

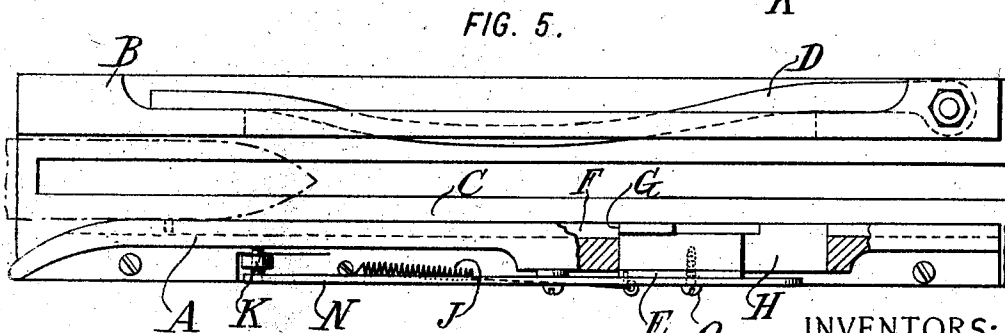
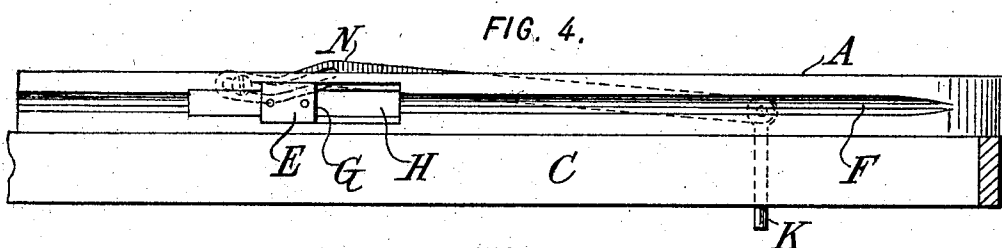
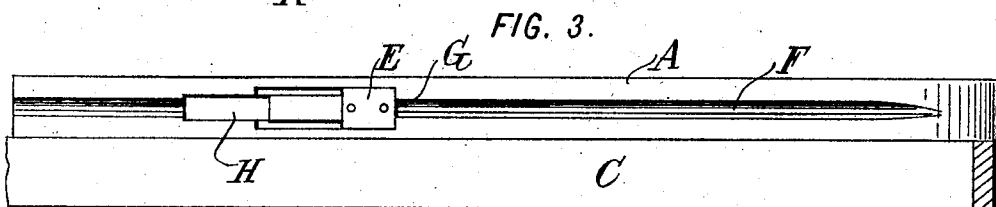
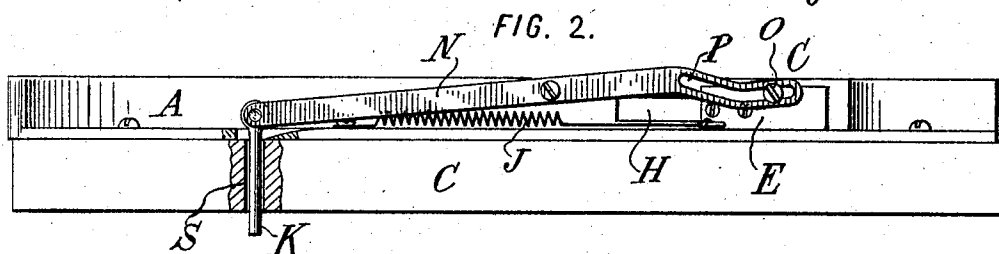
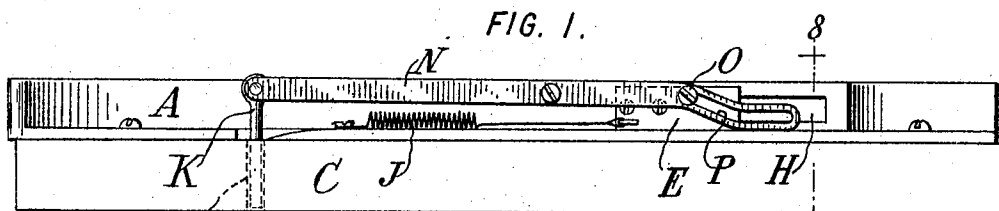
No. 815,950.

PATENTED MAR. 27, 1906.

N. FOERSTER, D. J. CAREY & W. A. FOSTER.

SHUTTLE BOX.

APPLICATION FILED OCT. 12, 1903. RENEWED AUG. 29, 1905.



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SHUTTLE-BOX.

No. 815,950.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed October 12, 1903. Renewed August 29, 1905. Serial No. 276,324.

To all whom it may concern:

Be it known that we, NORBERT FOERSTER, DANIEL JOSEPH CAREY, and WILLIAM ASTON FOSTER, citizens of the United States, and residents of the borough of Manhattan, city, county, and State of New York, have jointly invented certain new and useful Improvements in Shuttle-Boxes, of which the following is a specification.

In many looms mechanism is provided for controlling the operation of the loom, as by supplying new weft to the shuttle or supplying a new shuttle or operating a stop-motion, which controlling mechanism is actuated automatically from the shuttle at the desired moment.

This invention provides a shuttle-box or a mechanism to be used in proximity to a shuttle-box whereby the movement of the shuttle or of a suitable device carried thereby is transmitted to the loom-controlling mechanism.

In the forms shown the invention is applied to a shuttle-exchanging loom of the class shown in the patent of Brun, Brun, and Bicking, No. 714,665, dated December 2, 1902; but the invention in its broadest aspect is applicable as an improvement to various other types and specific constructions of loom mechanism.

The accompanying drawings illustrate embodiments of the invention.

Figures 1 and 2 are front elevations of a shuttle-box front carrying the improved device. Figs. 3 and 4 are rear or inside elevations of the same shuttle-box front. Figs. 1 and 3 represent the parts in their normal inoperative position. Figs. 2 and 4 represent them in the operative position, to which they are moved by the shuttle. Fig. 5 is a plan of the new shuttle-box.

We will assume that the shuttle is such as is described in the aforesaid patent of Brun, Brun, and Bicking and from the side of which a pin is projected when the thread in the shuttle is nearly exhausted. The invention, however, may be used in connection with shuttles carrying any other suitable device.

The complete shuttle-box, as herein illustrated, comprises a front A and a rear B and a race-board or bottom C, which is slotted to

permit the passage therethrough of the picker-stick. The rear wall B carries a swell D, which is pressed inward with a spring-pressure in any known or suitable manner and which serves to frictionally hold the shuttle between itself and the front wall of the shuttle-box, so as to prevent it rebounding, and which serves other purposes not pertinent to the present invention. The various parts of the box may be made of any suitable material. The race-board is usually of wood and the front and rear walls of metal or wood.

According to our improvement as illustrated, the front wall A carries a member, such as the slide E, which is flush with the inner face of the box-front and in position to be engaged by the shuttle-pin when the latter is projected. The inner face of the box-front has a groove F, in which the projected pin may travel and which may be made of considerable width to allow of use with shuttles of various depths. The contact face or edge G of the slide E is preferably vertical and at any rate should have a considerable vertical dimension, so that it will be operatively engaged by the shuttle-pin at whatever height (within a wide range) this pin may stand.

The box-front A is provided with a slot H, and the slide E may conveniently be guided in this slot without the necessity of additional guides. For this purpose the slide is formed with a smaller intermediate portion traveling in the slot H and with enlarged heads at the inner and outer sides, the inner head traveling in a suitably-shaped recess in the inner face of the box-front. The slot H being closed at both ends has no appreciable weakening effect upon the box-front, the two ends of which are rigidly supported.

The slide E moves forward, as will be seen, in the direction of the movement of the shuttle. For holding the slide E and parts connected thereto in normal inoperative position, Figs. 1 and 3, a spring, preferably on the outside, as at J, is attached at one end to the slide and at the other end to a fixed point on the box. The slide E may be an integral block extending entirely through the slot H, or it may be, as illustrated, an intermediate block faced with metal plates, constituting the heads referred to, on the outside and inside and obviating the need of other guides.

than the slot for preventing lateral movement.

The means illustrated for controlling the loom mechanism is a striker—such, for example, as the vertically-reciprocating pin K of Figs. 1 to 5. When the shuttle-thread is exhausted, the striker is thrown to such position that the swinging of the lay causes the striker to strike a slide, the movement of which controls the loom mechanism in any one of the manners above referred to. To obtain the vertical movement, the striker may be pivoted at one end of a lever N, while the slide E carries a pin O, which works in an oblique slot P in the opposite end of the lever and by its reciprocation raises and lowers this end of the lever and lowers and raises the striker K. The pin O may be provided with an antifriction-roller of any suitable style. This construction is especially advantageous, in that it converts a long movement of the slide into a short movement of the striker, which utilizes a long comparatively gentle movement of the shuttle near the end of its shoot and opposes a minimum of resistance to the movement of the shuttle. Furthermore, the nature of the cam-slot in which the pin O works locks the striker in position, and any tendency to throw the striker out of position is converted into a tendency to vertical movement of the slide, which is resisted by the walls of the slot and is not materially transmitted to the shuttle.

It is understood that the spring J, while strong enough to quickly retract the slide E and the striker when the slide is no longer held by the pin of the shuttle, is yet weak enough to permit the shuttle to be held in place by the swell D until it is again thrown by the picker, so that when the shuttle, with its pin projecting, strikes the slide E and operates the striker K the latter is held in operative position during the following beat of the lay and until the shuttle is thrown again

to the opposite side of the loom. The striker moves through a hole or slot S, formed in the projecting portion of the base of the shuttle-box.

The complete mechanism shown is very simple in construction and not liable to get out of order with long or hard usage. It is compact and being chiefly on the outside of the shuttle-box is easily accessible and is easily applicable to old shuttle-boxes now in existence.

Though we have described with great particularity of detail certain embodiments of our invention, yet it is to be understood that the invention is not limited to the particular embodiments disclosed. Various modifications thereof in detail and in the arrangement and combination of the parts may be made by those skilled in the art without departure from the invention.

What we claim is—

In combination, a shuttle-box front A having a closed slot H, a slide E having an intermediate portion guided in said slot and having at its inner side an enlarged head wider than said slot, said head being in position to be struck and moved by a suitable device carried by a shuttle, a lever N on the outside of the box-front and having a slot P, a pin O carried on the outside of the slide and engaging said slot to move said lever vertically as the slide moves horizontally, and a striker K moved from an inoperative and to an operative position by said lever.

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

NORBERT FOERSTER.
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WILLIAM ASTON FOSTER.

Witnesses:

FRANK G. SWARTWOUT,
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