

J. SHAW.
LOOM.

No. 75,305.

Patented Mar. 10, 1868.

Fig. 1.

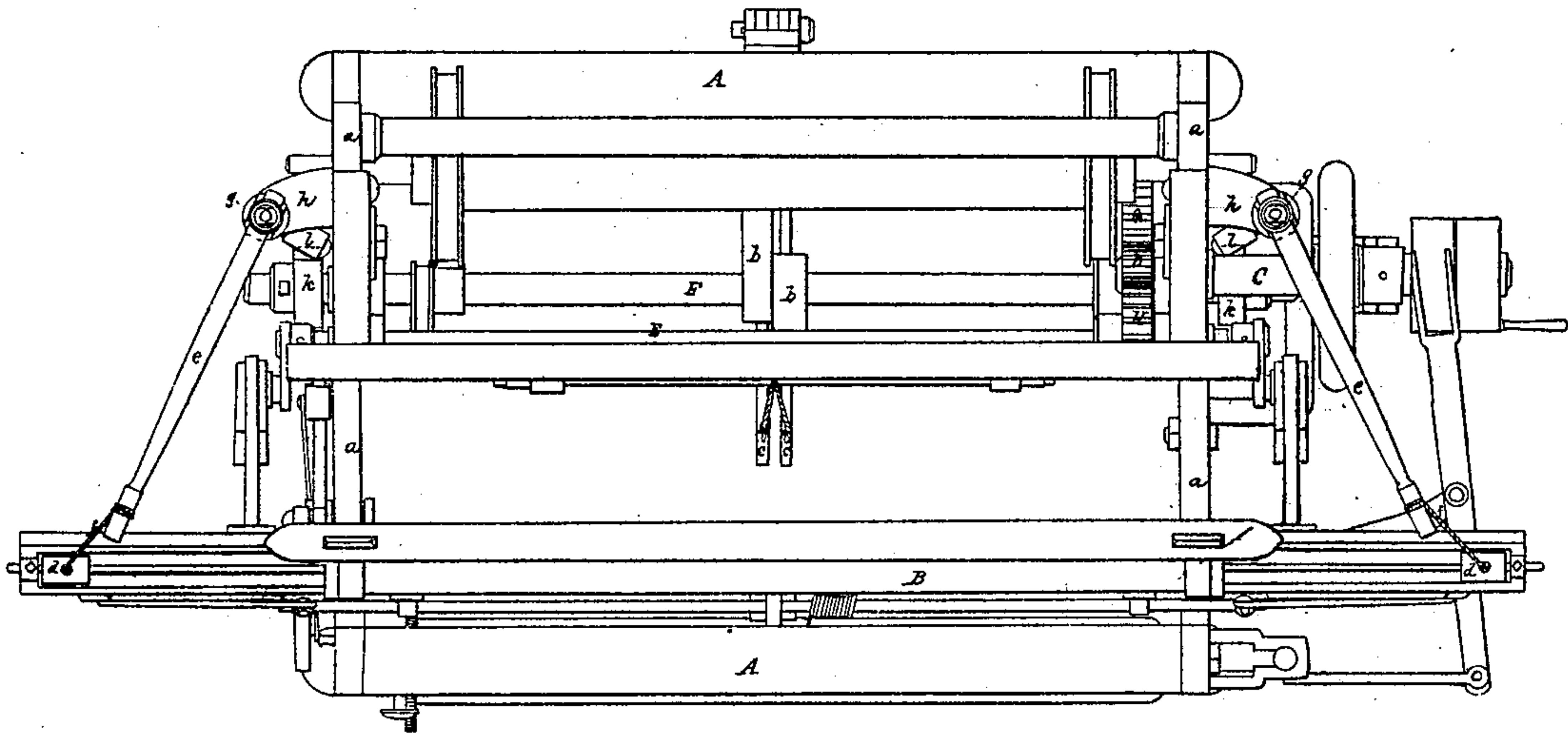


Fig. 2.

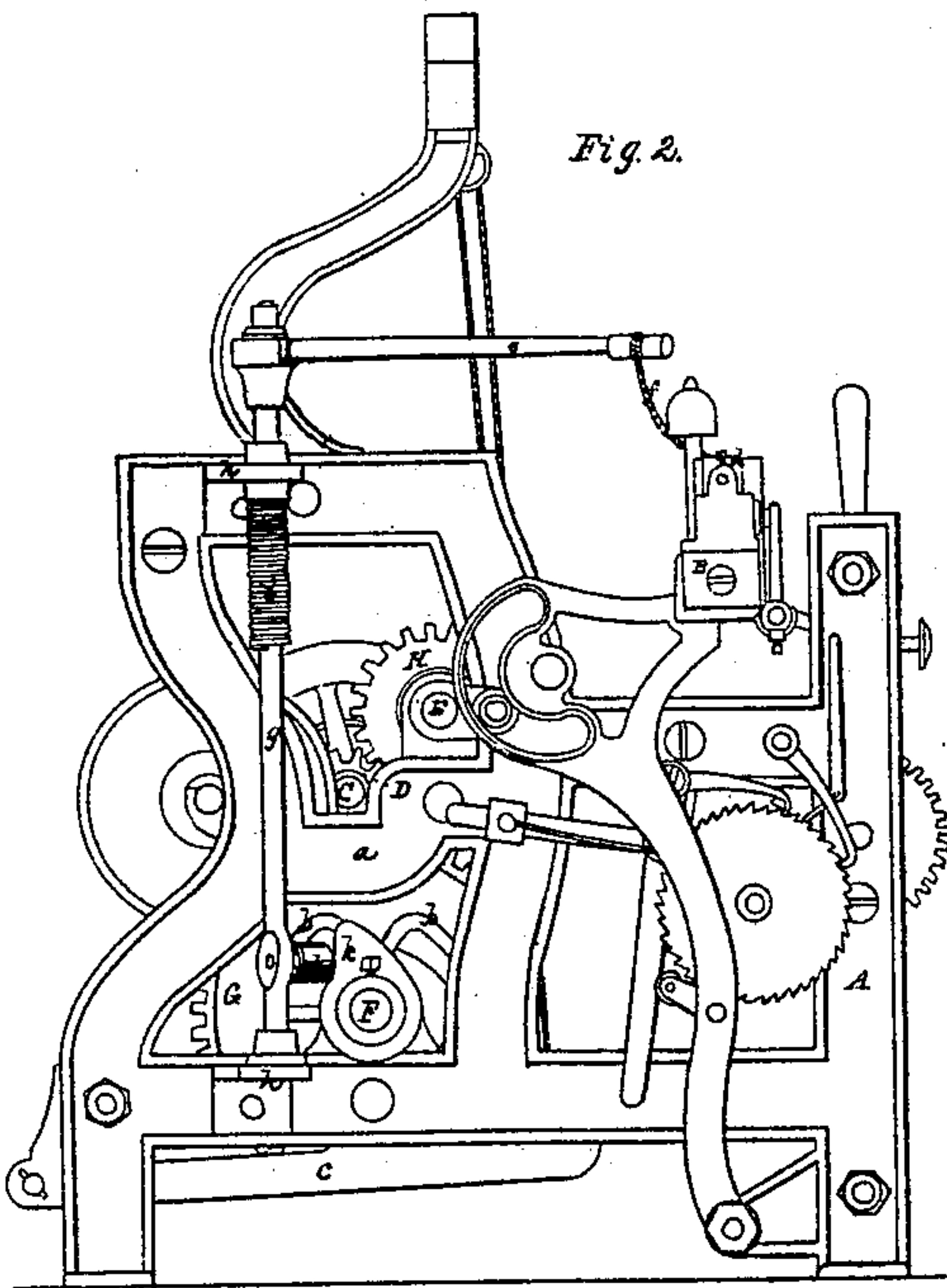
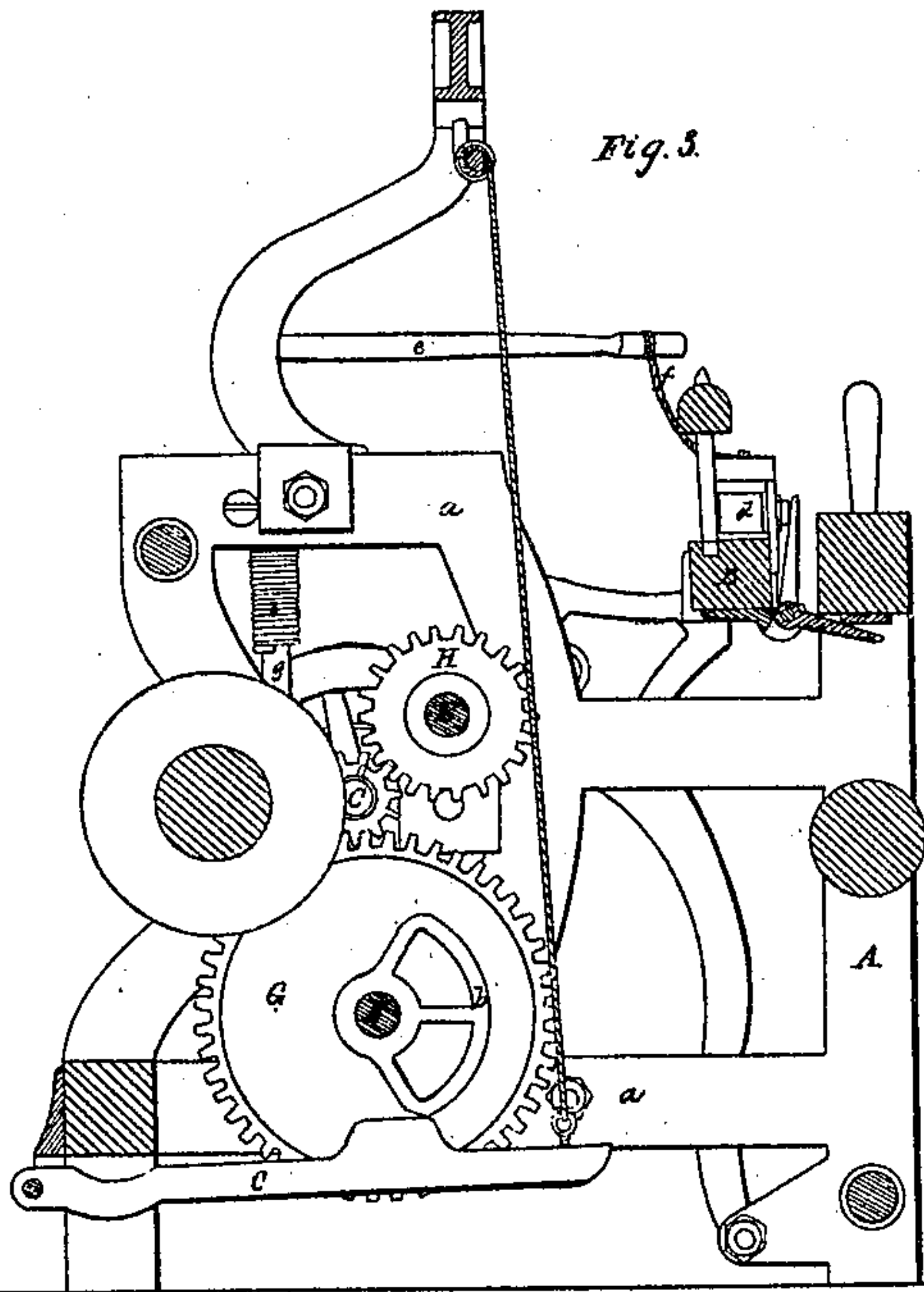


Fig. 3.



WITNESSES.
Samuel O. Piper.
Geo. H. Andrews.

James Shaw.
by his attorney
R. W. H. H.

United States Patent Office.

JAMES SHAW, OF BALLARDVALE, MASSACHUSETTS.

Letters Patent No. 75,305, dated March 10, 1868.

IMPROVEMENT IN LOOMS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL PERSONS TO WHOM THESE PRESENTS SHALL COME:

Be it known that I, JAMES SHAW, of Ballardvale, in the county of Essex, and State of Massachusetts, have made a new and useful invention having reference to Looms for Weaving Wide Fabrics; and do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a top view,

Figure 2 an end elevation, and

Figure 3 a transverse section of a loom provided with my invention.

The first of my improvements relates to the machinery for operating the picker, and the second to mechanism for operating the harnesses and the lay.

In the drawings, A denotes the loom-frame, as composed of two end-frames, *a a*, with their usual connections; B is the lay, C the driving-shaft, and D its driving-gear or pinion. E is the lay-shaft, and F the harness-cam shaft, the latter shaft having cams *b b* fixed on it, for operating the harness-heddles *c c*. The pickers are represented at *d d*, each being connected to one of two horizontal arms, *e e*, by means of a cord, *f*. These arms proceed from the upper ends of two vertical shafts, *g g*, which, instead of being arranged within the loom-frame, or between its two end-frames *a a*, as they usually are, are placed outside of them, and are supported by brackets, *h h*. A spring, *i*, for effecting what is termed a reverse motion of each shaft *g*, is affixed to such shaft and to its upper bracket, the motion of the shaft for causing a throw of the picker being caused by a cam, *k*, fixed on the shaft F, and acting against a friction-roller, *l*, arranged on an arm projecting from the shaft *g*.

The improvement made by me, and having reference to the mechanism for operating each picker, consists in arranging the two shafts *g g*, their operative cams *k k*, and their arms *e e*, wholly outside of the frame A, or with reference to its end-frames, as shown in the drawings.

By arranging this picker operative-mechanism wholly outside of the loom-frame, instead of within it in the ordinary manner, when picker operative-mechanism of this kind is employed, I am enabled to weave much wider cloth in the frame, or for the production of cloth of any given width, to materially lessen the width of such frame in comparison to what it would be were the picker-mechanism arranged within the frame.

Instead of allowing the two gears G H of the lay and harness-cam shafts to engage directly with each other, and one of them with the pinion D of the driving-shaft, as is the common method of doing, I do not engage such two gears G H together, but engage each with the driving-pinion D, the same being as shown in fig. 3. This effects a very material improvement in the operations of the lay and the harnesses, as it prevents the jar or concussion of the movements of the harnesses and their operative mechanism from being received by the lay, and it prevents the jars and concussions of the lay from being experienced by or affecting the harnesses and their operative mechanism. In either case the jar and concussion of either the lay or the harnesses will be resisted by the driving-shaft, its fly-wheel, its pulley, and driving-belt.

Thus it will be seen that by my arrangement of the pinion D with respect to the gears G H, that is, so that the pinion shall engage directly with each of the gears, such gears become so insulated from each other, that neither can transmit to the other the jar or concussion it may receive from the mechanism which it puts in operation. Other advantages also result from such an arrangement.

What I claim as my invention in the loom for weaving, is as follows:

The combination of the short shaft C, pinion D, shaft E, pinion H, shaft F, pinion G, tappets *k k*, roller-arm *l*, vertical shaft *g*, spring *i*, and lever *e*, all constructed and arranged with the loom-frame, as and for the purpose set forth.

JAMES SHAW.

Witnesses:

R. H. EDDY

SAMUEL N. PIPER.