J. J. & E. Harrison.

Take-Up in Loom.

No. 82,220. Patented Sept. 15, 1868.

Fig. 2.

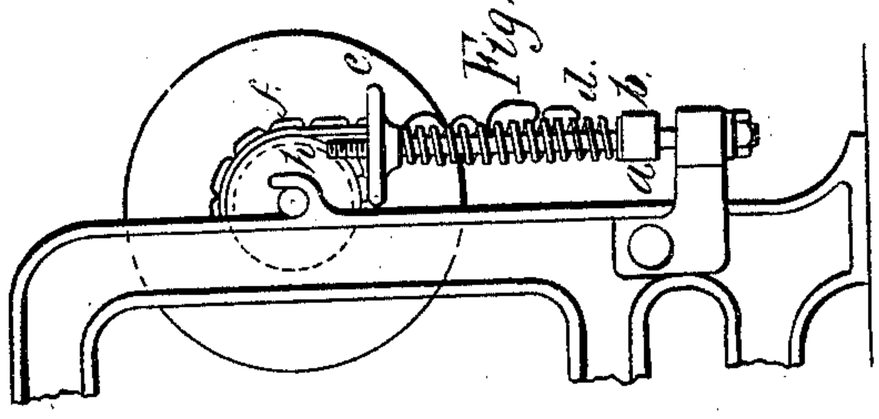


Fig. 3.

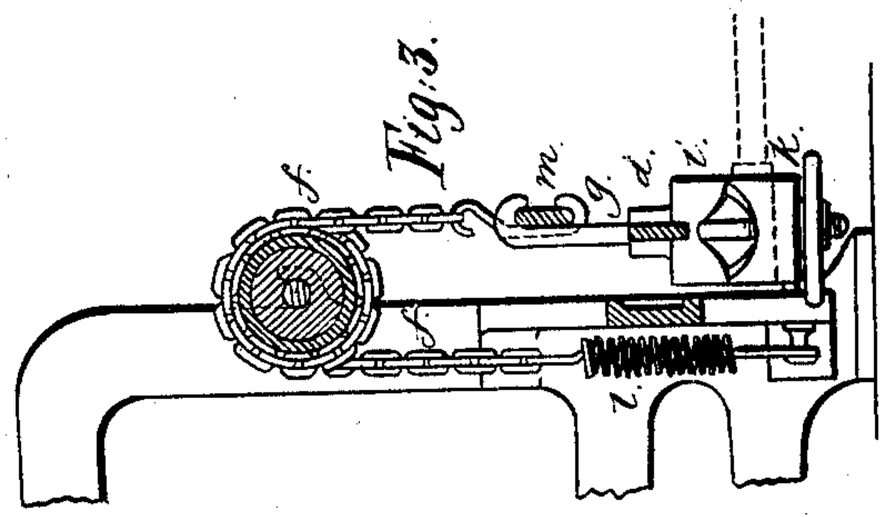


Fig. 1.

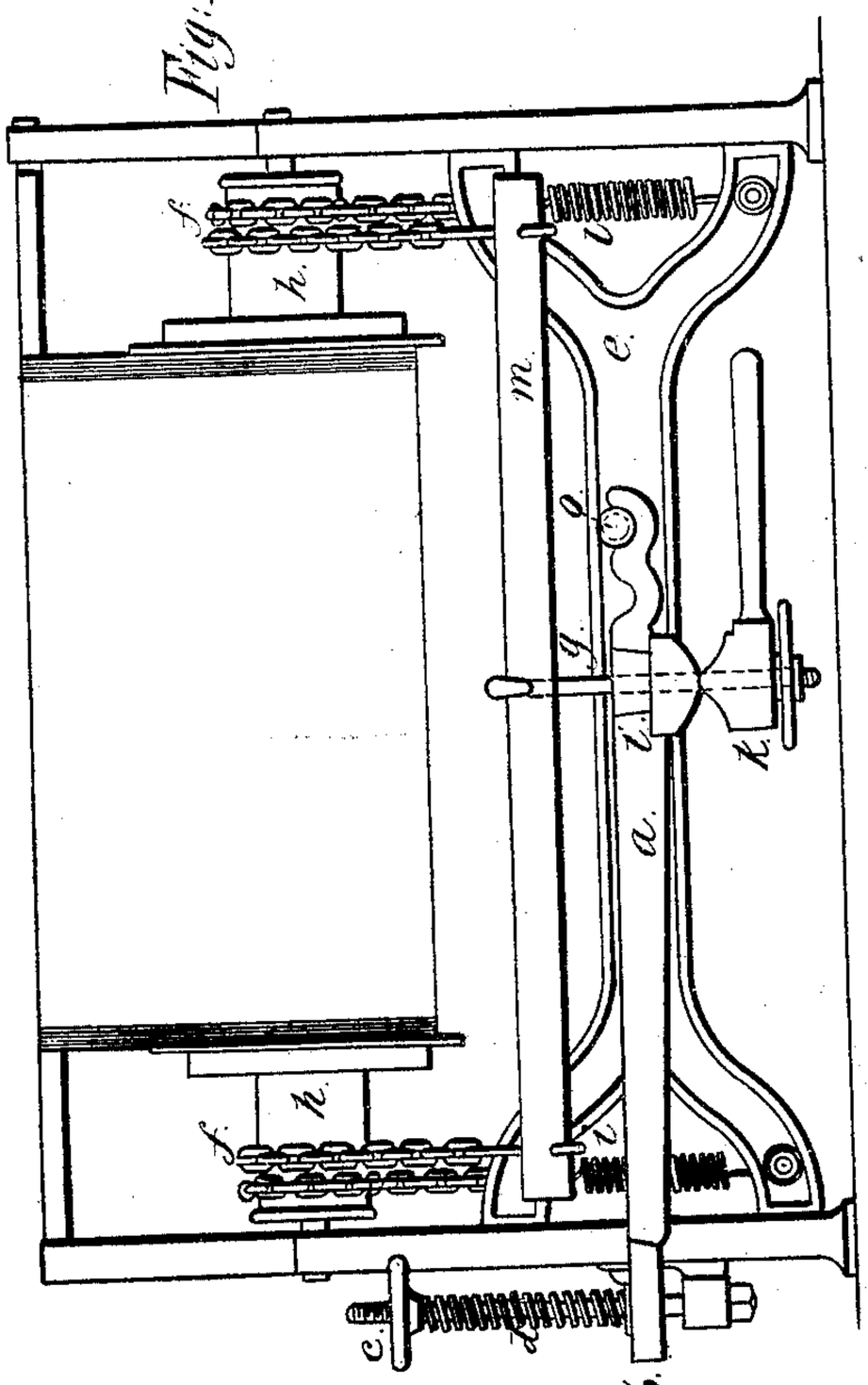
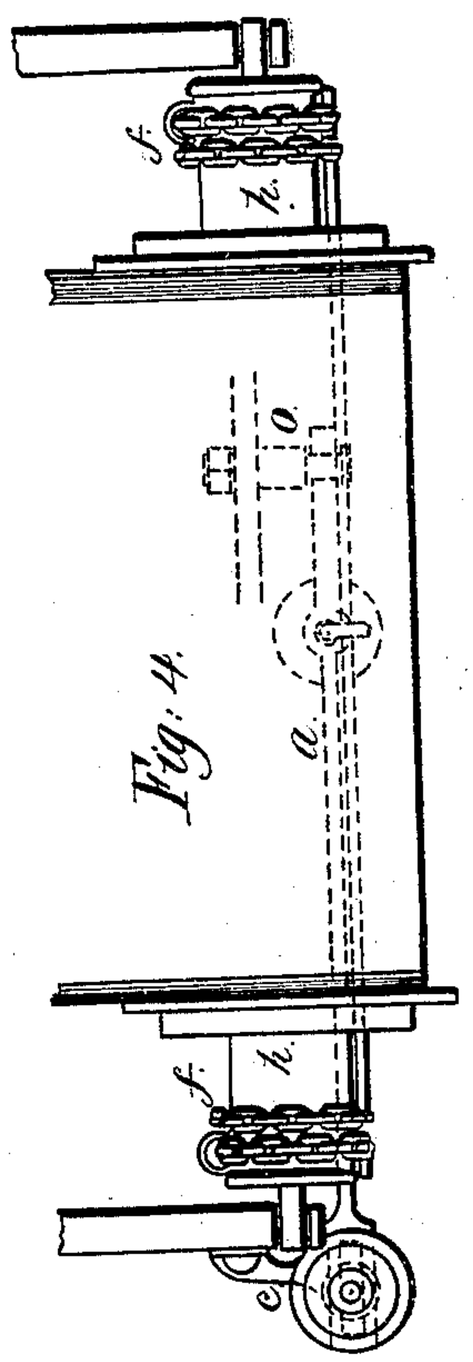


Fig. 4.



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United States Patent Office.

JOSEPH JOHN HARRISON AND EDWARD HARRISON, OF BROUGHTON, ENGLAND.

Letters Patent No. 82,220, *dated September* 15, 1868.

IMPROVEMENT IN BRAKE FOR YARN-BEAM OF LOOMS.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that we, JOSEPH JOHN HARRISON and EDWARD HARRISON, of Broughton, Lancaster county, England, have invented an Improvement in Looms; and we do hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to an arrangement of mechanism for producing and regulating any amount of tension upon the warps without the employment of weights, and also for facilitating the operation of effecting such tension; and the improvement consists in encircling or embracing about two-thirds of the circumferences of the ends of the warp-beam with steel blades, chains, or other equivalents. The lower ends of these blades on each side of the loom are firmly riveted, or otherwise secured to a stiff blade or coiled spring, fixed to the lower portion of the loom-frame. Their opposite ends, after passing over the ends of the beam, are coupled with rods that connect them with a bar of metal running parallel with the beam, from side to side of the loom. The centre of this bar, midway between its extremities, is attached to a lever, the fulcrum of which is supported by a bracket secured to the back rail of the loom, a little beyond where the lever is connected with the aforesaid parallel bar. The opposite extremity of this lever, at the side of the loom, is acted upon by a strong helical or other-shaped spring, which can be caused to increase or diminish its tension by means of a screw and wheel.

In order to enable others skilled in the art to make and use our invention, we will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 is an end elevation of an ordinary loom with our improvement.

Figure 2, a side elevation of part of the loom.

Figure 3, a sectional elevation, on the line 1–2, fig. 1; and

Figure 4, a plan view of part of the loom.

A and A′ are the side frames of an ordinary loom, and *a* is a lever which works on a stud, *o*, secured on the back rail *e* of the loom. At the end of the lever (marked *b*) a slot is provided, so as to allow a rod, *i*, secured to a bracket, to pass through and work freely, on which rod a spiral steel spring, *d*, is placed. The rod is screwed and provided with a hand-wheel, *c*, which, when screwed or unscrewed, exerts a greater or less pressure upon the lever *a*. A chain, *f*, passes round each end of the warp-roller, is secured at one end to a spiral spring, *l*, attached to the cross-piece *e*, and is connected at the other end to one end of a bar, *m*. From the cross-beam *m* the connecting-rod *g* is suspended by a hook, which, after passing through a hole in the lever *a*, carries the two inclined-surfaced disks *i* and *k*, the upper one of which is retained in its position with the lever *a*, by lugs or projections therefrom. The lower disk *k* is provided with a handle, as shown in the figure. The hand-wheel on the connecting-rod *g* is for the rough adjustment of the tension on the yarn, and should be screwed up when the handle of the disk *k* is at right angles to the line of the lever *a*. When the proper amount of tension is obtained, the handle should be turned into a parallel position with the lever, when it will be locked by the notches in the inclined disk. When it is necessary to slacken the yarn, the disk *k* is turned at right angles, as above stated, which is easily done by the weaver without interference with the first and permanent tension obtained.

The principal point to be observed in adjusting the tension-mechanism, is, first, to see that all parts are firmly attached, and secondly, that the lever *a* is in a horizontal position when the proper tension has been given for the loom to work. The rough adjustment must in all cases be given by the hand-wheel on the connecting-rod *g*. When desirable, a great additional power can be obtained by shifting the stud *o* to the notch on the lever nearest the connecting-rod.

It will be seen that flexible bands may be substituted for the chains *f*.

We claim as our invention, and desire to secure by Letters Patent—

1. The chains or bands *f*, bearing on the ends of the warp-roller, and secured to a bar, *m*, in combination

with the within-described devices, or their equivalents, for adjusting the bar, and securing it after adjustment, for the purpose specified.

2. The combination of the above and the springs *l*, connected to the bands or chains *f*, for the purpose described.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

JOSEPH JOHN HARRISON,
EDWARD HARRISON.

Witnesses:
SAM'L SHELLEY, *Ardwick.*
WM. SWAN, *Ardwick.*