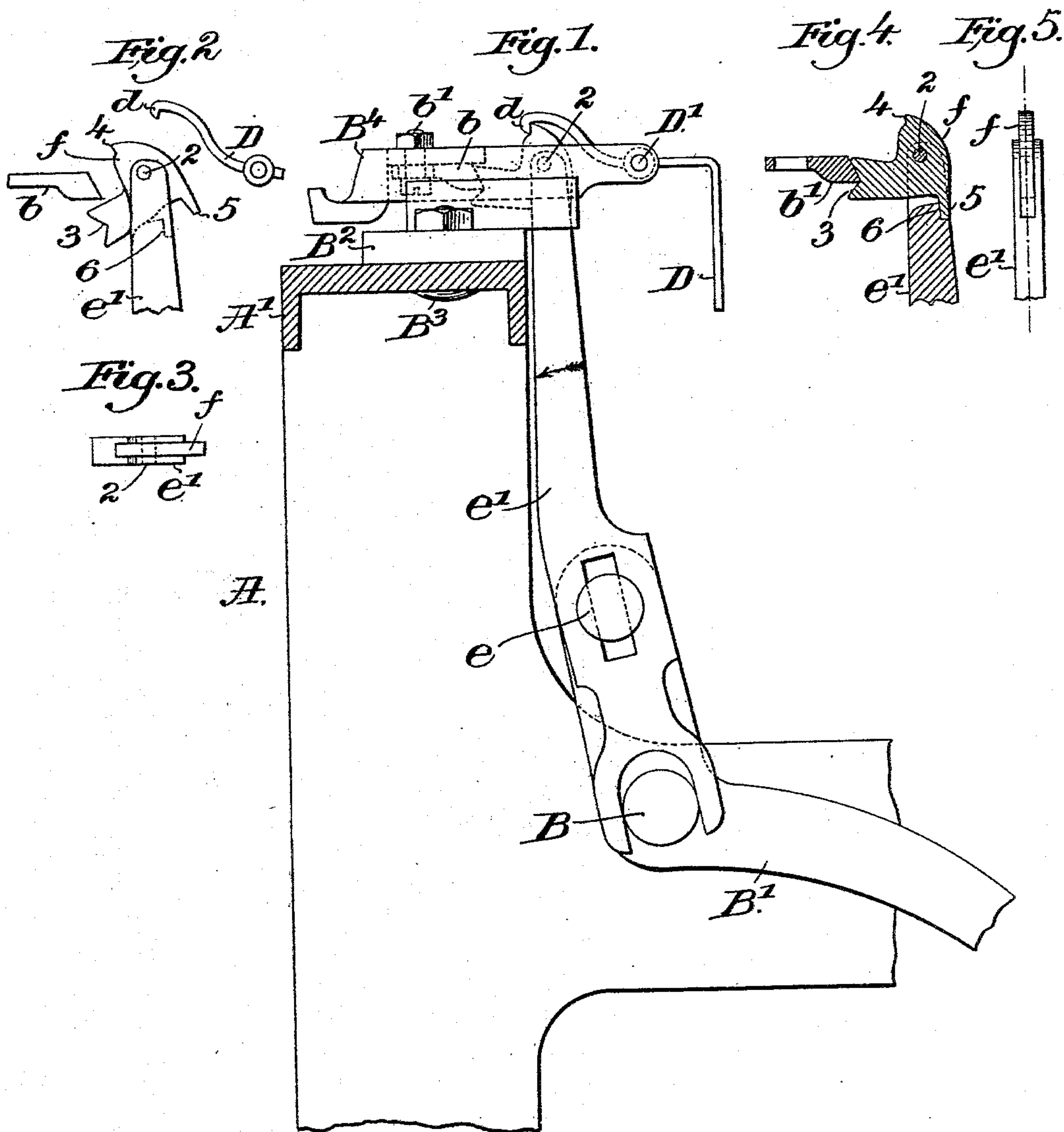


(No Model.)

O. PIPER & J. E. NEWTON.  
WEFT STOP MOTION FOR LOOMS.

No. 515,532.

Patented Feb. 27, 1894.



*Witnesses:*

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Fred S. Grumbaf.

*Inventors.*

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James E. Newton.

by Leroy Oregon attys.



# UNITED STATES PATENT OFFICE.

ORIN PIPER AND JAMES E. NEWTON, OF MANCHESTER, NEW HAMPSHIRE.

## WEFT STOP-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 515,532, dated February 27, 1894.

Application filed May 6, 1893. Serial No. 473,213. (No model.)

*To all whom it may concern:*

Be it known that we, ORIN PIPER and JAMES E. NEWTON, of Manchester, county of Hillsborough, State of New Hampshire, have invented an Improvement in Weft Stop-Motions for Looms, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

In ordinary looms the tail piece of the weft fork has a lip, which, when the tail piece is not held up by the action of the legs of the fork on the weft, is struck by the usual hammer, which, acting through the tail piece draws the slide carrying the fork back in its guide box secured to the breast-beam and causes it to effect the release of the shipper handle. In this old way it will be seen that the fork pivot and the tail piece are subjected to considerable strain. To obviate this, we have combined with the usual hammer-arm a dog, which, when the weft is present will pass under the lip of the tail piece, but when the weft is absent will strike said tail piece and be turned by it and put in position to strike the weft fork carrying-slide and retract it in its guide-box.

Our invention, therefore, consists in the combination with a weft fork, its carrying-slide, and guide-box, of a hammer device having a dog extended into the said carrying slide and adapted to be tripped by the weft fork when the weft is absent, said dog then acting directly upon and moving the slide, thus relieving the weft fork itself of the duty of pulling back the slide.

Figure 1, shows a sufficient portion of a loom and its weft fork with our improvements added to enable our invention to be understood; and Figs. 2, 3, 4 and 5, details to be referred to.

The loom side A, the breast-beam A', the stud B fixed to the loom side, and the hammer-carrying lever B' mounted thereon and adapted to be vibrated once for each pick by a suitable cam on the main or cam shaft, not shown, the guide-box B<sup>2</sup> fixed to the breast-beam by the bolt B<sup>3</sup>, and the slide B<sup>4</sup> adapted to be slid back and forth thereon, and in practice adapted to act by its rear end against an arm of the rock shaft carrying-devices to release the shipper handle, are and may be all as usual.

The slide B<sup>4</sup> in this our present invention is provided with a lip b, which, as shown, is fixed to the slide by a bolt b'. This invention, is not, however, limited to the manner of connecting the lip to the slide, but it is preferable to make it separate, as these old forms of slides may be utilized with our improvements.

The weft fork D pivoted at D' on the slide has a tail piece of usual construction, said tail piece having a suitable shoulder or projection, as d.

The short arm of the hammer-carrying lever has attached to it by a bolt e the hammer e', provided in accordance with our invention, with a dog f pivoted on the said hammer at 2, said dog, as herein shown, having a notched pushing end 3, which is the heavier, so that the dog normally stands as shown in Fig. 2, in which condition said end 3 passes under and does not strike the lip b and does not move the slide bar back.

The slide bar will not be pushed back so long as the weft fork meets the weft properly laid, for under such circumstances the projection d of the tail piece is elevated above the path of movement of the ear 4 of the dog f. Now, if the weft has not been properly laid, then the weft fork will not be tilted, but the tail piece will be left down, as in Fig. 1, and the projection d will catch the ear 4 and turn the dog f about its pivot as the hammer is being moved in the direction of the arrow Fig. 1, and will cause the tail 5 of the dog to be brought up to the shoulder 6, thus pulling the pushing end 3 of the dog into position to engage the lip b and move back the slide B<sup>4</sup>, the latter carrying with it the front of the weft fork and the said fork, thus relieving the weft fork of all strain.

A weft fork which has not to be strong enough to withstand the stroke of the hammer and then pull the slide back with it may be made lighter and consequently more delicate in action than when the fork must stand so much strain.

Our invention is not limited to the exact shape shown for the weft fork, its tail piece, or projection thereon, as we may use any other usual or suitable weft fork.

We do not claim a hammer provided with a dog pivoted to be turned to directly engage a lever constituting part of a stop motion.



Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A weft-fork, its carrying slide and guide-box, and a hammer, combined with a dog extended into the said carrying slide and adapted to be tripped by or through the weft-fork and to act against and move the said slide in its guide-box on the failure of the weft, substantially as described.

2. A weft-fork, its carrying slide and guide-box, said slide having a detachable lip, and a weft-fork, combined with a hammer having a pivoted dog provided with an engaging end to engage said lip, substantially as described.

3. The combination with the breast beam, the guide-box B<sup>2</sup> mounted thereon, and the slotted slide B<sup>4</sup> adapted to be reciprocated in said guide box, of a weft fork, a hammer,

means to actuate the same, and a weighted dog pivoted on the hammer and located wholly above the breast-beam, said dog being extended into a slot in the slide B<sup>4</sup> and being adapted when caught by the weft fork to have its notched end lifted to directly engage a portion of the said slide to move the same longitudinally and thus obviate strain on the pivot of the weft fork, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ORIN PIPER.

JAMES E. NEWTON.

Witnesses:

C. A. SULLIVAN,

P. H. SULLIVAN.