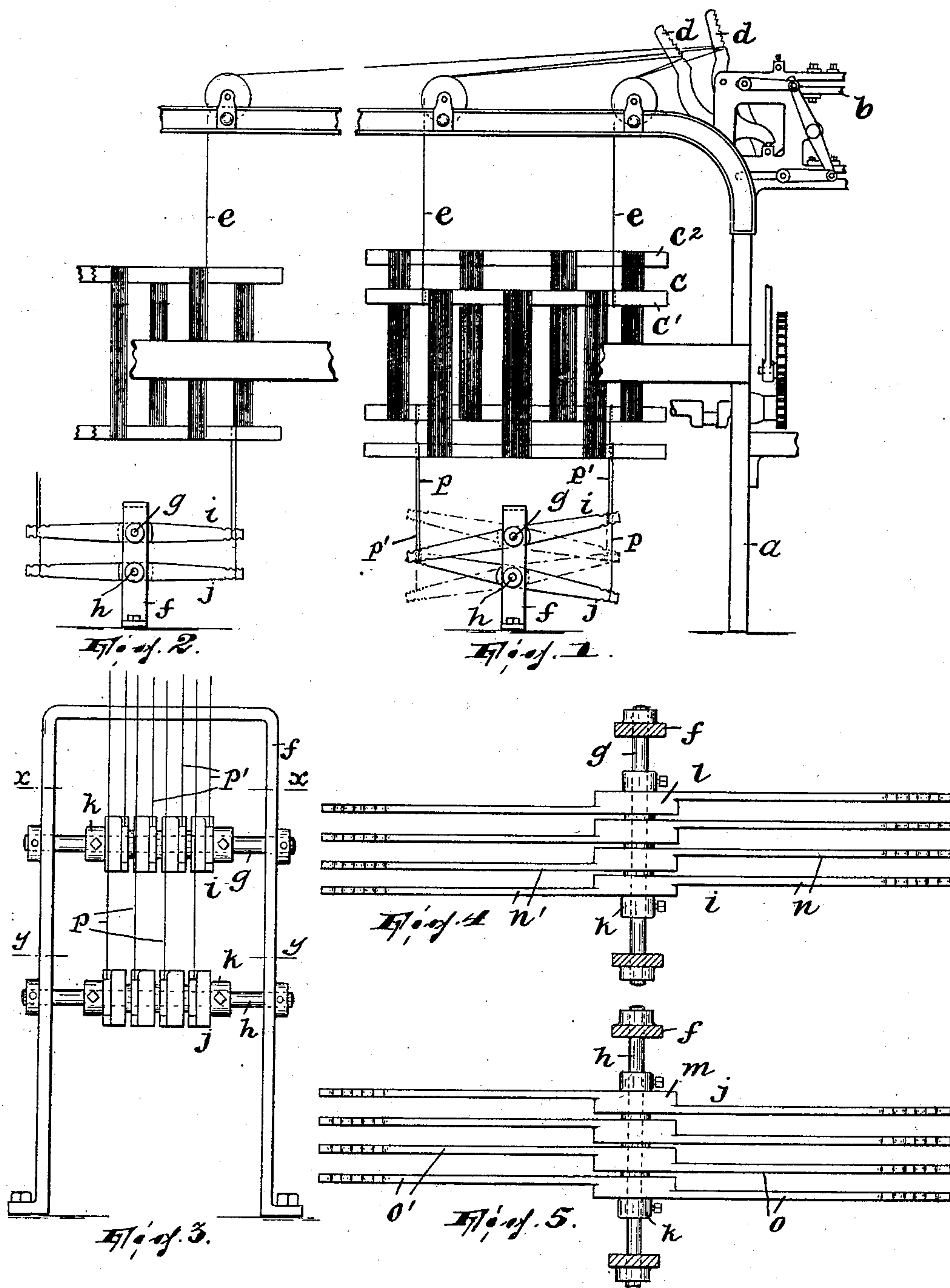


No. 897,549.

PATENTED SEPT. 1, 1908.

D. LINDSAY.  
LOOM HARNESS MECHANISM.  
APPLICATION FILED MAR. 12, 1908.



WITNESSES

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# UNITED STATES PATENT OFFICE.

DAVID LINDSAY, OF PATERSON, NEW JERSEY.

## LOOM HARNESS MECHANISM.

No. 897,549.

Specification of Letters Patent.

Patented Sept. 1, 1908.

Application filed March 12, 1908. Serial No. 420,617.

*To all whom it may concern:*

Be it known that I, DAVID LINDSAY, a citizen of the United States, residing in Paterson, Passaic county, New Jersey, have invented a certain new and useful Improvement in Loom Harness Mechanisms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My present invention relates to harness for looms and it has for its object to provide means whereby the use of springs coöperating with the jacks of a dobby or the like to produce the desired movements of the harness may be avoided, it being well-known that springs for this purpose exert a constantly changing tension on the harness, so that the life of the harness is reduced and its proper operation, as a means for controlling the warp, undesirably impaired.

My construction allows the harness, once it has been adjusted to the desired tension, to move always under the same tension and in a smoother, easier and more regular manner than is possible when springs are used.

The invention will be found fully illustrated in the accompanying drawing, wherein,

Figure 1 is a view in front elevation of so much of a loom as is necessary to illustrate the invention; Fig. 2 is a somewhat similar view showing the parts in the position which they occupy when the harness is leveled; Fig. 3 is a view in side elevation of the system of levers; and, Figs. 4 and 5 are horizontal sectional views on the lines  $x-x$  and  $y-y$  in Fig. 3.

In the loom frame  $a$  is arranged in the usual manner the dobby or other similar means  $b$  for operating the harness, marked  $c$ ; the jacks  $d$  of the dobby are connected with the respective shafts of the harness by the cords  $e$ . In the present instance, each two units of harness, marked  $c'$  and  $c''$ , are adapted so to operate that whenever one moves up the other is moving in the opposite direction, or down. This of course means that the jacks corresponding to such units of the harness move in opposite directions. Under the harness and bolted to the floor I arrange an inverted U-shaped stand  $f$  in which are

mounted the two superposed horizontal shafts  $g$  and  $h$ . On these shafts are fulcrumed the levers  $i$  and  $j$ , respectively, the one set of levers being disposed over the other and both sets retained against axial movement by the collars  $k$ . Each lever is fulcrumed midway of its length and comprises the bearing or fulcrumed portion  $l$  (or  $m$ ) and the horizontally off-set arms  $n$ ,  $n'$  ( $o$ ,  $o'$ ) respectively. The arms of one set of levers are off-set reversely to those of the other set, so that, since the corresponding levers in the set marked  $i$  are vertically above those in the set marked  $j$ , the arms  $n$  and  $n'$  of the former are opposite the spaces between the arms  $o$  and the arms  $o'$ , respectively, of the latter.

If, as shown, cords  $p$  be employed to connect one of the units, say,  $c'$ , with one end of one of the levers  $i$  and with the opposite end of the corresponding lever  $j$  and cords  $p'$  be employed to connect the other unit,  $c''$ , with the other ends of these levers, the oscillation of the corresponding jacks  $d$  will cause the units  $c'$  and  $c''$  of the harness to oscillate in opposite directions, the levers  $i$  and  $j$  corresponding thereto also oscillating reversely. The connections being previously adjusted to the proper tension, the operation will be smooth and regular and the tension kept constant, thereby saving considerable wear and tear on the harness. The arms of the levers in one set being opposite spaces between the arms of the other set of levers, the cords  $p$  and  $p'$  clear the levers in their oscillation, so that the cords are not worn or frayed.

One of the principal advantages of my invention is that the power heretofore required to move the harness, on account of the springs, is saved; incidentally, also, the breaking of the jacks on account of their slipping off the hooks of the dobby and striking against the frame thereof under the pull of the springs, is also avoided.

Having thus fully described my invention, what I claim and desire to secure by Letters Patent is:

1. The combination, with two harness units, of means for reciprocating them in opposite directions, levers fulcrumed between their ends, and means for connecting one harness unit with one end portion of one lever and the opposite end portion of the other lever and for connecting the other harness unit with the other end portions of said levers, substantially as described.

2. The combination, with two harness

- units, of means for reciprocating them in opposite directions, superposed levers fulcrumed between their ends, and means for connecting one harness unit with one end portion of one lever and the opposite end portion of the other lever and for connecting the other harness unit with the other end portions of said levers, substantially as described.
- 10 3. The combination, with two harness units, of means for reciprocating them in opposite directions, superposed levers fulcrumed between their ends and each having its end portions laterally off-set relatively to each other, and means for connecting one harness unit with one end portion of one lever and the opposite end portion of the other lever and for connecting the other harness unit with the other end portions of said levers, substantially as described.
- 15 In testimony, that I claim the foregoing, I have hereunto set my hand this 10th day of March, 1908.
- 20

DAVID LINDSAY.

Witnesses:

JOHN W. STEWARD,  
WM. D. BELL.