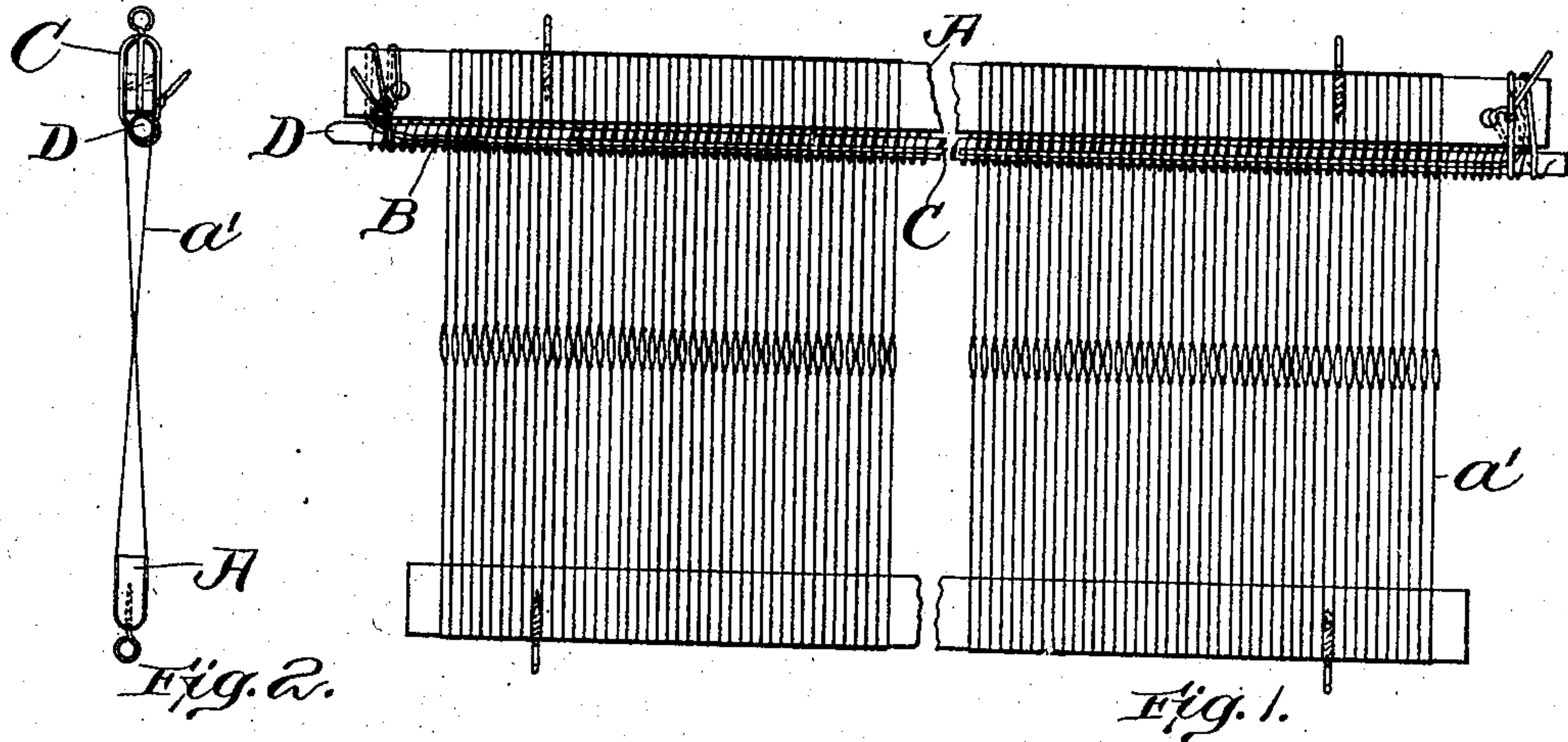
No. 795,989.

PATENTED AUG. 1, 1905.

C. D. LANNING.

HEDDLE SEPARATING DEVICE FOR LOOM HARNESS.

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Witnesses

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HEDDLE-SEPARATING DEVICE FOR LOOM-HARNESS.

No. 795,989

Specification of Letters Patent.

Patented Aug. 1, 1905.

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To all whom it may concern:

Be it known that I, CHARLES D. LANNING, a citizen of the United States of America, residing at Boston, in the county of Suffolk and Commonwealth of Massachusetts, have invented certain Improvements in Mechanism for Retaining, Supporting, and Protecting Heddle-Separating Devices in Loom-Harnesses, of which the following is a specification.

In the operation of drawing warp-threads into the eyes of loom-harnesses by machinery, such as described and shown in Letters Patent No. 600,670, dated March 15, 1898, a normally contracted extensible spacing member is employed in connection with the harnesses to engage the heddles thereof individually and regularly space them and in coöperation with other parts of the machine to assist in spreading the harness-eyes to facilitate the drawing-in operation. The application of these spacing devices to the heddles is an operation which requires a very considerable amount of time and labor, and it is therefore very desirable when once applied to the heddles to have them remain, even after they have served their purpose in the warp-drawing machine. When, therefore, the harnesses are put into looms for use in the process of weaving, it becomes very necessary to have each of these spacing members securely held in position upon the harness out of the range of the warp-threads as they move up and down between the heddles in the shedding operation and also in a position to protect them from damage by the harness-shafts in their movement up and down.

This invention consists in means by which the heddle-spacing members may be properly retained upon the heddles and supported and securely held in a position out of range of the shed of the warps when the harnesses are removed from the warp-drawing machine, and particularly while in use in the loom, and, when the specific form of spacing device shown in said Patent No. 600,670 is employed, in means to support said device in a position to protect it from damage by pressure or concussion.

In the drawings forming a part of this specification, Figure 1 is an elevation of a loom-harness with the heddle-separating device attached thereto and the improved retaining,

supporting, and protecting device in operative position. Fig. 2 is an end elevation of the same parts. Fig. 3 is an enlarged sectional detail of the upper portion of a harness, showing the heddle-separating device with retaining device and supporting device holding the separating device in suitable position to protect it from injury.

Referring to the parts illustrated in the drawings by designating letters, A is the upper harness-shaft; a' , the individual heddles of the harness; B, the heddle-separating device, in this instance consisting of a helical coil of wire with one of the heddles a' in each convolution thereof.

C is the device for retaining the heddles in the coil. Preferably a flexible cord is used for this purpose.

D is the supporting and protecting device for the heddle-separating coil B. A light and economical device for this purpose is a rod of wood which nearly fills the space within the coil B. As set forth in said Patent No. 600,670, the retaining-cord C is drawn into the coil B as the shaft which carries the heddle-separating screw is withdrawn in the operation of drawing in warp-threads. This retaining-cord remains, and when the harness is to be removed from the warp-drawing machine the supporting-rod D is inserted within the coil, as shown in Fig. 3, and the whole raised up beneath the harness-shaft A, where it is secured in place by any suitable means, conveniently by the ends of the cord C passed around the rod D and the shaft A. By this arrangement of parts not only is the coil B held against any movement longitudinally of the heddles, but also it is drawn in beneath the shaft A, where it is supported and protected against damage by external pressure or concussion.

I claim—

1. In combination with a loom-harness, heddle-separating means to engage and separately hold the respective heddles and adapted to be moved readily thereon, a device to engage the said heddle-separating means and securely support it throughout its length, and means to secure it against movement longitudinally of the heddles, in a position out of the range of the shedding movement of the warp-threads.

2. In combination with a loom-harness, heddle-separating means which loosely engage

them separately, a rigid device to support the heddle-separating means and protect it against compression, and means to secure it in a position out of the range of the shedding movement of the warp-threads.

3. In combination with a loom-harness, heddle-separating means to engage and separately hold the respective heddles, which means may be readily moved longitudinally thereon, means to retain the heddles in position in their separating device, a device to engage the said heddle-separating means and to secure it against movement longitudinally of the heddles, and in a position thereon out of range of the shed of the warp-threads.

4. In combination with a loom-harness, a helical coil which loosely engages the heddles thereof separately, means to retain the heddles within the coil, a device to engage and firmly support the coil in a position on the heddles, out of range of the shedding movement of the warp-threads during the weaving operation.

5. In combination with a loom-harness, a helical coil which loosely engages the heddles

thereof, means to retain the heddles within the coil, a rigid device to engage and support the coil and protect it against compression, and means to secure the whole in a position out of the range of the shedding movement of the warp-threads.

6. In combination with a loom-harness, a helical coil the convolutions of which are in engagement with the heddles or harness-cords, and which is adapted to be moved longitudinally thereof, a flexible retaining-strip extending longitudinally within the coil between the heddles and the open side of the convolutions which contain them, a rigid rod approximately of the same diameter as the interior of the coil and extending longitudinally therein between the heddles and the closed sides of its convolutions, and means to secure said rod and coil in a position out of the range of the shedding movement of the warp-threads.

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