

(No Model.)

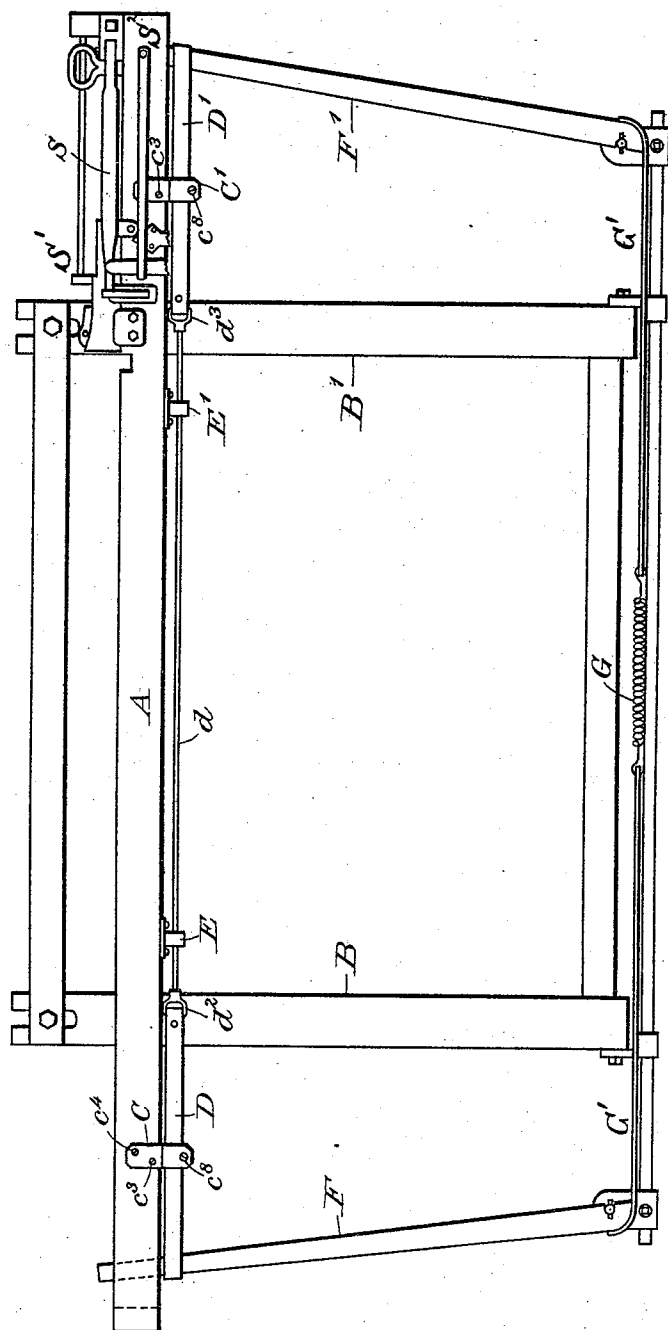
2 Sheets—Sheet 1.

S. GREENWOOD.
PICKER CHECK FOR LOOMS.

No. 485,686.

Patented Nov. 8, 1892.

— Fig. 1. —



Witnesses.
Saml. G. Stephens.
David W. Dewar.

Inventor.
Saml. Greenwood

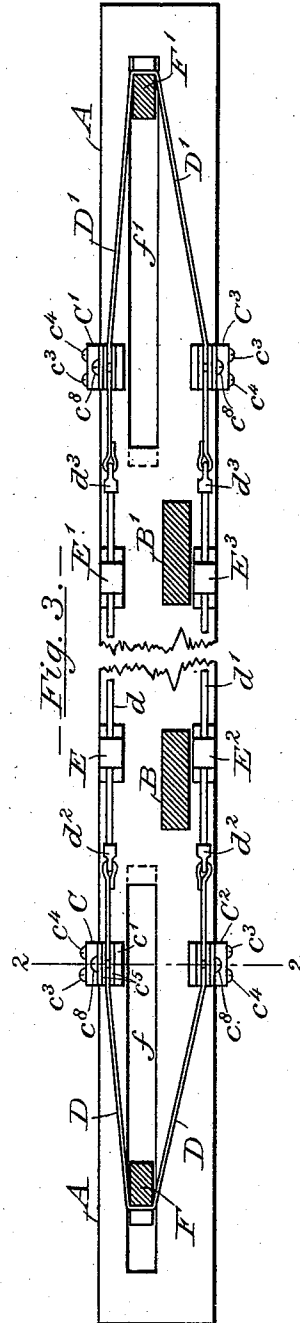
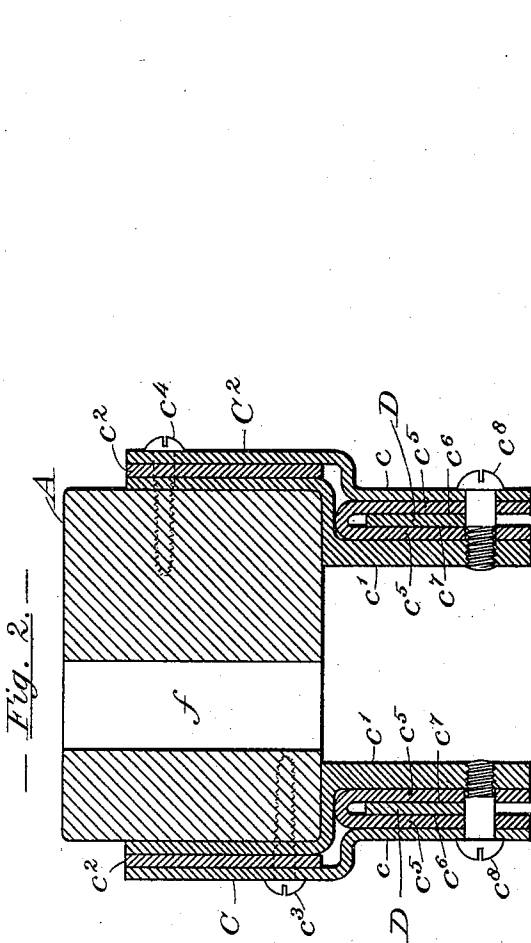
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UNITED STATES PATENT OFFICE,

SAMUEL GREENWOOD, OF LOWELL, MASSACHUSETTS.

PICKER-CHECK FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 485,686, dated November 8, 1892.

Application filed November 17, 1891. Serial No. 412,157. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL GREENWOOD, a subject of the Queen of Great Britain, residing at Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Picker-Checks for Looms, of which the following is a specification.

My invention is designed as an improvement upon the picker-check which is presented in the Letters Patent granted to me May 16, 1876, No. 177,393.

It consists in a picker-check for looms embodying a novel construction and combination of parts, all as will first be fully described in connection with the accompanying drawings, and then particularly pointed out and distinctly defined in the claim at the close of this specification.

My invention has among its objects to simplify the construction of a picker-check on the order of that presented in my Letters Patent aforesaid, and thereby make it less costly to manufacture; to arrange the parts of a picker-check more satisfactorily with respect to one another, so that the stresses, strains, and wear incident to its use will be more regularly distributed throughout its parts and the durability will be increased, and to render the devices for regulating the friction of the check more perfectly adjustable and less liable to derangement.

In the accompanying drawings, Figure 1 is a view in front elevation of a loom-lay having my invention applied thereto, the said view representing the shuttle-box which is at one of the ends only of the lay with those portions of the usual protecting mechanism which are adjacent to the shuttle-box that is so shown. Fig. 2 is a view in cross-section on line 2 2 of Fig. 3; and Fig. 3 is an inverted or bottom view of the lay, showing the swords or arms thereof and the picker-sticks in section.

The lay beam or sill is shown at A, the lay sword or arms at B B', the picker-sticks are shown at F F', and at G G' G' are shown the spring and straps, which are connected with the lower ends of the picker-sticks, the said spring G acting to move the upper ends of the picker-sticks outwardly, as usual.

At S is shown the usual movable front or swell of the shuttle-box, which is located at

the right-hand side of the lay in Fig. 1; at S' the usual finger, which is carried by the ordinary protector-shaft (not shown) and caused to bear by its upper free end against the front or swell S by the spring S², all as usual.

In my former invention, presented in the patent above mentioned, the outward movement of the picker-sticks is checked by means of hooks or offsets extending laterally into the paths of the said picker-sticks from blocks situated to one side of the plane of motion of the picker-sticks, each block having a slot therethrough for the passage of a screw having its threaded end entered into the under side of the lay-beam, the stem of the said screw below the block having thereon a leather or other packing-piece in contact with the under side of the block, a plate partially covering the covering-plate and the head of the screw, the tension of the spring and the friction created in the movement of the block being regulated by turning the screw. A leading disadvantage of this construction is the decided twisting or side stress or strain which results from the blows of the picker-sticks against the laterally-extending offsets or hooks, this stress or strain racking the devices, being destructive of the combined parts, and occasioning an excess of friction which cannot be controlled by the screws. Other disadvantages are the unsatisfactory working of the adjusting devices and the liability of such devices to get out of order.

In accordance with my present invention I provide straps D and D', one for each picker-stick. Each of these straps is doubled upon itself, as shown clearly in Fig. 3, so as to form a loop or bight, within which is located the corresponding picker-stick. Friction-clamps C C² are attached to the lay beam or sill in front and in rear, respectively, of the slot f, within which the picker-stick F works, and through these clamps are passed the opposite ends of the strap D. Similar friction-clamps C' C³ are similarly disposed with relation to the slot f', within which the picker-stick F' works, and through them are passed the opposite ends of the strap D'. The extremities of the straps D D' have secured thereto loops d² d² and d³ d³, respectively, which screw onto the opposite ends of the rods d d. (Shown in

Figs. 1 and 3.) The said rods $d d$ are supported by and slide through stands $E E^1 E^2 E^3$, in which are secured leather brushings for the purpose of reducing the wear of the rods.

5 The construction of the friction-clamps is shown clearly in Fig. 2. Each clamp consists of two metal parts $c c'$, which preferably are made of malleable iron. Between the upper portions of the parts $c c'$ is placed a piece of

10 leather c^2 for the purpose of separating somewhat the said upper portions and getting a more even pressure upon the leather strap D or D' , which passes between the lower portions of the parts $c c'$. Screws $c^3 c^4$ secure the

15 clamps to the lay beam or sill. Those portions of the parts $c c'$ of a clamp which depend below the lay-beam or lay-sill have placed between them the horseshoe-piece of leather c^5 , between the limbs of which is passed the

20 portion of the strap D or D' which is acted upon by that clamp, the said portion of the strap sliding between and in contact with the faces $c^6 c^7$ of the said piece of leather c^5 . A screw c^8 passes through part c and the piece

25 of leather c^5 and is tapped into the part c' , so that by tightening or loosening the said screw c^8 the necessary friction upon the straps may be obtained to check and arrest the motion of the shuttle.

30 The action of the described construction and combination of parts in checking a shuttle is clearly apparent, and is as follows: As will be observed in Fig. 1, the spring G , which is connected with the lower ends of the picker-

35 sticks $F F'$ by the straps $G' G'$, tends to hold the upper ends of the said picker-sticks separated as far as is practicable and to keep the leather straps $D D'$ and the rods $d d'$ taut. The length of the straps D and D' and their

40 connections is not sufficient to permit both the picker-sticks to be at the outer extremities of the slots $f f'$ at the same time. In the drawings picker-stick F is shown at the outer extremity of the slot f' . Therefore, when the

45 picker-stick F is struck by the shuttle after the flight of the latter across the loom from right to left in Fig. 1 the said picker-stick is free to move a short distance to the left. The force of the blow is overcome and the shuttle

50 is checked and arrested by the resistance arising from the friction generated in the movement of the straps $D D'$ through the clamps $C C' C^2 C^3$ as the picker-stick F thus moves. This movement of the picker-stick F

55 causes the picker-stick F' to be drawn, through the described connections, away from the outer end of slot f' into position to receive the blow

of the shuttle in the flight of the latter from left to right. It will be seen that in this my present invention each outward movement of either picker-stick under the impact of the shuttle is resisted by the friction created by all four friction-clamps, and also that the strains occurring while the shuttle is being checked are perfectly balanced by the employment of the looped straps $D D'$ and of the clamps acting upon the two ends of each of such straps on opposite sides of the line of movement of the picker-sticks. In practice the two clamps acting upon the ends of each strap are placed as nearly as possible equidistant from the plane of movement of the picker-sticks, in order to balance the strains most perfectly. In my present device the wear is very light and is uniformly distributed.

75 In my former invention the adjusting-screws $f' f'$ shown in my patent aforesaid were screwed into the wooden substance of the lay beam or sill and the thread in the hole in the latter was easily worn out by the turning and reversing of the said screws. This defect is wholly obviated in my present construction. The eye-shaped heads of the said adjusting-screws render the screws liable to be bent or knocked out of place by an accidental blow, whereas the screws c^8 neither project into the way nor are liable to injury.

The ordinary method of checking and arresting the motion of a shuttle by means of powerful binder-springs located in or adjacent to the shuttle-box causes excessive wear of the shuttle and requires a very powerful blow of the picker-stick for the driving of the shuttle out of one box and across the loom to the other box. By the use of a checking device on the order of that shown the use of powerful binder-springs is rendered unnecessary and the shuttle may be driven with a blow of reduced force.

I claim as my invention—

100 The combination of the picker-sticks with the leather straps passing around the tops of the picker-sticks, means for connecting together the corresponding ends of the said straps, and the clamps engaging with the opposite sides or limbs on each of the loops of the said straps, substantially as described.

In witness whereof I have signed this specification, in the presence of two attesting witnesses, this 6th day of November, 1891.

SAMUEL GREENWOOD.

Witnesses:

SAML. G. STEPHENS,
GEORGE W. POORE.