J. WELSH.

Shuttle Check.

No. 11,768. Patented Oct. 3, 1854.

Fig. 1.

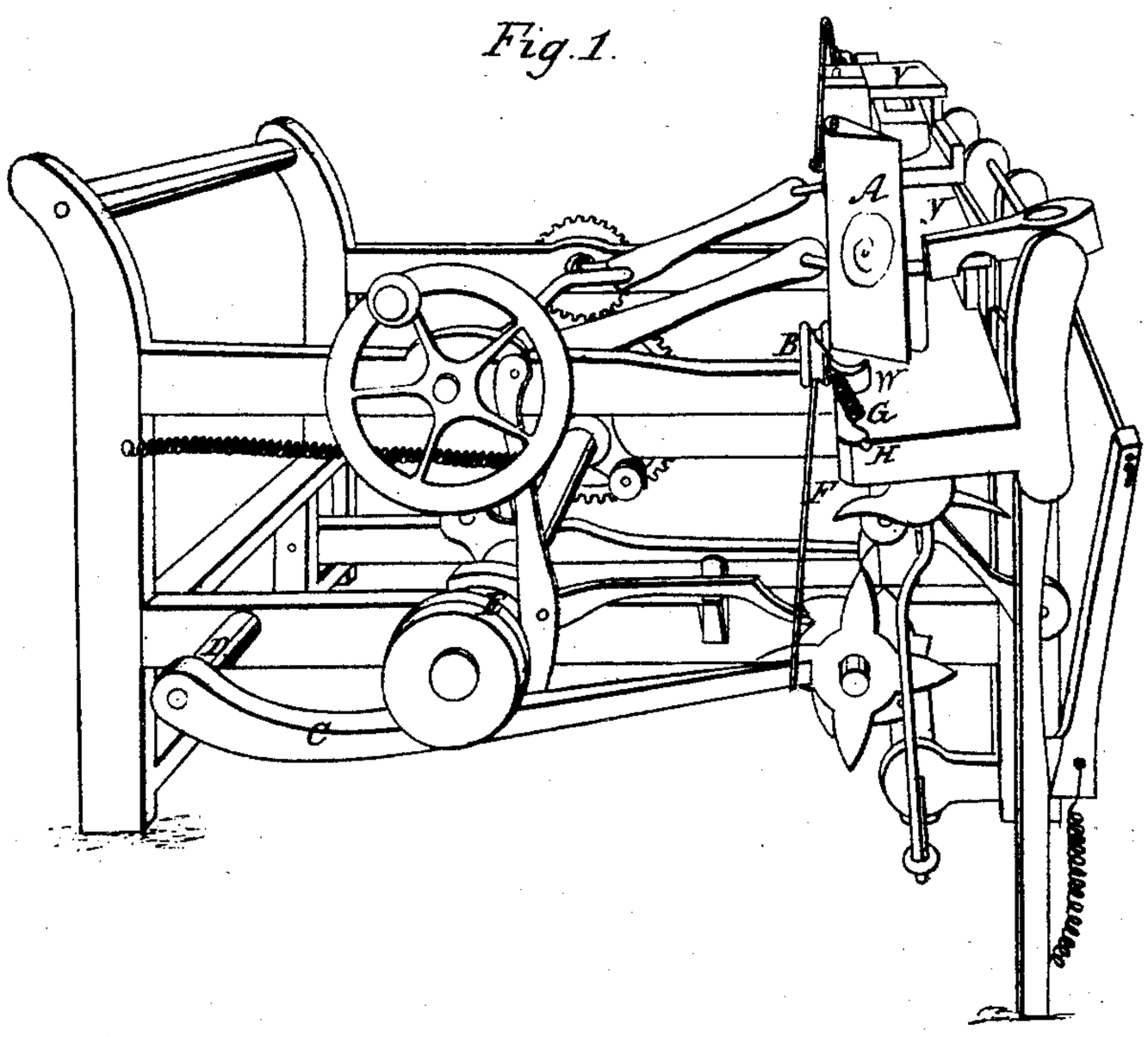
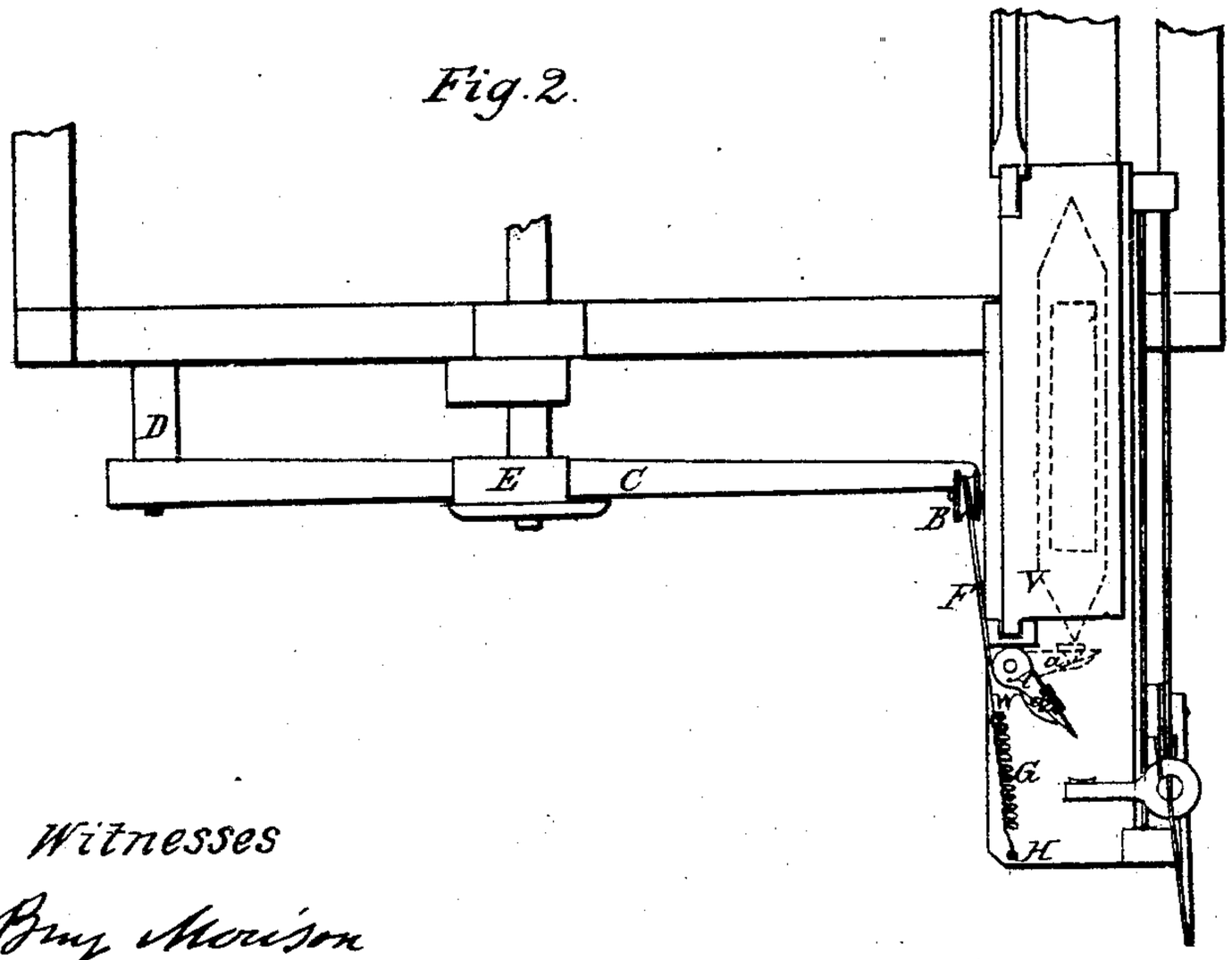


Fig. 2.



Witnesses

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JOSEPH WELSH, OF PHILADELPHIA, PENNSYLVANIA.

LOOM.

Specification of Letters Patent No. 11,768, dated October 3, 1854.

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 on Moving-Box 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, and Fig. 2, a sectional plan view, like letters indicating the same parts when on both figures.

The nature of my invention consists in applying to the lay of those looms which have a moving shuttle-box, a periodically moving shuttle-stopper, which receives its motions independently of the picker, and shuttle-box, and continues to act so as to arrest or stop the motion of the shuttle (without injury to the same, or to the box) on its arrival within the said box, and then immediately turns or moves from the same so as to allow a perfectly free and independent motion of the box and also of the picker, during the working operation of the loom.

The usual devices or arrangements for arresting the motion of the shuttles on their arrival within the box of looms of this character, consist of a stationary block of metal, secured on the back of each box, on the inside,—and in making near the end of the shuttle, a beveled shoulder on one side, so that the shuttle may be arrested by this shoulder's coming in contact with the block of metal aforesaid. As the shuttles are made of wood, (the tips only being of metal) they are very rapidly worn into a wedge shape by this metallic block, and consequently burst the box, if new shuttles are not then substituted—and in this case there is a continued expense which is avoided by the application and use of my invention; and as the common single-box shuttle answers as well as any other with my invention, there is a saving of fifty cents per dozen, in the original cost, and besides, one shuttle, with my improvement applied to the loom, will last four times as long as heretofore, and the box will never be injured thereby—and there will also be a saving of the picker and straps.

In the annexed drawings, Fig. 1, represents part of a double-box loom with my improvement applied thereto, and as no alteration of any importance is required to be made in the loom, it will not be necessary to describe it. I will therefore proceed to point out and describe the subject of my invention, and its construction and mode of operation.

A, is the moving stopper, which is placed in a vertical position, and so as to turn freely upon a spindle secured firmly to the lay at W.

B, is a small grooved pulley which turns freely on its spindle secured in the back of the lay.

C, is a lever whose fulcrum is placed in the end of a stud (D) which projects from the frame of the loom.

E, is a cam placed on the end of the cam shaft so that it may cause a downward motion of the lever (C) at each revolution of the cam shaft. At the inner end of the lever (C) a leather strap F, is attached, which passes up and over the pulley (B) and thence along horizontally on the outside of the lay and partly around the cylindrical stem of the stopper (A) to which it is attached. Attached also, on the opposite side of this stem of the stopper is one end of a spiral spring G, which has its other end secured to the lay at H. These devices are so adjusted and arranged, that when the loom is put in motion, giving revolution to the cam shaft, the stopper (A) is caused to turn upon its spindle periodically, in a quarter circle as follows:

As the stopper (A) is relieved from the positive effects of the cam (E), (conveyed through the lever, pulley and strap) it is caused by the action of the spring (G) to take the position (shown by the dotted lines Fig. 2) across the lay near the end of the moving box V, where it is held by the spring until struck by the shuttle, which it arrests. When the cam (E) again coming into positive action upon the lever (C), causes the stopper (A) to open out from the box and allow the free and unobstructed stroke of the picker against the shuttle, and its return, in the usual manner. The drawings represent the stopper (A) in the act of closing to receive the blow of the shuttle to arrive within the lower box. The stopper has a recess bored on the inside about seven-eighths of an inch in diameter, and about half an inch deep for receiving two or three thicknesses of belt leather, or its equivalent, as shown by dotted lines at *a*—the middle

of the back of this recess being bored through with a tapered tool, so as to prevent the tip of the shuttle being injured after the leather has worn through as the stopper receives the tip of the shuttle against the leather in the recess aforesaid.

It will be perceived that the stopper is constructed, applied and operates, so as to be always shut when required to stop the motion of the shuttle on its arrival within the box, and open in proper time to allow the free action of the picker to drive it out again and return; and that for its motion, it is entirely independent of the picker, and also of the shuttle box, leaving them both free in their respective motions, as the stopper always turns back from the tip of the shuttle, immediately after arresting it, thus allowing the free motion of the box, up and down, and also of the picker, in and out, in the usual manner; and that consequently, all the objections to the old mode of arresting the motion of the shuttles in the boxes of looms of this character as before pointed out and described, are entirely obviated at a trifling expense, and without any important alteration of the other parts of the loom.

There are several modes contemplated by me, in which my shuttle stopper can be constructed, applied and operated. For instance, the stopper may be of a different form, and arranged so as to turn on a horizontal spindle, or hinge, and produce the same effect, without changing its actuating devices. It may also be made to slide, so as to produce the effect of arresting the shuttle in the box, and move out of the way of the picker; but as it is important that the stopper should move out, so as to clear the tip of the shuttle and allow the free motion of the box up and down, this latter mode would not answer the purpose so perfectly as either of the other two before mentioned. I therefore consider the mode hereinbefore described and illustrated, as the best.

Having thus described the nature or principle and mode of operation of my invention, and pointed out several modes in which I contemplate the construction and application of the same, and particularly described the mode which I consider the best, I proceed to state that I do not claim the devices, nor their arrangement for giving the necessary motions to the stopper as herein described, as these may be constructed and applied in various ways; but

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

The application to the lay of those looms requiring or having a moving shuttle box, a periodically moving shuttle-stopper, which receives its motions from any suitable part of the loom and independently of the picker and shuttle box, or either of them, and continues so to act as to arrest or stop the motion of the shuttle (without injury to the same, or to the box) on its arrival within the said box, and then immediately turns or moves from the same so as to allow a perfectly free and independent motion of the box and also of the picker, during the working operation of the loom, substantially as herein described.

JOSEPH WELSH.

Witnesses:
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