(No Model.)

H. M. FARR.

MECHANISM FOR DEPRESSING LOOM HARNESS.

No. 251,564. Patented Dec. 27, 1881.

Fig. 1.

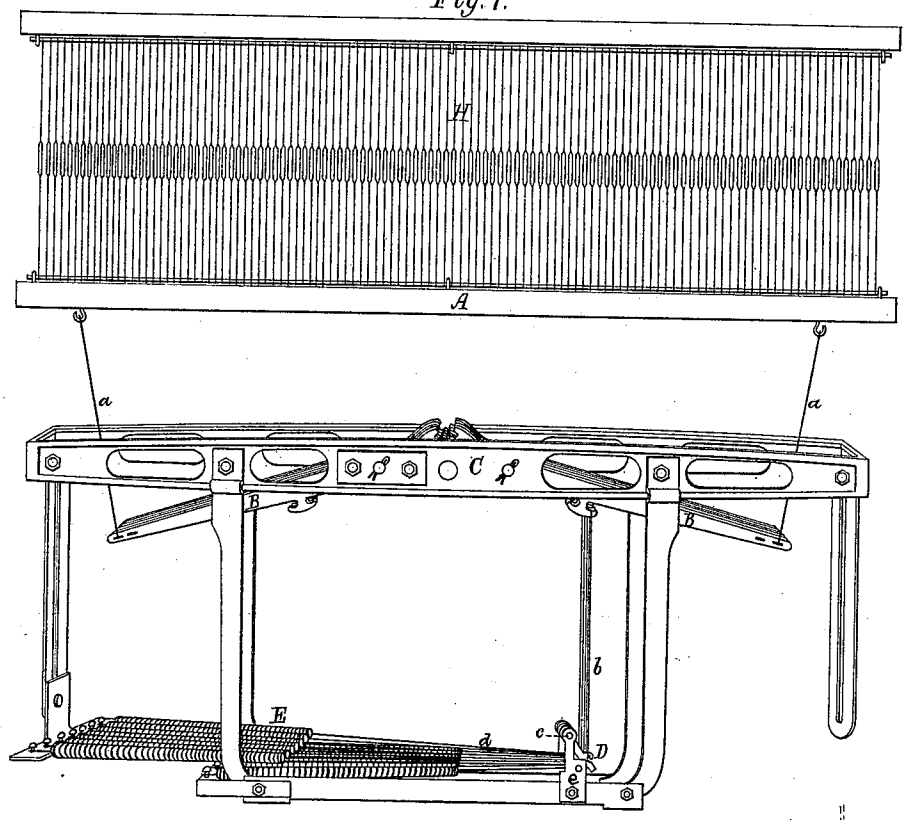
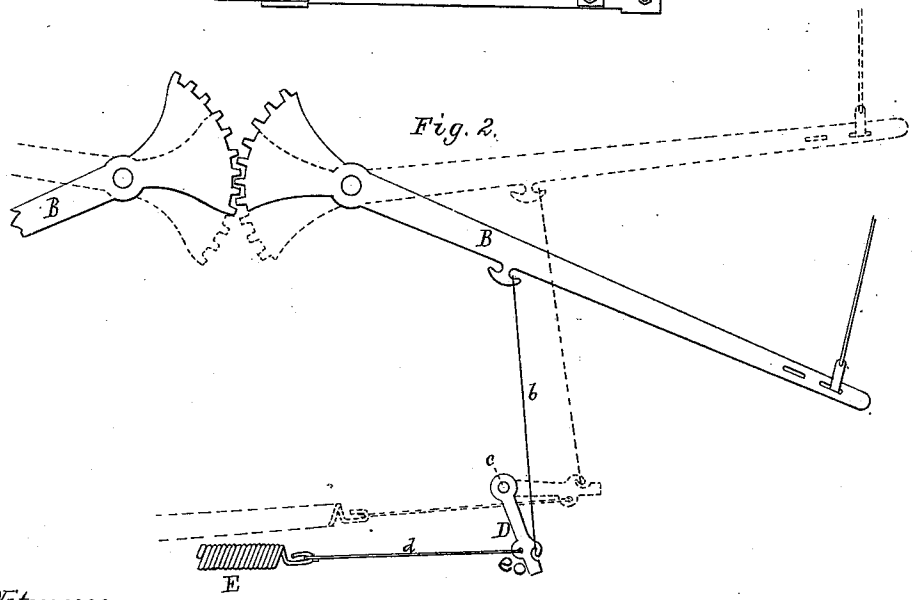


Fig. 2.



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MECHANISM FOR DEPRESSING LOOM-HARNESS.

SPECIFICATION forming part of Letters Patent No. 251,564, dated December 27, 1881.

Application filed February 18, 1881. (No model.)

To all whom it may concern:

Be it known that I, HERBERT M. FARR, of Holyoke, of the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Mechanism for Depressing Loom-Harness; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a perspective elevation of certain parts of a loom with my invention applied thereto. Fig. 2 is a side view of my improved harness-depressing mechanism on a scale somewhat enlarged with respect to that in which it is represented in Fig. 1.

The nature of my invention is duly set forth in the claims, as hereinafter given.

In order to effect the depression or drawing down of the harness of the loom, it has been customary to connect it to the longer arms of two levers, having their shorter arms sectors of gears and arranged in engagement with each other. To the said longer arms spiral springs arranged vertically, or thereabout, were connected at their upper ends, the lower ends of such springs being fixed in position. Under these circumstances the tension on the harness was increased as the harness continued to rise, thereby causing a consequent increased expenditure of power to effect the lifting of the harness.

In carrying out my invention, as shown in the drawings, each spring is arranged horizontally, or thereabout, and is connected with a vibratory-arm, which, in turn, is connected with the longer arm of one of the pair of harness-levers by a rod or cord, the vibratory arm being separate from either of such levers, and when the harness is down standing in position somewhat inclined from a vertical line passing through its pivot.

With my improvement the draft of the spring on its harness-lever, though not uniform during rise of the harness, is diminished as the tension of the spring is increased, and thus less power is required to draw up the harness against the strain of the warps, the power exerted on the levers to depress the harness increasing as the power of the warps to depress it may diminish.

In the drawings, A denotes the lower bar of a loom-harness, H, and B B its pair of depression-levers, their longer arms being connected with the bar by lines *a a*. These levers, arranged within and fulcrumed to a frame, C, have their inner arms geared together, as shown in Fig. 2. From the longer arm of each of one of the said levers a wire or cord, *b*, extends down and is hitched to an arm, D, separate from either of such levers and pivoted on a stationary pin, *c*, such wire and pin being arranged with the arm B in manner as shown. The said arm D, by means of a cord or wire, *d*, is connected with the movable end of the spiral spring E, such spring being disposed horizontally, or about so, in the frame C, to which the spring at its rear end is attached. The arm D has a perforated semicircular projection extending from it at its lower edge, such projection being to receive the wire *d* and prevent it from being bent by the arm while such arm may be rising upward. Furthermore, the arm D, when the levers B are depressed to their lowest positions, brings up or is drawn by the spring E against a back-stop or stationary horizontal bar or rod, *e*, arranged as shown.

Instead of connecting a spring to each lever of the pair for each harness, I prefer to use but one spring to such pair of levers and to dispose the several springs in "banks" or two sets, in manner as shown in Fig. 1, wherein half the number of springs for the harness are represented as arranged above the remaining ones, each spring being connected with an arm, D, duly connected with one lever of a pair belonging to a harness. This arrangement enables me to dispose the series of springs to better advantage in the frame than would be the case were they all arranged in one plane, as in the latter case the frame to contain them would have to be made much wider.

I do not claim for connecting a harness with a spring for depressing it two levers having their shorter arms pivoted to each other and a curved arm extended from the longer arm of one of such levers and connected to the spring, all being as shown in the British Patent No. 2,147 for 1874, as I use an arm separate from either lever and pivoted upon a rod, and connected with the spring and one of the levers by cords or wires; and I use a back-stop, as described, for the said arm to bring up against;

nor do I claim to operate a harness by a single bent arm and a spring, arranged as shown in the British Patent No. 3,538 for 1879, as I employ two levers to each harness.

I claim as my invention as follows, viz:

1. The combination, substantially as described, for depressing each loom-harness, such combination consisting of the spiral spring E, arm D, pivotal rod *c*, wire or cord *b*, the two geared levers B B, and the lines *a a*, all being arranged and adapted to operate essentially as specified.

2. The operative springs E, arranged horizontally, or thereabout, in two separate banks or sets, and with one of such sets above the other, in combination with the series of arms D, their pivotal rod *c*, the connection wires or cords *b*, the series of pairs of geared levers B, and the lines *a*, extending from the longer arms of the levers B to the harness, all being as and to operate substantially as set forth.

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