

(No Model.)

W. F. DRAPER & D. DURKIN.
LOOM.

No. 454,564.

Patented June 23, 1891.

Fig. 1.

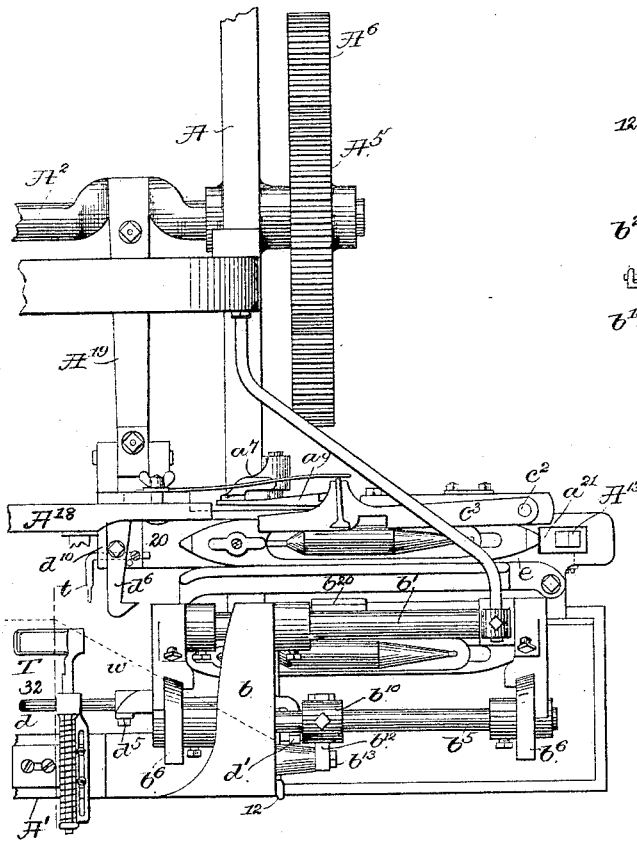


Fig. 2.

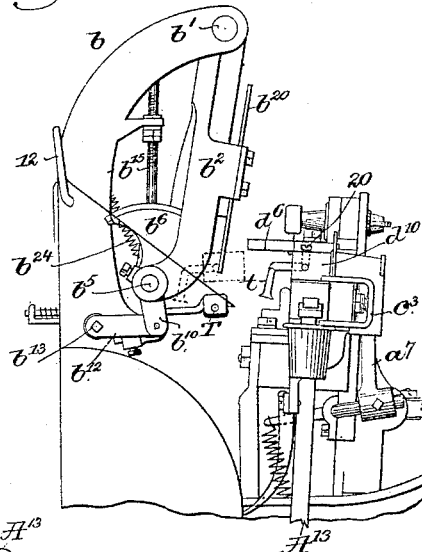


Fig. 4.

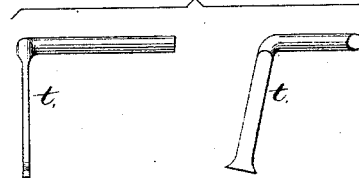


Fig. 3.

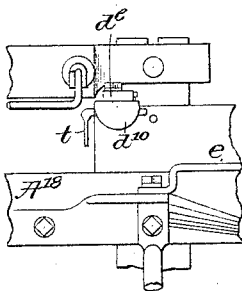


Fig. 5.

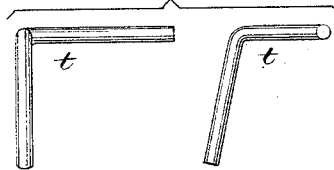
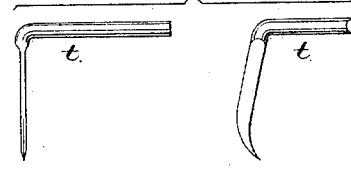


Fig. 6.



Witnesses.

Edgar A. S. Allen
Frederick L. Emery-

Inventors,
William F. Draper
Daniel Durkin,
by Henry Emory Attys.

UNITED STATES PATENT OFFICE.

WILLIAM F. DRAPER, OF HOPEDALE, AND DANIEL DURKIN, OF GRAFTON,
ASSIGNORS TO GEORGE DRAPER & SONS, OF HOPEDALE, MASSACHU-
SETTS.

LOOM.

SPECIFICATION forming part of Letters Patent No. 454,564, dated June 23, 1891.

Application filed January 16, 1890. Serial No. 337,035. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM F. DRAPER, of Hopedale, and DANIEL DURKIN, of Grafton, county of Worcester, State of Massachusetts, have invented an Improvement in Looms, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention has for its object to provide novel weft-breaking mechanism for that class of looms having means for automatically supplying the shuttle-box of the lay while in motion with shuttles from a hopper normally un-
15 attached to the lay.

In accordance with our invention the end of each weft-thread led out from the shuttles in the hopper is secured to a suitable catch or pin attached to some part of the loom near
20 the breast-beam. The lay is provided with a weft-thread breaker, between which and the reed of the lay the shuttle is shot in its first passage through the shed after having been taken from the hopper and placed in the shuttle-box of the lay. The end of the weft-thread
25 being fixed to a catch unattached to the lay enables the weft, in the movement of the shuttle, to be drawn off the point of the bobbin in the shuttle, as is necessary. The lay goes forward and the reed beats up into the crossed
30 shed the first shot of weft laid by the shuttle, and preferably on the return of the lay to its back center the weft-breaker, by its action on the weft extended between the selvage and
35 the said catch, contacts with and breaks or separates the weft close to the selvage. In case the weft is not broken as the lay moves back, as described, then the breaker slips over the weft between the selvage and catch, and
40 at the next forward beat of the lay the breaker acts upon and breaks the said filling, the breaking being assisted somewhat by the head of the usual temple. This breaker may be variously modified as to shape, and may have
45 a blunt or a sharp edge, and if a cutting-edge, said edge may be of any usual shape common to cutting-edges.

Our invention consists, essentially, in the combination, with a lay and a catch detached

from the lay and holding the outer ends of 50 the weft-threads, of a weft-breaker actuated by the lay and adapted to act upon and break the weft between the said catch and the selvage of the cloth.

Figure 1 is a top or plan view of a sufficient 55 portion of a loom with our improvements added to enable the same to be understood. Fig. 2 is a partial side elevation thereof; Fig. 3, a detail showing part of the front of the lay and part of the shuttle-box. Fig. 4 shows 60 the weft-breaker detached. Figs. 5 and 6 show modified forms of breakers.

The loom-frame A, the bracket b, the hopper b² to contain shuttles, the breast-beam A', the catch or pin 12, to which the outer end of 65 each weft in each shuttle in the hopper b² is attached, the lay A¹⁸, the arm c³, the binder a⁹, the hook d⁶, attached to the projection d¹⁰ of the lay to couple the hopper with the lay after the hopper shall have received an initial forward movement by shaft d, having a 70 finger d', and devices under the control of the weft-fork to move the said shaft after the failure of the weft, the transferrer b⁶, the arm b¹⁰, link b¹², and the picker-stick A¹³ and picker 75 a²¹ are and may be all as in United States application, Serial No. 334,873, wherein said parts are fully shown and described and designated by like letters.

In the drawings, T represents an ordinary 80 temple secured to the breast-beam in the usual manner to receive one of the selvage edges of the cloth and keep the cloth distended in the usual manner.

We have attached to the projection d¹⁰ of 85 the lay by a suitable screw 20 a weft-breaker t. (Shown detached and enlarged in Fig. 4.)

In the movement of the lay the breaker moves close to and passes the temple.

It will be understood that the end of the 90 weft-thread in each shuttle in the hopper is attached to the catch 12.

A shuttle when transferred from the hopper is put into the shuttle-box of the lay, and the picker strikes and throws the said shuttle 95 across the lay, this happening while the lay is near its back-stroke, the weft-thread passing through the space between the reed and

the rear side of the weft-breaker, the reed in its forward movement beating the weft into the warp at the fell.

The dotted line *w* represents the weft as it will appear between the catch 12 and the selvage of the cloth (indicated at 32) as the lay completes its forward stroke. As the lay goes back into the position, Figs. 1 and 2, the breaker will catch the weft-thread and break it off, usually at the point where the breaker contacts with the weft, or between that point and the selvage.

In case the weft is not caught by the breaker at the first back-stroke of the lay after the weft has been beat in, then the breaker at the next forward movement of the lay will contact with the weft and the latter will be broken as the breaker passes the head of the temple.

In Fig. 4 the breaker is provided with a hooked point at both its front and its rear side, so as to readily pass under the weft-thread.

In Fig. 5 the breaker is shown as a piece of round wire. In Fig. 6 it is shown as having a blade-like end.

This invention is not limited to the exact shape shown for the weft-breaker, nor to connecting the weft-breaker to any particular or

exact part of the lay, the gist of the invention being in so connecting the breaker to the lay as to move with it.

The catch to hold the weft ends is herein shown as a pin; but it is obvious that the shape of the catch may be variously modified without departing from our invention, as the catch has only to be so constructed as to hold the end of the weft-thread.

We claim—

1. A catch disconnected from the lay to hold one end of the weft, and the lay, combined with a weft-breaker actuated by the lay and located between the catch and the selvage to break the weft between the said catch and selvage, substantially as described.

2. The lay and its attached weft-breaker, combined with a catch disconnected from the lay to hold the end of the weft, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WM. F. DRAPER.

DANIEL DURKIN.

Witnesses:

GEO. OTIS DRAPER,

E. D. BANCROFT.