T. NEVIN.

PICKER STICK CHECK FOR LOOMS.

APPLICATION FILED JULY 7, 1908.

914,360. Patented Mar. 2, 1909.

Fig. 1.

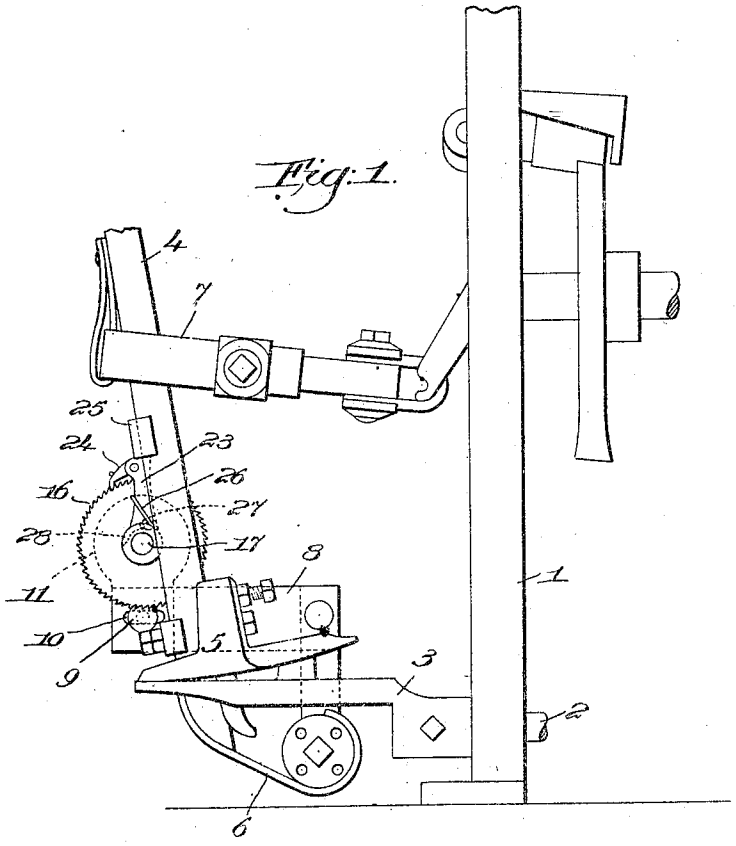


Fig. 2.

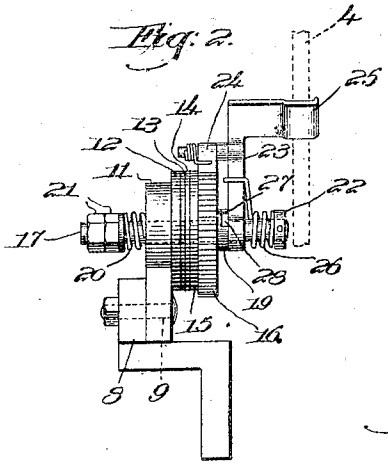
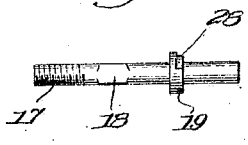


Fig. 3.



Witnesses,
Edward F. Allen.
Joseph M. Ward,

Inventor:
Thomas Nevin.
by Crosby Gregory.
Atty's.

UNITED STATES PATENT OFFICE.

THOMAS NEVIN, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO DRAPER COMPANY, OF HOPEDALE, MASSACHUSETTS, A CORPORATION OF MAINE.

PICKER-STICK CHECK FOR LOOMS.

No. 914,360. Specification of Letters Patent. Patented March 2, 1909.

Application filed July 7, 1908. Serial No. 442,362.

To all whom it may concern:

Be it known that I, THOMAS NEVIN, a citizen of the United States, and resident of Lowell, county of Middlesex, State of Massachusetts, have invented an Improvement in Picker-Stick Checks for Looms, of which the following description, in connection with the accompanying drawing, is a specification, like numerals on the drawing representing like parts.

My present invention relates to picker-stick checks for looms and it has for its object the production of improved means for checking the outward movement of the picker-stick, when subjected to the impact of the shuttle, the construction and arrangement being such that the freedom of movement of the stick on its inward stroke is not impaired or interfered with in the least by the checking means.

I have made provision for easily and quickly adjusting the resistance of the checking means, as may be rendered necessary in the practical operation of the loom, and the checking action can also be varied as to its duration in a very simple manner.

One practical embodiment of my invention is fully described in the subjoined specification and its novel features are particularly pointed out and emphasized in the following claims.

Figure 1 is a front elevation of a portion of the picking mechanism at one side of a loom, with one embodiment of my present invention applied thereto, the picker-stick being shown nearly at the end of its outward stroke; Fig. 2 is a left-hand end elevation of the picker-stick check, the stick being shown in dotted lines; Fig. 3 is a detail of a part of the checking means to be referred to.

Referring to Fig. 1, the loom-side 1, lay rocker-shaft 2 having fast thereon the picker-stick stand 3, the picker-stick 4 having attached to its lower end a shoe 5 resting and rocking upon the flat top of the stand 3, the spring-controlled strap 6 mounted on the stand and attached at its free end to the end of the stick depending below the stand, and the lug-strap 7 connecting the picker-stick with the pick-motion, may be and are all of well known construction and operate in usual manner. The stand 3 has secured to or forming part of it an outwardly extended arm 8 on which is adjustably secured, by a bolt 9 extended through an elongated slot 10 in the arm, the shank of an upright bracket 11 substantially circular in shape. The arm 8 is offset from the stand 3 to afford room for the checking means mounted on the bracket. Attached to the front face of the latter is a disk 12, preferably of wood, having a facing 13 of leather or other suitable friction producing material, coöperating with a like facing 14, see Fig. 2, on the disk-like part 15 of a ratchet 16, the latter being rotatably mounted on a spindle 17 extended through the bracket, disk 12 and friction pads. The spindle is preferably squared, as at 18, Fig. 3, to fit a correspondingly shaped hole in the bracket, whereby the spindle is restrained from rotation, an annular enlargement 19 on the spindle bearing against the front face of the ratchet, while a spring 20 interposed between the back of the bracket 11 and suitable check-nuts 21 acts to draw the friction surfaces together, the pressure being varied by adjustment of the check-nuts.

From the foregoing description it will be manifest that rotation of the ratchet will be resisted by the friction due to the relatively movable pads 12 and 13, the checking action of the friction members being regulated by the adjustment of the spring 20.

A collar 22 is pinned onto the front end of stud 17 and between said collar and the enlargement 19 I loosely mount the hub of an upturned pawl-carrier 23, carrying a pawl 24 coöperating with the ratchet 16, the upper end of the pawl-carrier being forwardly extended at 25 to form a bunter crossing the path of the picker-stick on its outward stroke. A spring 26 coiled round the spindle 17 has one end fixed to the collar 22 and its other end coöperating with the pawl-carrier to swing it to the right, viewing Fig. 1, such spring-induced movement being limited by engagement of a pin 27 on the pawl-carrier abutting against the inner end of a recess 28 in the periphery of the enlargement 19. The spring 26 is a setting device to automatically retract or set the pawl 24 at its starting point when the picker-stick is moved inward to pick the shuttle

Supposing the picker-stick to be on its outward stroke, due to impact of the shuttle, and that the pawl 24 is at its starting point, in engagement with the ratchet 16. When the picker-stick hits the bunter 25 it will

rock pawl-carrier 23 to the left, Fig. 1, and the pawl will rotate the ratchet and the angularly movable friction member of the check, the retarding action due to the friction between the pads 13 and 14 checking and bringing to a stop the picker-stick at the outer end of its outward stroke. On the inward stroke of the picker-stick it will be noticed that the checking means has no control or influence, so that the stick is perfectly free to be operated by the picking mechanism. As the stick moves inward, the spring 26 acts upon the pawl-carrier and moves the latter in the same direction till the pin 27 engages the end of the recess 28, stopping the pawl 24 at the proper point for the beginning of its next operative stroke.

The entire checking means is mounted on and movable with the bracket 11, as will be evident, and by loosening the bolt 9 and moving the bracket to the right, Fig. 1, the pawl will take up more teeth on the ratchet and the action of the check on the picker-stick will be of longer duration. Conversely, by moving the bracket to the left less teeth will be taken up by the ratchet and the checking action will be shortened. The adjustment as to the duration of the checking action is independent of the adjustment, by spring 20 and check-nuts 21, of the force or power of the check, and by using either adjustment, or by combining them, a very close and fine checking action can be effected, according to varied requirements in the practical operation of the loom.

It will be noted that the checking means is brought down as near as possible to the lay rocker-shaft by mounting said means on the stand 3 which is fast on the rocker-shaft, and this disposition of the added weight of the checking means is of the greatest advantage. It will be manifest that in high speed looms the lay makes from 170 to nearly 200 picks per minute, and at best the momentum of the moving parts is much greater than is desirable, but it cannot be obviated. To add the weight of the checking means to the top of the lay, or just under the shuttle-box, as has been proposed heretofore, increases the disadvantages due to momentum of the moving parts by adding weight at a distance from the center or axis about which the lay swings. By carrying the added weight low down and very near the axis about which the lay swings, as I have done herein, the added weight of the checking mechanism does not to any appreciable extent increase disadvantages already existing due to momentum of the moving parts.

Various changes or modifications may be made in details of construction and arrangement by those skilled in the art without departing from the spirit and scope of my invention as set forth in the annexed claims.

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

1. In a device of the class described, a picker-stick, and a stand on which it is mounted to rock, and a bracket fixedly secured to the stand, combined with a picker-stick check adjustably mounted on the bracket and comprising fixed and rotatable coöperating friction members, a ratchet fixedly attached to the rotatable member, a swinging pawl-carrier having a pawl cooperating with the ratchet, a bunter on the pawl-carrier, to be engaged and moved by the picker-stick on its outward stroke, to effect rotative movement of the ratchet and attached friction member and thereby check the stick, a spring to return the pawl-carrier to starting position when the picker-stick moves inward, whereby the pawl is set for the next operative stroke independently of the stick, and a stop to limit spring-induced movement of the pawl-carrier.

2. In a device of the class described, a picker-stick, and a stand on which it is mounted to rock, combined with a picker-stick check mounted on the stand and comprising fixed and rotatable coöperating friction members, a ratchet attached to the rotatable member, a swinging pawl-carrier having a pawl coöperating with the ratchet, a bunter on the pawl-carrier, to be engaged and moved by the picker-stick on its outward stroke, to effect rotative movement of the ratchet and attached friction member and thereby check the stick, a spring to set the pawl-carrier for the next operative stroke of the pawl, and means to adjust the position of the check bodily on the stand to vary the length of the operative stroke of the pawl and thereby vary the duration of the checking action on the picker-stick.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

THOMAS NEVIN.

Witnesses:
CHAS. H. CONANT,
BESSIE A. BYAM.