

(No Model.)

2 Sheets—Sheet 1.

R. L. HATTERSLEY & J. HILL.
MECHANICAL MOVEMENT.

No. 448,713.

Patented Mar. 24, 1891.

Fig. 1

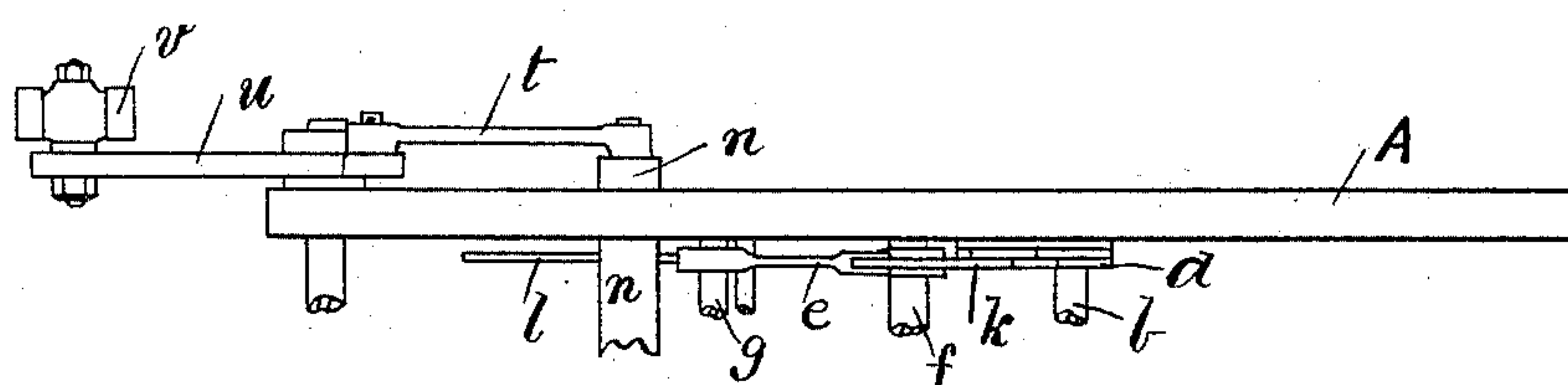
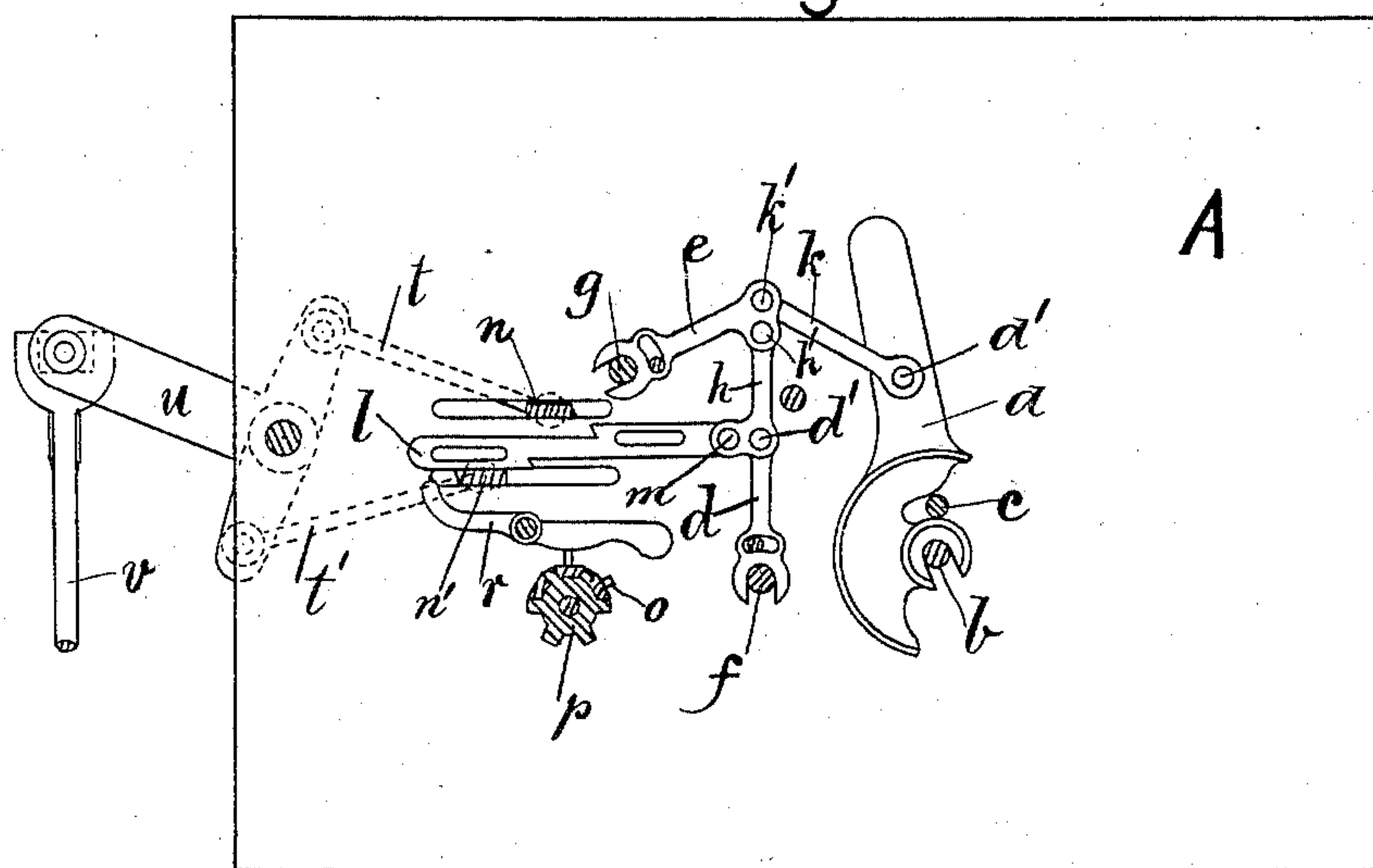


Fig. 2

Witnesses

John Whithead
Harry Ellison

Inventors.

Rich^d. L. Hattersley.
James Hill
Per Samuel Hey Atty.

(No Model.)

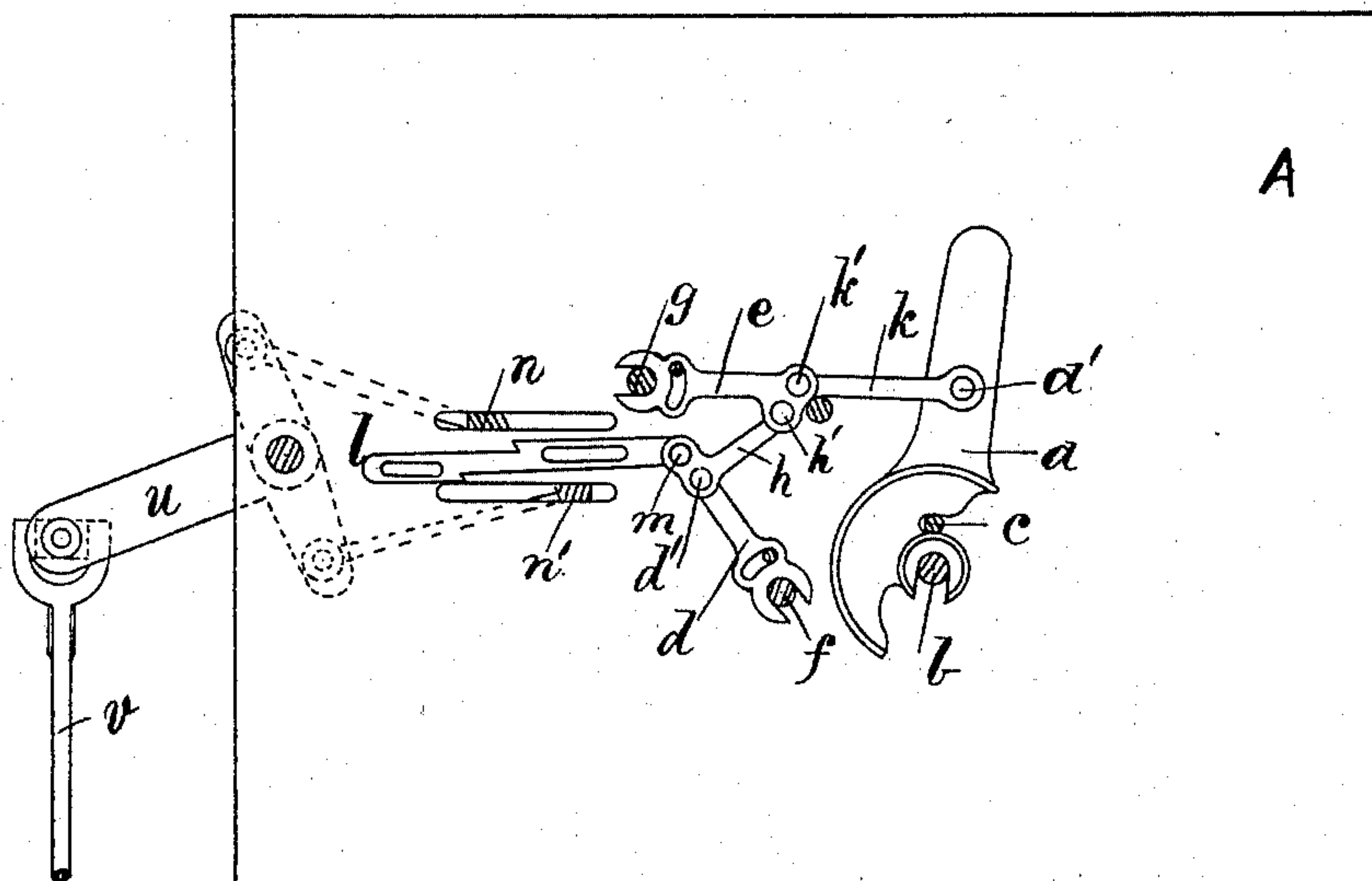
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Fig. 3



Witnesses.

John Whithhead
Harry Ellison

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Rich^d. L. Hattersley
James Hill
Per Samuel Hey
Atty.

UNITED STATES PATENT OFFICE.

RICHARD L. HATTERSLEY AND JAMES HILL, OF KEIGHLEY, ENGLAND.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 448,713, dated March 24, 1891.

Application filed July 14, 1890. Serial No. 358,613. (No model.)

To all whom it may concern:

Be it known that we, RICHARD LONGDEN HATTERSLEY and JAMES HILL, subjects of the Queen of Great Britain, residing at Keighley, in the county of York, England, have invented an Improvement in Mechanical Movements, of which the following description, together with the accompanying drawings, is a specification.

10 This invention has for its object the formation and disposition of two series of levers and their respective shafts and connecting-rods for the purpose of effecting, when put into operation, by series of hooked jacks
15 mounted upon one of these series of levers being made or allowed to engage with reciprocating draw and push bars, the movements of a third series of levers in a positive manner, as also the locking or rigidly holding of
20 this said third series of levers at each extremity of their movements, so that any force acting through this third series of levers when they are at the said extremities of their movements is withstood by several stationary
25 shafts, upon which said several series of levers are mounted. The particular uses for which these devices are fitted are the operating of the heddles or the shuttle-boxes of looms for weaving, and the usual and well-
30 known connecting parts are employed for connecting these said mechanisms to those of said looms.

The object of our invention is attained by the mechanism illustrated in the accompanying drawings, in which—

35 Figure 1 is an elevation of the parts shown as mounted upon a board or panel A instead of upon the ordinary frame-work, which would have interfered with the clearness of the view. Those parts of the mechanism
40 which in an ordinary way would extend across from the frame-work on one side of the machine to that on the other are here shown in section. Fig. 2 is a top view of parts
45 shown by Fig. 1; and Fig. 3 is a similar view to Fig. 1, but shows the relative positions of the several parts when moved so as to bring the third series of levers *a* to the other extremity of their movement than that shown
50 by Fig. 1.

In all the drawings, in order to simplify the

view, only one lever, together with its several parts, out of each of the three series of levers is shown, as from this it will readily be seen how the remaining parts of each series are to be arranged.

Similar letters refer to similar parts throughout the several views.

The lever *a* represents the series of levers herein referred to as the third series, and is shown as being mounted upon its shaft *b* by spanning the same, so that when its retaining-rod *c* is removed it may be readily detached at the time it is forming one of the series without in any way disturbing or displacing
60 any other in the same series. The levers *d* and *e* represent the two other series of levers, the same being mounted upon the shafts *f* and *g*, respectively, and coupled together and to the lever *a* by the rods *h* and *k*. The
70 hooked jack *l* is coupled to or made to lay hold of the pin *m*, attached to the rod *h*, and is made to extend horizontally to be in proximity with the draw and push bars *n* and *n'*, to or from which they are made to lay hold
75 or to be clear of by means of the peg-lags or pattern-surface *o* on the pattern-cylinder *p*, operating same in the well-known manner through the lever *r*. The draw and push bars
80 *n* and *n'* are reciprocated by the rods *t* and *t'*, (shown in broken lines, Figs. 1 and 3,) being coupled thereby to the oscillatory lever *u*, which receives its oscillatory motion through the rod *v* from any suitable motor, such as a
85 crank attached to or formed on a rotary shaft driven by any prime motor.

Now, when the rod *h* has been moved by the jack *l* into the position shown by Fig. 1 said rod *h* will have moved the lever *d* into the position for the center of its pin *d'* and that of
90 the pin *h'* on said rod *h* to be in line with the center of the shaft *f*, in which position the lever *e* and the rod *k*, as also consequently the lever *a*, (the position of which is now at the extremity of its onward movement,) will be
95 locked or rigidly held by reason of these several centers being in line with each other, while when the rod *h* has been moved into the position shown by Fig. 3 the lever *e* and the rod *k* will have been thereby moved into
100 the position for the center of the pin *k'* on the rod *k* and that of the pin *a'* on the lever *a* to

be in line with the center of the shaft *g*, in which position said lever *a* (which has now reached the other outward extremity of its movement) will be locked or rigidly held
5 from moving in any direction until said rod *h* is again moved by its motor.

We claim—

The lever *a*, the rod *k*, the lever *e*, the rod *h*, the lever *d*, the shafts *f* and *g*, the hooked

jack *l*, the bars *n* and *n'*, the rods *t* and *t'*, 10 and the lever *u*, in combination, all these several parts being mounted, constructed, and arranged to operate substantially as specified.

RICHD. L. HATTERSLEY.

JAMES HILL.

Witnesses:

SAMUEL HEY,

JOHN WHITEHEAD.