ABSTRACT

A device for severing yarns in yarn cleaners includes a movable knife and an anvil forming a striking support for the knife, the striking surface of the anvil facing the knife edge being harder in the peripheral zones thereof than in the central zone contacted by the knife during the cutting operation so that the knife will retain its sharp edge for a long period of use.

4 Claims, 4 Drawing Figures
DEVICE FOR SEVERING YARNS IN YARN CLEANERS

This invention is related to a device for severing yarns in yarn cleaners, which contains a knife and an anvil as a striking support.

Yarn severing devices for yarn cleaners of known performance are operated electromagnetically, whereby they are designed to be operated either in the form of scissors or in the form of a chisel. The latter performance is preferred because of its more simple construction. For achieving a sufficiently long duration of operation with a continuous cutting capacity, i.e., to reduce the wear of the edge and of the anvil, there has been suggested to support the anvil in a resilient bearing for diminishing the striking power between the knife edge and the anvil. This performance, however, has not resulted in a substantial increase in the duration of use of the device.

A further type of yarn severing device for yarn cleaners comprises a knife and a cylindrical, rotatable pivoted anvil. The knife strikes the anvil along one of its generatrices. Due to the rotatable bearing of the anvil, its entire circumference is presented as a striking surface and the probability is decreased accordingly that the knife edge always strikes the same generatrix and that a recess and a reduced cutting capacity is produced.

The present invention is directed to a device for severing yarns in yarn cleaners containing a knife and an anvil as a striking support and is characterized in that the striking surface of the anvil facing the knife edge is composed in its transversal direction of materials with different degrees of hardness.

The use of selected materials with different degrees of hardness is especially advantageous if the zone of the anvil, through which the yarn passes and in which the yarn consequently will be severed, consists of a softer material than the knife edge, while the zones of the anvil where no cuts occur are built with a material having a hardness which is comparable with the hardness of the knife edge.

The manufacture of the anvil with zones of different surface hardness can be effected in different ways. One of these consists, for example, in fitting and locking an insertion plate with the required hardness in the anvil. Another possibility consists in manufacturing the anvil completely with softer material and the zones which are not in the region of the passing yarn are hardened by means of methods known per se.

These and other objects, features, and advantages of the present invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a schematic diagram of a severing device in side elevation;
FIG. 2 is a front elevation of the device of FIG. 1;
FIG. 3 is a detailed view of a portion of the device of FIG. 2; and
FIG. 4 is a detailed view of a modification of the device shown in FIG. 2.

As seen in FIGS. 1 and 2, the severing device consists of a knife 1, which is journalled and longitudinally displaceable in a guide block 2, provided at the free end thereof in a knife edge 3 which is advantageously hardened. An arrow 4 schematically represents any suitable device for moving the knife 1 suddenly in a downward direction and effecting a subsequent return to its start-
material with substantially equal hardness as the knife edge.

4. Device for severing yarns as defined in claim 3 wherein said striking surface is formed of a homogene-
ous material, the zones with different hardness in the transverse direction being attained by means of partial hardening of the surfaces forming said marginal zones.

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