F. A. KUENY.

WEFT REPLENISHING MECHANISM FOR LOOMS.

APPLICATION FILED APR. 24, 1916.

1,347,700. Patented July 27, 1920.

Fig. 1

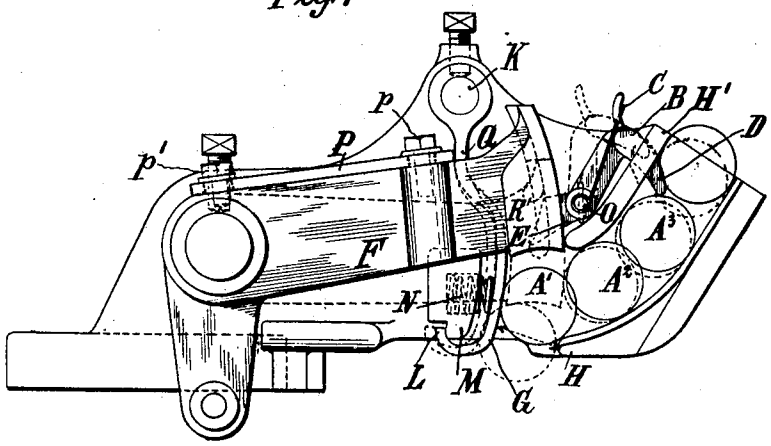


Fig. 3

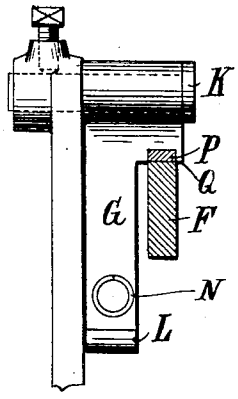
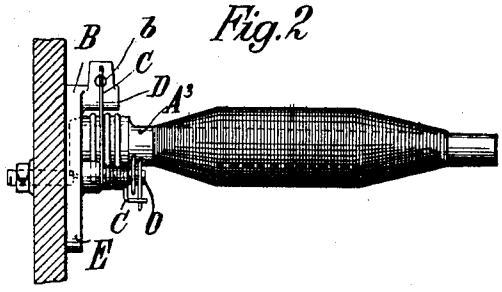


Fig. 2



Inventor

Friedrich Albert Kueny,

By Kenyon & Kenyon Atty.

UNITED STATES PATENT OFFICE.

FRIEDRICH ALBERT KUENY, OF MÜLHAUSEN, GERMANY.

WEFT-REPLENISHING MECHANISM FOR LOOMS.

1,347,700. Specification of Letters Patent. Patented July 27, 1920.

Application filed April 24, 1916. Serial No. 93,165.

To all whom it may concern:

Be it known that I, FRIEDRICH ALBERT KUENY, a subject of the Emperor of Germany, residing at 15 Elsässerstrasse, Mülhausen, Alsace, Germany, have invented certain new and useful Improvements in Weft-Replenishing Mechanism for Looms; and I do hereby declare the following to be a full, clear, and exact description of the invention.

This invention relates to weft replenishing mechanism for looms.

Those replenishing mechanisms heretofore used, in which the bobbins in a magazine are fed to the hammer either by their own weight, or by suitable forwarding mechanism, have had the disadvantage that when using partly used bobbins, *i. e.* those that are not full, and the yarn or thread windings of which are of different diameters, (generally less than the normal diameter) the bobbins are liable to become inclined in the magazine, and thereby prevent the proper operation of the replenishing mechanism.

The object of this invention is to overcome this disadvantage in this type of mechanism, and to enable the weft bobbins to be inserted in the shuttle independently of the quantity of thread on them.

This is done by providing means for exerting pressure on those bobbin heads that lie in the magazine immediately in front of the inserting hammer sufficient to cause them to assume their proper parallel positions.

Referring to the drawings, in which like parts are similarly designated,

Figure 1 is a side elevation of a mechanism embodying the invention.

Fig. 2 is an elevation of the pawls for exerting pressure on the bobbin heads.

Fig. 3 is an elevation of the bobbin supporting plate G.

The weft bobbins are successively supplied from a magazine, only the lower end of which is shown in Fig. 1, and in which H and H′ are the guide rails for the bobbin heads. A′, A^2 and A^3 are the successive bobbins. The forward bobbin A′ that lies under the head of the hammer F also lies against a yielding support or plate G pivoted on a pin K. This plate is normally urged by a spring N and is held thereby in its outer position, and is limited in this outward movement by the lower bent end L of said plate engaging a stop M.

The end of the lower guide rail H is spaced from the plate G when in its normal position a distance somewhat less than the diameter of the bobbin head, so that the forward bobbin A′ lying against the plate G is supported by the end of rail H and said plate.

In order to parallelize the bobbins and to maintain them parallel as they are guided under the hammer, there is provided parallelizing means moved out of operation by the hammer as it descends to insert the foremost bobbin into the shuttle.

This mechanism comprises a pawl B pivoted on a pin O on the magazine, and having a nose D approximately the width of a bobbin head. A coil spring C wound upon the pin O has its free end extending through a hole *b* in the front of the pawl and urges this pawl to continually exert a pressure by its nose D on the head of the third bobbin A^3, thus pressing the heads of the three bobbins A′, A^2, A^3 together and against the plate G.

The crowding of one or more bobbin heads against the pawl nose D and plate G causes the bobbins to assume their parallel position, even if they have considerably less thread thereon than they are designed to normally hold, so that partially used bobbins of thread can be properly fed to the hammer and inserted thereby into the shuttle.

As the hammer F descends it strikes the foremost bobbin A′ and forces it down through the opening between the plate G and rail H, the plate G being simultaneously swung on its pivot pin K and pressed back, compressing the spring N to enlarge the opening sufficiently to permit the bobbin to pass through the opening into the shuttle.

The hammer has a lateral projection R, which during the downward movement of said hammer strikes the tail E of the pawl B and lifts it to the position shown in dotted lines, clear of the bobbins and allows them to feed forward in the magazine under the nose D. When the hammer returns to normal position the nose D engages the next bobbin.

As the nose D of the pawl B descends it will force the bobbins apart should their

heads have become accidentally jammed or interlocked.

In order to prevent the plate G from being accidentally moved during the position of rest of the hammer, suitable locking means is provided.

As will be seen from Fig. 3, the plate G has a lateral extension Q extending over the hammer F, and on top of the hammer is an adjustable stop or plate P held thereto by two adjusting screws p and p'. This stop P lies just behind the extension Q, Figs. 1 and 3, and prevents the plate G from being moved until the hammer in its inserting downward movement has moved sufficiently to allow the projection Q to move over the top of stop P.

It is, of course, obvious that the device can be so constructed that instead of having three bobbins between the nose D and plate G, any other number can be used, as may be found desirable.

I claim:

1. In a weft replenishing mechanism, the combination with a magazine, a hammer, and a yielding bobbin support at the end of the magazine; of movable means coöperating with the support to exert pressure on the head of one of the bobbins about to be transferred, to maintain said bobbins parallel independent of the quantity of thread thereon.

2. In a weft replenishing mechanism, the combination with a magazine, a hammer and a yielding bobbin support at the end of the magazine; of movable means coöperating with the support to exert pressure on the head of one of the bobbins about to be transferred to maintain the latter parallel independently of the quantity of thread thereon, said means being actuated upon the downward movement of the hammer to permit the feeding of the bobbins in the magazine.

3. In a weft replenishing mechanism, the combination with a magazine, a hammer and a yielding bobbin support at the end of the magazine; of means to exert pressure on the head of one of the bobbins about to be transferred to maintain the latter parallel independent of the quantity of thread thereon, said means being positively actuated by the hammer upon the downward movement of the latter to permit the feeding of the bobbins in the magazine and to withdraw said pressure exerting means.

4. In a weft replenishing mechanism, the combination with a bobbin magazine; of a pivoted spring urged lever having a relatively fixed nose arranged to engage only the bobbin heads to urge bobbins toward the delivery end of the magazine and maintain the bobbins parallel independent of the quantity of thread thereon.

5. In a weft replenishing mechanism, the combination with a bobbin magazine, and a hammer, of a pivoted lever having a relatively fixed nose arranged to exert a forward pressure on the heads of the forward bobbins in the magazine and maintain the bobbins parallel independent of the quantity of thread thereon, and means on the hammer to engage the lever to move the nose to permit the bobbins in the magazine to feed past the nose.

6. In a weft replenishing mechanism, the combination with a bobbin magazine and a hammer; of a pivoted spring urged bobbin support, means to limit the movement of the support under the action of its spring, said support having a projection extending over the hammer, an adjustable stop on the hammer to engage said extension and prevent the movement of the support when the hammer is raised, a pivoted spring-urged lever on the magazine having a nose arranged to urge forward bobbins in the magazine against said support and means on the hammer to engage the tail of said lever during the descent of the hammer.

7. In a weft replenishing mechanism, the combination with a magazine and a hammer coöperating therewith; of movable means acting to force the heads of the forward bobbins together to maintain the forward bobbins in the magazine parallel, independent of the quantity of thread thereon.

8. In a weft replenishing mechanism, the combination with a magazine and a hammer coöperating therewith; of means acting on the heads of the forward bobbins in the magazine to crowd them together to maintain said forward bobbins parallel independent of the quantity of thread on said bobbins, said means also preventing the remaining bobbin heads from feeding during the transfer.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

FRIEDRICH ALBERT KUENY.

Witnesses:

JEAN GRUND.

CARL GRUND.