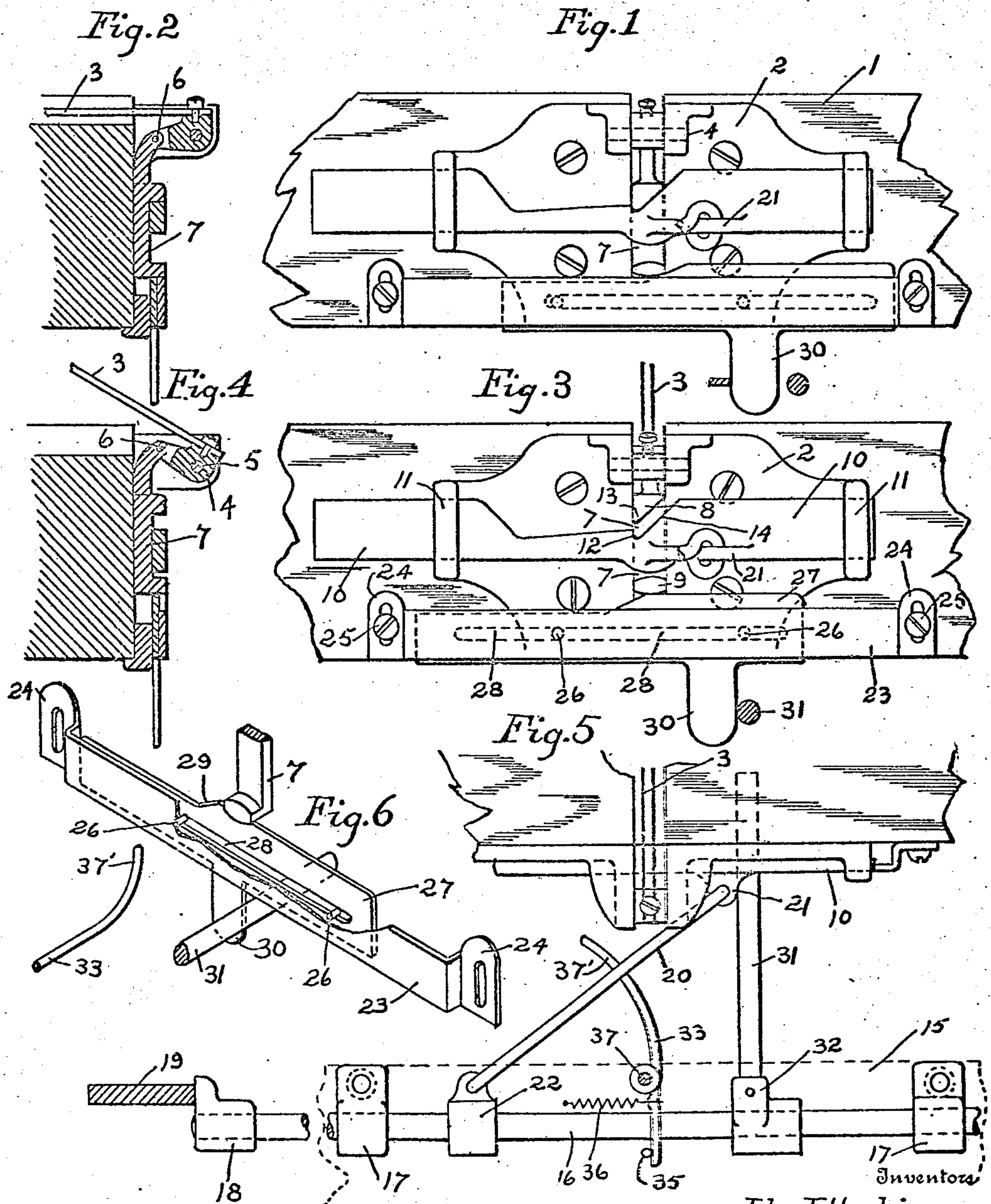


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 KNOCK-OFF GUARD FOR STOP MOTIONS.
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899,163.

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Witnesses

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JOHN THOS. HACKING, OF ENFIELD, AND CHARLES WILKINSON, OF PROVIDENCE, RHODE ISLAND.

KNOCK-OFF GUARD FOR STOP-MOTIONS.

No. 899,163.

Specification of Letters Patent.

Patented Sept. 22, 1908.

Application filed September 18, 1907. Serial No. 393,435.

To all whom it may concern:

Be it known that we, JOHN THOS. HACKING and CHARLES WILKINSON, citizens of the United States, residing at Enfield, town of Smithfield, and Providence, respectively, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Knock - Off Guards for Stop-Motions, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to knock-off guard for weft stop motion for looms, and has for its object to provide a simple and effective means whereby the usual stop motion is automatically prevented from working during the first stroke of the lay even though the weft thread is not in position to hold up the fork.

In our device the action of knocking off the shipper lever to stop the loom is caused to move an auxiliary device to again raise the feeler fork and hold the same in its raised position until the lay has made another forward stroke in order to facilitate starting up the loom again, after which the fork is automatically released and restored to its normal action.

In a loom, such as ordinarily used for weaving woolen blankets and the like, the machine is necessarily very wide and heavy, the weft fork is placed in the middle of the lay and when the fork fails to engage a weft thread the loom of course is stopped in the usual way, and in a loom of this weight and extreme width considerable time and manual labor is required in threading up and starting the same again, which necessitates the throwing of the shuttle across the lay by hand, and then starting the heavy lay. In order to facilitate this work we have provided a simple attachment for automatically raising the fork and holding the same up until after the lay has completed its first stroke, which gives sufficient time for the shuttle to be thrown across the lay by the action of the loom itself, thus saving much time and rendering the work of starting much lighter.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1—is a front elevation showing a portion of

the lay and the weft fork down and in position to operate the mechanism to stop the loom. Fig. 2—is a central sectional view of the same. Fig. 3—is a front elevation illustrating the weft fork in its raised position and held in said position by our device. Fig. 4—is a central sectional view showing the weft fork in its raised position. Fig. 5—is a plan view showing the stopping mechanism. Fig. 6—is a detail illustrating our attachment showing the sliding cam in position under the fork finger.

Referring to the drawings, at 1 is a portion of the usual lay to the front face of which is secured the plate 2. In this plate the weft fork 3 is pivoted at 4 on the lever 5. To the inner end of this lever at 6, see Figs. 2 and 4, is pivotally connected the downwardly extending finger 7, which finger is provided on its face with a cam portion 8, and is also provided with a second extension or cam portion 9 on its lower end.

At 10 is a bar adapted to slide transversely on the plate 2 through the ears 11—11. The upper edge of this bar is cut away forming a notch 12 into which the lower edge 13 of the cam portion 8 on the depending finger is adapted to catch. An inclined cam portion 14 is also formed on the edge of plate 10 for the purpose of engaging the face of cam 8, whereby the latter may be raised when required.

Beneath the breast beam, as illustrated in the dotted lines at 15 in Fig. 5, is a rod 16 adapted to slide endwise in its bearing 17 which is adapted to engage the shipper lever 19. At 20 is a connecting rod hooked at one end in ear 21 of the bar 10 and its opposite end is hooked into the collar 22 on said rod 16.

In the ordinary action of the lay in beating up the cloth the rod 16 is held by friction against an endwise movement and the bar 10 through the action of the connection 20 is caused to continuously reciprocate in its bearings in the plate 2 by the action of the lay, and if for any reason the weft thread should become broken or unduly slack the fork 3 will fail to hold up the depending finger 7 and its edge 13 will engage the notch 12 and lock the bar from a further endwise motion, whereby the rod 16 will be forced to the left as the lay moves forward to knock off the lever 19 and stop the loom.

Our improved device is an attachment adapted to work in conjunction with the

above mechanism described in detail, or a stop motion of similar construction, and consists essentially of an offset bracket 23 provided with slotted ears 24—24 at either end by which the same may be adjustably secured by screws 25—25 to the front of the lay beneath the depending fork finger 7. A pair of guide pins 26—26 are secured to this bracket and arranged to extend inwardly therefrom on which the cam plate 27 is hung. This cam plate is slotted at 28 and is adapted to slide endwise on said pins 26—26. The upper edge of this plate is provided with a long slanting portion 29 which serves as a cam to be forced under the fork finger 7 whereby the latter is carried upward to hold the fork in a raised position. To the lower edge of this cam plate is fixed a depending finger 30 through which said plate is moved back and forth on its supporting bracket. An outwardly extending push rod 31 is supported on the endwise movable rod 16 by the bracket 32, and is adapted to engage the depending finger 30 and carry the cam portion 29 under the finger 7 each time the rod 16 is moved to engage the shipper and stop the loom.

At 33 is a yieldable finger pivoted at 37 and held against the stop pin 35 by means of the spring 36. This finger is offset at its end 37' so that after the cam plate has been carried along into its operative position by the push rod 31 the next forward movement of the lay will cause this spring finger to engage the opposite side of the downwardly projecting end 30 and carry the cam back to its normal position again to again release the fork to work in its usual way.

The operation of the device is further described as follows: The device is readily attached to be operated in connection with the ordinary stop motion for this class of looms so that each time the fork fails to find a thread and the loom is stopped this little cam is automatically operated and passed under the fork finger to again raise the fork and hold it in its raised position until the lay has made another forward stroke, in which stroke the cam engages the yielding spring finger 33 and is carried back out of the way, leaving the fork to again act in its normal capacity. By the use of this device it will be seen that the lay can make a complete backward and forward stroke in starting up without the necessity of there being a weft thread in position to prevent the fork from falling to stop the loom again, allowing the attendant to place the shuttle in position at one end of the loom and give the same an

opportunity to be thrown across the lay and establish the weft thread in its proper position after which the cam is removed and the lay continues to operate in the usual way.

Our device is extremely simple and inexpensive in its construction and effective in its operation, and is so designed that it may be readily applied to and operated on any loom of this character.

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

1. In a loom, a weft fork, a lay, means for automatically stopping the loom when its fork fails to find the weft thread, a cam actuated by the movement of said stopping means to position said fork whereby the loom is prevented from being stopped on the next forward stroke of the lay, and means for withdrawing said cam to restore said fork to its normal action.

2. In a loom, a stop mechanism including a weft fork, a lay, an automatically actuated transversely sliding cam plate adapted to be moved by said stopping mechanism to position said fork whereby said mechanism is prevented from being actuated to stop the loom on the next forward stroke of the lay, and means for automatically withdrawing said cam plate to again allow said fork its normal action.

3. In a loom, a weft fork, a lay, a shipper lever, means including a shipper lever knock-off rod for automatically stopping the loom when its fork fails to find the weft thread, a transversely sliding cam, means operated by said knock-off rod to move said cam to hold up said fork whereby the loom is prevented from being stopped on the next forward stroke of the lay.

4. In a loom, a weft fork, a lay, a shipper lever, means including a shipper lever knock-off rod for automatically stopping the loom when its fork fails to find the weft thread, a transversely sliding cam, means operated by said knock-off rod to move said cam to hold up said fork whereby the loom is prevented from being stopped on the next forward stroke of the lay, and a yieldable finger adapted to engage said cam to remove the same to restore said fork to its normal action.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN THOS. HACKING.
CHARLES WILKINSON.

Witnesses:

JAMES J. MCGOVERN,
JOHN J. RICHARDS.