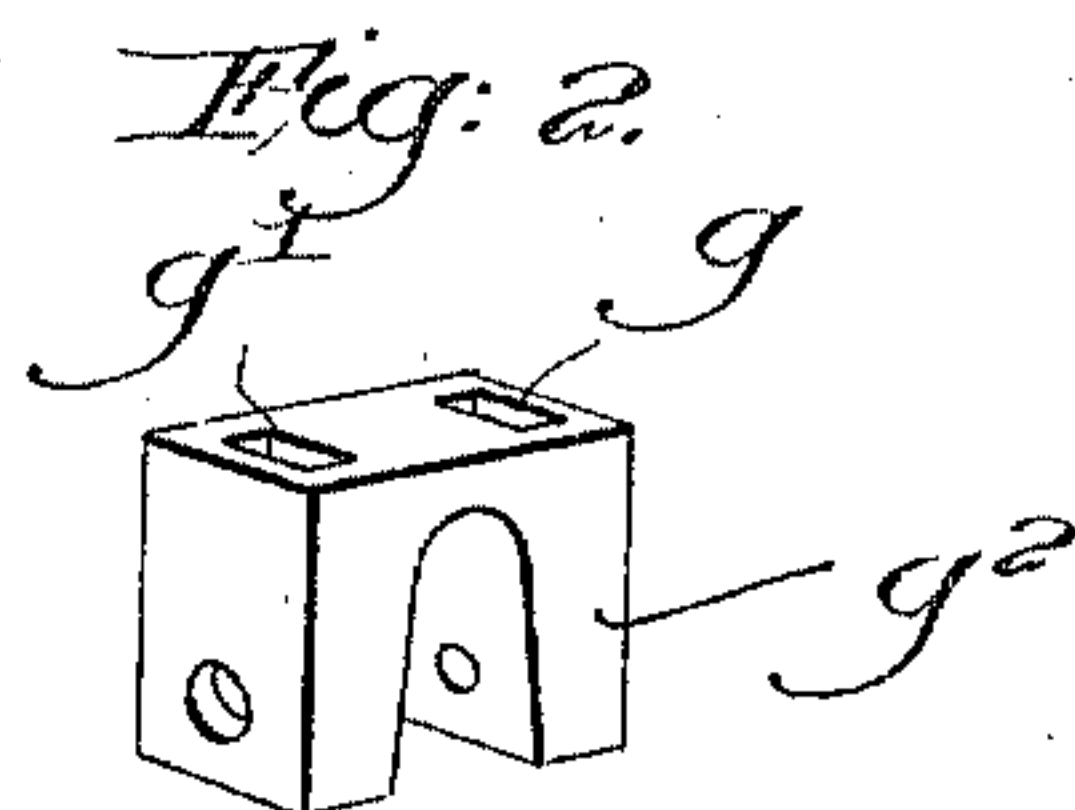
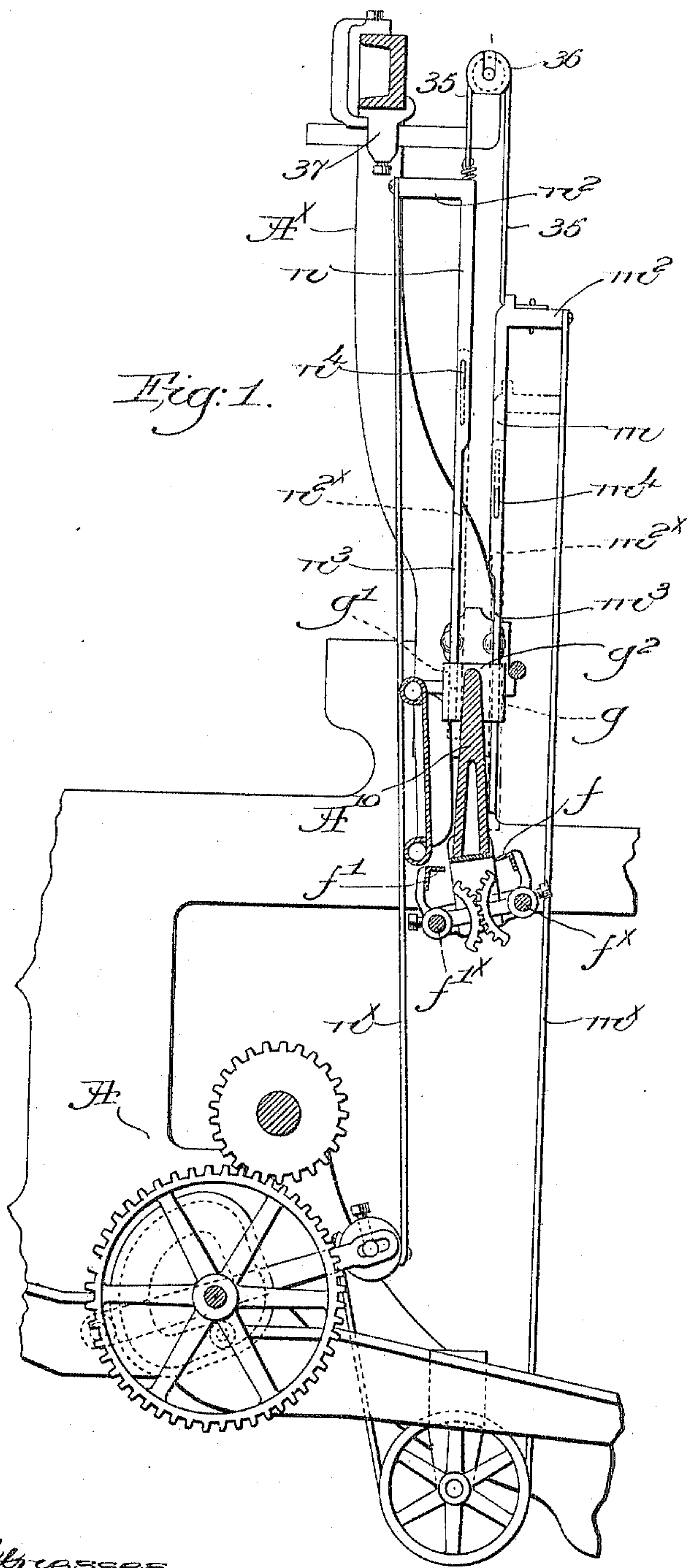


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E. G. GUSTAFSON & H. G. OLSSON.
SELVAGE STOP MOTION FOR LOOMS.

APPLICATION FILED AUG. 4, 1905.



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UNITED STATES PATENT OFFICE.

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SELVAGE STOP-MOTION FOR LOOMS.

No. 817,144.

Specification of Letters Patent.

Patented April 3, 1906.

Application filed August 4, 1905. Serial No. 272,634.

To all whom it may concern:

Be it known that we, ERNEST G. GUSTAFSON and HJALMAR G. OLSSON, citizens of the United States, and residents of North Grosvenor Dale, county of Windham, State of Connecticut, have invented an Improvement in Selvage Stop-Motions for Looms, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to selvage-motions for looms wherein the reciprocating and oppositely-movable selvage harness members each include one or more heddles for the selvage-warps and a carrier to sustain the heddle or heddles, release of a heddle, as by breakage or exhaustion of its warp-thread, causing the heddle to act as a detector and engage and arrest a feeler, the latter thereupon effecting the operation of a loom-stopping instrumentality. One example of this form of selvage-motion is shown in United States patent to Draper, No. 729,046, dated May 26, 1903, and our present invention is illustrated in connection with apparatus such as is shown in said patent. The heddle-carriers are made as elongated rigid bars which are slidable at their lower ends in fixed guides and are connected at their upper ends by a flexible overhead connection. In practice this connection sometimes breaks, and when a weaver is tending a large number of looms the fault in the selvage-motion may not be noticed until considerable bad cloth has been woven, resulting in loss in production and diminution in the weaver's pay.

Our present invention has for its object the production of means whereby the breakage of the overhead connection between the heddle-carriers will act through one of the carriers to effect the operation of the stopping instrumentality. As a result the loom is stopped before any faulty cloth can be woven.

Figure 1 is a transverse sectional view of a portion of a loom, showing a selvage-motion of the character referred to with our invention applied thereto; and Fig. 2 is an enlarged perspective detail of the guide through which the lower ends of the reciprocating heddle-carriers are slidably extended.

It will be understood that two oppositely-movable vertically-reciprocating harness

members for the selvage-warps are arranged at each side of the main shed-forming mechanism, and in Fig. 1 the selvage harness members for only one shed are shown, the main harness members being omitted altogether.

The front harness member or heddle-carrier is shown as an elongated rigid metal bar m , having a forwardly-projecting offset m^2 at its upper portion and a lateral projection m^4 on the inner side of the carrier, onto which projection are strung the desired number of detector-heddles m^{2x} for the selvage-warps. (See dotted lines, Fig. 1.) These heddles serve as warp-stop-motion-controlling detectors and are longitudinally slotted to have a limited vertical movement relative to the carrier, as in the patent referred to, and in practice operate as therein described. The back selvage harness member is also shown as an elongated bar or carrier n , having at its upper end a rearwardly-extended offset n^2 and a lateral heddle-support n^4 for the back set of selvage-heddles n^{2x} . (Shown in dotted lines, Fig. 1.) A flexible band or strap 35 is connected at its ends with the upper ends of the two carriers m and n and passes over a rotatable sheave 36, mounted in a bracket 37 of the arch A^x , constituting an overhead flexible connection between the carriers.

A guide-block g^2 (shown separately in Fig. 2) is mounted on the usual separator A^{10} at each end thereof, and parallel upright slots or guideways $g g'$ in each block slidably receive the lower ends of the two carriers of the adjacent pair.

In order that the carriers may slide freely in the guideways, their lower ends are reduced in thickness, as at $m^3 n^3$, Fig. 1, and it will be seen that this reduced portion is made unusually long for a purpose to be described. Flexible bands or straps $m^x n^x$ are connected at their upper ends to the offsets $m^2 n^2$, respectively, and at their lower ends are connected with the actuating means (designated as a whole in Fig. 1 at A) which effects opposite vertical reciprocation of the heddle-carriers. This actuating means is not of our invention and may be such as is shown in the patent hereinbefore referred to. Vibratable feelers $f f'$ are mounted on rock-shafts $f^x f'^x$, geared together and operating in well-known manner, a released detector-heddle engaging and arresting a feeler and effecting automat-

ically the actuation of a loom-stopping instrumentality.

If a selvage detector-heddle $m^{2\times}$ of the front set is released, it drops and engages and arrests the feeler f , a released heddle $n^{2\times}$ of the back set similarly coöperating with and arresting the feeler f' .

We have made the reduced portions m^3 and n^3 of the heddle-carriers m and n so long that if the overhead connection between them breaks, as it sometimes will in practice, one of the carriers will descend or drop in its guideway in the block g^2 far enough to coöperate with and arrest a feeler just as a released heddle does to thereby effect the actuation of the stopping instrumentality and stop the loom before further damage can be done. Thus the heddle-carriers themselves are made effective to cause loom-stoppage when the overhead connection which sustains the carriers breaks or fails in any way.

While we have shown our invention as embodied in one particular form of selvage-motion, principally for convenience and because such selvage-motion readily adapts itself to use in connection with our invention, the latter is not restricted thereto nor to the particular means shown for reciprocating the selvage harness members.

It will be manifest that our invention is applicable to any selvage-motion in which the selvage-heddles are mounted on vertically-reciprocating carriers which can be made effective to cause loom-stoppage upon breakage of the overhead connection between each pair of carriers.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a selvage-motion for looms, two reciprocating, oppositely-movable harness members each consisting of an elongated bar and one or more detector-heddles sustained by each bar and having a limited vertical movement relative thereto, a flexible overhead connection between said bars, means to reciprocate the harness members, and stop-motion-controlling feelers adapted to coöperate

with a released heddle, or with one of said bars upon breakage of the overhead connection.

2. In a selvage-motion for looms, two reciprocating, oppositely-movable, elongated heddle-carriers, an overhead connection between them, means to reciprocate the said carriers, one or more detector-heddles sustained by each carrier and having a limited vertical movement relative thereto, and means adapted to effect the operation of a stopping instrumentality by release of a heddle, or by breakage of the overhead connection between the carriers.

3. In a selvage-motion for looms, two reciprocating, oppositely-movable, elongated heddle-carriers, an overhead connection between them, means to reciprocate the said carriers, one or more detector-heddles sustained by each carrier and having a limited vertical movement relative thereto, fixed guides through which the lower ends of the carriers are slidably extended, and vibrating stop-motion-controlling feelers adapted to coöperate with and be arrested by a released detector, or with a carrier upon breakage of the overhead connection.

4. In a selvage-motion for looms, two vertically-reciprocating and oppositely-movable, elongated heddle-carriers, a flexible overhead connection between them, a fixed guide for their lower ends, one or more detector-heddles sustained by each carrier and having a limited vertical movement relative thereto, and normally vibrating feelers adapted to effect the operation of a stopping instrumentality when engaged by a released heddle, or by the lower end of a carrier upon breakage of the overhead connection.

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

ERNEST G. GUSTAFSON.
HJALMAR G. OLSSON.

Witnesses:

FRANK S. RICHMOND,
ARTHUR JOHNSON.