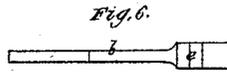
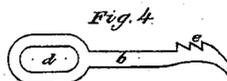
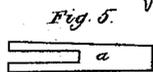
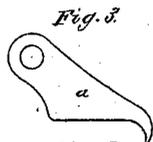
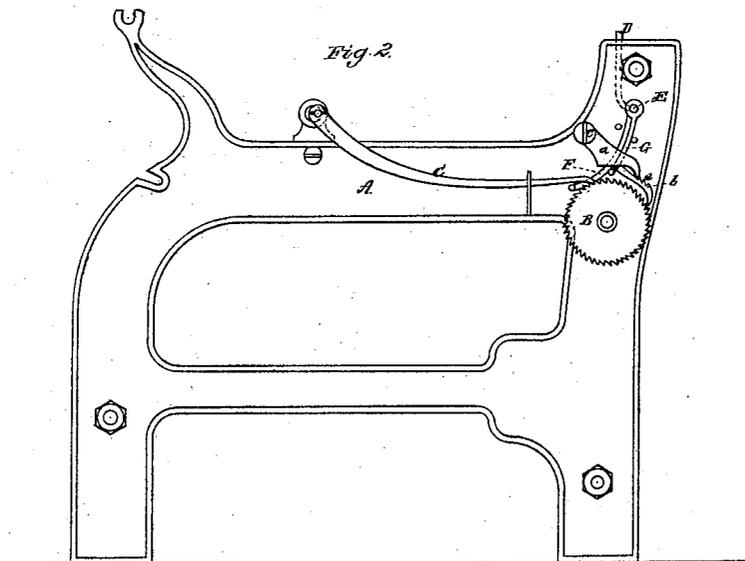
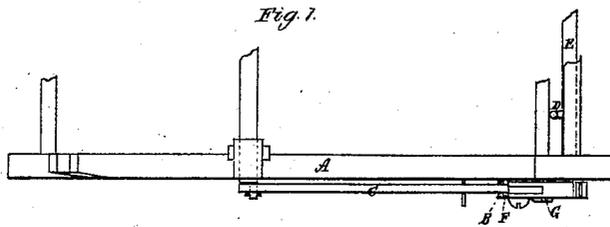


G. Richardson,

Take Up.

No. 109345.

Patented Nov. 15. 1870.



Witnesses
S. N. Piper
J. H. Snow

Geo. Richardson
by his attorney
R. W. Cady

UNITED STATES PATENT OFFICE.

GEORGE RICHARDSON, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN TAKE-UP DETAINING-PAWLS.

Specification forming part of Letters Patent No. 109,345, dated November 15, 1870.

To all whom it may concern:

Be it known that I, GEORGE RICHARDSON, of Lowell, of the county of Middlesex, of the State of Massachusetts, have made a new and useful invention having reference to Looms for Weaving Cloth; 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, and Fig. 2 a side elevation, of a loom-frame with my invention applied to it.

The 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 of 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 meantime, will actuate the take-up 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 revolve the cloth to its normal position, and thus avoid the improper weaving, as described.

In the drawing, A denotes the loom-frame; B, the ratchet of the take-up mechanism; C, the impelling-pawl of such ratchet; and D, the finger of the stop-motion or mechanism, such finger being projected upward from the

shaft E, comprising 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.

In carrying out my invention, I employ a duplex or compound retaining-pawl to the said ratchet, such pawl being composed of two parts, *a b*, which are shown in connection in Fig. 2, and separately in side elevation in Figs. 3 and 4, and also in top view in Figs. 5 and 6. Both parts *a b* are pivoted on a common pin or fulcrum, *c*. The part *b* has a slot, *d*, that it may have a short sliding movement on the fulcrum. It also has a rack or series, *e*, of teeth formed in it to receive the end of the part *a*, which rests on the top of the said part *b*, the end of the latter resting on and serving to act with the teeth of the ratchet. There project down from the stop motion shaft E two arms or pawl-lifters, F G, one of which extends underneath the compound pawl and the other underneath the impelling-pawl C.

From the above it will be seen that when the stop-motion of the loom is set in action, in order to effect stoppage of the loom the pawl-lifters F G will be moved with and by the shaft E, and one will lift the impelling-pawl C out of action upon the ratchet, and the other will lift the part *a* of the compound pawl out of action upon the teeth or rack of the part *b*, whereby both the ratchet and the part *b* will be set free, so as to enable the cloth to fall or be drawn back a distance corresponding to the length of the sliding movement allowed the part *b* by the slot *d*.

In the British patent No. 670, for 1853, granted to Bellford, there is described a mechanism for the purpose for which the mechanism hereinbefore explained is intended. I make no claim to such mechanism of Bellford, as it differs materially from mine in construction as well as in operation, mine being simpler and more efficient.

The differences are mainly in the construction of the compound retaining-pawl, and also in the mechanism for actuating it and the impelling-pawl of the ratchet of the take-up motion.

I therefore claim—

1. The arrangement of the pawl-lifters F G and the compound retaining-pawl, composed of the parts *a b*, made and applied together, as described, with the impelling-pawl C,

ratchet-wheel B, and the shaft E of the stop-motion, the whole being constructed and operating as explained.

2. The compound retaining-pawl, composed of the two parts *a b*, when constructed and arranged substantially as explained.

GEO. RICHARDSON.

Witnesses:

R. H. EDDY,

J. R. SNOW.