J. Welsh.

Picker Check.

No. 12,981. Patented May 29, 1855.

Fig: 1.

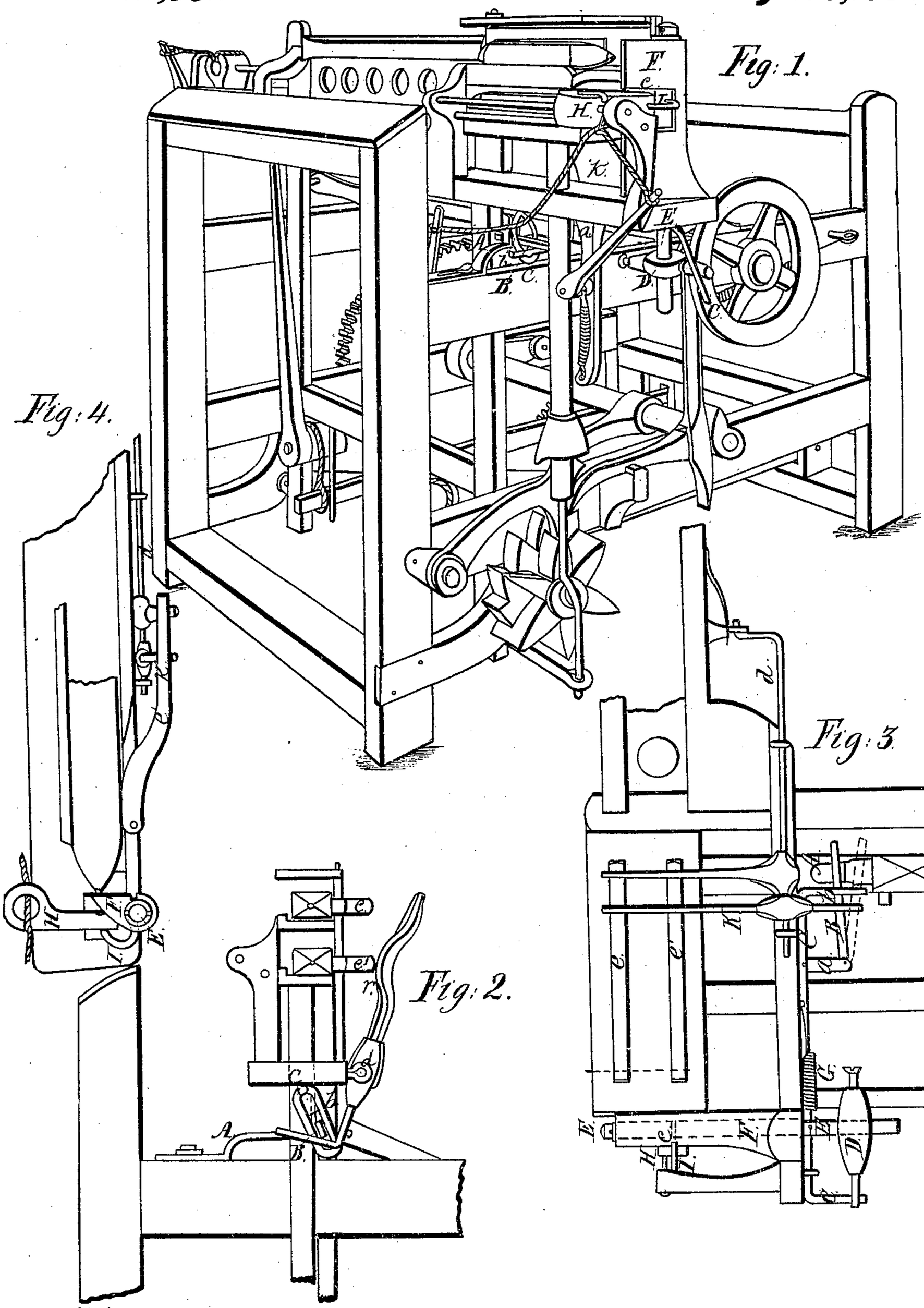

Fig: 4.

Fig: 3.

Fig: 2.

Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH WELSH, OF PHILADELPHIA, PENNSYLVANIA.

LOOM.

Specification of Letters Patent No. 12,981, dated May 29, 1855.

To all whom it may concern:

Be it known that I, JOSEPH WELSH, of the city of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Looms; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a perspective view of a double-box loom with the improvement attached; Fig. 2, a transverse section of part of the same; Fig. 3, a like sectional back view; and Fig. 4, a sectional top view—like letters indicating the same parts when on the different figures.

The nature of my invention consists in an improved mode of relieving the tip or point of the shuttle from contact with the picker so that it shall be so relieved previously to the commencement of the up or down motion, of the box containing it; and also in so adapting the said invention, when applied to three or four box looms, as to prevent any of the shuttles skipped, being displaced by the action of the picker stopper, during the up or down motion of the said box. These important and necessary results are attained by means of a stop or stud, which is adjustably affixed upon the frame of the loom, so as to operate a latch combined with a rock shaft which is attached to the under side of the lay, and connected with a partially rotating stud, having a curved metallic piece projecting therefrom (which may be called the picker stopper) and which on every forward motion of the lay, may at the option of the attendant, be caused by the said stop or stud, to recede after arresting the shuttle, so as to allow the picker to follow in contact therewith, and thus relieve the said shuttle from its contact with the picker, before the shuttle box commences to move, the said stop and latch or lever, being also so arranged and combined with the lay, that at the pleasure of the operator or attendant, the action of the shuttle may cause the picker stopper to recede from and relieve the point of the shuttle from contact with the picker, only during the presence of the said shuttle in the box opposite the picker—and so that when it is necessary (as in three and four box looms) to throw in immediate succession, the upper and lower shuttles, while the intermediate shuttles are skipped or remain in the box—the said remaining shuttles may not be affected by the stopper, nor be struck back or become displaced by the action of the same during the necessary up and down motion of the box, as heretofore.

Referring to the drawings—A, is the stop or stud which is adjustably affixed upon the top or side of the frame of the loom, by means of a headed screw adapted to a slot in the base of the stud, in the usual manner, the said stud being formed and placed so as to present a stop capable of either arresting the forward motion of the latch (B), or, allowing it to pass freely beneath the same, as occasion may require during the forward motion of the lay.

C, is the rock shaft, attached to the lower side of the lay, having fixed to it a small piece of metal (*a*) which projects downward therefrom near its inner end so as to produce a point of attachment for the fulcrum of the latch (B), the said inner end of the rock shaft being bent down so as to form a projection (*b*) with an oblong slot therein, within which the latch (B) may freely move up and down, so as to be brought either in contact with the stop (A), or allowed to pass under the same, as shown in the drawing. The outer end of this rock shaft (C) is also bent downward, so as to come in contact with an arm (D) which is adjustably affixed, near the lower end, of a cylindrical piece or stud (E) which passes up through a stationary post (F) on the end of the lay, so as to be capable of being partially rotated therein by the combined action of the rock shaft (C) and a spiral spring (G) as shown in the drawing.

The fixed post (F), is made broad and high enough to cover the open ends of the shuttle boxes and the middle portion cut sufficiently away, as shown at (*c*), to allow the end of the picker (H) to pass the same freely while in contact with the curved piece or stopper (I) which projects from, and moves with the partially rotating stud (E), as shown in the drawing. Adjusted so as to move upon the usual finger shaft (*d*) is an additional finger piece (K) which has its lower end bent so as to cross under and support the latch (B), and its upper end extended upward and bent so as to come in contact with one of the swells (*e* or *e'*)

which is acted upon, or forced out by the shuttle which is to be relieved from the contact of the picker.

The operation of my invention is as follows: On the entrance of the shuttle within the box, the swell attached to the back of the box is forced out in the usual position, which swell being in contact with the finger (K) causes its lower end to lift the latch (B), so that, on the forward motion of the lay, the said latch comes in contact with the stop (A), and (the latch) being confined within the slotted projection (*f*) of the rock shaft (C) this latter is caused to press back the projecting arm (D) which is adjustably fixed upon the cylindrical stud (E)—thus causing a partial rotation of the said stud, which carrying with it the attached curved piece or picker stopper (I) allows the picker to recede in contact therewith the full distance required from the tip of the shuttle opposite thereto, before the shuttle box commences to move; and when the shuttle is not in the box, the latch (B), resting upon the lower part of the loose finger (K) will sink with it sufficiently to pass beneath the said stop (A) so as to avoid any contact therewith, and thus the rock shaft (C) and consequently the picker stopper (I) is not actuated, and therefore the picker stopper remains stationary, supporting the picker in position for receiving or throwing the next shuttle when required.

It will now be evident that unless a shuttle is in the box which may be opposite to the picker, no receding motion of the picker can take place, and also, that whenever a shuttle is in the said box, the picker stopper (I) must always recede and allow the picker to follow and thus be separated from the tip of the shuttle at every forward motion of the lay and before the box commences to move; or, as it is sometimes necessary, for only one shuttle to be used, and therefore no receding motion of the picker required—that the finger (K) has only to be shifted aside, off the swell—and the picker will of course not be caused to recede. It will also be evident that if the latch (B) is permanently elevated in the slotted end (*b*) of the rock shaft (by inserting a wedge or block beneath it) so as to come in contact with the stop (A) at every forward motion of the lay, the picker stopper will recede at every such forward motion, whether the box moves or not. This latter effect may indeed be produced as well in the absence of the latch (B) and finger piece (K), by simply adjusting the stop (A) so that it shall come in contact directly with the arm (*b*) of the rock-shaft (C)—and hence it is designed by me to take off or shift aside the latch (B) and the finger piece (K) and so to adjust the stop (A) as to cause it directly to operate the rock shaft independently of the shuttle, as described—though their remaining on the loom attached as described, will not be attended with any inconvenience.

In my invention of improvements in looms patented January 9, 1855, and also in the invention patented by Barton H. Jenks April 4, 1855, ample provision is made by devices, more or less complicated, for arresting the picker in looms having a moving shuttle box, so as to permit the up and down motion of the box, but however sufficient they may be for the purpose of arresting the picker and causing it to move or recede from the tip of the shuttle in contact therewith, so as to permit the rising and falling motion of the box, being entirely dependent for their action in relieving the tip of the shuttle, upon devices which are actuated either directly by the motion of the shuttle-boxes themselves or by the motion of the same indirectly acting from some other part of the loom and independently of either the presence or absence of the shuttles, they are necessarily imperfect; and besides, neither of the said devices are capable of performing their functions without causing a derangement of the intermediate shuttles, when applied to three and four-box looms, wherein the upper and lower shuttles thereof often require to be thrown in immediate and alternate succession, while the intermediate or skipped shuttles remain in the box; whereas in my present invention, as herein described, this defect is entirely and fully remedied, as when the alternate motion of the upper and lower shuttles is required while the intermediate shuttles remain in the box, the motion of the picker stopper, being primarily caused by the shuttle itself acting only while it is in the box which is then opposite the picker, any shuttle not in this position can have no effect upon the action of the picker stopper. And during the motion of the boxes up and down, though the intermediate or "skipped" shuttles come to be in succession opposite to the picker for the moment they are passing the same, they cannot be affected or touched by the picker, and consequently the said "skipped" shuttles remain in position and undisturbed thereby; but in the devices patented as before designated, the picker, from the manner in which it is actuated, is caused to strike the tips of these intermediate shuttles as they pass the same and the shuttles are consequently knocked forward by the picker so as to arrest the motion of the box, or certainly produce breakage. Again in the devices patented by B. H. Jenks April 4, 1855, as before designated, the picker cannot move out of the way of, or recede from the tip or point of the shuttle previously to the moving of the box, as therein stated—because the picker stopper, receiv-

ing its action from the box-motion, must, in its movement, necessarily be subsequent to that of the boxes—and hence a sliding motion of the tip of the shuttle against the picker, must take place, whereas in my present invention operating as herein described and set forth the tip of the shuttle is perfectly and entirely separated from contact with the picker, for some time before the box commences to move, and therefore its effect is entirely perfect.

Having thus fully and accurately described the construction and operation of my invention, and the several modes in which I contemplate its use; and also pointed out peculiar facts showing its utility and advantages, I proceed to state that I do not claim a yielding rest or support for the picker, either "to break the sudden blow or concussion with which the shuttle impinges upon the picker," or for other purposes, as this device has been in use in England for some time, and also in this country; nor do I claim "separating or freeing the picker from the end of the shuttle by the same movement which shifts the shuttle boxes," as this principle has been discovered; and several devices for carrying out the same patented—see patents granted to Barton H. Jenks, April 4/55, antedated January 8th 1855, and Joseph Welsh, Jany. 9th, '55—nor do I claim "holding the picker forward in movable shuttle box looms for the purpose of stopping the shuttle thereby, and causing the picker after having stopped the shuttle to recede"—as and by the devices or their equivalents, patented by James Eccles January 23, 1855; nor do I claim the use of "a shuttle stopper (as a picker stopper), when the said shuttle stopper receives its motion from any part of the loom, and independently of the picker and the shuttle box or either of them," as patented by me October 3, 1854; nor, finally do I confine my claim herein to the precise devices described and set forth herein for conveying either the joint or several action of the stop (A) and acting shuttle, to the picker as described—but

What I claim as my invention and desire to secure by Letters Patent is—

Actuating the picker stopper by means of the shuttle which is required to be relieved from the picker; and so that the tip or point of the same may be fully relieved as described before the box containing it commences to move, substantially as described and set forth; or, by means of the stud (A) in combination with the rock shaft (C) (or its equivalent) adjustable arm (D) and moving stud (E), irrespective of the action of the shuttle upon the swell—substantially and for the purposes as described.

JOSEPH WELSH.

Witnesses:
BEN MORISON,
JOHN THOMPSON.