(No Model.)

C. PEARSON.

LET OFF MECHANISM FOR LOOMS FOR WEAVING DOUBLE PILE FABRICS.

No. 343,648. Patented June 15, 1886.

Fig. 1.

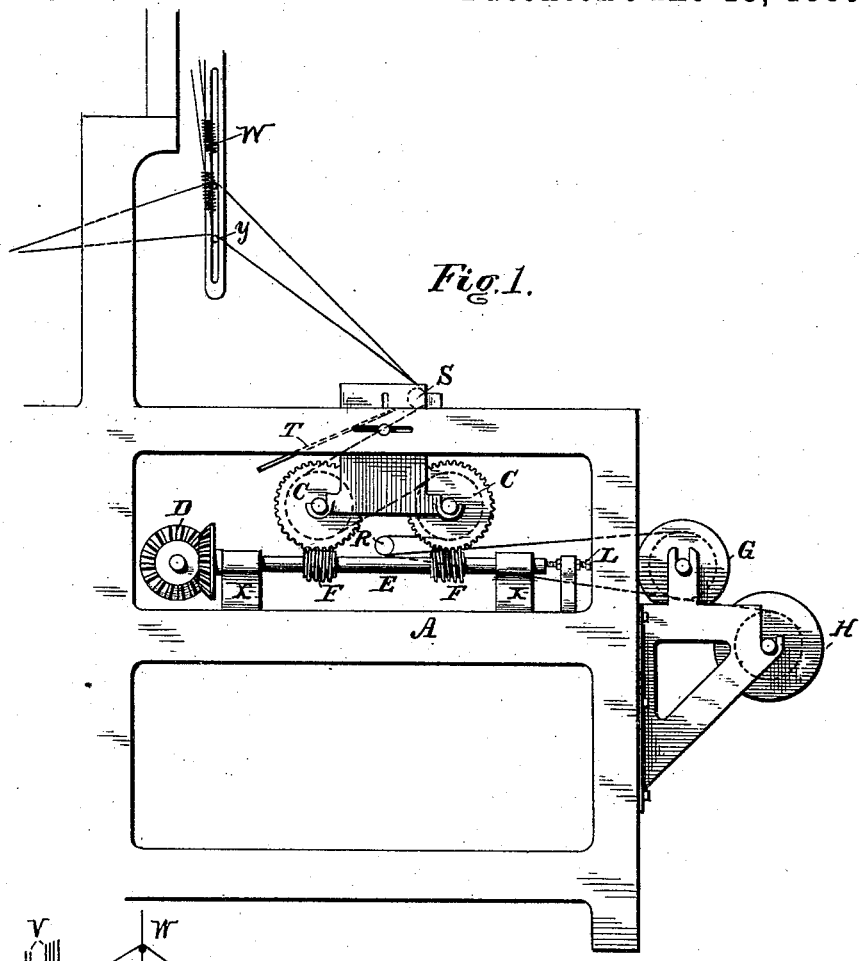


Fig. 2.

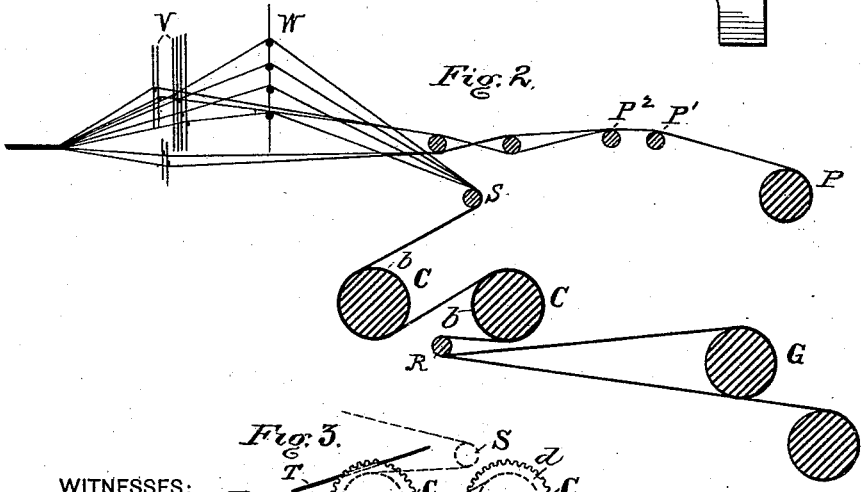
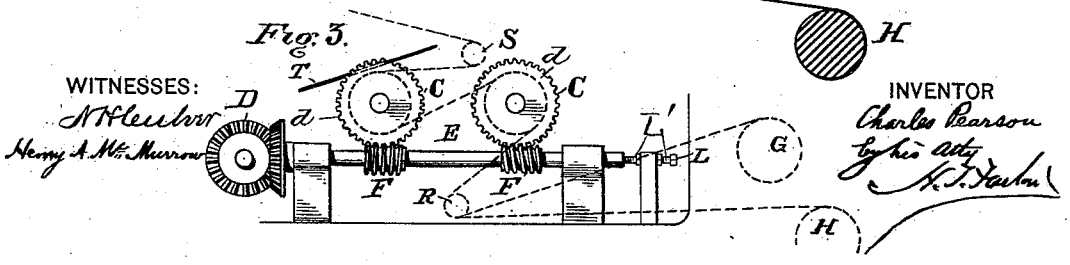


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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LET-OFF MECHANISM FOR LOOMS FOR WEAVING DOUBLE-PILE FABRICS.

SPECIFICATION forming part of Letters Patent No. 343,648, dated June 15, 1886.

Application filed March 27, 1885. Serial No. 160,178. (No model.) Patented in England April 17, 1885, No. 4,767.

To all whom it may concern:

Be it known that I, CHARLES PEARSON, a subject of the Queen of Great Britain, at present residing in the city of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Let-Off Mechanism for Looms for Weaving Double-Pile Fabrics, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to mechanism for supplying, guiding, and delivering pile-warp in looms adapted to weaving fabrics composed of two cloths or backings with connecting pile-threads between them, which are severed laterally to produce two distinct pieces of pile fabric, and is designed to effect a more regular delivery of said warp. The construction and operation of looms of this character are well known in the art, and need not be herein particularly described; but a reference may be made to English Letters Patent granted to George Davies, No. 2,429, dated November 1, 1858, for the general and necessary features of such machines.

It has been found by experience in the use of such looms that the quality of the product depends largely upon the regularity and uniformity with which the warp for the pile is supplied and delivered; and my invention consists solely in improved mechanism for replacing that found in said Davies' loom for effecting the letting off, supporting, and guiding, and delivering of the pile-warp, and to those skilled in the art and familiar with such looms my improvements will be readily understood from the accompanying drawings, in which—

Figure 1 is a side elevation of that part of the loom containing the mechanism for supplying, guiding, and delivering the pile-warp. Fig. 2 is a diagram showing the arrangement and position of the several rollers and parts constituting said mechanism and the relative position of the ground-warp rollers. Fig. 3 is a detached view of some of the parts.

Appropriately mounted in the frame A of the loom are beams G and H, around which the pile-warp threads are wound, and these threads are delivered from thence to a guide-roller, R, secured in the frame of the loom, and thence to a pair of metal rollers, C C, turned perfectly true and covered with cloth, plush, or other like rough-surface material, indicated at *b b*, in order to create friction between the surface of the roller and the warp-threads. These rollers C C are suitably mounted upon shafts having bearings in a bracket bolted to the frame A of the loom. They are independently rotated toward each other with unvarying uniformity and precision by means of worm-wheels *d d* on the axes thereof, which engage with two screws, F F, one for each roller, one being a left-hand screw and the other a right-hand screw, on a horizontal shaft, E, which has its bearings in brackets X X, also secured to the side of the frame A. One end of this shaft E is provided with a beveled gear-wheel, which engages with a similar beveled gear-wheel on the end of the picking-shaft D, and is thus continuously driven. The other end of said shaft E bears against a rod, L, in the bracket X, provided with jam-nuts L', in order thereby to secure desired pressure against the shaft and its actuating-wheel, more especially when actuated by friction as a substitute for the gear-wheels shown. The pile-warp threads are delivered directly from the guide-roller R to one of the metal rollers C, and under and around the same, and from thence in like manner under and around the other roller, C, said rollers rotating toward each other, and from the said last-mentioned roller C the pile-warp is carried to a second guide-roller, S, supported horizontally in the frame A, and is from thence taken up by vertical rods Y, held up by pull-springs W, to support the warp in its passage to the heddles, and to create the necessary tension thereon to hold the same taut.

It has been found in practice that in carrying the pile-warp threads to a point over the main rollers C the loose waste driven off by the operation will drop onto the warp after passing the second roller, C, not only injuring the pile-warp, but clogging the mechanism; and to prevent this I arrange a shield, T, over the second roller, C, consisting of a flat tin or other suitable plate extending from side to

side of the loom and secured to the frame thereof.

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

1. The mechanism shown and described for supplying, guiding, and delivering pile-warp threads from the warp-beam to the heddles, consisting of the guide-rollers R and S, independently-rotated covered rollers C C, provided with worm-wheels on the axes thereof, horizontal shaft E, provided with right and left hand worm-screws engaging with said worm-wheels, whereby said rollers C C are rotated toward each other, and tension-regulating springs *w* and rods *y*, the said parts being combined, arranged, and operating substantially as and for the purposes set forth.

2. The combination of the covered rollers C C, provided with worm-wheels on the axes thereof, the horizontal shaft E, with right and left hand worms thereon engaging with the worm-wheels of said rollers to independently rotate the same in contrary directions, the picking-shaft D, and bevel-gearing, whereby said shaft E is continuously driven, and supplying and guiding mechanism for delivering pile-warp to and from said covered rollers, substantially as described.

3. The combination and arrangement of mechanism for supplying, guiding, and delivering pile-warp, consisting of an upper and a lower guide-roller with a pair of independently-rotated covered rollers located between them, and mechanism consisting of the continuously-driven shaft E, provided with a right and a left hand worm engaging with worm-wheels on the axes of said covered rollers to rotate said covered rollers toward each other, in order that the pile-warp may be first carried under and around the first of said covered rollers, and from thence to, under, and around the second of said covered rollers, substantially as set forth.

In testimony whereof I have hereunto affixed my signature this 25th day of March, A. D. 1885.

CHARLES PEARSON.

Witnesses:
ROBT. M. PARSONS,
HOMER PARSONS.