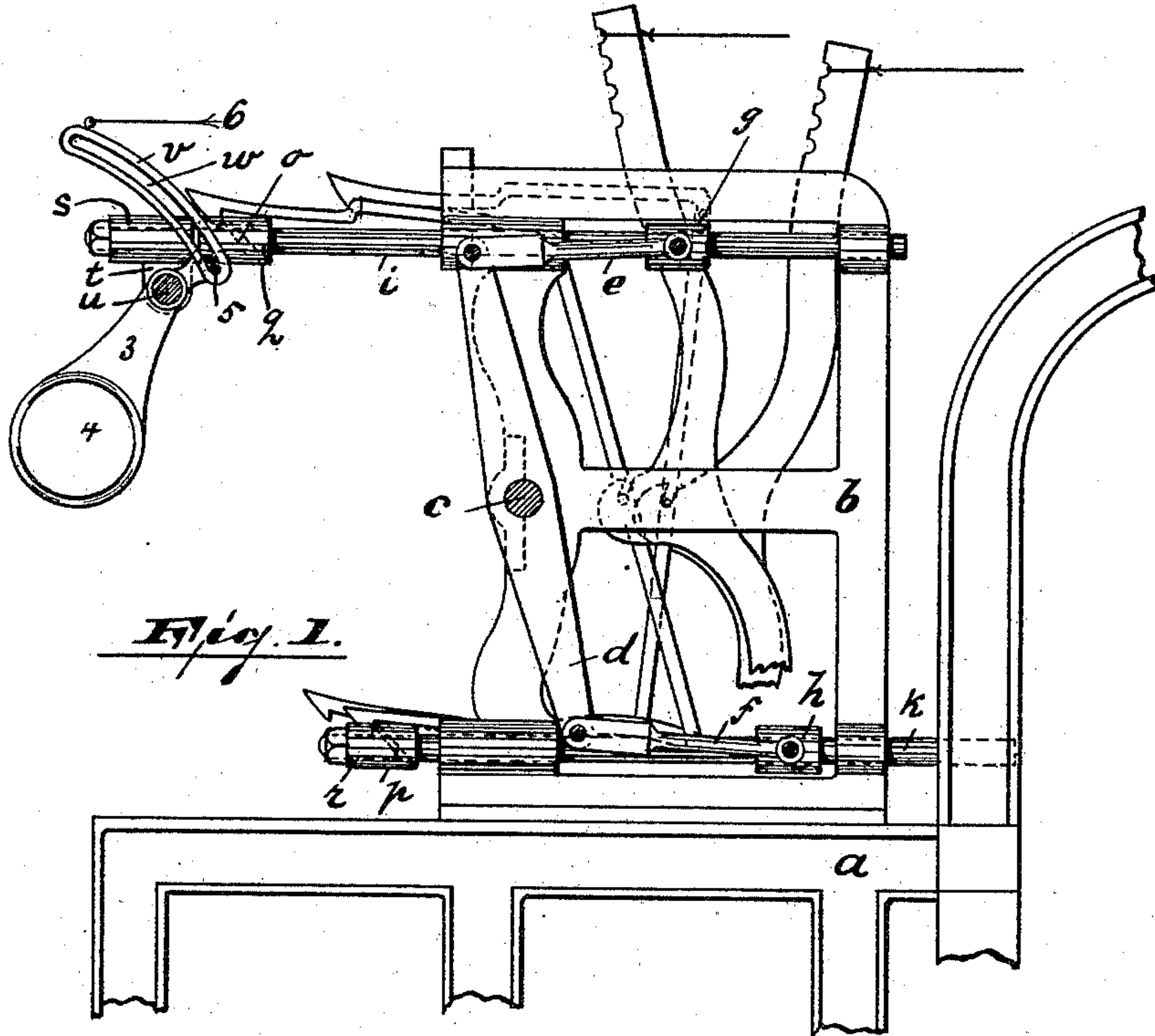
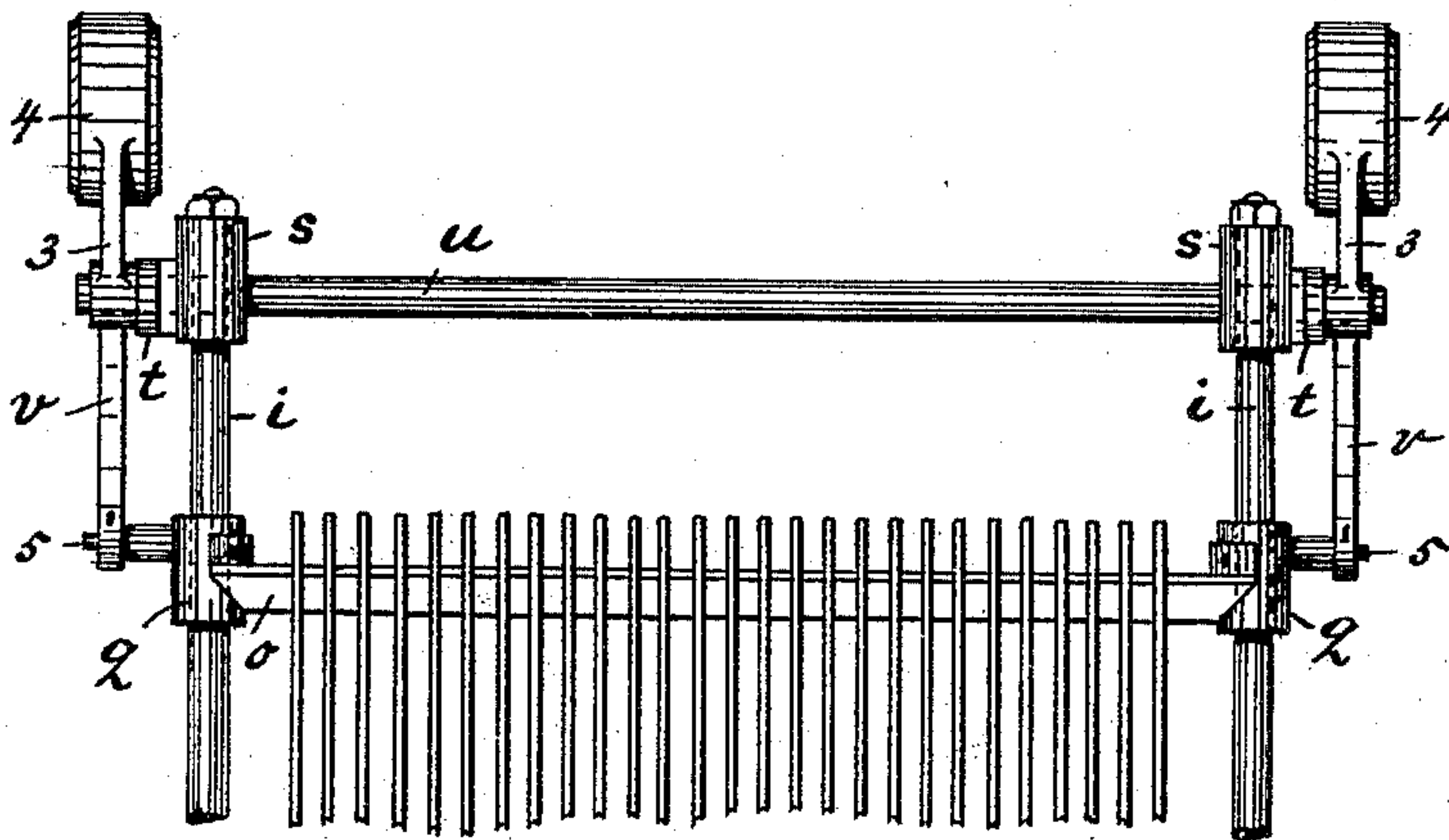


R. J. RISK.  
HARNESS LEVELING DEVICE FOR LOOMS.  
No. 488,286. Patented Dec. 20, 1892.



*Fig. 1.*



*Fig. 3.*

WITNESSES:

*Wm. S. Mell*  
*D. McRobertson.*

INVENTOR:

*Robert J. Risk*

BY

*Cartner & Co*

ATTORNEYS

(No Model.)

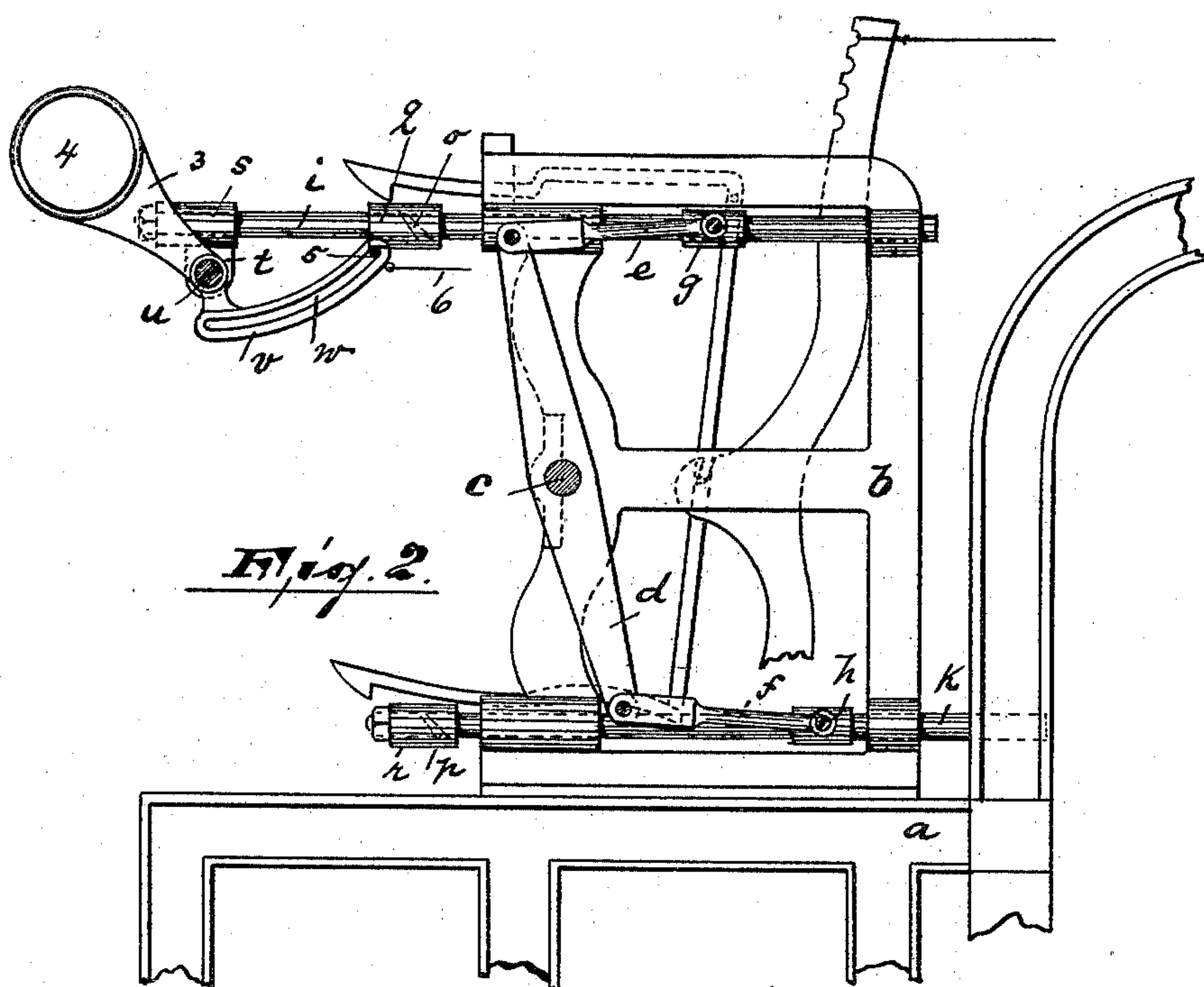
2 Sheets—Sheet 2.

R. J. RISK.

## HARNESS LEVELING DEVICE FOR LOOMS.

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Patented Dec. 20, 1892.



**WITNESSES:**

**INVENTOR :**

Wm. D. Mcl.  
D. McRobertson.

*Robert J. Risk*

BY

Partner & Co

**ATTORNEYS**



# UNITED STATES PATENT OFFICE.

ROBERT J. RISK, OF PATERSON, NEW JERSEY, ASSIGNOR TO BENJAMIN EASTWOOD, OF SAME PLACE.

## HARNESS-LEVELING DEVICE FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 488,286, dated December 20, 1892.

Application filed August 20, 1892. Serial No. 443,558. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT J. RISK, a citizen of the United States, residing at Paterson, county of Passaic, and State of New Jersey, have invented certain new and useful Improvements in Harness-Leveling Devices for Looms; 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 and numerals of reference marked thereon, which form a part of this specification.

The object of this invention is to provide simple means for operating the griff or knife (controlling the hooks) in a dobby or Jacquard machine, whereby said griff can be operated independently from the griff frame. When for instance the warp threads have to be repaired, it is necessary to bring them to one level, and this can be easily accomplished by my present invention, which consists in the improved griff or knife operating mechanism, and the combination and arrangements of the various parts thereof, substantially as will be hereinafter more fully described and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters and numerals of reference indicate corresponding parts in the three figures: Figure 1. is a side elevation of a portion of a dobby, embodying my improvement, only those parts being shown, which are necessary to fully illustrate my invention; Fig. 2. is a view similar to Fig. 1, illustrating the various parts in position in which all the hooks are returned and the harness brought to a level, and Fig. 3. is a top plan view of a portion of the griff frame, the griff and its operating mechanism.

In said drawings, *a* and *b* represent the frame of the dobby, in which is arranged the operating shaft *c*. The lever *d*, which is secured to said shaft, operates the griff frames *i* and *k*, by rods *e* and *f*, pivotally connected to said lever and to sleeves *g* and *h*, the latter being firmly secured to the griff frames *i* and *k* respectively. To the forward ends of the rods forming the lower griff frame *k* are removably secured sleeves *r*, supporting or car-

rying the lower griff or knife *p*. To the forward ends of the rods forming the upper griff frame *i* are removably secured sleeves *s*, provided with downwardly extending bearings *t*, in which is arranged shaft *u*. To each of the projecting ends of said shaft is secured an arm *v* provided with slot *w*; said arm (and its slot) is arranged eccentrically on shaft *u* and is counterbalanced by weight 4, secured to arm 3. In the slot *w* is adapted to operate a pin 5, extending horizontally from sleeve *q*, the latter being movably arranged on the rods forming the upper griff frame *i*, and between sleeve *s* and frame *b*, as clearly shown in the drawings. To the sleeves *q* is removably secured the knife or griff *o*, and to the outer end of the arm *w*, in any desired manner, a cord or wire 6, extending to any desired point of the machine within reach of the operator, whereby the latter is enabled to control the movement of said arm—and thus the movement of the griff or knife carrying sleeves.

In Fig. 1, I have illustrated a position in which the griff *o* is in engagement with the series of hooks (two, three or more at one time, according to the pattern).

In operation, when from necessity of repairing the warp threads, or for any other reason, the harness has to be brought to one level, the operator stops the machine (when it reaches the position shown in Fig. 1.) and pulls the cord 6, whereby the arm with its eccentric slot, engaging pin 5 of the knife carrying sleeve *q*, is turned on its fulcrum. The sleeves *q* are thus moved backward until they reach the position shown in Fig. 2, thus allowing the hooks (formerly engaging the knife) to return to their normal position. The harness is thus brought to level and the necessary repairs can be accomplished. When this is done the machine is again started. The griff frame in its return motion will cause the sleeves *q* to press against the stationary frame *b*, whereby the eccentric arm, assisted by its counterbalance weight, will be returned to its normal position.

Alterations in the connection of my improved leveling device with the dobby or the Jacquard machine can be made, without changing the scope of my invention.



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

1. In a harness leveling device, the combination with the griff frame and the knife carrying sleeves, of a lever pivotally secured to the forward end of the griff frame and provided with a slot, arranged eccentrically to the fulcrum of said lever, and a pin, secured to the knife carrying sleeve and adapted to engage said eccentric slot, all said parts, substantially as described and for the purposes set forth.

2. In a harness leveling device, the combination with the griff frame and the knife carrying sleeves, of a sleeve secured to the forward end of the griff frame, a lever pivotally

secured to said sleeve, one arm of said lever being provided with a slot, arranged eccentrically to the fulcrum, a pin secured to the knife carrying sleeve and adapted to engage said eccentric slot, and a counter weight secured to or arranged on the other arm of the lever, and adapted to control the return motion of the latter, all said parts, substantially as described and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of August, 1892.

ROBERT J. RISK.

Witnesses:

GEORGE S. SMITH,

JAMES J. VAN HOVENBERG.