M. SPALECK.

HEDDLE FRAME OF LOOMS.

APPLICATION FILED JUNE 17, 1913.

1,223,435. Patented Apr. 24, 1917.

Fig. 1.

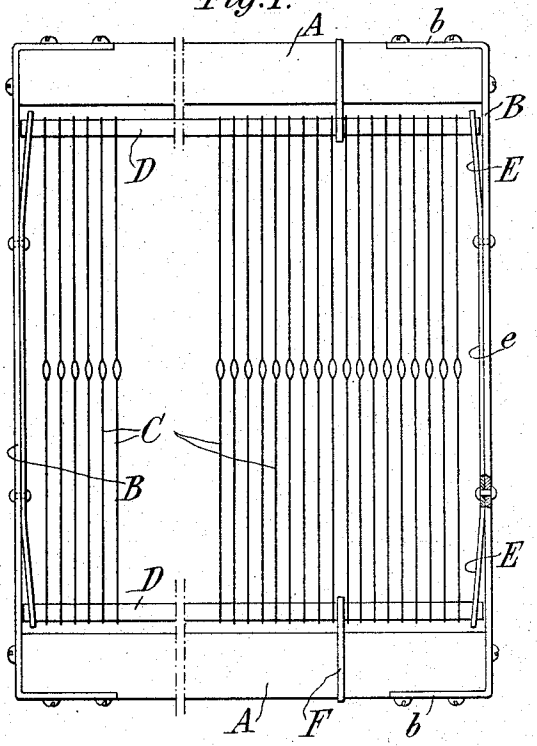


Fig. 2.

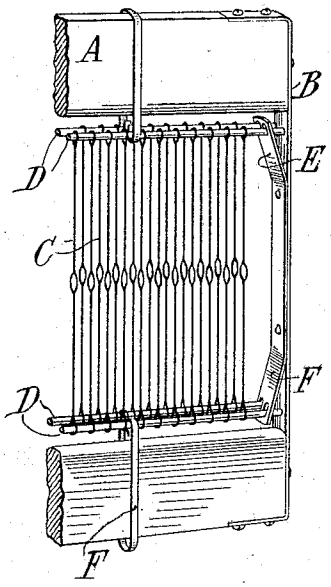


Fig. 3.

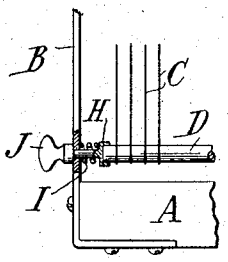
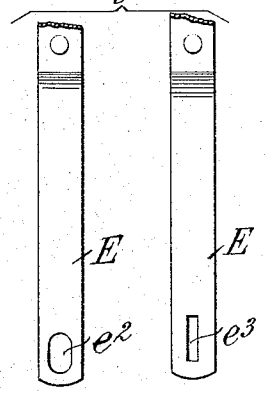


Fig. 4.



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UNITED STATES PATENT OFFICE.

MAX SPALECK, OF GREIZ, GERMANY, ASSIGNOR TO THE FIRM OF OTTO SPALECK, OF GREIZ, GERMANY, SAID FIRM COMPRISING OTTO SPALECK, MAX SPALECK, AND JOHANNES SPALECK, ALL OF GREIZ, GERMANY.

HEDDLE-FRAME OF LOOMS.

1,223,435. Specification of Letters Patent. Patented Apr. 24, 1917.

Application filed June 17, 1913. Serial No. 774,085.

To all whom it may concern:

Be it known that I, MAX SPALECK, a subject of the Emperor of Germany, residing in Greiz, Thuringia, Germany, have invented certain new and useful Improvements in Heddle-Frames of Looms, of which the following is a specification.

This invention relates to heddle frames of looms and aims to provide certain improvements therein.

In heddle frames as at present constructed it is usually necessary to take the frame apart in order to replace a broken heddle, and in removing the heddles it is ordinarily only possible to remove them from one end of the rods on which they are carried.

The present invention avoids the foregoing objections and provides a frame in which the heddle rods carrying the heddles may be easily and conveniently disconnected from the frame, and may be so disconnected without loosening or removing any parts of the frame, and without the necessity of employing tools for the purpose. Furthermore, the frame is so constructed that the heddle rods may be disconnected at either end of the frame, and the heddles be thereby removed and replaced from either end of the frame. Moreover, the heddle rods may be constructed as straight rods without bends or perforations. Furthermore, the present means for connecting the heddle rods to the frame avoids any weakening of the heddle frame.

Several embodiments of the invention are illustrated in the accompanying drawing, in connection with which the invention will be described in detail.

In said drawings—

Figure 1 is a front elevation of a heddle frame constructed according to the present invention;

Fig. 2 is a perspective view of one end of a heddle frame having double rows of heddle rods and double rows of heddles;

Fig. 3 is a partial view of a heddle frame illustrating another embodiment of the invention; and

Fig. 4 illustrates the ends of the rod-holding arms provided with different shaped perforations for holding heddle rods having different cross-sectional outlines.

Referring to the drawing, A designates the cross beams or headers of the frame, which are preferably constructed of wood, and B end pieces or bars, preferably constructed of metal, and having angular extremities *b*. The ends of the cross beams A and of the end bars B are connected together in a permanent manner by screws or the like, inasmuch as in the ordinary use of the frame it is not necessary to take these parts apart. By mortising the angular extremities *b* in the ends of the cross beams A a neat and strong connection is made. C designates the heddles and D the heddle rods by which the heddles are carried. The heddle rods D may be made of metal or wood. The loops or eyes at the extremities of the heddles may be of any of the various shapes in which these are made, and the heddle rods may be made of shapes to correspond.

As shown in Fig. 1, the heddle rods D are connected to the frame by means of spring arms E, which may be conveniently formed of a strip of metal *e* riveted to the end bars B of the frame and having its ends, consituting the arms E, free. The ends of the arms E are perforated, as shown at e^2, e^3, Fig. 4, to receive the ends of the heddle rods, the perforations corresponding to the shape of the rods. The length of the heddle rods is equal to the inside width of the frame between the end bars B, minus the width of one of the arms E. The heddle rods D may be disconnected from the frame, at either end, by pressing one or the other of the spring arms E inwardly against the inside face of one of the end bars, thereby withdrawing the end of the rod from engagement with the perforation in the arm, and moving the heddle rods D to one side. By this means the heddle rods may be instantly disconnected, without the use of tools and without removing or loosening any part of the heddle frame, or the heddle rod connection.

F designates the straps passing around the cross beams at different transverse points, and the ends of which are bent over the heddle rods for preventing them from springing between their ends.

In Fig. 2 the invention is shown as applied to a heddle frame having a double row of heddle rods; in this case the arms E are provided with a double set of perforations for the double heddle rods.

In Fig. 3 is illustrated another modification of the invention. In this embodiment the ends of the heddle rods D are held in socket pieces H which are pressed inwardly into engagement with the ends of the heddle rods by coil springs I. J is a finger piece which may be grasped to move the socket pieces H against the tension of the spring I for releasing the ends of the heddle rods and disconnecting them from the frame.

While several embodiments of the invention have been illustrated and described, the invention is not to be understood to be limited thereto, as the inventive idea is capable of receiving a variety of mechanical expressions.

What is claimed is:—

1. In heddle frames of looms, the combination of a heddle frame having end pieces, heddle rods of a length to fit between the end pieces of the frame, and spring-pressed means at the inner sides of said end pieces adapted to engage the ends of the heddle rods axially thereof, said spring-pressed means also being adapted to be retracted axially of the heddle rods to admit of fitting over the ends of the heddle rods to attach and detach the heddle rods to and from the frame.

2. In heddle frames of looms, the combination of a heddle frame having end pieces, heddle rods of a length to fit between the end pieces of the frame, and spring-pressed arms at the inner side of said end pieces adapted to be retracted to admit of fitting over the ends of the heddle rods to detachably connect said heddle rods to said frame.

3. In heddle frames of looms, the combination of a heddle frame having end pieces, heddle rods of a length to fit between the end pieces of the frame, and spring-arms at the inner side of said end pieces having openings therein into which the ends of said rods are adapted to fit and be thereby connected to said frame, said rods being detachable from said spring-arms by drawing back of said spring-arms.

4. In heddle frames of looms, the combination of a heddle frame having end pieces, heddle rods of a length to fit between the end pieces of the frame, and spring-arms at the inner side of said end pieces each having a plurality of openings therein into which the ends of a plurality of said rods are adapted to fit and be thereby connected to said frame, said rods being detachable from said spring-arms by drawing back of said spring-arms.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

MAX SPALECK.

Witnesses:
ARTHUR DÖNATH,
JOHS DRÉCHSLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."