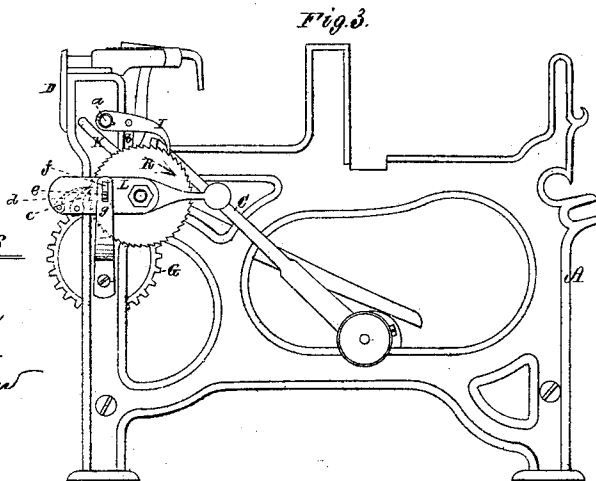
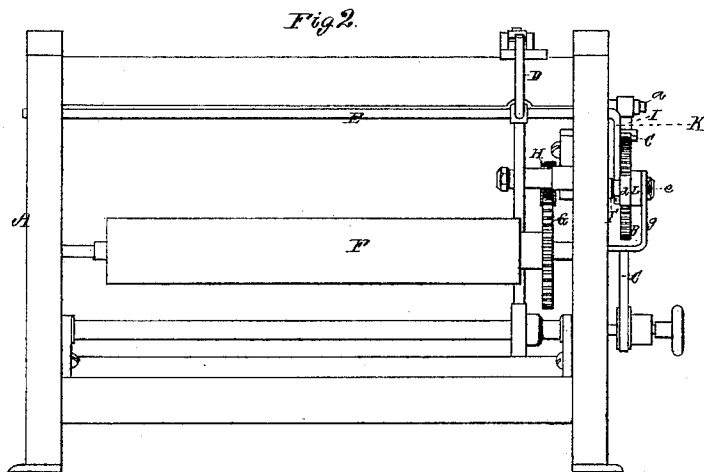
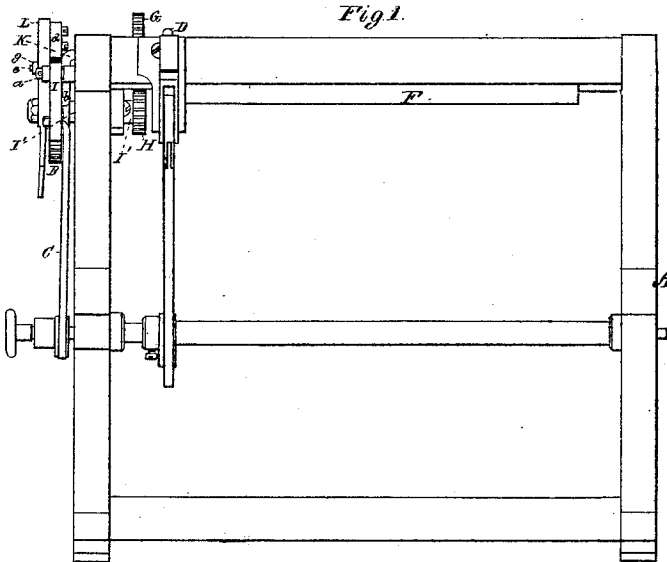


W. ROUSE.

Improvement in Loom Take-Up.

No. 114,606.

Patented May 9, 1871.



Witnesses
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L. A. Mollen

W. Rouse.
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United States Patent Office.

WANTON ROUSE, OF TAUNTON, ASSIGNOR TO GEORGE DRAPER & SON,
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Letters Patent No. 114,606, dated May 9, 1871.

IMPROVEMENT IN LOOM TAKE-UPS.

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

To all persons to whom these presents may come :

Be it known that I, WANTON ROUSE, of Taunton, of the county of Bristol, of the State of Massachusetts, have made a new and useful invention having reference to Looms for Weaving; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a top view,

Figure 2 a rear elevation, and

Figure 3 an end elevation of a loom-frame provided with my said invention.

The main purpose of the mechanism to be hereinafter described is to allow the sand or cloth-roller to revolve backward a short distance when a stoppage of the loom takes place by reason of breakage of the weft or filling, or the want of weft or filling in the shuttle, the amount of such back movement of the roller circumferentially being an arc equal to the width of two or three threads of the filling or thereabout. The object of thus causing or allowing the roller to fall back is to avoid the production of what weavers term a "thin place" in the cloth.

It is well known that after a stoppage of the loom takes place, by reason of breakage of the filling or a want of filling in the shuttle, the latter—that is, the shuttle—will generally be thrown one or more times too much across the race-beam of the lay. The lay beating up in the mean time will actuate the "take-up motion" or mechanism and the "let-off motion" or mechanism, whereby an extra taking up of the cloth and an extra letting off of warp will be effected, so that when the shuttle again commences to weave there will be a loose or thin place or "filling-void" left in the cloth.

From the above it will be seen that, by letting the cloth woven fall back a little, equal to the amount taken up during the false movements of the shuttle, I restore the cloth to its normal position, and thus avoid the improper weaving, as described.

Mechanism for the purpose above mentioned will be found explained in the specification of Bellford's British patent No. 670, A. D. 1853; in those of the British patents of Taylor and Hurst, No. 12,997, and Goldie, No. 3,203, for 1863; and also in the specification of the United States patent No. 109,345, dated August 4, 1870, and granted on an invention made by George Richardson.

The mechanisms of Bellford and Richardson depend entirely on the strain or contraction of the cloth and warps to effect the necessary back movement of the cloth-beam, and in doing this there has to be overcome

the gravitating power or weight of the sliding portion of the sectoral pawl.

In the weaving of thin or light cloth, owing to the little strain on the warps and cloth, great difficulty is found in avoiding the production of the thin places or filling-voids hereinbefore referred to, and this more especially with either of the mechanisms of Bellford and Richardson, a material obstacle being the weight of the sliding part of the pawl, which has to be overcome by the strain on the warps and cloth before the cloth-roller can give or move back. So in the mechanisms of Taylor and Hurst, and Goldie; when there is a lever supporting the journal of the ratchet-wheel the arrangement of the same is such as to cause it to operate as an obstruction to the back movement of the cloth-beam.

In my mechanism, as hereinbefore described, there is employed with the ratchet no compound retaining-pawl, such as is found described and represented in either of the said patents of Bellford or Richardson. With my invention the turning back of the cloth-roller is entirely under control, and in fact, instead of such roller being resisted in its backward movement, it by my invention is assisted in making such, one object of my invention being to avoid the resistance incident to those of Bellford, Taylor and Hurst, Goldie, and Richardson whereby they are rendered incapable of being used to advantage, or are objectionable in the weaving of thin and light cloth.

In the drawing—

A denotes the loom-frame.

B, the ratchet of the take-up mechanism.

C, the impelling or draw-pawl of such ratchet.

D is the finger of the stop motion or mechanism, such finger being projected upward from a shaft, E, composing part of such mechanism, as is well known.

As the take-up and the stop motions or mechanisms are well understood by weavers and manufacturers of looms, it will be unnecessary for me to further describe them, as I have exhibited in the drawing those elementary parts of them to which my apparatus or mechanism, to be hereinafter described, is directly applied.

The cloth-beam or roller is shown at F, and its operating train of gears at G and H, the ratchet B being fixed on the shaft I of the pinion H.

The retaining-pawl of the ratchet is shown at I as arranged on a stationary journal, a, and extended over the draw-pawl.

The two pawls are raised at once out of engagement with the ratchet by means of an arm or pawl-lifter, K, extended from the finger-shaft E, and underneath the

draw-pawl, and also underneath a projection or stud, *b*, of the retaining-pawl.

In carrying out my invention I pivot upon the shaft *I* of the ratchet a lever, *L*, and arrange such lever alongside of, and diametrically and horizontally or thereabout across, the ratchet; and I pivot to one arm of such lever a pawl, *c*, to engage with the ratchet, such pawl being furnished with a spring, *d*, to preserve it in contact with the toothed periphery of the ratchet.

The range of vibration of the lever is limited by a stud, *e*, projecting from it into a slot, *f*, made in a standard, *g*, projecting from the loom-frame, all being arranged in manner as represented.

That arm of the lever *L* to which the pressure-pawl *c* is pivoted should be heavier than, or equal in weight with, the other arm; or either may be weighted, as occasion may require. When the pawl-arm is the heavier of the two, or is weighted, the excess of weight will operate to facilitate the back movement of the cloth-beam.

The third or pressure-pawl admits of the forward rotary movement of the ratchet produced by the draw-pawl, and serves, by its friction on the ratchet, to enable the weighted arm of the lever to aid in revolving the ratchet, and thereby facilitate the required back motion of the cloth-beam the distance such beam may have been improperly advanced by the action of the lay while the shuttle may have been improperly or unnecessarily moved over the race-beam.

While the ratchet may be advancing the pawl-arm of the lever *L* will be at its highest elevation. As soon as the draw and rotary pawls are lifted out of action with the ratchet the cloth-beam will be free to

be moved back, and will be assisted in such movement by the excess of weight of the pawl-arm of the lever *L* over the weight of the other arm.

I would remark that a spring applied to and forming part of the pressure-pawl is better than a weight, as it is more certain in its action, or will keep the pawl in contact with the peripheries of the ratchet to better advantage. The pawl, however, may be weighted or be of sufficient weight to enable the spring to be dispensed with; but it is far preferable to have a spring with the pawl in order to effect the proper degree of pressure of it against the periphery of the ratchet.

I make no claim to either of the mechanisms hereinbefore mentioned as found in the British patents of Bellford, Taylor and Hurst, and Goldie, or in the American patent of Richardson.

My mechanism contains a mechanical element or device not incident to either of the others, viz., a mechanism that either presents no resistance to the back motion of the cloth-roller or operates to facilitate such. Therefore,

I claim—

The lever *L* and its pressure-pawl *c*, the stud *e* and the slotted standard *g*, as arranged and combined with the ratchet *B* of the take-up motion, substantially as shown and described, such ratchet being provided with the pawls *C I* and with the lifter *K* to be operated by the stop motion, the whole being essentially as and for the purpose or purposes as explained.

WANTON ROUSE.

Witnesses:

R. H. EDDY,
J. R. SNOW.