

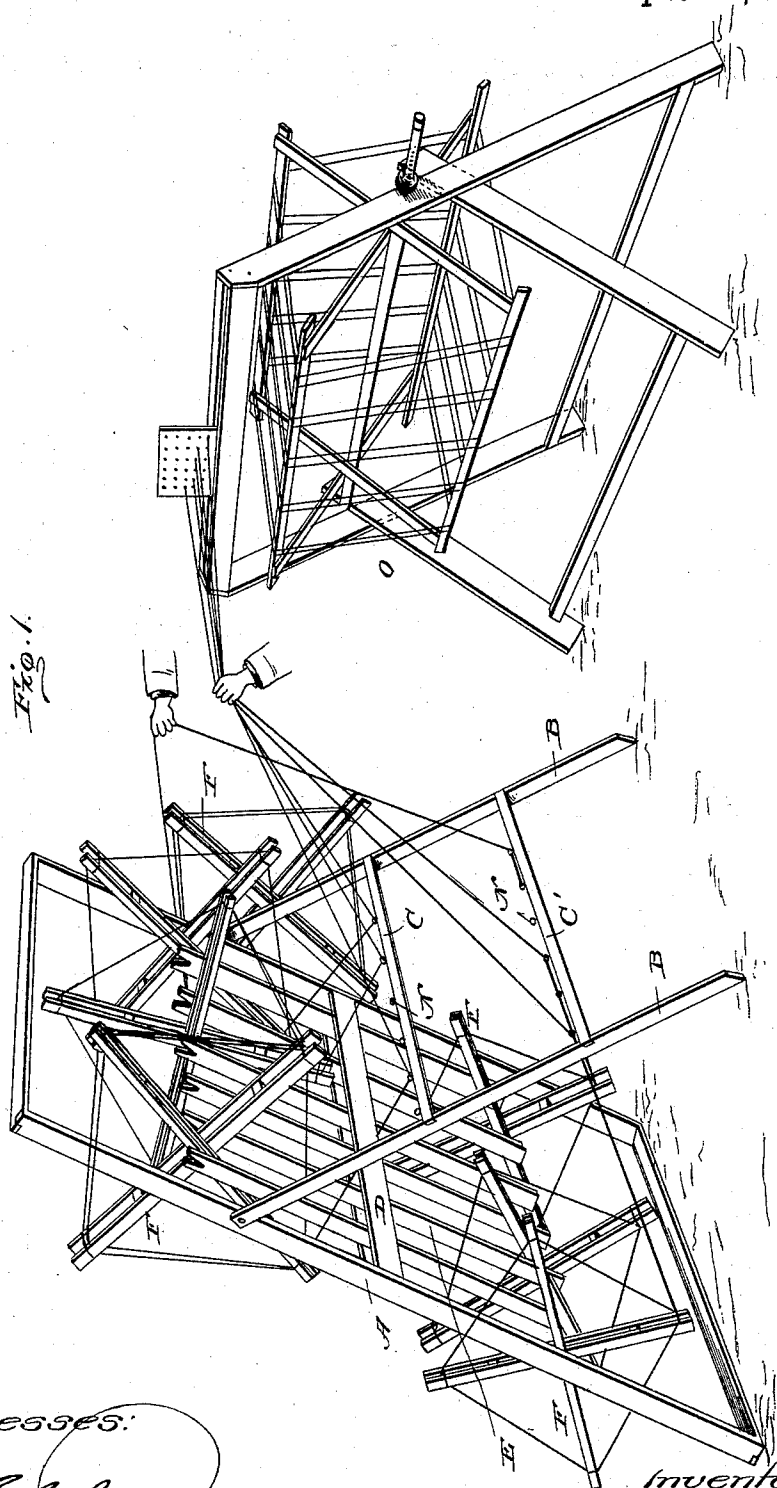
(No Model.)

2 Sheets—Sheet 1.

W. P. KIRKPATRICK.
SWIFT WARPING MACHINE.

No. 505,770.

Patented Sept. 26, 1893.



Witnesses:

Wm. C. Ashiee
Arthur L. Bryant

Inventor:

William P. Kirkpatrick.
By *Edson Bros. Attys.*

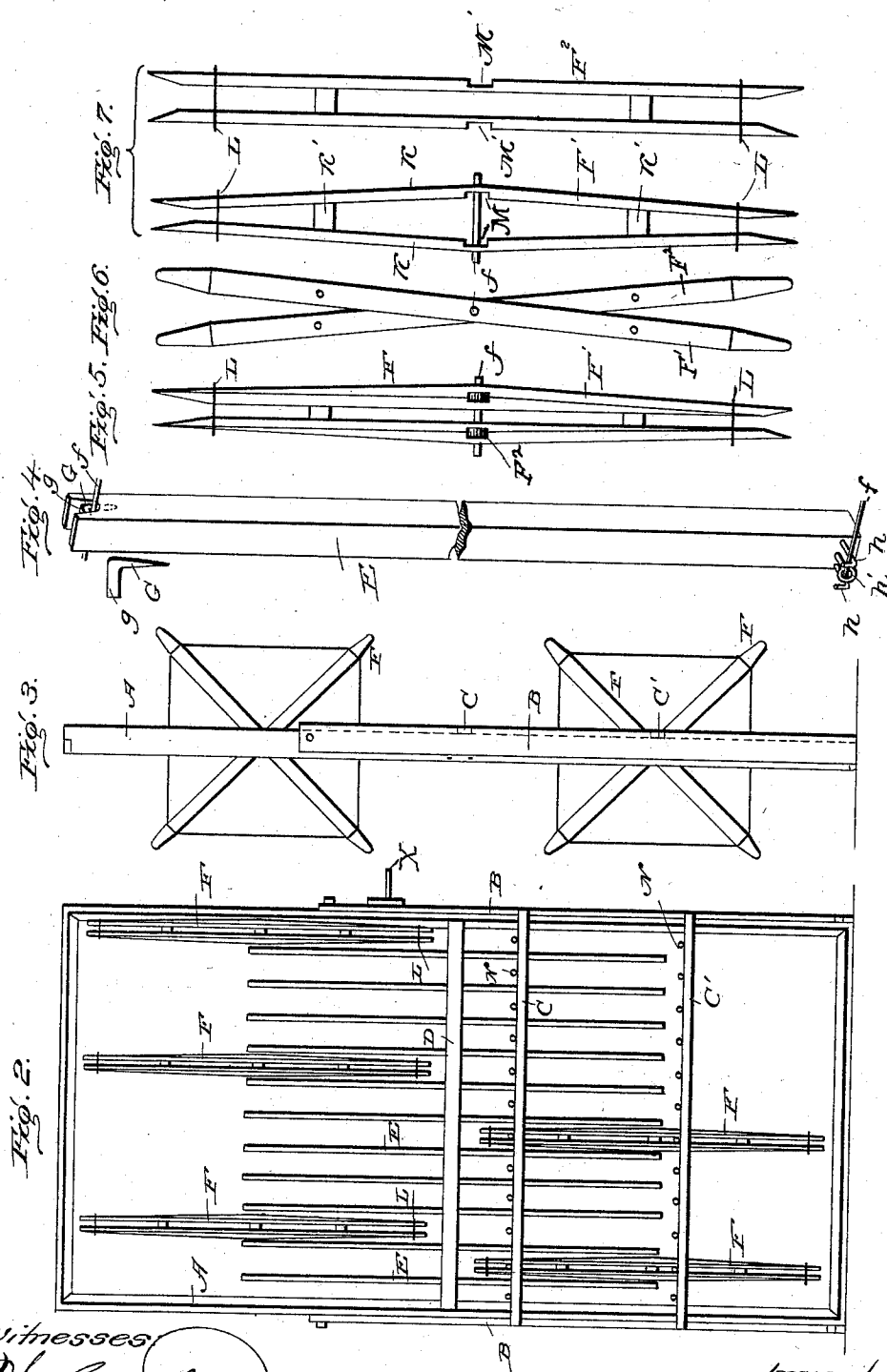
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UNITED STATES PATENT OFFICE.

WILLIAM P. KIRKPATRICK, OF ARROWSMITH, ILLINOIS.

SWIFT WARPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 505,770, dated September 26, 1893.

Application filed May 16, 1892. Serial No. 433,259. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. KIRKPATRICK, of Arrowsmith, in the county of McLean and State of Illinois, have invented certain new and useful Improvements in Swift Warping Machines; 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 appertains to make and use the same.

My invention relates to improvements in swift warping machines, and the object of the invention is to provide a machine by means of which the labor incident to the ordinary method of spooling the warp preparatory to putting it in the loom can be dispensed with.

With this end in view, my invention consists in the combination with a suitable supporting frame of a series of independent skein holders or carriers from which the desired amount can be readily wound upon a warp reel of any desired and suitable construction.

My invention further consists in the peculiar construction and arrangements of parts as will be hereinafter more fully pointed out and claimed.

In the accompanying drawings—Figure 1 is a perspective view of my improved machine, some of the skein carriers being removed, in connection with a warp reel of ordinary construction. Fig. 2 is a front elevation of the machine. Fig. 3 is a side elevation showing the frame folded. Fig. 4 is a detail view of one of the supports for the skein carriers. Fig. 5 is a front elevation of one of the skein carriers. Fig. 6 is a side elevation of the same; and Fig. 7 is a detail view of the sections composing the skein carrier.

Like letters of reference denote corresponding parts in all the figures of the drawings, referring to which—

A designates the main frame of my improved warping machine, which frame may be of any desired size and material and to the sides of which are pivotally connected supporting legs B which are connected, by transverse bars C, C'.

The sides of the main frame A are connected, at an intermediate point of their length, by parallel transverse bars or strips D between which are arranged a number of parallel supports E. The supports E are firmly

attached to the transverse bars D and are provided at their upper ends with sockets or notches to receive laterally projecting pins *f* 55 on the skein carriers F, each skein carrier being arranged between two adjacent supports E and provided on each side with a laterally projecting pin *f*. To hold the skein carriers in position and prevent the pins *f* 60 thereof from escaping from the sockets or notches in the upper ends of the supports E, I preferably insert in each of said sockets or notches a retaining plate G provided with a projecting lip *g* which extends over the up- 65 per side of the pin *f* in the socket.

There are two sets of skein carriers F one arranged above the transverse connecting bars D and supported in the manner above described, and the other set arranged below 70 said bars D and supported by having the pins *f* thereof extending across square hooks *h* and through eyes or guides *h'* attached to the supports E. Each skein carrier consists of two members F', F², centrally connected together 75 by means of a transverse rod or pin *f* which extends across the carrier and projects laterally therefrom on both sides thereof. The members F', F² of each skein carrier consist of two strips K which are connected together 80 on opposite sides of their centers or blocks K' and the ends of said strips K are drawn toward each other by elastic bands L. In the inner faces of the strips K of the member F' of each skein carrier, at the middle thereof, 85 are formed notches M and on the outer sides or faces of the strips composing the members F² are formed similar notches M'. When the two members F', F², composing each skein carrier are placed together the reduced portions thereof align and the members are thus fitted together and they are held in such position by the transverse pin *f*.

On the transverse bars C, C', in front of the skein carriers are arranged a number of 95 thread guides N corresponding in number to the number of the skein carriers that may be employed. The thread guides N are, preferably, provided with a screw threaded shank or stem by means of which they are secured 100 in position on the bars C, C', and by turning said guides, the tension on the threads from the skein carriers can be regulated. The tension on each warp thread will be increased

by turning the proper guide N so that its body will extend parallel to the length of the thread. To one side of the frame A is attached a projecting pin X on which one of the skein holders can be placed and by rotating the same as a reel a skein divider will be provided, by means of which warp can be wound from a full skein or several skeins to make a new skein which can be placed in position to be wound onto the warp reel O.

In the drawings I have shown my improvements as used in connection with a warp reel O of ordinary construction, and have also indicated the position of the operator's hand in grasping the warp threads to control and regulate the tension thereof.

The operation of my improvements may be briefly stated as follows:—Any desired number of skein holders are placed in position in the frame A and the free ends of the skeins carried by said holders are passed through the guide eyes N and attached to one bar of the warp reel O. By rotating said reel the skeins are wound from the holders onto the reel O. When the desired number of bouts shall have been wound on the warp reel O said reel is placed close to the warp beam of a loom and the ends of all the bouts are hooked to said beam and all rolled thereon at once, rapidly, evenly, tightly and smoothly.

Among the advantages of my machine may be mentioned the following: The warp can be taken directly from the skeins and every thread is separate and independent. The thread guides on the bars C, C', prevent any

of the threads from falling and becoming tangled.

The elastic bands L can be adjusted on the members F', F², so that skeins of different lengths can be used, and if any one of the skein carriers becomes empty it can be readily removed and replaced by a filled one, each of the skein carriers being independent of all the others.

When not in use the supporting legs B can be folded against the main frame and the whole machine stored in a comparatively small space.

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

1. In a machine of the character described, the combination of a main frame A, legs B pivotally connected to the main frame and connected by a transverse cross bar C, a series of skein carriers carried by the main frame and a series of thread guides carried by the bar connecting the legs B, substantially as described.

2. A skein carrier consisting of two members F', F², connected by a transverse pin *f*, each member consisting of two strips K connected at intermediate points of their length by blocks K' and connected near their ends by elastic bands L, substantially as described.

WILLIAM P. KIRKPATRICK.

Witnesses:

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