2 Sheets--Sheet 1.

H. D. DAVIS & J. M. STONE.

Loom.

No. 160,084. Patented Feb. 23, 1875

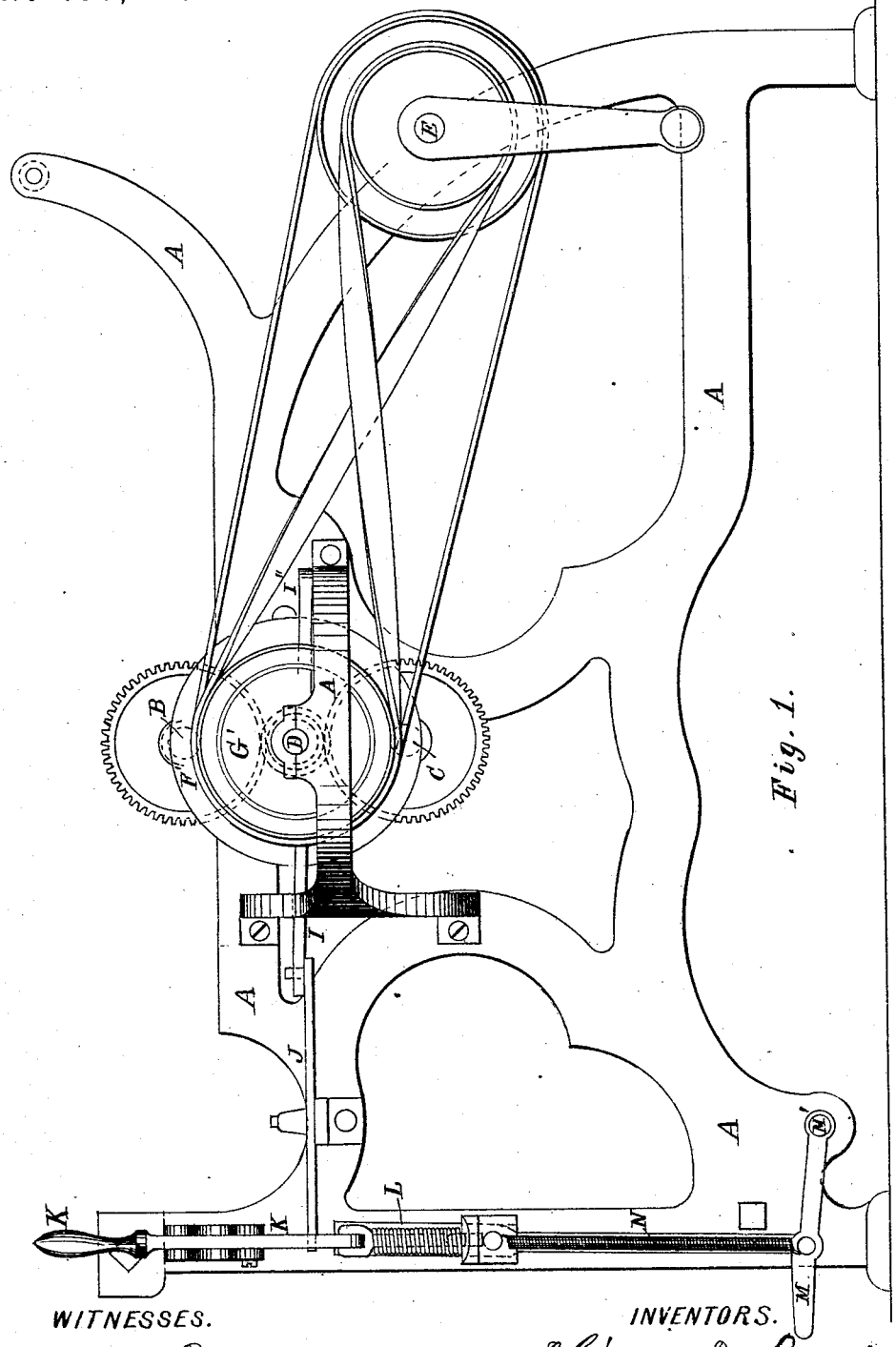

Fig. 1.

WITNESSES.

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Wm. C. Hibbard

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THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

2 Sheets--Sheet 2.

H. D. DAVIS & J. M. STONE.

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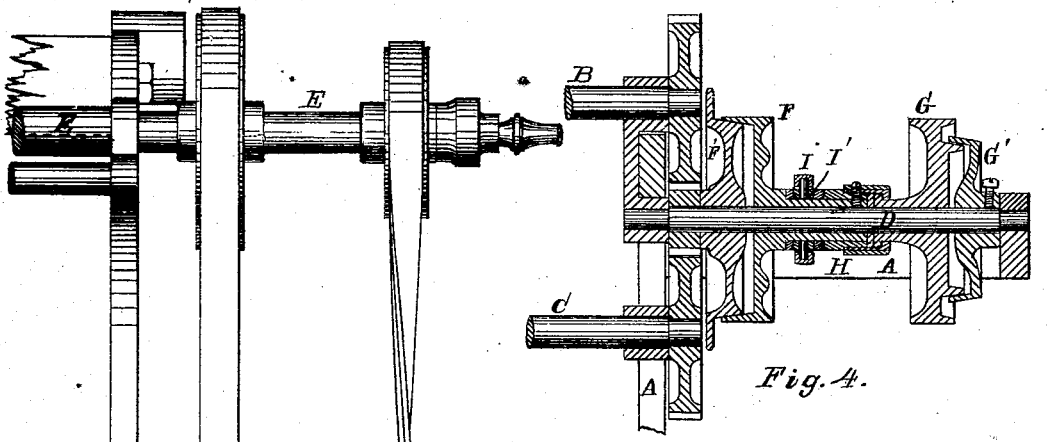

Fig. 4.

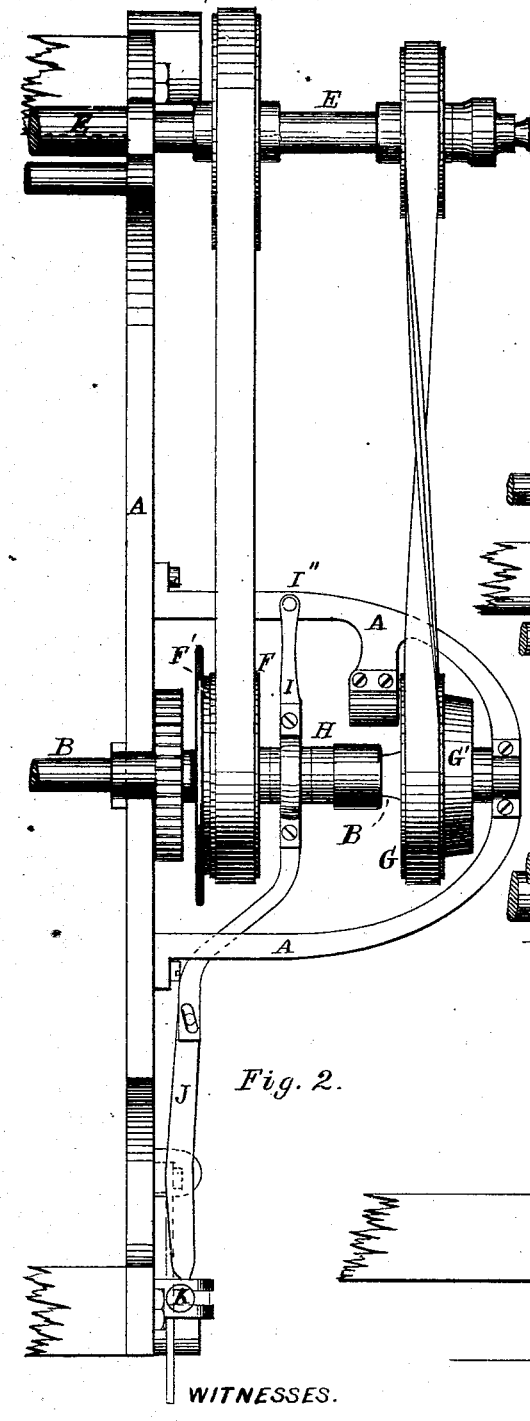

Fig. 2.

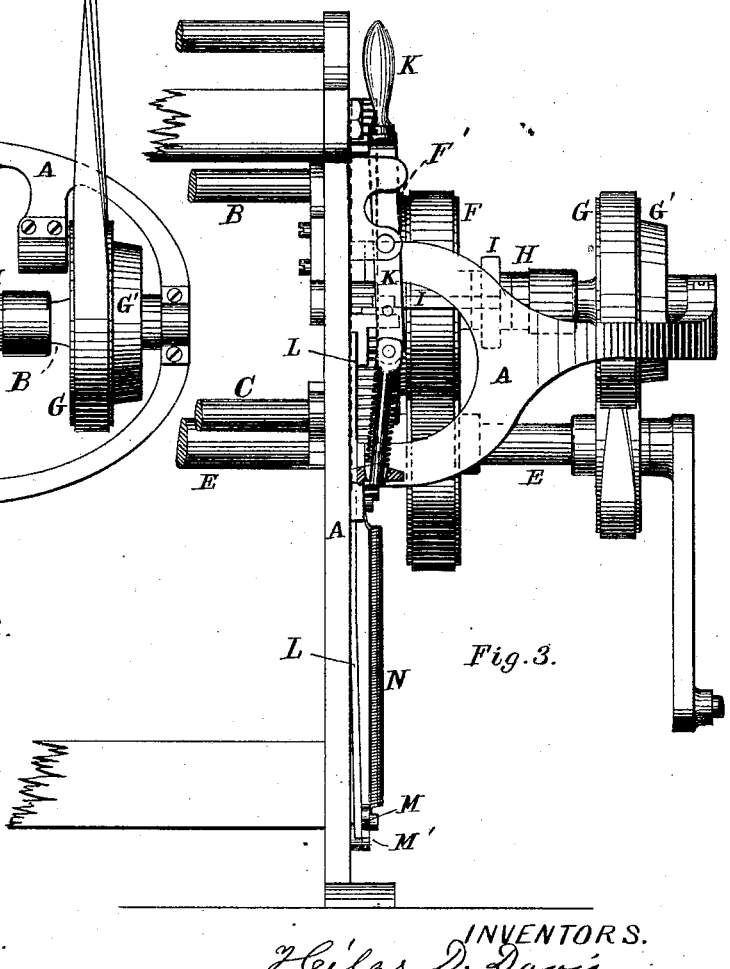

Fig. 3.

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UNITED STATES PATENT OFFICE

HILAS D. DAVIS AND JOSEPH M. STONE, OF NORTH ANDOVER, MASSACHUSETTS, ASSIGNORS TO GEORGE L. DAVIS, JOHN A. WILEY, JOSEPH M. STONE, GEORGE G. DAVIS, JOSEPH H. STONE, AND JAMES H. DAVIS, OF SAME PLACE.

IMPROVEMENT IN LOOMS.

Specification forming part of Letters Patent No. **160,084**, dated February 23, 1875; application filed October 21, 1874.

To all whom it may concern:

Be it known that we, HILAS D. DAVIS and JOSEPH M. STONE, both of North Andover, in the county of Essex and State of Massachusetts, have invented certain Improvements in Looms, of which the following is a specification:

These improvements relate to a device to be used in connection with machinery for turning the loom backward, by power under the control of the operator, when an emergency arises in weaving which requires that operation, such, for instance, as putting back the lay, or bringing the harness to some particular position, as is frequently required in mending up the yarns or adjusting the machinery; and consists in combining, with the shipper which puts the loom into engagement with the reversing mechanism, a latch or stop, by which the shipper is prevented from putting the reversing mechanism into engagement with the loom until said latch or stop is withdrawn, and by which also the shipper is prevented from acting to reverse the motion of the loom, when it is used to stop the loom in ordinary practice.

In the drawings only the framing and a small part of the mechanism of the loom are represented, sufficient to show the mode of applying our improvements.

Figure 1 is a side elevation. Fig. 2 is a plan. Fig. 3 is a front elevation. Fig. 4 is a vertical section through the driving mechanisms.

A is the frame of the loom; B, the lay or crank-shaft; C, the cam-shaft, where one is used; and D the driving-shaft, all of which may be constructed in any of the usual ways. E is a representation of the line-shaft from which the loom is driven, which is not intended to be upon the loom-frame, but is represented merely to show the arrangement of the driving-belts, when two are used. F and G are the two driving-pulleys of the loom; the pulley F drives the loom forward, the pulley G revolves in the opposite direction to drive the loom backward. They both revolve loosely upon the driving-shaft D, and impart their motions to the driving-shaft by means of the conical friction-clutches F′ and G′, in a well-known manner. The hubs of the pulleys are connected at H by a swiveling coupling, so that they are both moved lengthwise of the shaft by the same shipping-lever I and collar I′, as is usual. This lever has its fulcrum at I″, and at the opposite end engages with the second lever, J, which engages with the usual shipper-lever K, which is provided with the usual stop motion, so as to be worked at both ends of the loom, which is not shown.

By this arrangement of the parts, the shipper-lever K has the usual movements, with which weavers are familiar, in stopping and starting the loom.

L is a latch or bar, which slides vertically in suitable guides on the loom-frame, and is attached at its lower end to the treadle M, which turns on an axis at M′, and is drawn upward with the latch by the vertical spring N, or some other equivalent means.

When the treadle is raised, as shown, the upper end of the latch rises so high as to come between the lower end of the lever K and the frame, and stops the lever from vibrating far enough to put the reversing-clutch G′ into engagement, so that until the latch-bar L is depressed, so as to permit the further vibration of the shipper-lever K, it works just the same as the usual shipper. But when it is desired to turn the loom backward, the treadle M is depressed by the foot of the operator, which draws down the latch L out of the way of the shipper-lever K, and allows it to put the reversing clutch into engagement, and when it is disengaged the latch rises again behind the lower end of the lever K, and holds the reversing mechanism out of gear.

The treadle M is also to be operated from the opposite end of the loom by means of a treadle upon a cross-shaft at M′, or its equivalent.

Other arrangements of mechanism for reversing the motion of the loom may be used

instead of that shown, and controlled by a shipper in substantially the same manner, to which this invention may also be usefully applied.

What we claim is—

The combination, with the shipper which operates the reversing mechanism of the loom, of a latch or detent, which prevents the reversing mechanism from being put into engagement with the loom until said latch or detent is withdrawn, substantially as described.

Executed October 2, 1874.

HILAS D. DAVIS.
JOSEPH M. STONE.

Witnesses:
JAMES W. POTTER,
WM. C. HIBBARD.