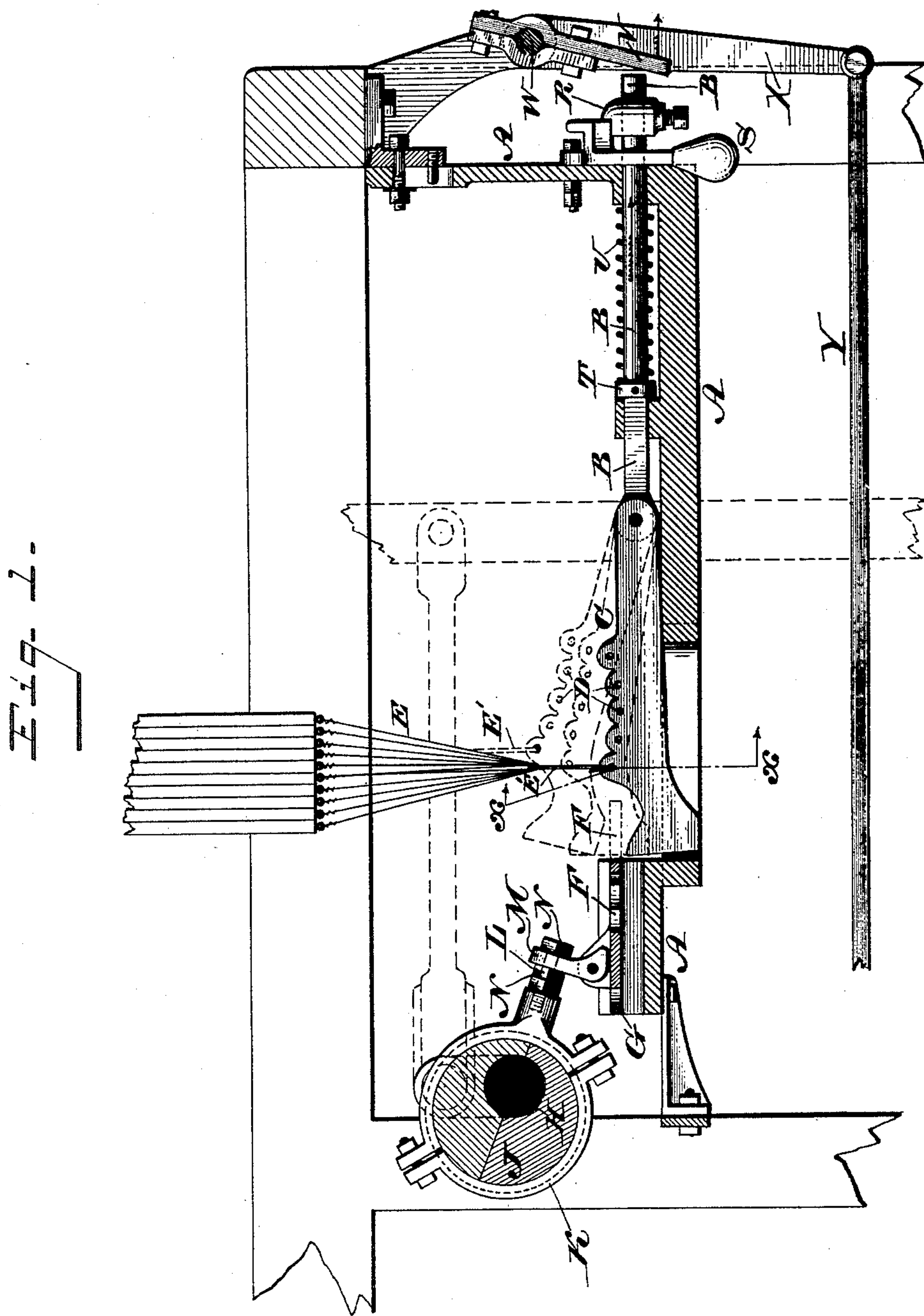


2 Sheets—Sheet 1.

HEDDLE CONTROLLED STOP MOTION FOR LOOMS.

Patented Nov. 10, 1891.



WITNESSES:

L. Douville,
P. Fr. Bayle

INVENTOR
John F. Kerstan
BY John D. Wiersma
ATTORNEY.

(No Model.)

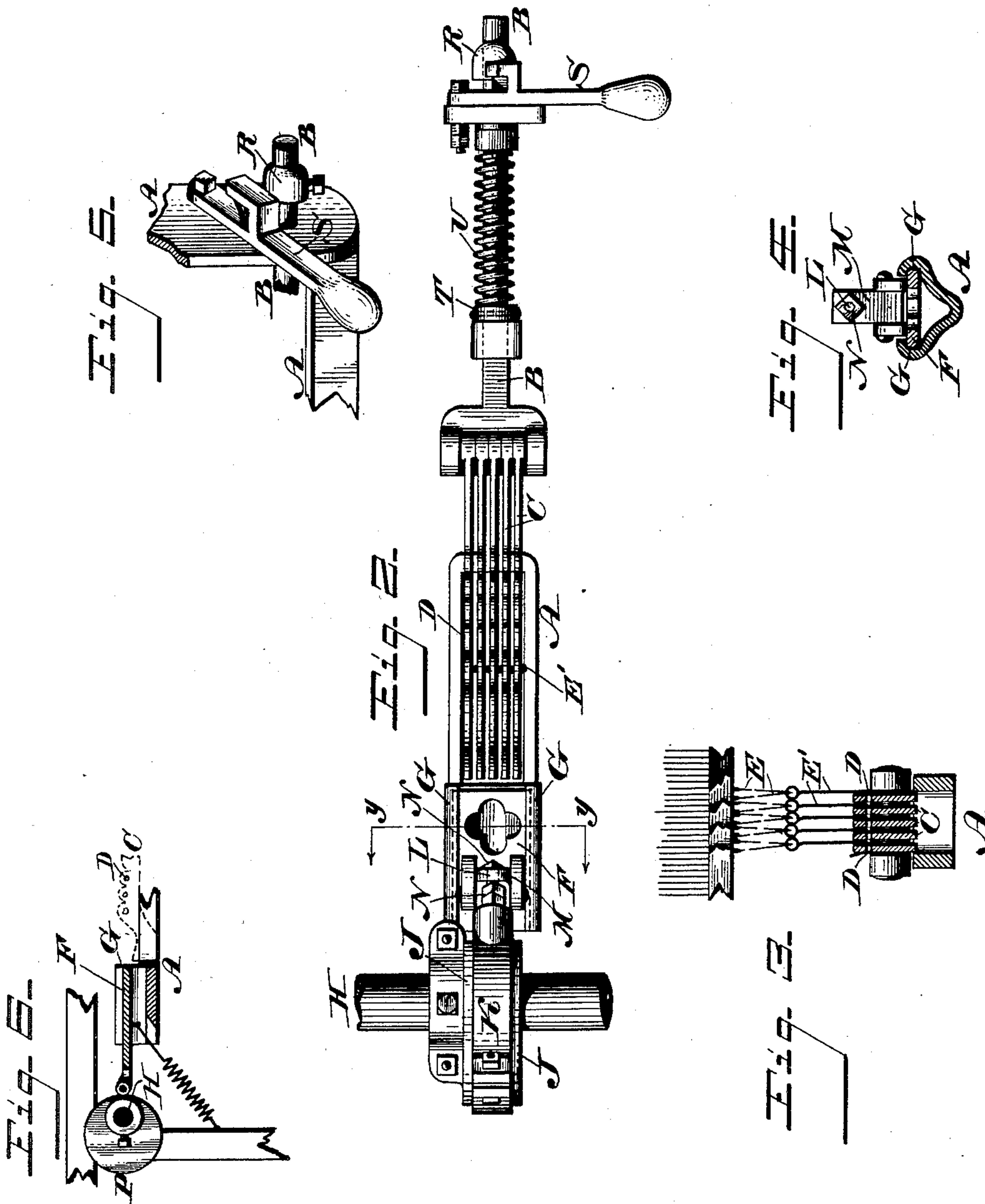
2 Sheets—Sheet 2.

J. F. KERSTAN.

HEDDLE CONTROLLED STOP MOTION FOR LOOMS.

No. 462,927.

Patented Nov. 10, 1891.



WITNESSES:

L. Douville,
P. H. Hagler

INVENTOR
John F. Kerstan.
BY *John A. Diersheim*
ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN F. KERSTAN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF
ONE-HALF TO ROBERT N. DUNN, OF SAME PLACE.

HEDDLE-CONTROLLED STOP-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 462,927, dated November 10, 1891.

Application filed November 17, 1890. Serial No. 371,677. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. KERSTAN, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Heddle-Controlled Stop-Motions for Looms, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in stop-motions for looms; and it consists of a device adapted to be connected with the heddles of a loom so that when the heddles are working improperly the shipper of the loom is operated so as to stop the same.

Figure 1 represents a vertical sectional view of a device embodying my invention secured to the frame of a loom. Fig. 2 represents a top view of the said device. Fig. 3 represents a vertical sectional view on line *xx*, Fig. 1. Fig. 4 represents a vertical sectional view on line *yy*, Fig. 2. Fig. 5 represents a perspective view of one end of the device, showing the weighted catch. Fig. 6 represents a partial side and partial sectional view of a modification of the operating mechanism of the sliding plate.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a frame adapted to be secured to the frame of a loom, and B designates a bar which is movable on the said frame A. Pivottally secured to one end of the bar B are a number of levers C, having therein the openings D, in which are inserted hooks connected with the cords E. Each of the said cords is connected at its ends to two heddles, so that the lever is raised by the movements of the same when the pattern-card is properly perforated above the path of travel of a sliding plate F, which moves in ways G on the frame A, and is operated by the mechanism hereinafter described and connected with a rotary shaft H, which latter may be either the driving-shaft of the loom or a shaft operated thereby. The said mechanism consists of an eccentric J, secured to the shaft, and a yoke K, encircling said eccentric and having an arm with an end forming a bolt L. To the sliding plate F is

pivoted an arm M, which is provided with an opening through which the bolt L is passed for securing the plate to the yoke. The nuts N N on the bolt secures the said arm M in place on the bolt.

Instead of the eccentric and yoke connection just described, a cam P, secured to the shaft H and bearing against the plate F, as shown in Fig. 6, may be employed.

Secured to the bar B at or near its end and outside of the frame A is a collar R, forming a stop, and pivotally attached to the said frame A is a weighted catch S, adapted to rest on the said stop R, when the bar is in the position shown in Figs. 1, 2, and 5. A coil-spring U encircles the bar B, and the bar B and the other end bear against a shouldered portion of the frame so as to bear against a collar T, which is secured to the bar B, and the other end bears against a shouldered portion of the frame, and thus normally keeps the bar in position to have the catch S rest on the stop R. The end of the bar B, having the stop R, is adapted, when moved back, to come in contact with an arm V of a shipper mechanism for stopping the rotation of the driving-shaft of the loom. The number of openings D in the said levers permit the use of the same frame A and connections with heddles in different positions.

The operation of the device is as follows: The heddles are so secured in pairs to the levers C by the cords E and the hooks E' as to normally raise the said levers above the path of the plate F, as shown in upper dotted lines, Fig. 1, and the parts are so timed that if the heddles work properly, or, in other words, if the pattern-card is properly perforated, so that the proper heddles are raised together, the levers will be out of the way of the plate in its reciprocating movements; but in case of any improper working of a heddle, whereby it is not raised the proper distance, the levers connected therewith will be in the path of the sliding plate, as shown in the lower dotted lines, Fig. 1, whereby the said plate will come in contact with it and force the bar backward, removing the stop R from beneath the weighted catch, which will then fall, so as to be between the stop and the side of the

frame A. At the same time the end of the bar will bear against the arm V, so as to operate the shaft W, and thereby the levers X and Y and the shipper, thus stopping the loom.

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

1. Heddles having levers attached thereto, a sliding bar connected with said levers and adapted to engage with the shipping or stopping mechanism of a loom, a traveling plate adapted to engage said levers, and mechanism for operating said plate, said parts being combined substantially as described.

15 2. A support, a traveling plate and sliding bar, mechanism for operating said plate, heddles, levers pivoted to said bar and connected with said heddles, a spring bearing against said bar, and a catch for said bar, said parts being combined substantially as described.

20 3. A frame, a plate and bar thereon, heddles, a lever or levers pivoted to said bar and adapted to be raised and lowered by the movements of the said heddles, and mechanism for

operating said plate, said parts being combined substantially as described. 25

4. A suitable support with a sliding plate and a bar movable thereon, heddles, a series of levers pivoted to said bar and connected with the heddles by cords and hooks, a stop and a collar on said bar, a weighted catch normally adapted to rest on said stop, and a spring bearing against said collar, said parts being combined substantially as described. 30

5. A frame adapted to be secured to the frame of a loom, a bar movable thereon, levers pivotally secured to one end of said bar, two heddles secured by a cord and hook to said lever, a sliding plate movable on said frame, a stopping device for said bar connected therewith, and a catch adapted to engage said stop, said parts being combined substantially as described. 35 40

JOHN F. KERSTAN.

Witnesses:

JOHN A. WIEDERSHEIM,
WM. C. WIEDERSHEIM.