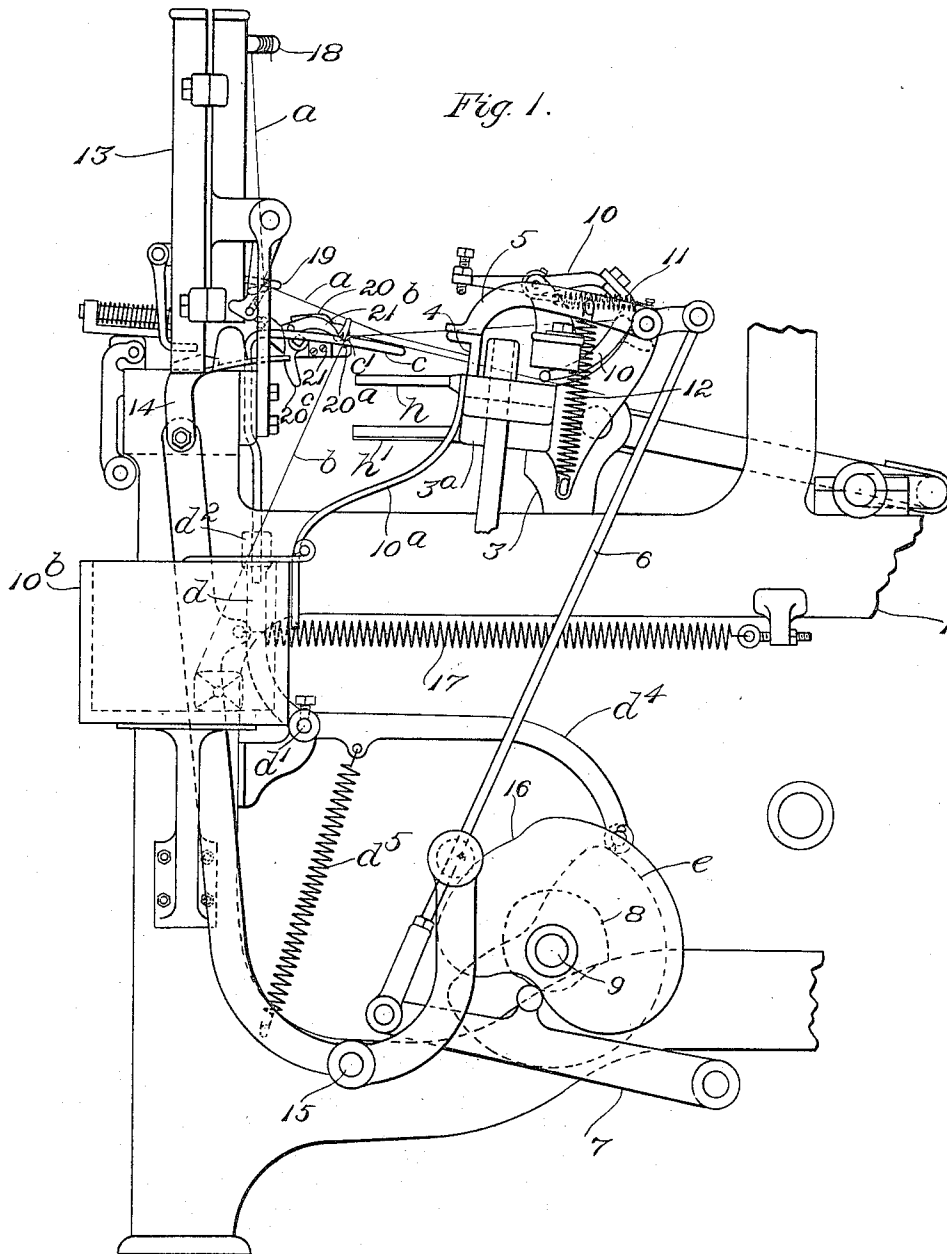


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APPLICATION FILED FEB. 2, 1912.

1,064,651.

Patented June 10, 1913.

2 SHEETS—SHEET 1.



Witnesses:
Oscar F. Hill
Ellen O. Spring

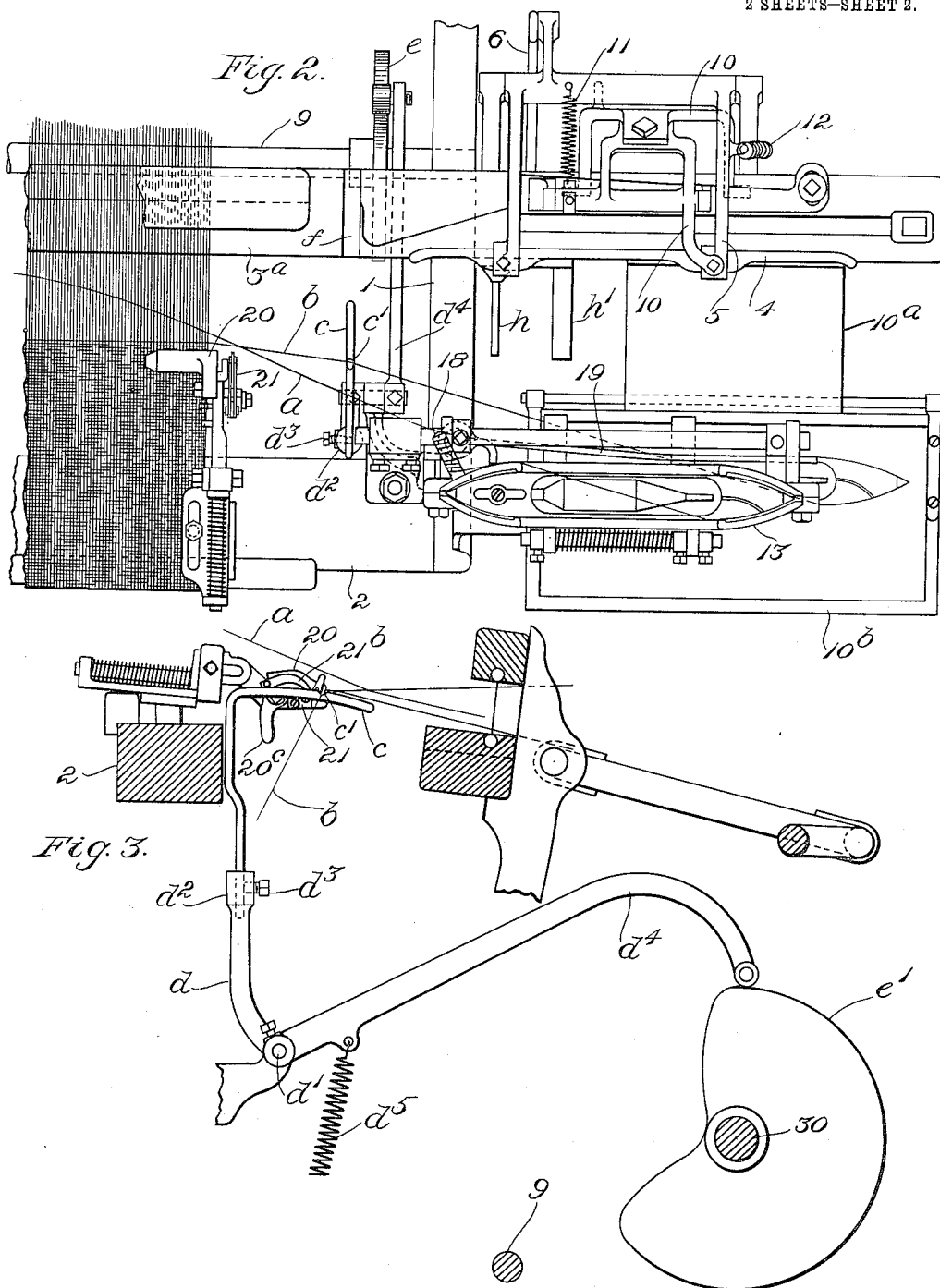
Inventor:
Simon S. Jackson
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Attorney.

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UNITED STATES PATENT OFFICE.

SIMEON S. JACKSON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE STAFFORD COMPANY, OF READVILLE, MASSACHUSETTS, A CORPORATION OF NEW JERSEY.

WEFT-PARTER DEVICE FOR LOOMS.

1,064,651.

Specification of Letters Patent. Patented June 10, 1913.

Application filed February 2, 1912. Serial No. 675,033.

To all whom it may concern:

Be it known that I, SIMEON S. JACKSON, a subject of Great Britain, residing at Readville, Boston, in the county of Suffolk, State of Massachusetts, have invented a certain new and useful Improvement in Weft-Parter Devices for Looms, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention is designed to be used in looms of the class operating to effect replenishment of the working weft-supply automatically by ejecting the working shuttle from the lay and placing a fresh or reserve shuttle on the lay to continue the weaving. Looms of the said class are shown and described in U. S. Letters Patent No. 870,509, granted November 5, 1907, and No. 945,722, granted January 4, 1910. In such looms the mechanism thereof effects the ejection of the working shuttle by first raising the front-plate of the shuttle-box which is occupied by the said shuttle, and then pushing the shuttle forward on the lay-beam past the uplifted front-plate and off from the lay-beam so that it drops down in advance of the lay into a stationary catcher-box located at the front of the loom. Patent No. 870,509 aforesaid also shows and describes the employment of feeler-mechanism operating to bring about the ejection of the working shuttle and the introduction of a fresh or reserve shuttle shortly before the supply of weft or filling contained in the working shuttle has become completely exhausted. When the working shuttle of a loom is expelled prior to complete exhaustion of its supply of weft or filling, the portion of yarn that extends from the selvage of the cloth to the expelled shuttle, forming a continuation of the last pick of weft or filling laid among the warp-threads, hangs down between the lay and breast-beam to the said shuttle in the catcher-box.

The invention consists in novel means of supporting the said portion of yarn, and presenting it to the action of a weft-parter located adjacent the selvage of the cloth, so as to insure that it shall be parted or severed by the action of such device.

In the drawings,—Figure 1 shows in side elevation certain portions of a shuttle-changing weft-replenishing loom having an embodiment of the invention applied thereto. Fig. 2 shows in plan the parts that are

represented in Fig. 1. Fig. 3 is a sectional view illustrating a modification.

Having reference to the drawings,—and first to Figs. 1 and 2,—the loom-frame is marked 1, the breast-beam 2, the lay 3, and the lay-beam 3^a. The drawings show certain features of replenishing mechanism on the order of what is presented in the patents aforesaid, as follows: The vertically-movable front-plate of the shuttle-box at the magazine-side of the loom is shown at 4, 5 being its carrying or supporting rocker, hung upon the lay, and 6 a rod connecting the said rocker with a lever 7, Fig. 1, which last is actuated in one direction by a cam 8 on the change-shaft 9 to swing the rocker to raise the front-plate. This action and the other actions which are involved in effecting weft-replenishment take place only when the change-shaft rotates.

In a loom of the general character of those of the Letters Patent aforesaid the change-shaft rotates only when the replenishing operations are to be performed. While the loom is weaving the change-shaft does not rotate. During the performance of the said operations the weaving action is suspended and the lay and other usual parts stand at rest until replenishment has been effected. Then the weaving mechanism is caused to become operative again, and the rotation of the change-shaft ceases.

At 10 is an ejector which is actuated by the rocker and front-plate as the front-plate is raised, and when thus operated pushes the working shuttle forward across the top surface of the lay-beam and off from the latter.

10^a is a flexible apron, connected at its upper end to the lay-beam, and down which the ejected shuttle slides into the catcher-box 10^b which is mounted upon the loom-frame in advance of the lay and below the magazine.

11 is a spring which retracts the ejector as the front-plate closes down into working position under the action of a spring 12 engaging with the rocker. By means of the spring 12 the front-plate is swung down into normal position in front of the fresh shuttle after the latter has been placed upon the lay, so as to inclose such shuttle within the shuttle-box in condition for continuation of the weaving process.

At 13 is a magazine for reserve shuttles, and 14, Fig. 1, is a transferrer by which a

reserve shuttle is transferred from the mouth of the magazine to the lay, the said transferrer being pivoted at 15, and being operated by means of a cam 16 on the change-shaft, and a spring 17, the said cam serving to move the transferrer forward to its normal retracted position shown in Fig. 1 of the drawings, and the said spring serving to move the transferrer rearward, under the control of the said cam, to effect the transfer of a reserve shuttle from the magazine to the lay.

At 18 is a peg or pin supported by the magazine and to which are attached the starting-ends of the loads of weft or filling which are contained in the reserve shuttles that occupy the magazine, and 19 is a wire, attached to the magazine at the rear of the latter, and constituting a weft-end holder around the inner end of which the starting-end of the weft or filling carried by the freshly transferred shuttle, and extending from the latter to the peg or pin 18, loops as the said shuttle makes its first flight from the magazine side of the loom to the other side of the latter. The starting-end *a* thus looped around the inner end of the weft-end holder 19 extends obliquely downward and rearward from the bend at the inner end of the said weft-end holder to the selvage of the cloth.

At 20 is a loom-temple located at the magazine-side of the loom and equipped with a weft-parter 21, usually termed a temple-cutter, which may be of any approved character and construction suitable for the purpose of cutting the starting-end *a* as soon as the first pick of the fresh weft is beat up by the lay. The temple-head is shown provided with a mouth or notch 20^a into which the yarn to be parted or severed finds its way, and with a pivoted blade-member 21^b that is actuated in one direction by engagement of the lay-beam with its heel 20^c as the lay beats up, and in the other by a spring (not shown) as the lay recedes. The said blade-member operates in its movement to part or sever the yarn that has entered into the mouth or notch.

When the front-plate 4 is raised and the shuttle is pushed forward and drops down between the front of the lay-beam and magazine, the portion *b* of weft-thread or filling forming a continuation of the pick just laid among the warp-threads by the flight of the shuttle to the magazine side of the loom, and extending outward from the selvage at that side to the expelled shuttle, will draw downward away from the temple-cutter and not be acted upon by the latter unless means is provided for preventing it from drawing out of the range of action of the temple-cutter. In accordance with my invention, I provide novel means of preventing the outwardly extending portion *b* of weft or fill-

ing from sinking, adjacent the selvage, out of the range of action of the temple-cutter or weft-parter 21; and also for presenting the said portion to the temple-cutter or weft-parter to be cut or parted thereby.

In each of the figures of the drawings, *c* represents a rod or wire that normally occupies a position at the front of the loom, adjacent the selvage of the cloth being woven and the temple-cutter or weft-parter. It extends rearward toward the lay. This rod or wire is carried by the upwardly extending arm of a lever *d* which is mounted upon a pivot *d'*, Figs. 1 and 3, in connection with the loom-frame. The acting portion of the rod or wire extends rearwardly toward the lay. To accommodate the rear end of the rod or wire a groove *f*, Fig. 2, is formed in the lay-beam. The acting portion of the rod or wire *c* is formed with a notch *c'* in its top side. In usual practice the said acting portion is supported at a height substantially corresponding with or a little above the mouth of the temple-cutter, with the notch *c'* a little in advance of the fell of the cloth. The attachment of the rod or wire to the carrying lever *d* is effected by means of a socket *d*² and screw *d*³, Figs. 2 and 3, such socket receiving a depending portion of the rod or wire. The construction provides for vertical adjustment of the acting portion of the rod or wire with relation to the lay-beam and temple-cutter.

An arm *d*⁴ of the carrier-lever *d* extends into working relations with a cam, the latter being mounted upon a rotatable shaft, the said arm being maintained in engagement with such cam by means of a contracting spiral spring *d*⁵. In Figs. 1 and 2 the cam, there marked *e*, is mounted upon the change-shaft 9. While such shaft stands at rest during the continuance of the weaving operations, the high part of the cam operates to hold the rod or wire *c* in its normal advanced position adjacent the breast-beam as in such figures. When the said operations are suspended for the performance of the replenishing operations, and the change-shaft 9 is caused to rotate for the purpose of bringing about the actuation of the replenishing instrumentalities, the action of the cam, in its rotation with the change-shaft 9, is such that the rod or wire *c* is caused to move rearward toward the lay, is held for a time in its rearward position, and then is moved forward toward the breast-beam, thereby restoring it to its normal position. The rearward movement of the rod or wire *c* takes place prior to the ejection of the working shuttle from the shuttle-box of the lay. When the shuttle-box is opened by raising its front-plate 4, and the ejector 10 operates to push the said shuttle forward out of the shuttle-box and off the lay, the portion of the weft *b* leading from the sel-

vage of the cloth to the shuttle is thrown forward somewhat upon the rod or wire *c* by the shuttle as the latter falls forward from the lay-beam. The said portion *b* also is drawn forward somewhat by reason of the forward movement of the shuttle in sliding forward down the flexible apron 10^a and finding its way into the catcher-box. When now the rod or wire *c* is moved forward, with the said portion *b* of weft or filling contained in its notch *b'*, the said portion *b* will be caused to assume the position which is represented in Figs. 1 and 2, extending outward from the selvage at a proper height to enter the mouth of the temple-cutter or weft-parter, and also inclining forward somewhat. The rod or wire *c* thus operates to bring the portion *b* of weft or filling within the range of action of the temple-cutter, and to present it to the said action so as to facilitate and insure the cutting or parting of the said portion. The said rod or wire *d* is so located below the line of the starting end *a* of fresh weft or filling extending from the weft-end holder 19 to the selvage of the cloth that the said rod or wire does not engage or make contact with the said starting-end *a*.

In Fig. 3 the rod or wire *c* is actuated under the control of a cam *e'* on the cam-shaft 30 of the loom, such cam being shaped to hold the rod or wire in its forward position for one pick of the loom and then cause it to move rearward for the next pick, and so on. Thereby, the rod or wire is caused to move to its rearward position for the pick of the shuttle to the replenishing side of the loom, and then move forward to its normal position and remain forward until after the pick to the opposite side of the loom. The stopping of the loom for replenishing purposes occurs following a pick to the said side, and at the time of the stoppage the rod or wire occupies its rearward position in readiness to receive the portion *b* of weft or filling extending to the expelled shuttle. When the loom-mechanism is automatically started up again the cam *e'* operates to move the rod or wire forward, taking portion *b* of weft or filling with it. By being caused to dwell in its forward position through the action of the said cam *e'*, the rod or wire *c* is enabled to hold the portion *b* of weft or filling forward an ample length of time to allow the temple-cutter or weft-parter to act to part or sever such portion.

The two studs or fingers *h*, *h'*, shown mounted upon the front of the lay-beam near the inner end of the shuttle-box at the magazine-end of the loom are employed for the purpose of catching the inner end of the expelled shuttle so as to cause the said shut-

tle to slide down the apron 10^a with its outer end foremost. The stud or finger *h'* is a little to one side and below the stud or finger *h*, in consequence of which the shuttle landing at its inner end upon the stud or finger *h* swings downward until it touches the stud or finger *h'*, assuming thereby the desired inclination, and then slides from the said studs or fingers down the apron 10^a, outer end foremost, as just mentioned. The stud or finger *h*, in addition, constitutes a supplemental support, carried by the lay, for the portion *b* of weft or filling extending from the selvage to the expelled shuttle.

What I claim is:

1. In a weft-replenishing loom in which the working shuttle is expelled forwardly from a shuttle-box on the lay, the combination with a weft-parter adjacent the selvage of the cloth, of a movable weft or filling-support mounted adjacent the weft-parter, and a rotatable cam controlling the said weft or filling-support and operating to give the latter a normal position adjacent the breast-beam and to move the same rearward into position to receive thereon the portion of weft or filling extending from the selvage to the expelled shuttle as the latter falls in front of the lay, and then move such portion of weft or filling forward into the range of action of the weft-parter.

2. In a weft-replenishing loom in which the working shuttle is expelled forwardly from a shuttle-box on the lay, the combination with a weft-parter adjacent the selvage of the cloth, of a weft or filling-support, a carrier lever therefor, and a rotatable cam in operative control of the said carrier-lever whereby the weft or filling-support is given a normal forward position, moved rearward therefrom to receive upon it the portion of weft or filling extending from the selvage to the expelled shuttle as the latter falls in front of the lay, and then forward to carry such portion into the range of action of the weft-parter.

3. In a weft-replenishing loom, the combination with a weft-parter, of a weft or filling support, a carrier-lever therefor, and a rotatable cam in operative control of the said carrier-lever whereby the weft or filling-support is moved rearward to receive the portion of weft or filling extending from the selvage to the expelled weft-carrier, and then forward to carry such portion into the range of action of the weft-parter.

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

SIMEON S. JACKSON.

Witnesses:

CHAS. F. RANDALL,
EDITH R. WISEMAN.