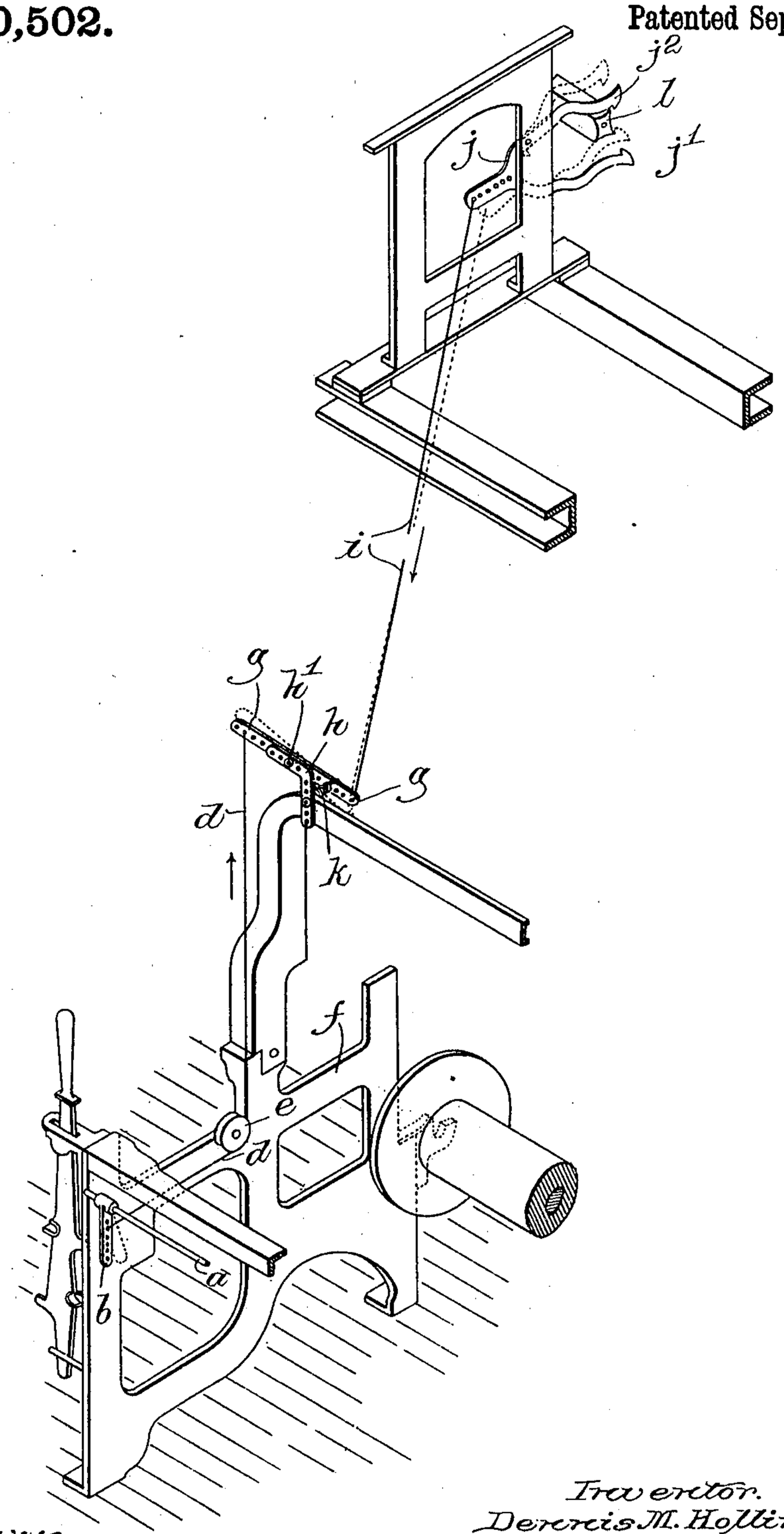
D. M. HOLLINS.

CHANGE CONTROLLING MECHANISM FOR JACQUARDS EMPLOYED IN AUTOMATIC WEFT REPLENISHING LOOMS.

APPLICATION FILED MAY 12, 1910.

970,502. **Patented Sept. 20, 1910.**



Witnesses.
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UNITED STATES PATENT OFFICE.

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CHANGE-CONTROLLING MECHANISM FOR JACQUARDS EMPLOYED IN AUTOMATIC WEFT-REPLENISHING LOOMS.

970,502. Specification of Letters Patent. Patented Sept. 20, 1910.

Application filed May 12, 1910. Serial No. 560,777.

To all whom it may concern:

Be it known that I DENIS MACHELL HOLLINS, a subject of King Edward VII of Great Britain, and resident of Blackburn, in the county of Lancaster, England, have invented certain new and useful Improvements in Change-Controlling Mechanism for Jacquards Employed in Automatic Weft-Replenishing Looms, of which the following description, in connection with the accompanying drawing, is a specification.

This invention relates to automatic weft replenishing looms in which a jacquard is employed for actuating the harnesses and comprises the provision of means for controlling the jacquard cylinder when a change takes place on the detection of breakage or absence of weft by the weft stop motion, the object of my improvements being to prevent the weaving of a faulty pattern in the cloth or of a break in the pattern of the cloth on the occurrence of such changes.

In the operation of an automatic loom having a weft feeler motion there is no necessity to control the jacquard because the feeler motion detects when the weft is substantially exhausted and brings about a change or replenishment of filling before complete exhaustion, consequently no break occurs in the weaving of the fabric and the pattern in the fabric produced by the Jacquard motion is correctly woven, while in case of breakage of the weft the loom is stopped through the action of the weft fork motion, the pick thereupon being matched by hand and the jacquard at the same time reversed by the weaver to bring the proper card into position to match the pattern. In the case of automatic looms having no weft feeler motion, the ordinary weft fork motion detects breakage or absence of weft, bringing the changing motion into action and continuing weaving. The result of this is that a faulty pattern is produced in the fabric by reason of the jacquard cylinder continuing to present fresh pattern cards while the loom is making one, two or possibly three picks without weft. It is with the intention of preventing such faults in the weaving of the pattern whenever a change is made that I have devised my improved controlling mechanism, which operates on the changing motion coming into action to reverse the motion of the jacquard cylinder whereby the pattern cannot be broken by more than say one, or possibly two picks.

According to my invention, as illustrated on the accompanying drawing, I mount on the change rod or shaft *a*, ordinarily supported at the front of the loom, a lever or arm *b* to one end of which is attached a coiled wire cable or like suitable flexible connection *d* which is passed under a guide pulley *e* carried by the loom framing *f* and is connected at its opposite end to one arm of a double armed lever *g* pivoted on a stud *h'* carried by a bracket or extension *h* bolted to or formed on the top arch of the loom. To the other arm of the said double armed lever *g* is connected one end of a second wire cable or like connection *i* which is attached at its other end to the ordinary double cylinder hook *j* of the jacquard.

The change rod *a* is actuated in the usual way by the action of the weft fork slide when moved to the front of the loom by the weft hammer on the detection of breakage or absence of weft by the weft fork, and I utilize this motion for operating the controlling mechanism, the rocking of the change rod *a* causing the lever or arm *b* thereon to be moved toward the loom and through the cable or flexible connection *d* allowing the double armed lever *g* to rock upon its pivot center, a spring *k* or weight or like means being employed in conjunction with said lever to insure its full movement to abnormal position.

The movement of the double armed lever *g* to abnormal position acts through the cable or connection *i* attached to its other arm to swing the double cylinder hook upward and bring the lower cylinder hook *j'* thereon into the path of the cylinder *l* whereby on the usual outward movement of said cylinder it engages the said hook *j'* and is rotated in a direction opposite to its normal movement, this reversal of movement turning back the pattern cards to the same extent so that, on starting up the loom again, the weaving of the pattern will proceed from approximately the same point it had reached when the breakage or absence of weft was detected. The return movement of the change rod re-instates the parts in their normal positions, that is, moving them from the positions shown in dotted lines to the positions shown in full lines with the

upper hook j^2 of the double cylinder hook j in the path of the jacquard cylinder l.

The mechanism above described acts self-actingly every time the weft fork detects absence of breakage and the fabric woven is more perfect and of higher value than fabrics woven in automatic looms having no weft feeler motion and not provided with such change controlling mechanism.

It will be understood that the details of the mechanism may be varied without departing from my invention.

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

In an automatic weft-replenishing loom, a change rod or shaft adapted to be rocked by or through failure of the working weft to effect thereby weft-replenishment, combined with a jacquard pattern-cylinder, a double cylinder-hook to effect rotative movement of said cylinder in one or the other direction, coöperation of the lower hook with the cylinder effecting reverse rotation thereof, and means actuated by rocking of said change rod or shaft to change the position of said cylinder-hook into coöperation with the pattern-cylinder to cause reversed rotation thereof.

In testimony whereof I affix my signature in the presence of two witnesses.

DENIS MACHELL HOLLINS.

Witnesses:
EWALD SIMPSON MOSELEY,
MALCOLM SMITHURST.