

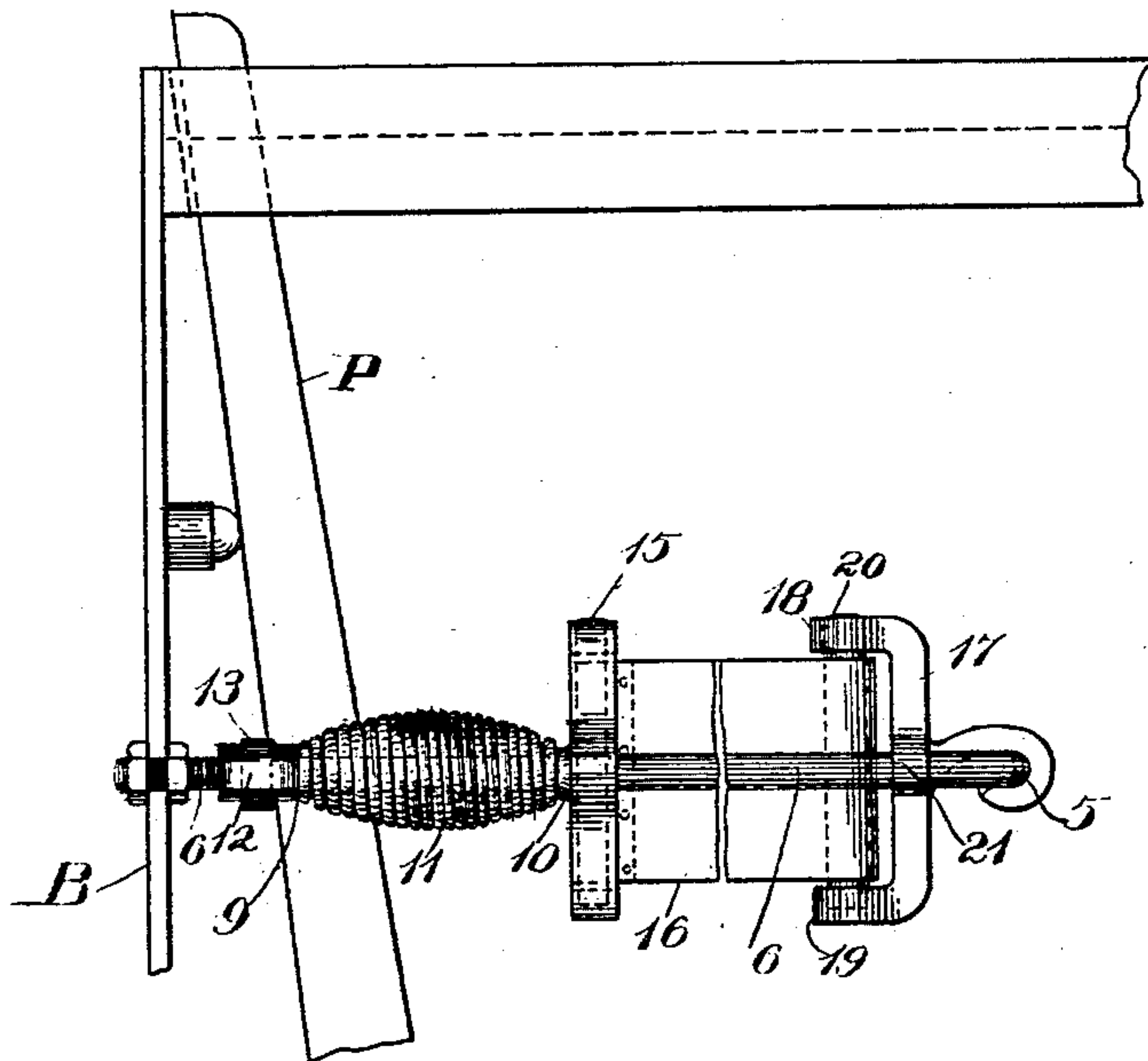
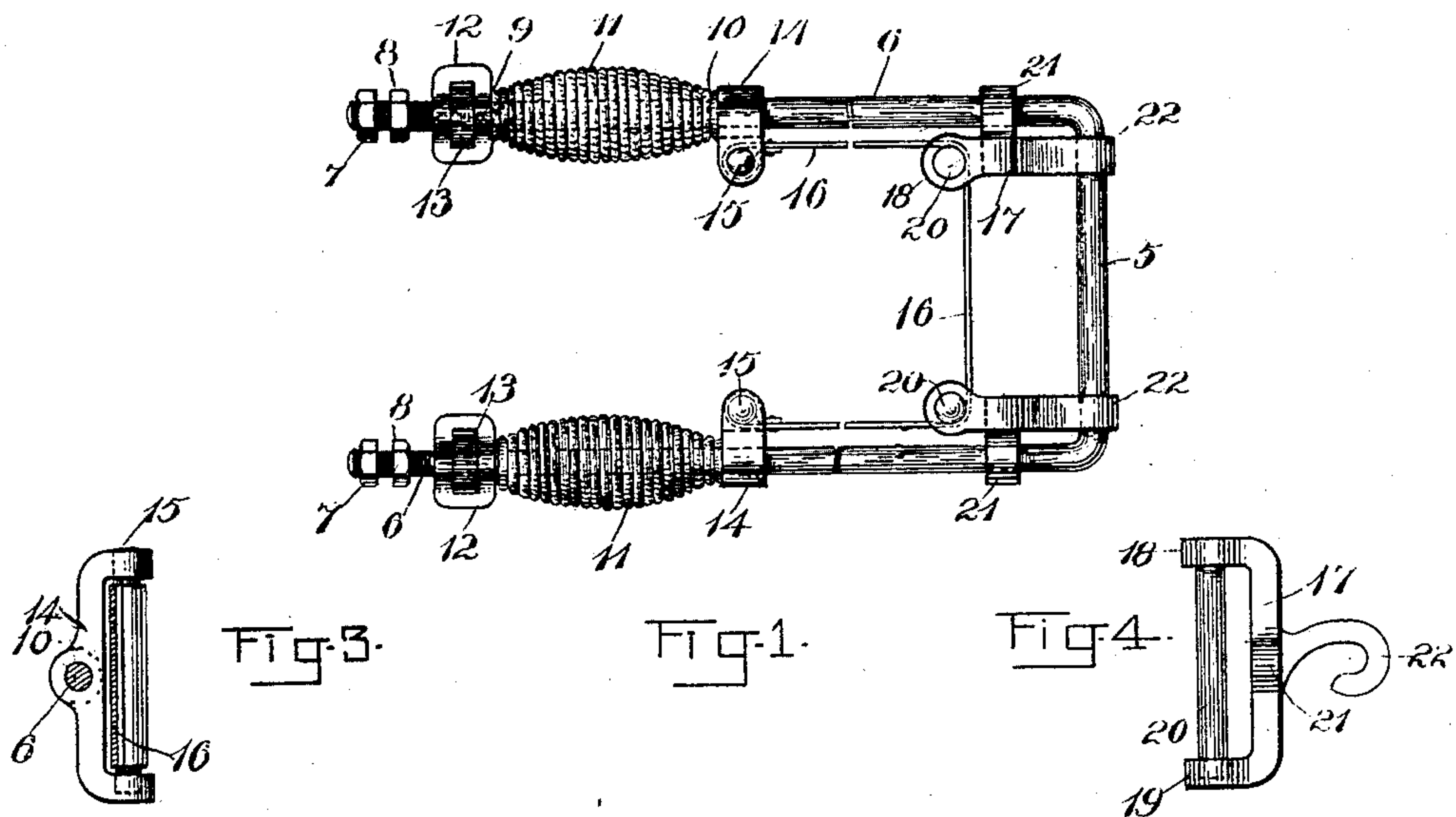
No. 677,561.

Patented July 2, 1901.

F. B. COMINS.
PICKER STAFF CHECKING DEVICE.

(Application filed Jan. 7, 1901.)

(No Model.)



WITNESSES

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Fig. 2.

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UNITED STATES PATENT OFFICE.

FRANK B. COMINS, OF SHARON, MASSACHUSETTS.

PICKER-STAFF-CHECKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 677,561, dated July 2, 1901.

Application filed January 7, 1901. Serial No. 42,310. (No model.)

To all whom it may concern:

Be it known that I, FRANK B. COMINS, a citizen of the United States, residing at Sharon, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Picker-Staff-Checking Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention has reference to improvements in checking devices for limiting the movements of picker-staffs.

One object of the invention is to so construct a picker-staff buffer or check that the movement of the picker-staff may be limited to approximately its driving action on the shuttle.

Another object of the invention is to so construct a picker-staff buffer or check that the inertia of the staff at the end of its shuttle-throwing action may be overcome and its initial recovery assisted.

Another object of the invention is to so construct a picker-staff buffer or check that resistance is effected in planes parallel to the path of the staff and the impact thereof on the check and laterally removed therefrom.

Another object of the invention is to so construct a picker-staff buffer or check of the nature described that the check may receive the shuttle-throwing blow of the staff, may be reversed to receive the recovery impact of the staff, or, when duplex, may act on the staff in both directions.

35 The invention consists in a strap, means for sustaining the same across the path of a picker-staff and at the sides of such path, and spring resistance mounted on positive guides and connected with the ends of the strap.

40 The invention also consists in a U-shaped frame, vertical guides mounted therein, spring resistance devices on the frame-arms, and a strap secured to such devices and supported on the guides.

45 The invention also consists in the U-shaped frame, adjustable spring resistance devices on the frame-arms, a barrier-strap connected with the resistance, and means for sustaining the strap, said frame and its mechanism being reversible.

50 The invention also consists in such other novel features of construction and combina-

tion of parts as shall hereinafter be more fully described, and pointed out in the claims.

Figure 1 represents a plan view of the improved picker-staff buffer or check, partially broken away in length, as its length is determined by the throw of the picker-staff. Fig. 2 represents an elevation of the same attached to a portion of a loom. Fig. 3 represents a detail view of one of the strap attachments and slides, Fig. 4 representing a detail of one of the strap-guides.

Similar characters of reference designate corresponding parts throughout.

Picker-staffs of looms generally move beyond the point to which they are driven by the picker-arm. This momentum movement of the staffs in some instances being equal to twenty-five per cent. of the distance they are driven has no driving effect on the shuttle, as the shuttle leaves the picker shortly after the speed of the latter decreases. As the speed of the loom depends largely upon the time consumed in making the pick and recovering the picker to its initial point of action, the time lost during the momentum movement and its recovery to the point at which it has ceased to be driven by the picker-arm requires a corresponding delay to the complete recovery of the picker.

The main objects of this invention are to intercept the picker-staff as nearly as is practical at the point at which it ceases to be driven, to overcome the inertia of the staff, and to assist its recovery. In carrying these objects into practice it is essential that the construction and operation of the picker-staff and its action on the shuttle should be held in mind.

In the drawings the checking mechanism is mounted on a U-shaped frame, of which 5 is the closed end, and 6 6 are the arms, herein shown as broken away, as their length depends somewhat on the throw of the picker-staff. The end portions of these arms are screw-threaded, and on these threaded portions are screwed the nuts 7 7 and 8 8, by means of which the frame and its mechanism may be secured and adjusted as a whole on any suitable support, as the bracket B, extending from some convenient portion of the loom. On each of the arms 6 6 are movable collars 9 and 10, between which is secured a spring

11. The collar 9 is fixed to or formed in part with a yoke 12, perforated to move on the arm 6 and supplied with a nut 13, which works on the threaded portion of the arm.

5 The collar 10 is formed in part with the vertical frame 14, perforated to move on the arm 6 and having the strap-pin 15. To each of these pins 15 is secured in any usual manner the check-strap 16.

10 In order to sustain the strap, the U-shaped frame is furnished with a pair of fittings which have the vertical frames 17, in the horizontal ends 18 and 19 of which are journaled the rolls 20, whereby the main portion of the

15 strap is sustained in a vertical position. From these frames 17 extend the ears 21, perforated to slide on the arms 6, and the hooks 22, which engage the end 5 of the U-shaped frame. When the hooks 22 are engaged with

20 the end 5 of the U-shaped frame, the tension of the springs is adjusted by the nuts 13 to exert the desired pressure on the strap 16, the reaches of the strap between the pins 15 and the rolls 20 being parallel to the path of the

25 picker-staff P when secured in position, as shown in Fig. 2, and the movement of the frames 14 along the arms 6, which serve as guides, being resisted in similar planes. The device being mounted as shown in Fig. 2 of

30 the drawings, the reach of strap between the rolls 20 20 is sustained across the path of the picker-staff as a barrier to intercept the staff at the limit of its driven motion. When in its shuttle-throwing action the staff strikes

35 this portion of the strap, this reach of strap is bowed out toward the end 5 of the U-shaped frame, thus drawing the strap over the rolls 20 20 and drawing the frames 15 15 along the arms 6 6 against the action of the springs

40 11 11, the rotation of the rolls 20 20 allowing an easy movement of the strap thereon. When the impetus of the staff has been overcome by the resistances or springs 11 11, the retraction of the springs effects a sudden initial

45 recovery movement of the staff, so that the loss of time in the recovery of the staff to the limit of its driven motion is essentially eliminated.

50 It is obvious that this device may be reversed when desired to act as a picker-staff buffer or that a duplex form of the same may be used without departing from the spirit of this invention.

The distance below the shuttle-race at

which this device is secured within certain 55 limits should be determined by practice and is not material.

I do not confine myself to the use of two springs, as one end of the strap may be fixed, if desired, and but one spring used, thus accomplishing a somewhat similar but imperfect effect. 60

Having thus described my invention, I claim as new and desire to secure by Letters Patent— 65

1. A picker-staff check comprising a pair of guides adapted to be mounted at the sides of the picker-staff path, members having vertical extensions free to move on the guides, a check-strap secured to the vertical members, means for sustaining the intermediate portion of the strap, and resistances connected with such vertical members. 70

2. A picker-check comprising a U-shaped frame, means for securing the same in position, spring resistances adjustably mounted on the arms of the frame and having guide members movable on said arms, a strap secured at its ends to such guide members, and rolls mounted in the frame for sustaining intermediate portions of the strap. 80

3. A picker-check comprising a barrier, a frame in which the barrier is mounted, a support for the frame, means for adjusting the frame longitudinally in its support, a spring resistance on the frame and connected with the barrier, and means for adjusting the spring resistance independently of the frame adjustment. 85

4. The combination with the frame having the end 5 and the arms 6 6, of the yokes 12 and the frames 14 movable on the arms 6, the springs 11 11 secured between the yokes and the frames, the nuts 13 working on the arms 6 within the yokes, the strap 16 secured to the pins 15 of the frames 14, and the frames 17 having the perforated ears 21 working on the arms 6 and the hooks 22 engaging the end 5, and provided with the rolls 20 on which the intermediate portion of the belt is sustained 90 as and for the purpose described. 95

In testimony whereof I affix my signature in presence of two witnesses.

FRANK B. COMINS.

Witnesses:

W. STANLEY CAMPBELL,

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