

E. S. STIMPSON.
WEFT SUPPLYING MECHANISM FOR LOOMS.
APPLICATION FILED JAN. 21, 1909.

972,943.

Patented Oct. 18, 1910.

4 SHEETS—SHEET 1.

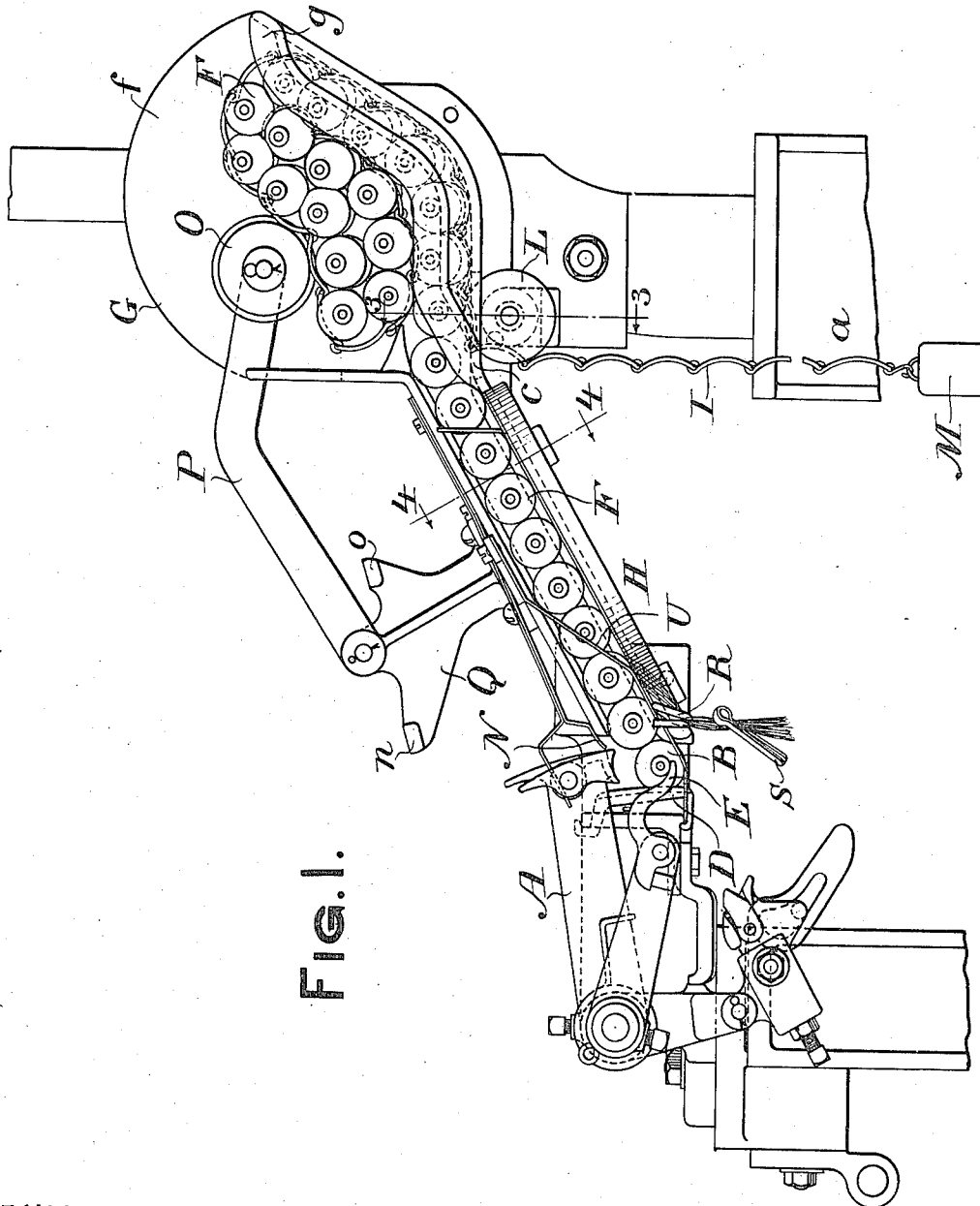


Fig. 1.

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Eng. and Bond.

Inventor:
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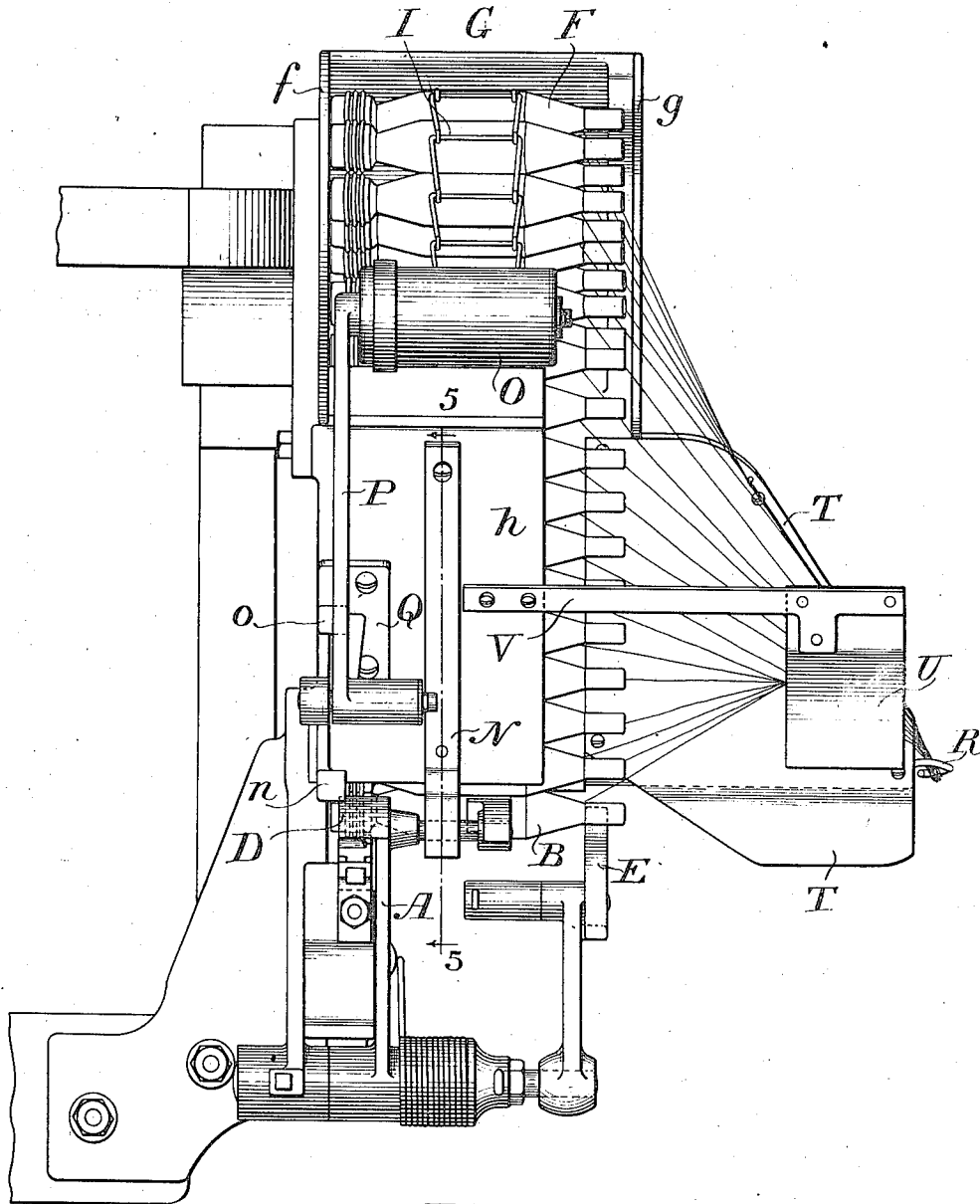


FIG. 2.

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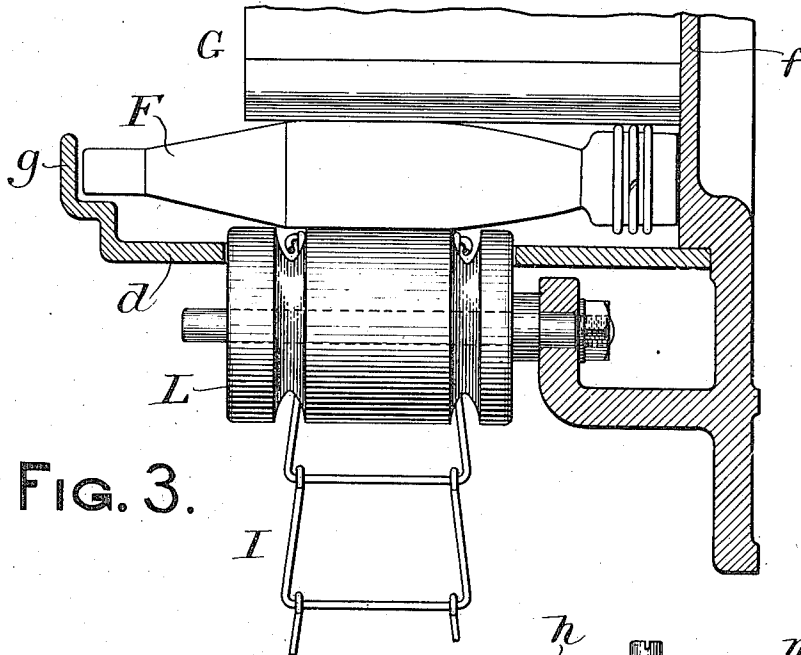


FIG. 3.

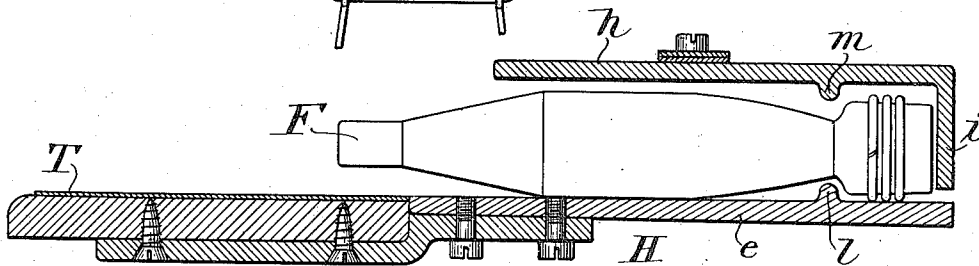


FIG. 4.

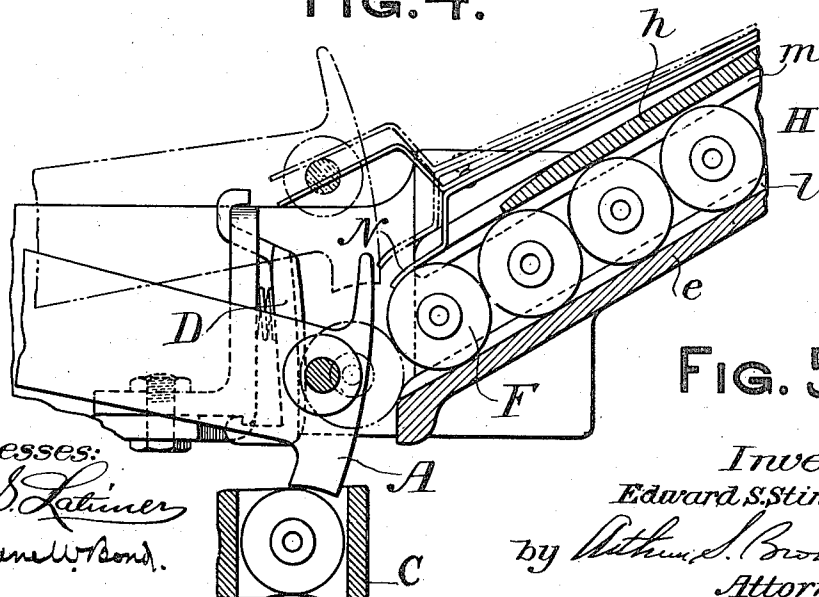


FIG. 5.

Witnesses:

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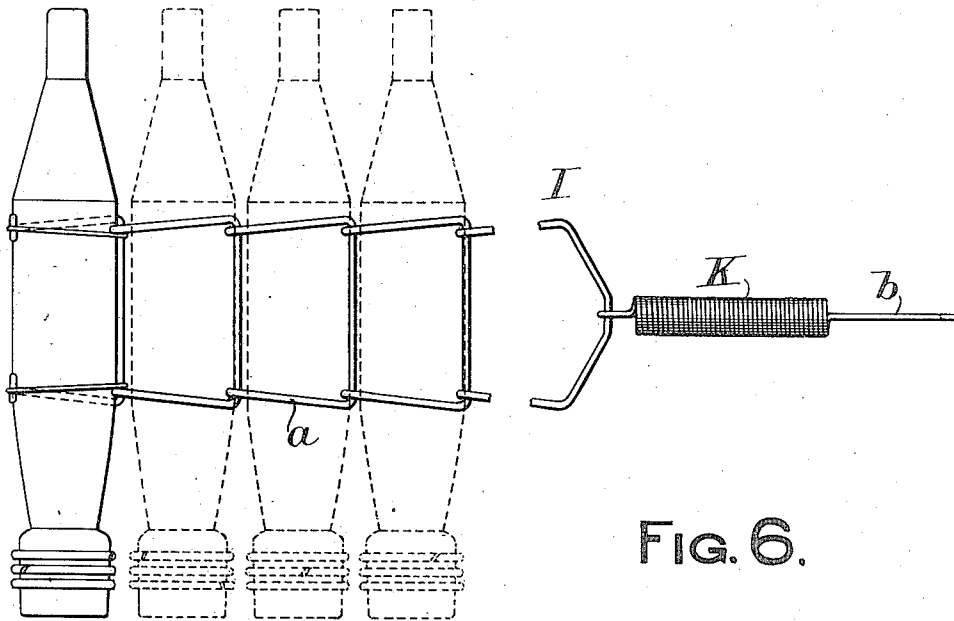


FIG. 6.

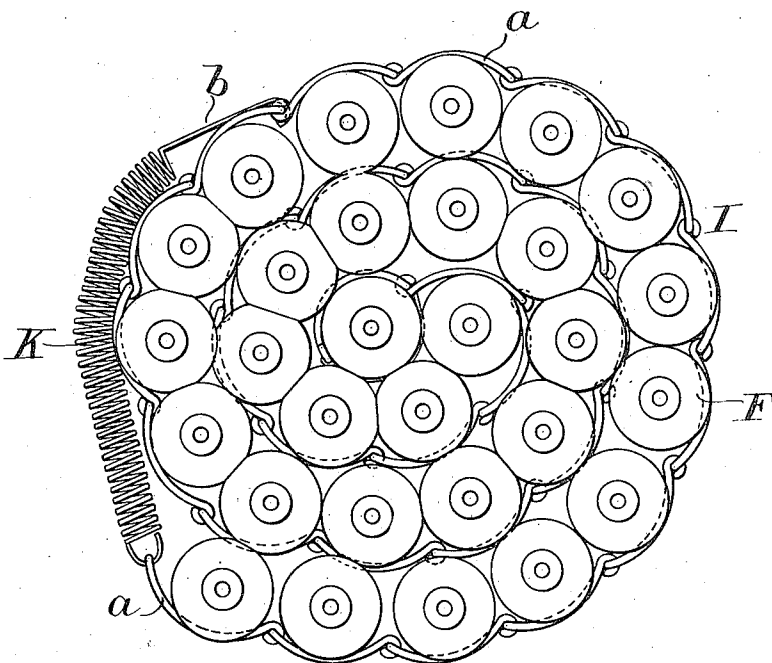


FIG. 7.

Witnesses:
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UNITED STATES PATENT OFFICE.

EDWARD S. STIMPSON, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO DRAPER COMPANY, OF HOPEDALE, MASSACHUSETTS, A CORPORATION OF MAINE.

WEFT-SUPPLYING MECHANISM FOR LOOMS.

972,943.

Specification of Letters Patent.

Patented Oct. 18, 1910.

Application filed January 21, 1909. Serial No. 473,515.

To all whom it may concern:

Be it known that I, EDWARD S. STIMPSON, of Hopedale, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Weft-Supplying Mechanism for Looms, of which the following is a specification.

The object of this invention is to provide a magazine for the spare weft-carriers of an automatic weft-replenishing loom which shall have large capacity and which shall be capable of receiving weft-carriers which have been assembled together in proper order outside of the weave room. Accordingly, the assembling of the weft-carriers and their placement in the magazine can be quickly and readily effected without the attention of the weaver and at such infrequent intervals as to afford little or no interference with the work of the weaver in connection with the looms. Novel provision is also made for taking care of the weft-ends applicable to the new magazine and the new plan of handling the weft-carriers.

One embodiment of the invention is illustrated in the accompanying drawings, wherein—

Figure 1, is a side view of so much of a loom as is necessary for the understanding of the invention. Fig. 2, is a plan view. Fig. 3, is a section along the line 3—3, in Fig. 1. Fig. 4, is a section along the line 4—4 in Fig. 1. Fig. 5, is a section along the line 5—5, in Fig. 2. Fig. 6, is a plan view of a portion of the weft-carrier holder. Fig. 7, is an end view of a bundle of weft-carriers held together by the holder.

A, is the transferer which acts to transfer a weft-carrier into weaving position in the loom when the condition of the running weft demands replenishment; and, as shown, it is the ordinary swinging transfer of the well-known Northrop or Draper loom, as illustrated, for example, in United States Letters Patent No. 529,940, November 27, 1894. The illustrated transferer acts to transfer the spare weft-carrier B, occupying the transferring position into the working shuttle C. This weft-carrier B, is maintained in transferring position by the yielding butt and tip stops D, and E, as usual in the Northrop loom. The other spare-weft-carriers F, in accordance with the present invention, occupy an elevated hopper G, and an inclined guide channel H, which leads

from the hopper to the transferring position, and acts as a support for the weft-carriers.

The weft-carriers within the hopper G, are maintained in relative position to each other by means of a flexible weft-carrier holder I. As shown in Figs. 6, and 7, this holder is composed of pivotally connected wire links *a*, each of which is curved to fit the middle part of the body of weft on one weft-carrier. The holder can be laid out flat outside of the weave room, and a weft carrier laid on each link, whereupon the holder and carriers can be rolled into a compact bundle as shown in Fig. 7. Each link constitutes a recess or shallow pocket in which a weft-carrier is loosely laid, but when the holder with its superposed weft-carriers is rolled into a bundle, the weft-carriers are securely held in proper relation to each other and to the holder. The bundle is held together by an elastic extensible clamp K, consisting of a coil of wire, pivotally connected to the outer end link *a*, and having a hook *b*, adapted to engage one of the intermediate exposed links. This bundle can then be handled with no danger of displacing any of the carriers. This bundle is then placed within the hopper and the clamp is either detached at its hook end or is removed altogether. The leading end of the chain holder is then passed down through an open throat *c*, between the bottom *d*, of the hopper and the bottom *e*, of the channel H, and is drawn down over a recessed idle roller L, during which movement the advance weft-carriers pass down in the channel until stopped by weft-carriers therein. A weight M, is then suspended upon the leading link *a*. Side walls *f*, and *g*, of the hopper prevent any lateral movement of the bundle; the outer wall *g*, being low enough not to interfere with the free passage of the weft-ends.

The spare weft-carriers within the channel H, fall until stopped by the active carrier B, held in transferring position by the stops D, E. The channel has a cover *h*, which overlies the butt and main bodies of the weft-carriers. Objectionable endwise movement of the weft-carriers while in the channel is prevented by flanges *i*, *l*, and *m* (Fig. 4). As fast as a weft-carrier is transferred to the loom by the transferer the spare weft-carriers are advanced by gravity and by the weight M. The weight also

feeds the holder I, link by link, thus feeding the carriers from the hopper to the channel.

An elastic flat spring detent N, is secured to the top of the cover h, and a part of its free end is above the transferer. When the transferer occupies its normal uplifted position (Fig. 1, and as shown in dotted lines in Fig. 5) the detent is upheld. When the transferer descends to the full line position shown in Fig. 5, the detent encounters and presses upon the leading carrier F, thus restraining the stack of carriers until the detent is removed by the elevation of the transferer, whereupon all of the carriers F, advance one step.

The bundle of weft-carriers within the hopper is pressed toward the outlet of the hopper, and the weft-carriers are prevented from displacement through the vibration of the loom by means of a presser consisting of a weighted roller O, which rests upon the bundle. This roller is rotatively mounted on the rear end of an arm P, which is pivoted to a fixed bracket Q. The arm P, can be swung in either direction and it is limited by stops n, o. The arm can be swung out of the way so as to leave the top of the hopper open for the reception of a fresh bundle of weft-carriers, and the arm can then be swung toward the hopper so that the roller O, may rest upon the bundle.

It is important that the weft-ends of the spare weft-carriers should be taken care of. All of the weft-ends of the spare weft-carriers within both the hopper and the channel are drawn off from the weft-carriers sufficiently to enable them all to be passed through a fixed guide R, located substantially in line with the weft-carrier B, which occupies the transferring position. A suitable weight S, is fastened to the weft-ends below the guide R, which moves and takes up slack in the weft-ends. The weft-ends from the weft-carriers in the hopper pass over the edge of the outer wall g, and thence over a thread guide-plate T, extending outwardly from the bottom of the channel H, over which guide-plate the threads also extend from the weft-carriers in the channel, as shown in Fig. 2. The weft-ends pass over the guide-plate T, to the guide R, beneath a yielding presser-plate U, which is fastened to an arm V, projecting outwardly from and secured to the cover of the channel. This presser-plate maintains the weft-ends taut between the weft-carriers and the presser-plate.

It is evident that the hopper H, may be made as large as desired and that the assembled bundle of weft-carriers may be large enough to fill the hopper. It is thus feasible to provide a bundle of weft-carriers sufficient to supply the loom for an entire day so that the fresh weft-carriers may be supplied to the looms and the spent carriers

and empty chain-holders may be removed when the looms are not running, thus avoiding any interference with the ordinary work of the weavers.

I claim—

1. A weft-replenishing mechanism for looms having, in combination, a transferer; an open-mouthed hopper; an inclined channel leading from the hopper to the transferer, there being an open throat between the hopper and channel; a roller at the throat; a flexible weft-carrier holder embracing weft-carriers within the hopper, its free end passing through said throat over said roller; a weight attached to said free end; and a rising and falling presser consisting of a roller resting on the mass of weft-carriers within the hopper.

2. A weft-replenishing mechanism for looms having, in combination, a transferer; an open-mouthed hopper; a channel leading from the hopper to the transferer, there being an open throat between the hopper and channel; a roller at the throat; a flexible weft-carrier holder embracing weft-carriers within the hopper, its free end passing through said throat over said roller; and means to feed said holder as the spare weft-carriers are transferred to the loom.

3. A weft-replenishing mechanism for looms having, in combination, a transferer; a hopper; a flexible weft-carrier holder embracing weft-carriers and wrapped with said weft-carriers into a bundle within the hopper; and means to feed said holder as the spare weft-carriers are transferred to the loom.

4. A weft-replenishing mechanism for looms having, in combination, a hopper having an outer wall over which the weft-ends of the contained weft-carriers extend; an inclined channel extending from the hopper to the transferring point; a thread guiding and supporting plate alongside said channel; a thread guide through which the weft-ends pass; a weight suspended from the weft-ends; and a yielding presser-plate bearing upon the weft-ends extending over said thread guiding and supporting plate.

5. A weft-replenishing mechanism for looms having, in combination, a hopper having an outer wall over which the weft-ends of the contained weft-carriers extend; an inclined channel extending from the hopper to the transferring point; a thread guiding and supporting plate alongside said channel; and a yielding presser-plate bearing upon the weft-ends extending over said thread guiding and supporting plate.

6. A weft-replenishing mechanism for looms having, in combination, a thread guiding and supporting plate; a thread guide through which the weft-ends pass; a weight suspended from the weft-ends; and a yielding presser-plate bearing upon the weft-ends

extending over said thread guiding and supporting plate.

7. A weft-replenishing mechanism for looms having, in combination, a transferrer; a channel conducting spare weft-carriers to said transferrer; and a yielding detent normally held idle by the transferrer but engaging the leading spare weft-carrier when the transferrer acts to transfer a weft-carrier into weaving position in the loom.

8. A weft-replenishing mechanism for looms having, in combination, a thread guiding and supporting plate; and a yielding presser-plate bearing upon the weft-ends extending over said thread guiding and supporting plate.

9. A weft-replenishing mechanism for looms having, in combination, a transferrer; an open-topped hopper; and a rising and falling presser resting on a bundle of weft-carriers within the hopper.

10. A flexible weft-carrier holder comprising a plurality of wire links pivotally connected and curved to fit weft-carriers, there being a link for each carrier, and an elastic extensible clamp connected to one end of the holder and having a hook adapted to engage the holder at an intermediate exterior

point when the holder and contained weft-carriers are rolled into a bundle.

11. A flexible weft-carrier holder comprising a plurality of pivotally connected links, one for each carrier, and a clamp connected to one end of the holder and having a hook adapted to engage the holder at an intermediate exterior point when the holder and contained weft-carriers are rolled into a bundle.

12. A flexible weft-carrier holder comprising a plurality of pivotally connected links, one for each carrier, and means to fasten the holder when the holder and contained weft-carriers are rolled into a bundle.

13. A flexible weft-carrier holder having a series of open recesses, each to loosely receive a weft-carrier, and said holder with the carriers in its recesses being adapted to be rolled into a compact bundle, whereby said carriers are retained in place.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

EDWARD S. STIMPSON.

Witnesses:-

GEORGE E. CHANDLER,
E. D. OSGOOD.