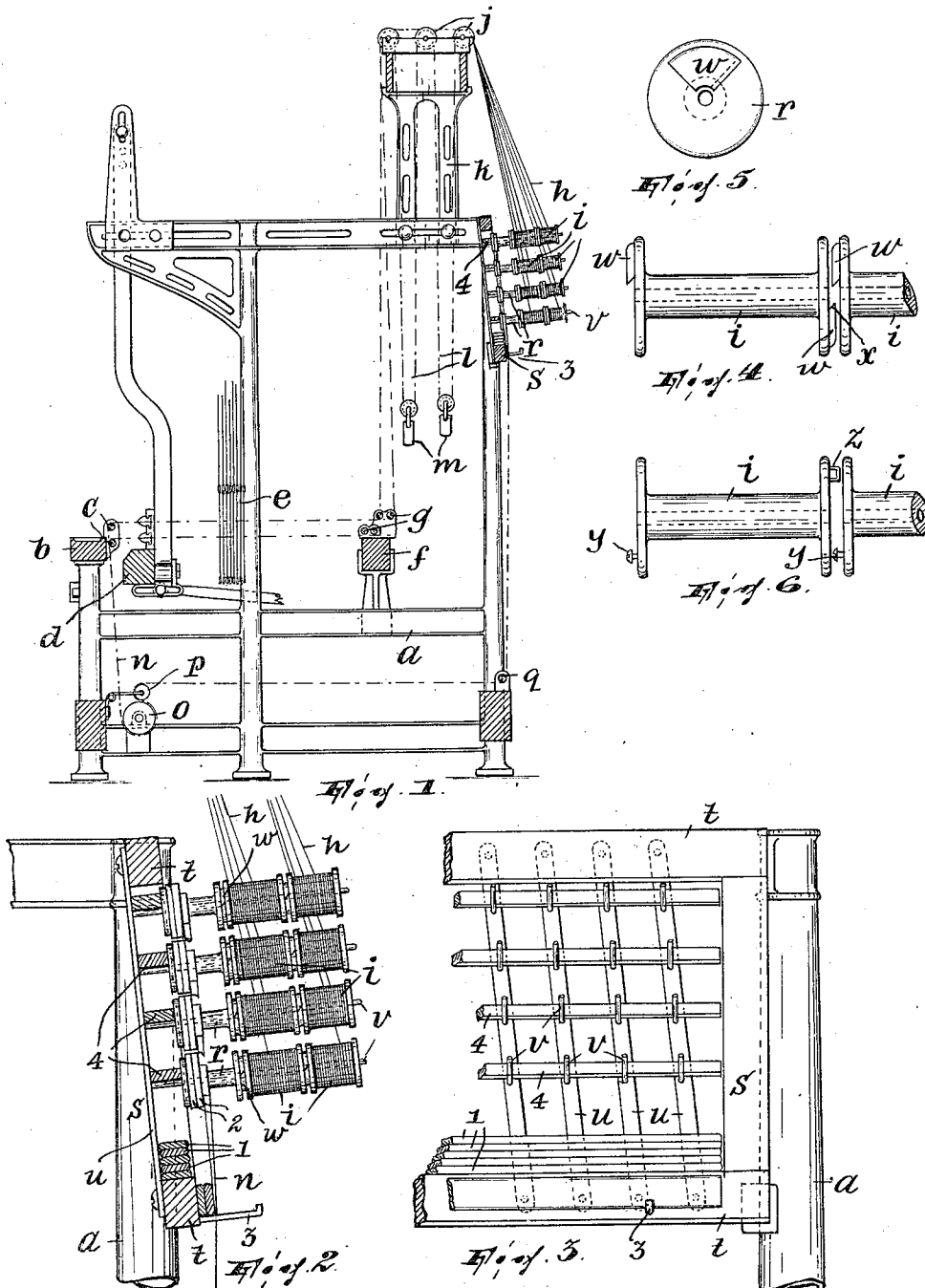


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LOOM.

APPLICATION FILED OCT. 24, 1908.

Patented Feb. 22, 1910.

950,021.



WITNESSES

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LOOM.

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To all whom it may concern:

Be it known that I, WILLIAM HARRIS, a subject of the King of England, residing in Paterson, Passaic county, New Jersey, have
5 invented a certain new and useful Improvement in 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 ap-
10 pertains to make and use the same, reference being had to the accompanying drawing, and to characters of reference marked thereon, which forms a part of this specification.

This invention relates to looms of the type,
15 usually of the narrow-ware class, in which the necessary tension on the warps is maintained by weights suspended in loops in the warps, the warp supply spools normally being held against rotation and only being al-
20 lowed to rotate as the slack represented by said loops becomes exhausted.

The principal objects of the invention are to provide for not only winding the finished goods on spools or the like, whereby to avoid
25 tangling and frequent damaging thereof, which usually attend the present custom of depositing the finished goods in boxes under the loom, but to make the delivery or warp spools rotate the spools for the finished goods
30 and thus effect the necessary take-up, whereby to avoid the loss of labor and time now required in occasionally replenishing the exhausted slack by releasing the warp spools and paying out more warp.

35 Another object is to provide in a simple way for controlling the finished goods so that it will not only be wound in succeeding regular convolutions on the several spools but so that the extent of movement of the
40 weights may be as limited as desired or necessary.

In the accompanying drawing, Figure 1 is a vertical sectional view of the improved loom; Fig. 2 a similar view, on a larger
45 scale, of the upper rear part of the loom; Fig. 3 a rear view of what is seen in Fig. 2, the spools being omitted; Figs. 4 and 5 side and end views of one form of spool; and, Fig. 6 a side view of another form of spool.
50 *a* is the loom-frame; *b* the breast-beam carrying glass-bars *c*; *d* the suspended lay or batten structure; *e* the harness and *f* the usual beam, supporting glass-bars *g*.

55 The warps *h* extend from the supply spools *i* over rollers *j* journaled in a super-structure *k* on the frame *a*, suspended loops

l being formed in the warps between said rollers and sustaining the tension weights *m*; from said rollers the warps extend under glass-bars *g*, thence forward through the
60 harness and over the batten. The finished goods *n* extend over the glass-bars *c*, around the sand-rollers *o*, over the pressure-rollers *p*, back under a guide-bar *q* and up to the spools *r*. An inclined frame *s* is arranged
65 at the back upper part of frame *a*, the upper and lower beams *t* of which are connected by oblique parallel strips *u* from which project skewers *v*; on these skewers are ar-
70 ranged spools *i* and *r*, interlocked in the manner to be described so that the rotation of the spools *i* under the pull of warps ro-
tates the spools *r* in the same direction, the woven goods being wound on spools *r* as the warps are unwound from spools *i*.
75

Figs. 4, 5 and 6 show how the spools may be interlocked: In Figs. 4 and 5, each spool has segmental projections *w* formed dia-
80 metrically opposite each other one at one end and the other at the other end of the spool; when two such spools are placed end
to end on a skewer they will be interlocked for rotation together and the interlocking
85 action may be augmented by forming the acting side of each projection with the undercut *x*. In Fig. 6, instead of segmental
projections, a headed device *y*, such as a screw, is driven into one end of the spool
90 and a staple *z* or the like into the other end thereof, each screw and staple interlocking
when two spools are brought face to face on the same axis. It will be understood that
95 any means for rotating the spools *r* from the spools *i* is comprehended within the invention, however.

To guide the woven goods properly onto the spools *r* I preferably employ the follow-
ing mechanism: A series of light slats *1* is kept in reserve on lower beam *t* of frame *s*,
100 and as a complete coil or pile 2 of finished goods forms on each spool *r* and the goods has been shifted to start a fresh coil, one
slat is removed and set flatwise against the rear face of the beam or the slat previously
105 so placed, being supported by the spikes 3. Spacing strips may be laid across each
horizontal row of skewers, as at 4, to keep the inner face of the end of each spool *r*
110 in the plane of the rear faces of beams *t*—the proper position of these spools for receiving the first coils.

By my arrangement I not only avoid the

undesirable use of boxes for receiving the finished goods and the necessity of frequently paying out more warp as the slack is taken up in the weaving but can "pick back" and effect other operations attending the weaving much more readily and with less loss of time than is possible in the present arrangement of looms of this character. The weights m maintain the necessary tension, while the loops l afford compensation under all conditions for constantly changing differences in diameter as between the spools i and r .

When the loom is started, the warp-spools being full and the goods spools empty, the weights fall gradually as the weaving proceeds, because on each revolution of the member comprising the interlocked spools i and r , a greater length of warp is paid out than length of goods is taken up. This continues, though at a diminished rate as the goods spool augments in diameter, until the diameters of the spools are equal, whereupon, the weights now rise gradually, at a constantly increasing rate. When a pile or coil of goods has reached a predetermined height the goods is shifted to start a fresh pile. In this way, the extent of movement of the weights is controlled to suit the conditions, when otherwise it might be so considerable as to require frequent attention to insure the weights exercising the proper tension action on the band or web comprising the warp and finished goods, it being obvious that whenever the goods are shifted to start fresh piles or coils the weights begin to run down again.

I do not claim herein the means for guiding the finished goods (said means herein taking specifically the form of the spikes 3 and slats 2), that being reserved for my copending application, Serial No. 485891, filed March 26th, 1909.

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

1. In a loom, the combination of the frame, means for guiding the warp and finished goods, a rotary warp-supply device

and a rotary receiving device for the finished goods, the latter being driven rotatively from the former, whereby to wind the goods on the receiving device as the warp is unwound from the supply device, substantially as described.

2. In a loom, the combination of the frame, means for guiding the warp and finished goods, a rotary warp-supply device, a rotary receiving device for the finished goods, the latter being driven rotatively from the former, whereby to wind the goods on the receiving device as the warp is unwound from the supply device, and means for maintaining a tension on the warp and finished goods, substantially as described.

3. In a loom, the combination of the frame comprising an axial support, means for guiding the warp and finished goods, a rotary warp-supply device and a rotary receiving device for the finished goods arranged in axial alinement on said support and interlocked for rotation together, substantially as described.

4. In a loom, the combination of the frame comprising an axial support, means for guiding the warp and finished goods, a rotary warp-supply device and a rotary receiving device for the finished goods arranged in axial alinement on said support and interlocked for rotation together, and means for maintaining a tension on the warp and finished goods, substantially as described.

5. In a loom, the combination of the frame, means for guiding the warp and finished goods, and a rotary member comprising a warp-delivery portion and a goods-receiving portion substantially axially alined with each other and mutually rotatable in one direction, substantially as described.

In testimony, that I claim the foregoing, I have hereunto set my hand this 23rd day of October, 1908.

WILLIAM HARRIS.

Witnesses:

JOHN W. STEWARD,
WM. D. BELL.