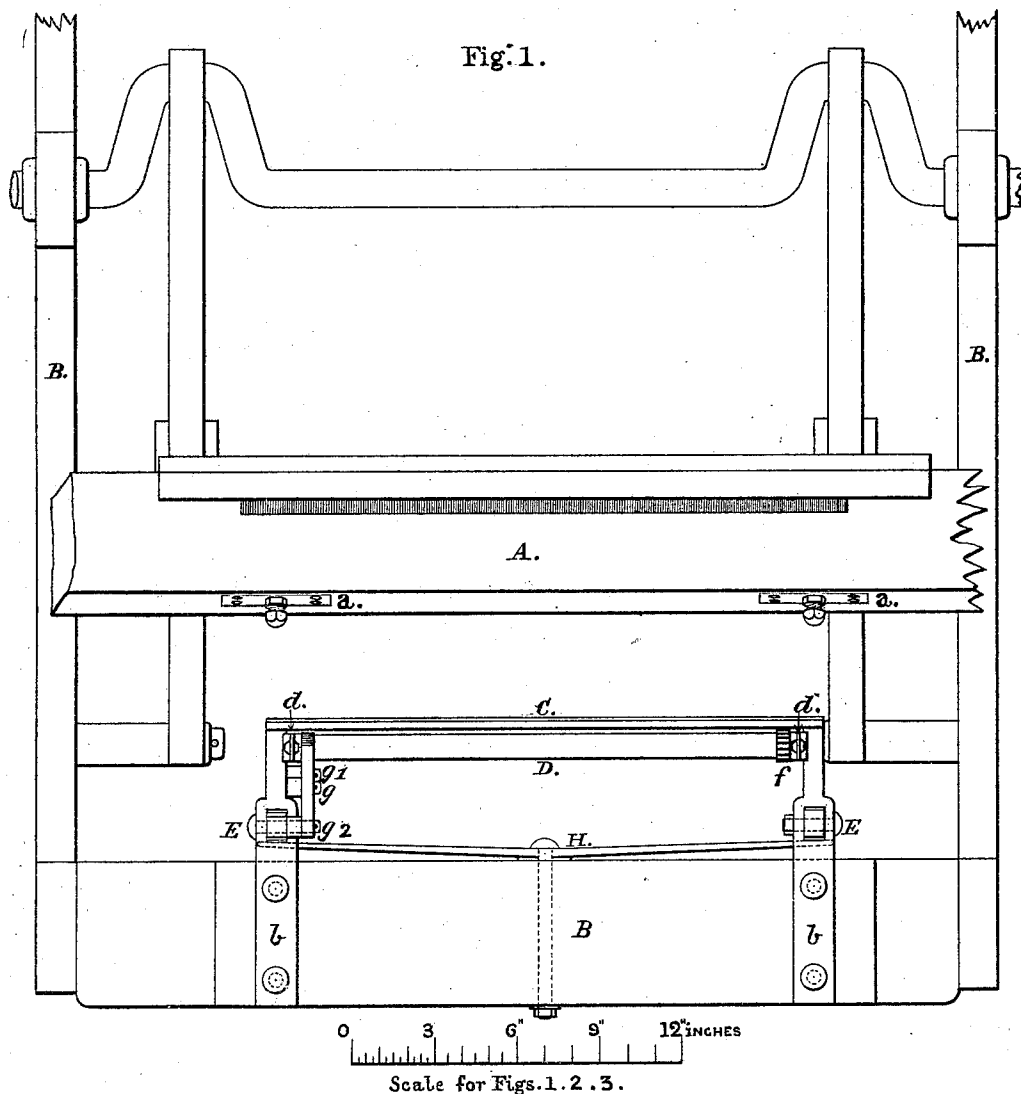


A. MITCHELL & H. S. COMBS.

Improvement in Take-Up Mechanisms for Looms.

No. 131,455.

Patented Sep. 17, 1872.



WITNESSES

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Fig. 2.

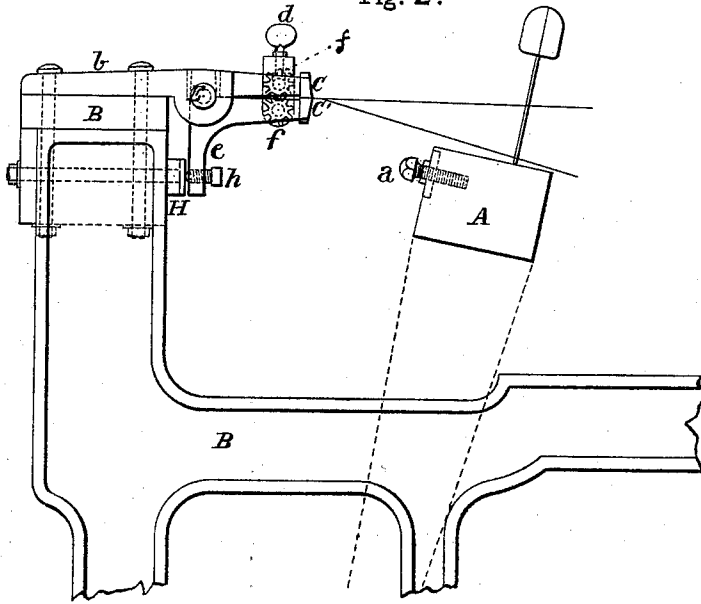
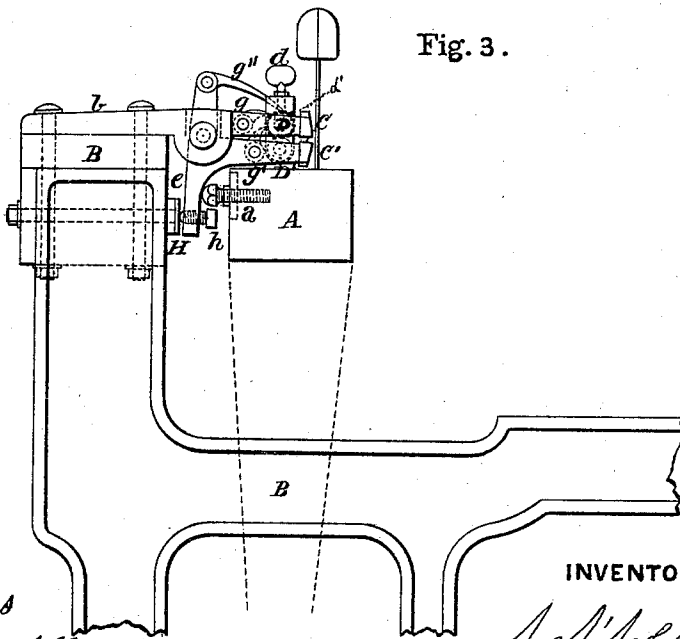


Fig. 3.



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UNITED STATES PATENT OFFICE.

ARCHIBALD MITCHELL, OF PROVIDENCE, RHODE ISLAND, AND HIRAM S. COMBS, OF WARREN, MASSACHUSETTS; SAID COMBS ASSIGNS HIS RIGHT TO SAID MITCHELL.

IMPROVEMENT IN TAKE-UP MECHANISMS FOR LOOMS.

Specification forming part of Letters Patent No. 131,455, dated September 17, 1872.

To all whom it may concern:

Be it known that we, ARCHIBALD MITCHELL, of the city and county of Providence and State of Rhode Island, manufacturer, and HIRAM S. COMBS, of Warren, in the county of Worcester and State of Massachusetts, machinist, have invented a new and Improved Take-Up Motion for Looms; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 represents a vertical view of the loom, showing the jaws, rollers, &c. Fig. 2 represents an end view, showing the jaws closed and the position of the lay. Fig. 3 represents the other end, showing the jaws opened and the lay in the act of beating up the filling.

The same parts in the different figures are indicated by the same letters.

The invention is particularly adapted to the weaving of gored fabrics, such as corsets, &c., and in part to the weaving of closely-beaten-up goods. Great difficulty has been experienced in weaving such gored goods by the power-loom, owing to the necessity of keeping the warp-threads on an equal tension, which cannot be done without taking up the woven portion evenly and under the same tension throughout its width. It is therefore evident that when the goods require more filling to be put in at one portion or side of the fabric than at the other this equal tension must be effected by a mode different from those in ordinary use on looms making plain goods. The object and design of our invention are, first, to seize the fabric near the point where the lay strikes up the filling, and to hold every part of it, so that at every beat the portion of the warp receiving the filling must move onward, while the remainder, if any, is stationary, and the tension is thus kept equal; secondly, to remove the woven fabric away from the holder, and at the same time prevent any doubling or wrinkling.

In the drawing, A represents the lay; *a a*, projections from it, and adjustable by the screw in their entering ends. B is the loom-frame. On the top of this are set and secured two horizontal arms, *b b*, projecting toward the

lay. Supported on these arms are shown two jaws, C C'—the upper one stationary and the lower one movable on a pivot, E. Upon each end of the lower jaw is constructed a projection, *e*, to receive the blow of the projections *a a*; and to one end of the same jaw are attached three pawls, *g g' g''*—one, *g*, on a line with the pivot E, another, *g'*, below, and the third, *g''*, above said line—all playing into a ratchet-wheel, *d'*, on the end of the upper roller D. On the other end of this roller is a gear, *f*, which plays into a similar gear on the end of the lower roller D'. Behind the arms *e e* of the jaws is placed a long flat or other shaped spring, H, secured at the middle of the frame, and so that each end shall operate on an arm, *e*, and be in contact with it. The ends of this spring are adjusted by set-screws *h h* so as to strengthen or weaken the action, as necessary. The jaws we prefer are of metal and have their surfaces grooved or otherwise roughened, although India rubber or other similar substance may be substituted. The width of these surfaces is about half an inch so as to give a firmer and broader gripe.

When the lay, in beating home the filling, causes the projections *a a* to come in contact with the arms *e e*, the effect is to open the jaws, while it forces forward the filling-thread, and also the woven portion, the distance of the thickness of the thread. When the lay begins to move back the spring H closes the jaws upon the cloth and holds it firmly until the operation is repeated. While the jaws are opening the pawl *g'*, pivoted to the lower jaw C', pushes the ratchet on the end of the upper roller D one tooth, and while closing the pawl *g''* pushes it another tooth, and thus the upper roller, and by its connection the lower roller, are rotated, the middle pawl *g* being stationary and preventing any retroaction. The fabric, after leaving the jaws, is at once received between the two rollers D D'. These are so adjusted by set-screws *d d* that in passing over the surface of the cloth, if they meet a certain resistance, such as will be presented by that part or portion where the weaving is suspended, they will slip over such part; but where the resistance is lessened by the beat of the lay upon the last filling they will carry the cloth

with them until the slack of the woven portion is taken up as before, so that the cloth will be removed as fast as woven, and no faster. As the rollers revolve much faster than is simply necessary to take away the cloth, their movement over and action upon the surface will also be to keep the cloth smooth.

Having now set forth and particularly described the nature of our invention, and what we believe the best and most practical mode of constructing, arranging, and operating the same, what we claim, and desire to secure by Letters Patent, is—

1. The jaws C C', arranged and operating substantially as described, for the purpose

specified, in combination with the spring H, the projections *e e a a*, and lay A, all operating substantially as described.

2. The jaws C C', in combination with the lay A, rollers D D', and pawls *g g' g''*, all arranged and operating substantially as described, for the purpose stated.

ARCHIBALD MITCHELL.

HIRAM S. COMBS.

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