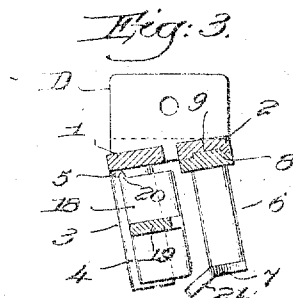
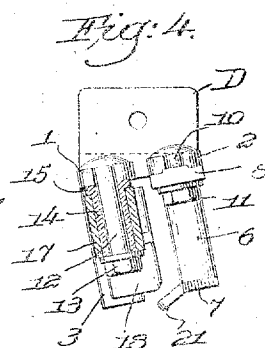
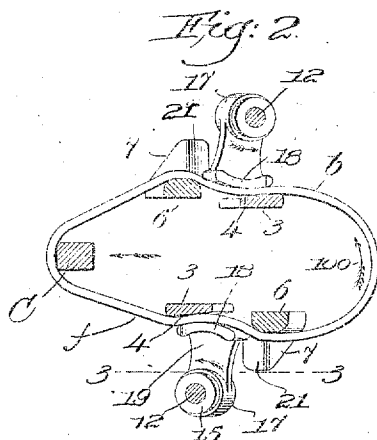


987,915.

Fig. 1.

B



Witnesses,
Edward F. Allen
Joseph M. Ward.

Groverton;
 Mary E. Prosser,
 Big Spring, N. Y.
 attn.

UNITED STATES PATENT OFFICE.

ALONZO E. RHOADES, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO DRAPER COMPANY, OF HOPEDALE, MASSACHUSETTS, A CORPORATION OF MAINE.

CHECK FOR PICKER-STICKS.

987,915.

Specification of Letters Patent. Patented Mar. 28, 1911.

Application filed November 23, 1910. Serial No. 593,805.

To all whom it may concern:

Be it known that I, ALONZO E. RHOADES, a citizen of the United States, and resident of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Checks for Picker-Sticks, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

In United States Patent No. 632,553 granted September 5, 1899 to Draper and Northrop a check for loom picker-sticks is shown, in which the check is made as an endless or closed loop of flexible material and of a length less than the stroke of the picker-stick which swings within the loop, means being provided to hold one side of the loop and release the other side on one stroke of the stick, and on the other stroke the previously held side of the loop is released and its other side held. This causes an intermittent longitudinal or creeping movement of the strap, and at the same time a gradually increasing retarding action is exerted upon the free side of the loop by a spring-controlled and eccentric detent, the force of the blow of the picker-stick being taken up partly by the unclamping action on the one side of the loop and by the gradually increasing drag on the other side, to gradually check and finally stop the movement of the picker-stick at each end of its stroke. The constantly and rapidly recurring changes in the tension of the detent controlling springs tends to undue wear and breakage, and my present invention has for its object the production of a picker-stick check of the closed and intermittently creeping loop type such as is disclosed in said patent, but with the springs wholly eliminated.

The various novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is one end of a loom lay and a part of the picker-stick, with checking means therefor embodying one practical form of my present invention; Fig. 2 is a horizontal section on the line 2-2, Fig. 1, looking down; Fig. 3 is a vertical sectional detail taken on the line 3-3, Fig. 2, to show more clearly some of the features of construction of the checking means; Fig. 4 is a front elevation and part vertical section of

one of the stands which is mounted on the lay, the sectional portion illustrating the manner in which the detent member is mounted on the stand.

The lay A, shuttle-box B thereon, the picker-stick C and its actuating devices (not shown) are and may be of usual construction.

At the front and back of the lay, near its outer end like stands D are fixedly attached, as by bolts *d*, one of which is shown in Fig. 1, and as the stands are alike some of the parts carried thereby are reversely positioned when said stands are in place. Slotted ears 1 and 2 extend outwardly from the stand in a plane at an angle to the horizontal as shown, the stand being extended downward below the ear 1 to form an upright and rigid guide-stop 3 having a beveled outer face 4. Just beneath said ear the guide-stop has a lug or projection 5 thereon, for a purpose to be described.

An adjustable deflector and loop-support 6 having an out-turned foot 7 is provided with an outwardly extended head 8 shaped to fit in a groove 9, Fig. 3, in the bottom of the slotted ear 2 of the stand, and held in adjusted position on said ear by a bolt 10 and nut 11. By loosening the nut the loop-support can be moved toward or from the path of the picker-stick, as will be apparent from Fig. 2, the outer face of said loop-support being made transversely convex, as is very clearly shown in Fig. 2.

A headed spindle 12 depends from the slotted ear 1 and is threaded to receive a nut 13, and upon the spindle is mounted a bushing 14 having an annular head 15 which is clamped against the under side of the ear when the nut 13 and a washer 16 are set up against the lower end of the bushing, see Fig. 4. Upon the bushing is loosely mounted the elongated hub 17 of a transversely-convex detent member 18, connected with and spaced apart from the hub by a short arm 19, the bushing 14 providing a bearing for the hub while preventing any cramping or binding thereof when the nut 13 is set up.

As is clearly shown in Figs. 1, 3 and 4 the detent member 18 is thus mounted to swing about an inclined axis, viz: the spindle 12, which latter is parallel to the guide-stop 3 and the loop-support and deflector 6, and by reference to Fig. 2 it will be seen the two spindles 12 are oppositely inclined. By the

arrangement shown the weight of the detent member 18 at the front of the lay always tends to swing it toward the outer end of the lay, while the tendency of the detent member at the back of the loom is to swing away from the adjacent end of the lay, but in each case the tendency is to cause the convex face of the detent member to more closely approach the beveled face 4 of the opposed guide-stop 3. This general arrangement of the parts is shown very clearly in Fig. 2, the opposed faces of a detent member and the adjacent guide-stop normally tending to diminish the distance between them to a predetermined minimum.

The check-strap E, made as a closed loop of leather or other suitable flexible material passes between the opposed faces of the two detent members 18 and their adjacent guide-stops 3, and around the convex outer faces of the loop-support 6, the lower edge of the strap being upheld by the out-turned feet 7, and by adjusting said loop-supports on their ears 2 the strap can be deflected more or less as it approaches the adjacent detent member 18; the strap always creeping in the same direction, indicated by arrow 100, Fig. 2.

When the picker-stick strikes the left-hand end of the loop E, Fig. 2, the pull of strap along the front side *f* will act, with the force of gravity, upon the front detent 18 and the latter will tend to cramp or bind the strap between itself and the adjacent guide-stop 3, while the pull along the opposite side *b* of said strap tends to rock the back detent member away from the adjacent guide-stop, against the action of gravity, releasing the strap at that side so that it can move or creep to the left, Fig. 2, as the picker-stick completes its outward stroke.

On the inward stroke of the picker-stick the operation is just reversed, for then the side *b* of the loop strap will be bound and held while the front side *f* will be released and will creep toward the right, the pull of the strap away from the thickest edge of a guide-stop 3 always acting upon the corresponding detent member 18 to release its grip upon the strap, as will be manifest.

The disposition of the weight of each detent member is such that the force of gravity thereon always tends to move such member into engagement with the strap, if the detent member is free to move, and when the pull of the strap is in the same direction the binding or cramping action upon the strap is effected. Straps of different thicknesses are provided for by adjusting the fulcrum spindles 12 in or out on the ears 1, and in the same manner the thinning of a strap by wear can be compensated for. Thus the picker-stick is checked at the end of each stroke, and the intermittent creeping of the

strap is effected to present new portions thereof to take up the impact of the picker-stick, and without the employment of springs to control the normal positioning of the detent members. The farther out the loop-supports 6 are set the greater will be the deflection of the strap and the checking friction thereupon by said supports will be increased, as will be apparent, and by slight adjustment of the spindles 12 the cramping or detaining action of the detent members can be regulated or adjusted with great exactness, so that a light or a heavy checking will result, as desired. Each loop-support 6 is located adjacent the releasing side of one of the detent members and its opposed guide-stop.

The operative or binding movement of the detent member is limited by engagement of the lug 5 on the guide-stop 3 with a corresponding lug 20 on the detent member 18, see Fig. 3, so that said member cannot by accident be swung beyond its operative position, releasing movement of the detent member being limited by engagement of the latter with the downturned tip 21 of the toe 7.

The detents 18 and their adjacent guide-stops 3 operate alternately upon opposite sides of the check-strap loop E, to hold one side and release the other side of the loop when the picker-stick moves in one direction, and vice versa on the reverse movement of the picker-stick, as in the patent referred to, but herein the beveled faces 4 of the guide-stops enable me to form the convex acting faces of the detents 18 concentric with the spindles 12, which is an easier construction to make than the cam-faced detents shown in the patent previously mentioned. The overhanging ears 1 and 2 of each stand D prevents any improper lifting tendency of the check-strap, and the feet 7 provide a suitable and relatively wide support for the lower edge of said strap.

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

1. In a loom, a picker-stick, an endless check-strap therefor, devices to frictionally grasp alternately opposite sides of the strap-loop, one of said devices holding the loop from longitudinal movement when the other device releases it to permit such movement, and vice versa, and an adjustable loop-support and deflector adjacent each of said devices, adjustment of such support varying the path of the strap-loop as it approaches the adjacent engaging device.

2. In a loom, a picker-stick, an endless check-strap therefor, devices to frictionally grasp alternately opposite sides of the strap-loop, one of said devices holding the loop from longitudinal movement when the other device releases it to permit such movement, and vice versa, a depending loop-support

and deflector having an out-turned foot upon which the lower edge of the check-strap rests, and means to maintain said support adjusted toward or away from the path of the picker-stick, to thereby decrease or increase the bend in the side of the check-strap as it approaches the adjacent engaging device.

3. In a loom, a picker-stick, a continuous and flexible creeping check-strap therefor and within which it oscillates, devices to frictionally engage alternately opposite sides of the strap-loop, each device comprising a bevel-faced guide-stop and an opposed detent member having a convex face, mounted to swing toward and from the guide-stop, longitudinal pull on either end of the loop causing one of the detent members to swing toward the opposed guide-stop, to bind the strap-loop against the beveled face of the stop while the other member swings away from its guide-stop, releasing the loop, and oppositely inclined fulcrum upon which said detent members swing, said fulcrum being so inclined that each detent member is normally moved by gravity toward operative position.

4. In a loom, a picker-stick, a continuous and flexible creeping check-strap therefor and within which it oscillates, devices to frictionally engage alternately opposite sides of the strap-loop, each device comprising a fixed guide-stop and a gravity-controlled, pivoted detent member movable toward and from the adjacent guide-stop, longitudinal pull on either end of the strap-loop causing one detent member to bind the loop while the other detent member is moved against the action of gravity to release the loop, and means to vary the distance between the opposed faces of a detent member and guide-stop, to provide for straps of different thicknesses and to compensate for wear.

5. In a loom, a picker-stick, a continuous and flexible creeping check-strap therefor and within which it oscillates, devices to frictionally engage alternately opposite sides of the strap-loop, each device comprising a fixed guide-stop and a cooperating pivotally-mounted detent member to receive the straps between them, said stop having a beveled face and the detent member hav-

ing an opposed convex face, and an inclined fulcrum upon which the detent member is mounted, combined with a loop-support adjustably mounted near the releasing side of each engaging device, to vertically sustain the check-strap and also to deflect the same more or less adjacent to the point at which it is bound intermittently by the engaging device.

6. In a loom, a picker-stick, an endless, flexible check-strap therefor and within which it oscillates, supports to engage the lower edge of and sustain vertically the said strap, and binding devices acting in alternation upon opposite sides of the strap-loop to hold one side and release the other, and vice versa, each of said devices comprising a depending and fixed guide-stop against the outer face of which the strap travels, a detent member having a convex face to engage and at times press the strap against the guide-stop, an inclined fulcrum spindle upon which the detent member is mounted to swing, the action of gravity moving said member toward binding position, and stops to limit swinging movement of the detent member, pull upon the strap-loop by the picker-stick causing one of the detent members to bind, and the other of said members to release, the strap.

7. In a loom, a picker-stick, an endless, flexible check-strap therefor and within which it oscillates, binding devices acting in alternation upon opposite sides of the strap-loop to hold one side and release the other, and vice versa, when the picker-stick engages the end of the loop, each binding device comprising a fixed guide-stop and a detent member movable toward and from it, to bind or release the portion of the strap-loop between them, and fixed, oppositely inclined fulcrum for the two detent members, each fulcrum being so inclined that its detent member tends normally to swing toward its adjacent guide-stop to decrease the distance between their strap-engaging faces.

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

ALONZO E. RHOADES.

Witnesses:

FRANK H. FRENCH,
E. D. OSGOOD.