

(No Model.)

2 Sheets—Sheet 1.

M. HEALY.  
HARNESS MECHANISM FOR LOOMS.

No. 432,042.

Patented July 15, 1890.

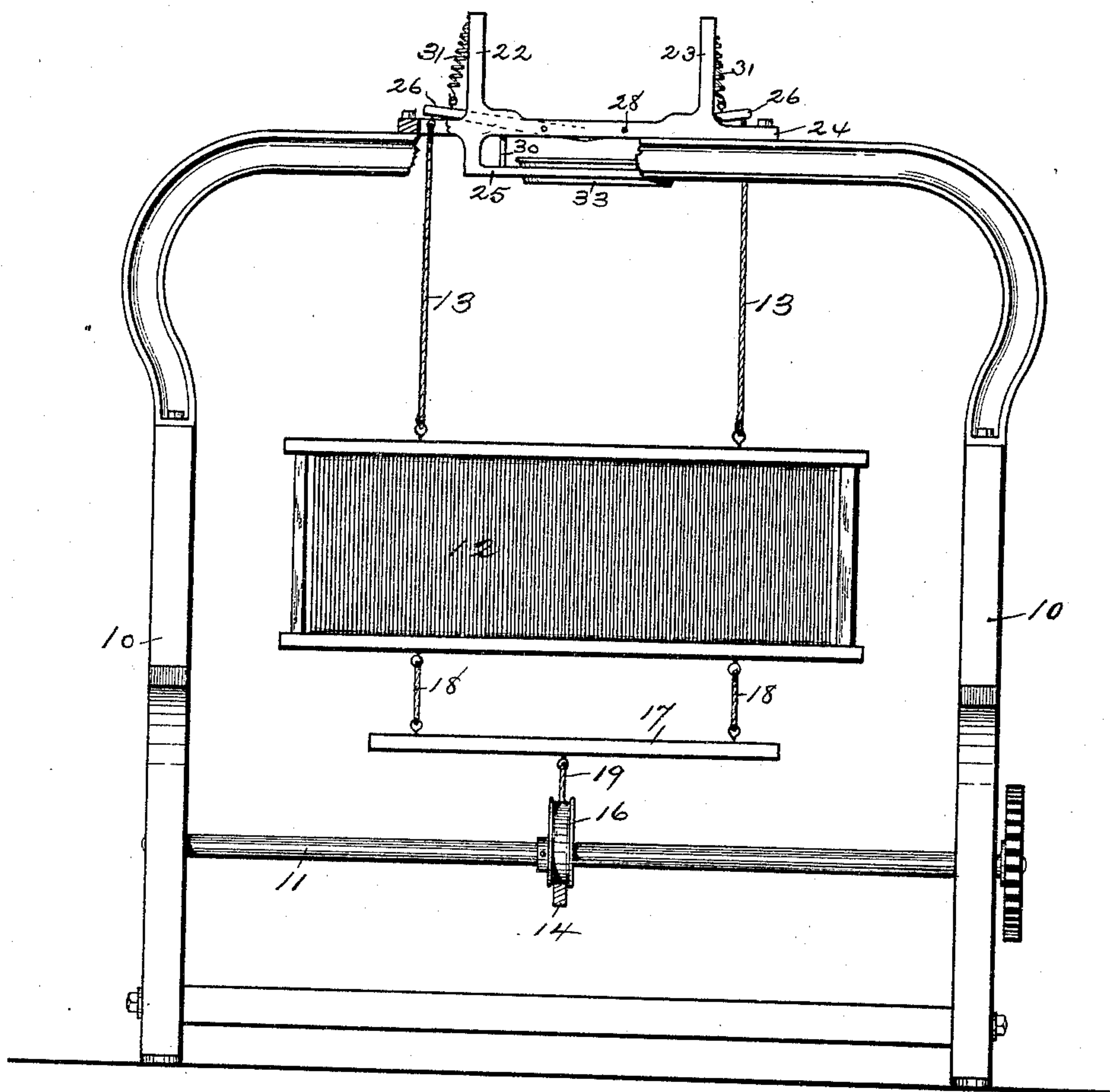


Fig. 1.

Witnesses

Henry A. Kingsbury  
Alonzo M. Luther.

Inventor

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By his Attorney

Frank H. Allen.

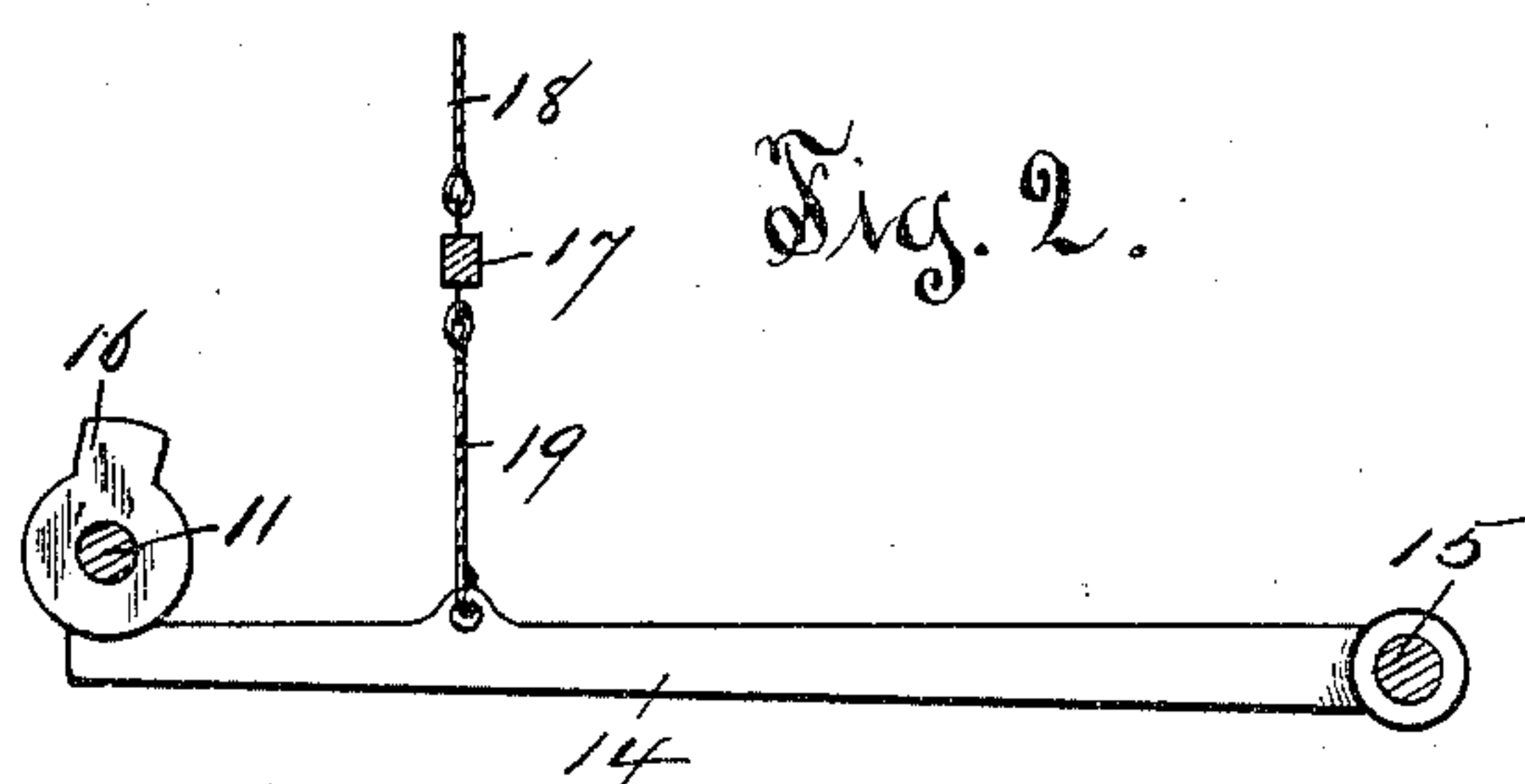
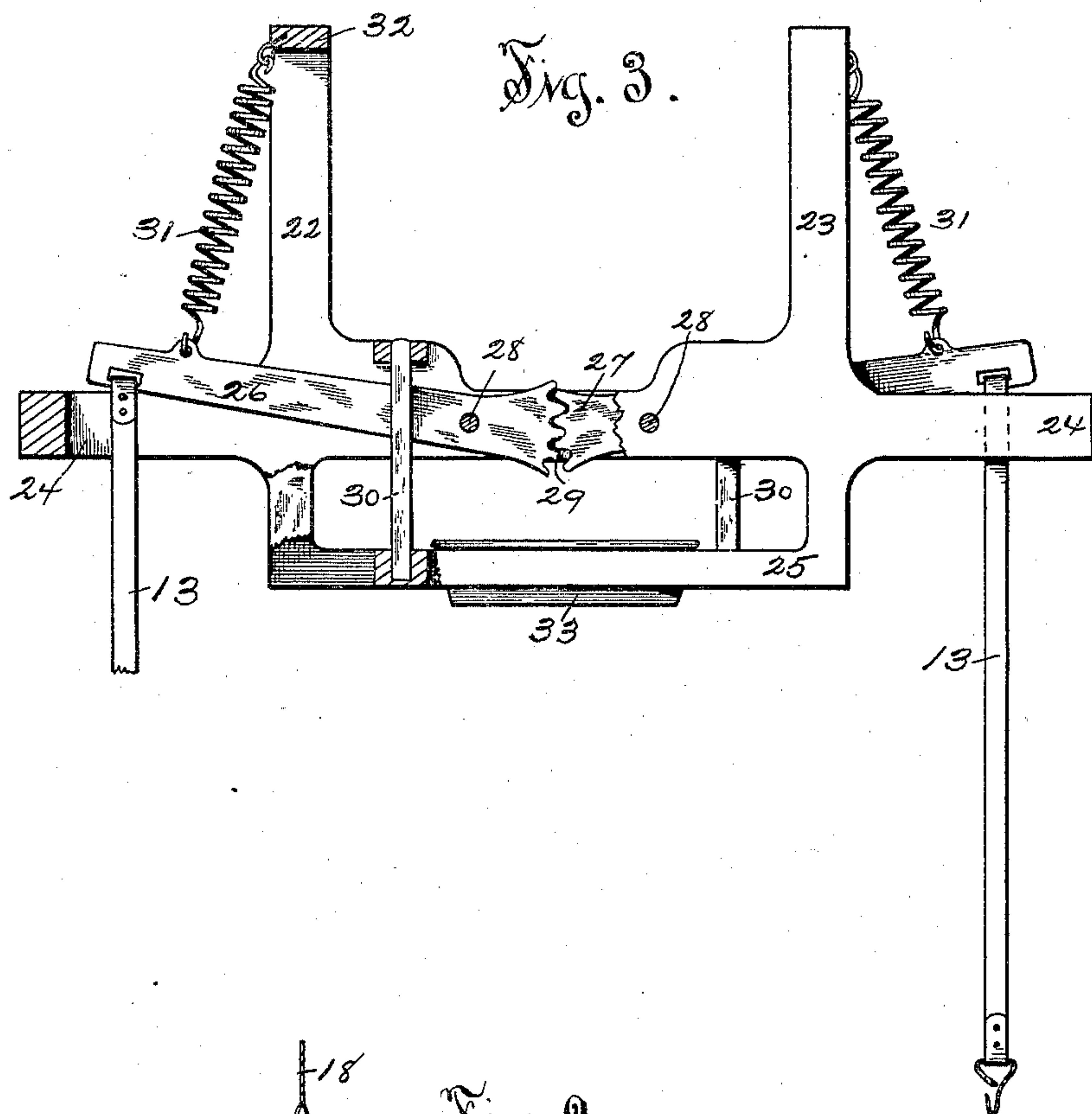
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# UNITED STATES PATENT OFFICE.

MICHAEL HEALY, OF JEWETT CITY, CONNECTICUT.

## HARNESS MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 432,042, dated July 15, 1890.

Application filed September 19, 1889. Serial No. 324,462. (No model.)

*To all whom it may concern:*

Be it known that I, MICHAEL HEALY, a subject of the Queen of Great Britain, residing at Jewett City, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Harness Mechanisms for Looms, which improvements are fully set forth and described in the following specification, reference being had to the accompanying two sheets of drawings, in which—

Figure 1 shows a front sectional view of a loom-frame partly broken away, having supported therein harness-actuating mechanisms of my improved form. Fig. 2 is a side view of the so-called "treadle" and "cam" employed to draw down the harness at the proper time, and also illustrates the means provided to connect said treadle and harness. In Fig. 3 I have shown considerably enlarged in detail that particular portion of the harness-actuating mechanism that embodies my invention—namely, the devices for raising said harness.

My invention relates to the class of looms used commonly in weaving cotton, woolen, or silk fabrics in which one or more sets of harness are employed, the object of my invention being to provide actuating mechanisms that will act positively and promptly to raise or lower the harness at the proper instant. To this end I have provided the devices illustrated in the annexed drawings, which I will proceed to describe in detail.

The figures 10 in said drawings denote a loom-frame of ordinary construction, and 11 a shaft journaled in suitable bearings in said frame.

12 denotes the harness. Said harness is suspended by straps or cords 13, that are attached to mechanism which I have described below.

The lower rail of harness 12 is connected to a treadle 14, one of whose ends is hinged to a rod or shaft 15, secured in the frame of the loom at its rear side in a manner well known, and whose front (free) end bears against the lower face of a cam 16 on the described shaft 11.

The harness may be connected directly with treadle 14 by a strap, or, preferably, a bar 17 may be interposed, said bar being connected to the harness by straps 18 and to the treadle by a strap 19. This mechanism (consisting

of treadle, cam, and straps) for drawing down the harness forms no part of my invention, excepting as the same is used in combination with my new devices for raising the harness. 55

Immediately over the harness and secured to the yoke of the loom-frame is a frame, preferably of cast metal, that consists of uprights 22 23, lateral extensions 24, and an open frame 25, projecting downward from said extensions. 60 An open space is provided between the two sides of said frame, in which is located a series of compound levers corresponding in number with the harness to be used. Said levers are each in two parts 26 27, fulcrumed on bolts or pins 28, and the confronting ends of each pair are formed with teeth 29, so interlocked that the two half-sections of each compound lever must work in unison. When several pairs of such levers are provided, flat 70 wires 30 are secured in the longitudinal side pieces 34 and 35 of the frame, so that they will be interposed between the several pairs, so that if said levers become worn and loose on their fulcra they cannot overlap or interfere with each other. 75 The free end of each section 26 27 of the compound levers is held normally in its raised position by a spring 31, whose other end is connected to the cross-bar 32 at the upper end of the uprights 22 23. 80 The cords or straps 13, which I have described above as attached to the harness, are connected to the free ends of the compound levers 26 27, and it will now be understood that the springs 31 will act with a constant tendency to raise the said levers and harness, and thus hold the free end of treadle 14 in close engagement with the cam 16. At each revolution of shaft 11 said cam forces downward the treadle and the connected harness, 90 and as said cam continues its round springs 31 draw said harness upward again.

The open frame 25, which I have already referred to, is provided in part to support the lower ends of the flat wires 30, but principally 95 to support a pan 33, that is provided to catch any particles of oil or other lubricant that may drop from the fulcrum-bolts 28.

My described harness-actuating devices are not expensive to produce, neither are they 100 complicated or difficult to operate, yet they perform their particular work perfectly, and

have the further advantage that they may be applied to old looms of this class without difficulty or great expense.

Having thus described my invention, I  
5 claim as new and wish to secure by Letters Patent—

In an attachment for looms, the combination, with a frame having an open frame below it, of compound levers pivotally secured  
10 in the upper frame, having their inner ends

interlocked, springs for operating the levers in one direction, flattened wires between the levers, the ends of the wires being secured in cross-pieces of the frames, and a pan in the lower frame under the interlocked portion of  
15 the levers, substantially as described.

MICHAEL HEALY.

Witnesses:

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ALONZO M. LUTHER.