A. MARCHAL.

WEFT END SUPPORT IN NORTHROP LOOMS.

APPLICATION FILED APR. 10, 1911.

1,013,884.

Patented Jan. 9, 1912.

2 SHEETS—SHEET 1.

Fig. 3.

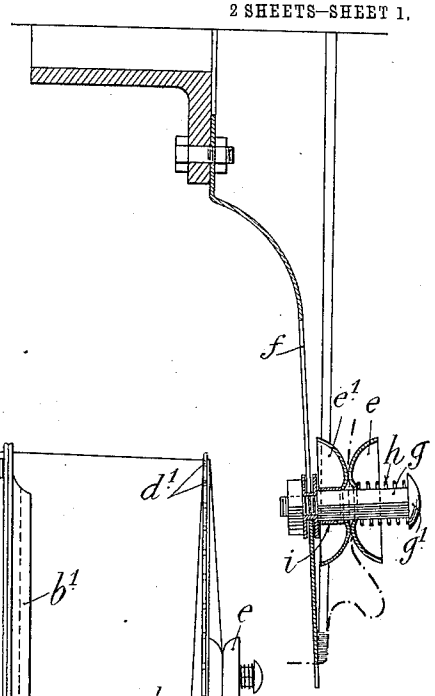
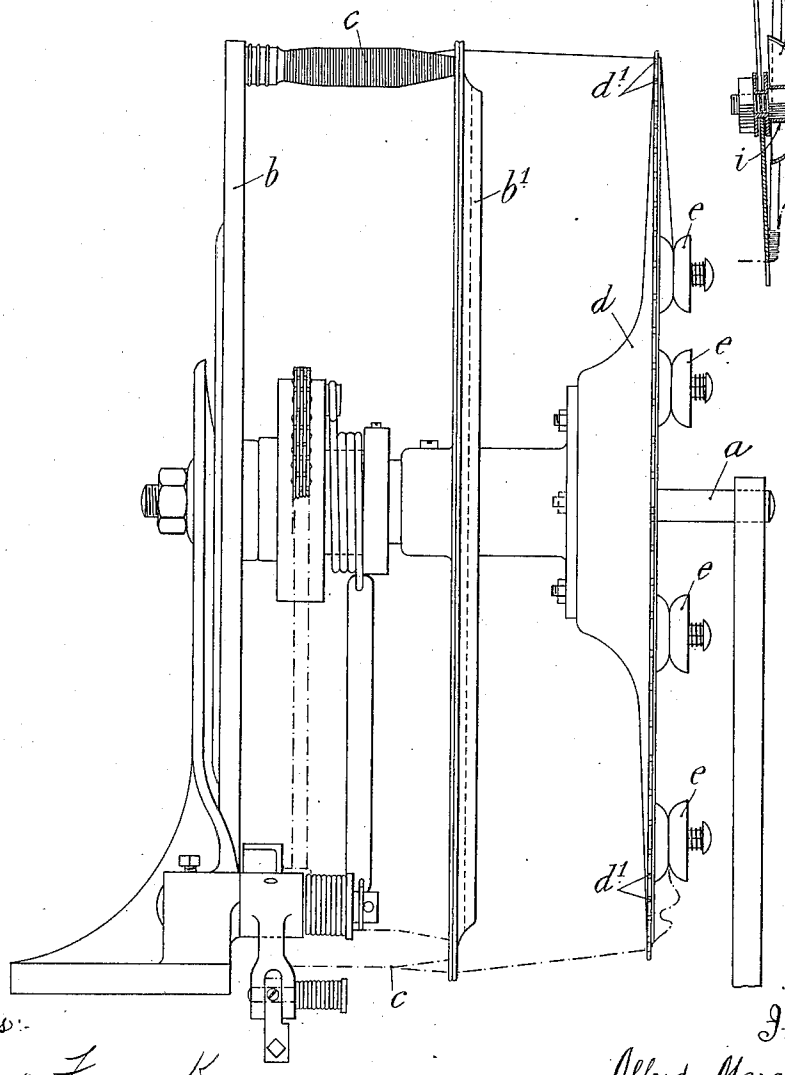


Fig. 1.



Witnesses:

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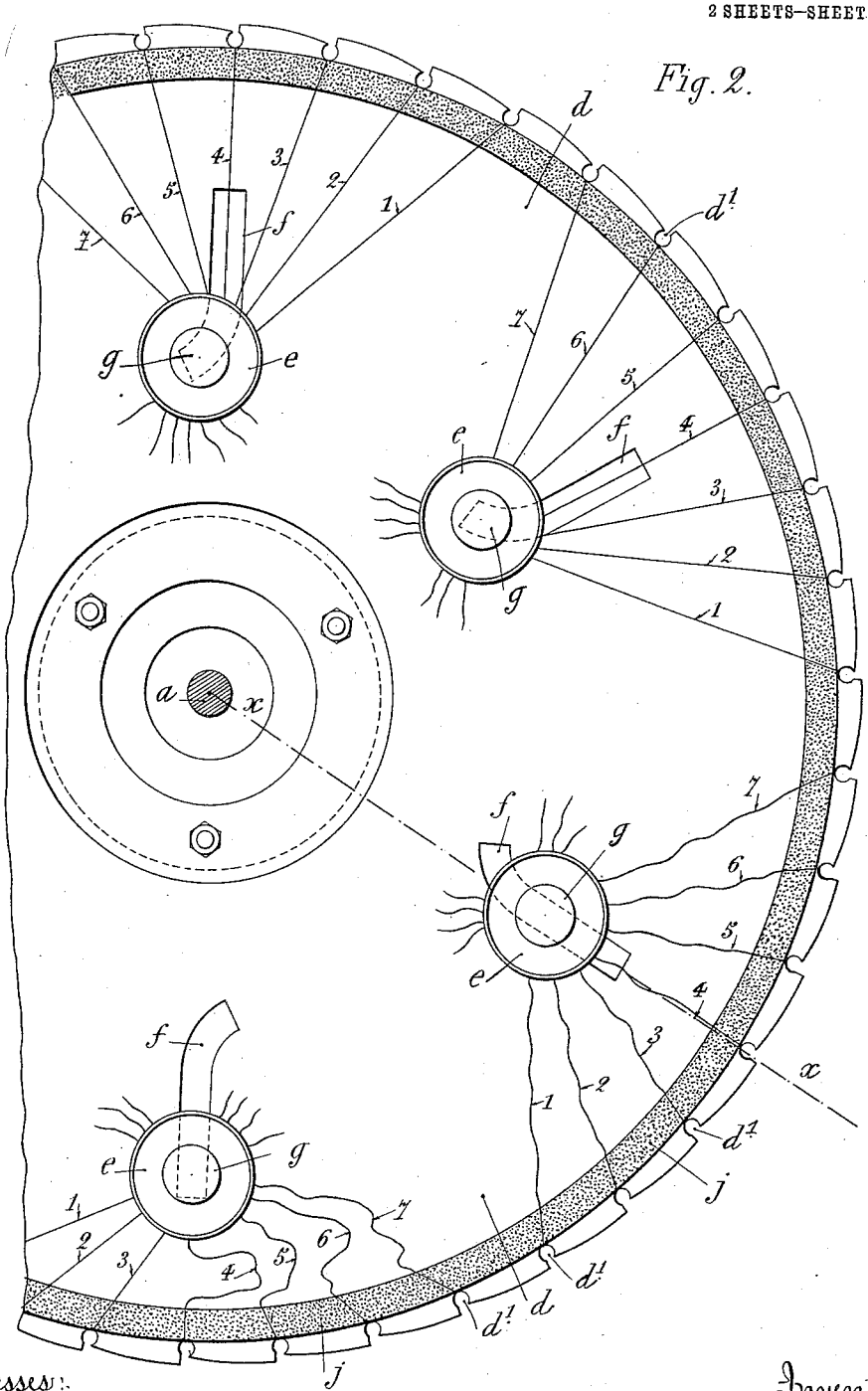
Fig. 2.



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UNITED STATES PATENT OFFICE.

ALFRED MARCHAL, OF CROUHANS, FRANCE.

WEFT-END SUPPORT IN NORTHROP LOOMS.

1,013,884. Specification of Letters Patent. Patented Jan. 9, 1912.

Application filed April 10, 1911. Serial No. 619,939.

To all whom it may concern:

Be it known that I, ALFRED MARCHAL, a citizen of the Republic of France, residing at Crouhans, Côte d'Or, France, have invented certain new and useful Improvements in Weft-End Supports in Northrop Looms, of which the following is a specification.

This invention relates to Northrop weaving looms in which the weft threads are, as is known, carried on bobbins mounted on a magazine, and the filled bobbins successively thrown into the shuttle after a preceding empty bobbin has been ejected therefrom. Now it is important that at the instant a filled bobbin is released from the magazine, the fixed end of the thread of the bobbin should not be stretched, in order to avoid a resistance capable of breaking the thread, and on the other hand it is necessary, before the filled bobbin drops that the end of the weft thead which is held by the weft end support should always be subjected to a suitable tension.

In an attempt to accomplish the objects above set out it has been heretofore proposed to employ weft end holders, movable by their own weight to assume two positions, the one for tensioning the thread and the other to permit the thread to slacken. However to permit the thread to slacken absolutely between the bobbin and the weft end support is unsatisfactory in that the slackened portion is likely to interfere with the operation of the mechanism, and when entirely slack the thread is not in the position necessary for its introduction into the shuttle.

It is the object of my invention to remedy all the above mentioned defects and I attain this result by the provision of a suitable weft end support having slide ways wherein weft end holders are adapted to slide, each weft end holder being adapted to retain the ends of a plurality of threads, and near the periphery of the support, which is preferably provided with a plurality of guide grooves, I arrange elastic means, such as a ring of plush or felt, for retarding the unwinding of the thread from the bobbin carried by the bobbin magazine.

Figure 1 of the accompanying drawings illustrates in general elevation, a magazine provided with the improved weft end support. Figs. 2 and 3 illustrate the new weft end support to larger scale, in elevation and partial section respectively.

In Fig. 1 *a* denotes the shaft about which rotates the magazine *b*—*b'* of known construction carrying a series of weft bobbins *c*. The end of the thread of each bobbin *c*, guided in known manner at the periphery of the plate *b'* of the magazine passes into a corresponding groove *d'* on the periphery of the weft end support *d*, and is then attached to a weft end holder *e* which can move in a radial slideway *f* in the support. Each of these holders *e* serves as attachment for the end of the thread of a group of bobbins. In the example illustrated in the support are formed six slideways *f*, in each of which works a movable weft end holder *e* serving as an attachment for the ends of the threads of seven bobbins of the magazine. The movable weft end holder for the threads may be given various constructions, but that shown in the drawings is preferred. On a pin *g* one end of which works in the corresponding slideway *f*, are mounted two metallic or other cups *e e'*, of spherical or like form, the two convex surfaces being in contact and held against each other by a spring *h* abutting at one end against the bottom of one of the cups and at the other against the outer end *g'* of the pin. The cup *e'* abuts on a washer *i'*. The pin *g* is preferably of square cross-section and the central hole of the cups of corresponding shape, so that no rotation is possible between the cups and the pin. The fixing of the end of the thread by the holder *e e'* is effected by simple insertion of this end of the thread between the two cups, the pressure of the spring being sufficient to grip the thread. The attachment of the seven threads 1, 2, 3, 4, 5, 6, 7, on a common movable holder is thus easily and rapidly effected. The slideways *f*, radial for a greater part of their length are curved at the inside end in the direction opposite to that of the rotation of the magazine. It is easy to see that for the greater part of a revolution of the magazine, before the bobbins arrive at the lowest point close to the position where they are ejected from the magazine the corresponding movable weft end holder *e*—*e'* will by its own weight, remain lodged at the inner end of

the slideway *f*. This is true up to the instant at which the said weft end holder reaches the position *x*—*x*. From this instant, under the influence of its own weight the weft end holder *e*—*e'* moves outward in the slideway. When the first of the bobbins, the end of the thread of which is attached to the movable holder which has descended in this manner, arrives in the ejection position, the end of the corresponding thread is sufficiently stretched out owing to suitable approaching of the weft end holder to the periphery of the support, and any breaking of the thread at the time of the ejection of the bobbin, is obviated. As it is necessary, however, that the thread should not be excessively slackened, a sufficient tension may be given it between the support *d* and the plate *b'* of the magazine by furnishing the support near the bottom of the grooves *d'* with a ring *j* of plush or like material, against which the threads rest before being fastened in the weft end holder.

It is obvious that the form and number of the movable holders and also their method of guiding in the slideways of the weft end supports may vary as desired.

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

1. In mechanism of the character specified, the combination with a rotary magazine for bobbins, of a rotary weft end support provided with peripheral guide grooves for the threads and having radial slideways therein curved at their inner ends, a weft end holder adapted to hold the ends of a plurality of threads and slidable by its own weight in each of the said slideways, and means arranged on the support adjacent the guide grooves for retarding the unwinding of the threads from the bobbins.

2. In mechanism of the character specified, the combination with a rotary magazine adapted to carry a supply of filled bobbins, of a rotary weft end support provided with peripheral guide grooves for the threads and having radial slideways therein curved at their inner ends in a direction opposite to that in which the magazine is adapted to rotate, a weft end holder adapted to hold the ends of a plurality of threads and slidable by its own weight in each of the said slideways, and elastic means arranged on the support adjacent the bottoms of the guide grooves for retarding the unwinding of the threads from the bobbins.

3. In mechanism of the character specified, the combination with a rotary magazine adapted to carry a supply of filled bobbins, of a rotary weft end support provided with peripheral guide grooves for the threads and having radial slideways therein curved at their inner ends in a direction opposite to that in which the magazine is adapted to rotate, a weft end holder adapted to hold the ends of a plurality of threads and slidable by its own weight in each of the said slideways, and a ring of plush arranged on the support adjacent the bottoms of the guide grooves for frictionally retarding the unwinding of threads from the bobbins.

In testimony whereof I have affixed my signature in presence of two witnesses.

ALFRED MARCHAL.

Witnesses:
PAUL RAMETTE,
EUGENE JURAND.