

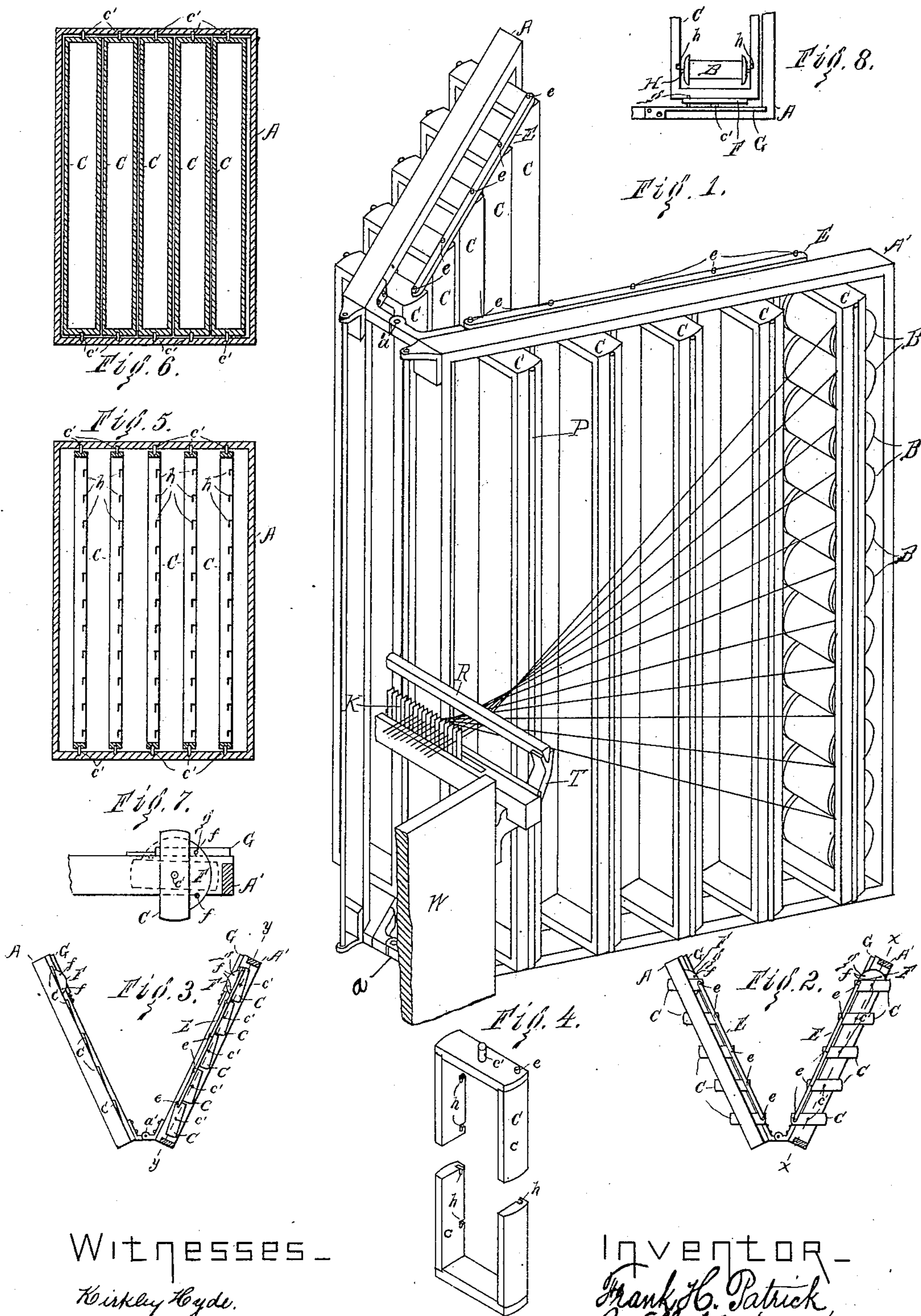
(No Model.)

F. H. PATRICK.

CREEL FOR WARPING, BEAMING, AND OTHER MACHINES.

No. 350,553.

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Witnesses—

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UNITED STATES PATENT OFFICE.

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CREEL FOR WARPING, BEAMING, AND OTHER MACHINES.

SPECIFICATION forming part of Letters Patent No. 350,553, dated October 12, 1886.

Application filed July 8, 1885. Serial No. 170,949. (No model.)

To all whom it may concern:

Be it known that I, FRANK H. PATRICK, a citizen of the United States, residing at South Hadley, in the county of Hampshire and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Creels for Warping, Beaming, and other Machines, of which the following is a specification.

My invention relates to creels adapted to hold the spools from which the yarn is taken to fill the warp-beam, and has for its object to facilitate the operation of "tying in."

In the accompanying drawings, Figure 1 is a perspective view of a creel embodying my invention, with a part of the guide-rail, part of the back comb of a warping-machine, and a part of the frame of the warping-machine; also one of the brackets which support said rail and comb; Fig. 2, a plan of said creel with the spool-holders in position for use, and Fig. 3 a plan of said creel with the spool-holders in position to allow the spools to be removed, a portion of the top of the frame of the creel being removed in Figs. 2 and 3; Fig. 4, an isometric view of a spool-holder detached, the middle parts of the sides of the spool-holder being broken away; Fig. 5, a section on the line *x x* in Fig. 2; Fig. 6, a section on the line *y y* in Fig. 3; Fig. 7, a plan of the bottom of one of the rear spool-holders, to show the means of preventing the same from turning accidentally; Fig. 8, a detail elevation of the lower part of the creel-frame, near its rear end, and an elevation of the lower part of a spool-holder.

Creels for warping-machines ordinarily consist of two frames, each consisting of a horizontal top board and a horizontal bottom board connected by parallel vertical stiles mortised into said bottom board and top board, the stiles being adapted to receive horizontal spindles or "skewers," as they are commonly called, upon which the spools turn. These frames are ordinarily placed with reference to each other like the arms of a letter V, and are hinged together. Owing to the difficulty of getting at the spools, it takes a girl from three-quarters of an hour to an hour to tie in four hundred spools.

In the construction of my creel I use a creel-frame formed in two rectangular sections, A A', hinged together at *a a'*. These sections are much narrower than the usual top board and bottom board, which require to be at least as wide as the length of the spool B and the thickness of the two stiles which connect the top board and the bottom board and support the spools. Instead of the fixed stiles ordinarily used, I use rectangular spool-holders C, the sides *c* of which are far enough apart to allow the spools B to be supported horizontally between said sides upon spindles or skewers H in the usual manner. The upper and lower ends of the holders C are provided with pivots *c'*, which enter holes in the top and bottom of the sections A A', and enable the holders to be rotated on their vertical axes. The tops of all the holders in one section, A or A', of the creel are connected together by a strip, E, which is connected by pins *e*, inserted in the top of said holders and projecting upward through holes in said strip. This is to enable all of the holders in the same section of the creel to be rotated together. The lower end of the holder C, which in each section of the creel stands farthest from the warping-machine, is provided with a piece of sheet metal, F, having two holes, *f*, into one or the other of which holes *f* a pin, *g*, secured on the top of the spring G, is raised by said spring G to hold said holder in the position shown in Fig. 2, or in the position shown in Fig. 3. The spools are supported upon horizontal spindles, commonly called "skewers," H, which enter slots *h*, formed on the inside of the spool-holders, near the rear edges of the same, the slots *h* being arranged in pairs, one slot of each pair being on one side and the other slot of the same pair being on the other side of the same spool-holder. The slots *h* lead back horizontally from the rear side of the spool-holder for a short distance, and then sink vertically for a short distance. The means of holding the spindles in place is the same as that commonly used in the stiles of an ordinary creel.

It is not intended to allow the yarns to be drawn entirely out of the creel at any time; but as the yarn runs off from the spools the

outer end of the yarn on a full spool is tied to the inner end of the yarn on a spool which is nearly empty, and the full spool is put in the place of the empty spool. This operation is called "tying in," and is performed usually by a girl who stands within the creel—that is, between the sections A A' of said creel. The time required for tying in is shortened by from twenty-five to fifty per cent. by the use of my improvement described above, which enables the girl to see between the heads of the spools, and to move the spindles and spools directly toward and away from her in the act of removing the empty spools and putting full spools in their places.

When the girl or operative wishes to move the spool-holders and spools from the position they usually occupy (shown in Fig. 2) to the position shown in Fig. 3, to allow the spools to be removed from the holders, she depresses the spring G, which draws the pin *g* out of one of the holes *f* in the plate F and allows all the spool-holders to be turned on their pivots about ninety degrees, when the spring G, being relieved from pressure, throws the pin *g* into the other of said holes *f*, and retains the holders in the position shown in Fig. 3. After the tying in is completed the spring G is again depressed and the holders are restored to the position shown in Fig. 2. The yarns from the spools pass under the guide-rail R and through the back comb, K, and thence through the warping-machine in the usual manner.

The only parts of the warping-machine shown, besides the guide-rail and the back comb, are the frame W (a part of which is shown) and one of the brackets T, which, being secured to the frame, supports the back comb and guide-rail.

The warping-machine proper forms no part of my invention, and its construction is well understood. The front ends of the creel-sections A A' and the outer sides of the spool-holders are provided with fenders P, which serve the usual purpose of diminishing the friction upon the yarns, and are vertical rods of metal or glass, secured, as such fenders are

commonly held, upon the creel-sections and outer stiles of an ordinary creel.

I claim as my invention—

1. The combination of a creel-frame with spool-holders adapted to be rotated about their vertical axes within said frame, and to be supported thereby, as and for the purpose specified.

2. The combination of a creel-frame with spool-holders adapted to be rotated about their vertical axes, and to be supported by said creel-frame, and to hold spools in a suitable position for the yarn to be drawn therefrom or at will in a position at about right angles to said first-named position, as and for the purpose specified.

3. The combination of a creel-frame with spool-holders adapted to be supported by and to be rotated around their vertical axes within said frame, said spool-holders being connected to each other by a rigid strip pivoted to their ends, one of said spool-holders having a plate secured thereto in the plane of rotation of said last-named holder, said plate being provided with two holes arranged at about ninety degrees distance from each other, and a spring secured to said creel-frame and provided with a pin adapted to enter either of said holes in said plate, and to hold all of said spool-holders in a position for use, or in a position for the ready removal of spools from said holders, as and for the purpose specified.

4. The combination of a creel-frame formed in two rectangular sections hinged together at their adjacent edges, the top and bottom of said rectangular sections being provided with holes, with a series of rectangular spool-frames provided with pivots at their upper and lower ends adapted to enter the holes in said sections, and provided also with slots, as herein described, adapted to receive and support horizontal spindles, substantially as described, and for the purpose specified.

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Witnesses:

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