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(54) **Warping mill for threads in general with improved thread removing unit**

Schäranlage mit Abzugsvorrichtung für Fadenresten

Installation d'ourdissage avec dispositif pour retirer les résidus de fil

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(73) Proprietor: **Legler - Società per Azioni**
24036 Ponte San Pietro (Bergamo) (IT)

(72) Inventor: **Parati, Agostino**
24020 Gorle (IT)

(74) Representative: **Modiano, Guido, Dr.-Ing. et al**
Modiano & Associati SpA
Via Meravigli, 16
20123 Milano (IT)

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Description

[0001] The present invention relates to a warping mill for threads in general with improved thread removing unit.

[0002] Currently, in conventional warping mills there is the problem of removing the residues of thread that remain on the bobbins of the creel at the end of the winding of said threads.

[0003] This operation is currently performed substantially manually by pulling the remaining threads, which are then discarded.

[0004] EP-0 668 234 discloses a unit for removing thread residues from bobbins that are on a creel, as defined in the preamble of claim 1.

[0005] The aim of the present invention is to eliminate the above drawbacks, by providing a warping mill for threads in general with improved thread removing unit which allows to remove the residues of thread substantially automatically, thus allowing optimization in the production steps.

[0006] Within the scope of this aim, a particular object of the present invention is to provide a warping mill for threads in general which allows to significantly reduce the use of labor, eliminating an operation which is also unpleasant for operators.

[0007] Another object of the present invention is to provide a warping mill which by virtue of its particular constructive characteristics is capable of giving the greatest assurances of reliability and safety in use.

[0008] Another object of the present invention is to provide a warping mill for threads in general which can be easily obtained starting from commonly commercially available elements and materials and is furthermore competitive from a merely economical point of view.

[0009] This aim, these objects and others which will become apparent hereinafter are achieved by a warping mill for threads in general with improved thread removing unit, according to the present invention, as defined in claim 1. Further characteristics and advantages of the present invention will become apparent from the following detailed description of a preferred but not exclusive embodiment of a warping mill for threads in general with improved thread removing unit, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a schematic plan view of the warping mill according to the present invention;
figure 2 is a front view of the thread removing unit;
figure 3 is a view of the thread removing unit, seen from the rear side;
figure 4 is a side elevation view of the thread removing unit.

[0010] With reference to the above figures, the warping mill for threads in general with improved thread removing unit according to the present invention, generally designated by the reference numeral 1, comprises a creel 2 and a winding unit 3, of a per se known type, between which a thread removing unit 4 is interposed; as shown more clearly in figures 2 to 4, the thread removing unit is constituted by a supporting framework 5 which is mounted on guiding wheels 6, two whereof are inserted in a guide or path 7 provided on the floor, so as to allow to position the thread removing unit 4 in active positions, i.e., at the path followed by the threads, or optionally in an inactive position, i.e., outside the path followed by the threads.

[0011] In its upper part, the thread removing unit 4 has a guiding ring 10 which is arranged in front of a motorized roller 11, opposite which a presser roller 12 is arranged.

[0012] The motorized roller 11 is connected, by means of a belt 13, to a motor 14 which is supported by a frame 15 on which elastic means 16 for tensioning the belt 13 act.

[0013] The presser roller 12 is supported by a moving frame 20 which is pivoted to the frame 5 at one end 21 and is connected, at its opposite end, to presser pistons 22 which are actuated so as to make the presser roller 12 act against the motorized roller 11, so as to pull the threads 30 and consequently remove all the residues from the bobbins of the creel.

[0014] In order to prevent the threads from winding on the motorized roller 11, there is provided a blade 40 which acts against the roller 11 and separates the threads, allowing them to accumulate in a region in front of the thread removing unit 4.

[0015] From the above description it is thus evident that the present invention achieves the intended aim and objects; in particular, the fact is stressed that a warping mill is provided in which a thread removing unit is provided which automatically allows to remove thread residues from the bobbins, eliminating all manual operations.

[0016] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the inventive concept.

[0017] All the details may also be replaced with other technically equivalent elements.

[0018] In practice, the materials employed, so long as they are compatible with the specific use, as well as the contingent shapes and dimensions, may be any according to requirements.

[0019] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A warping mill (1) for threads in general with improved thread removing unit, comprising, between a creel (2) and a winding unit (3), a thread removing unit (4), **characterized in that** said thread removing unit (4) is provided with mutually opposite and motorizable rollers which can be removably engaged with the threads (30) in order to remove the residues of thread from bobbins of the creel, said motorizable rollers comprising a presser roller (12) that acts against a motorized roller (11) so as to pull the threads (30), said thread removing unit (4) having a framework (5) which is mounted on wheels (6), one pair whereof can slide in a guiding track (7) to selectively position said thread removing unit (4) in an inactive position and in an active position, and **in that** it comprises a blade (40) which acts on the surface of said motorized roller (11) to prevent the adhesion of the threads (30) removed from the bobbins.

2. The warping mill according to claim 1, **characterized in that** said motorized roller (11) is associated with motor means (14) for rotating it and is supported by said framework, and said presser roller (12) which is supported by a moving frame (20) which can be removably arranged in contact with said motorized roller (11).

3. The warping mill according to claim 2 **characterized in that** said moving frame (20) is pivoted to said framework (5) at one end and is connected to presser cylinders (22) at its other end.

4. The warping mill according to claim 2, **characterized in that** it comprises means (16) for tensioning a belt (13) for connecting said motor means and said motorized roller (11).

Patentansprüche

1. Schäranlage (1) für Fäden im allgemeinen mit verbesserter Fadenabzugseinheit, mit einer Fadenabzugseinheit (4) zwischen einem Gatter (2) und einer Wickeleinheit (3), **dadurch gekennzeichnet, daß** die Fadenabzugseinheit (4) einander gegenüberliegende antreibbare Walzen hat, die lösbar mit den Fäden (30) in Kontakt gebracht werden können, um die Rest von Fäden von Spulen des Gatters abzuziehen, wobei die antreibbaren Walzen eine Andruckwalze (12) enthalten, die gegen eine angetriebene Walze (11) wirkt, um die Fäden (30) zu ziehen, wobei die Fadenabzugseinheit (4) einen Rahmen (5) hat, der auf Räder (6) montiert ist, von denen ein Paar in einer Führungsbahn (7) gleiten kann, um die Fadenabzugseinheit (4) wahlweise in einer inaktiven und einer aktiven Stellung anzuordnen, und daß sie eine Klinge (40) enthält, die auf die Oberfläche der angetriebenen Walze (11) einwirkt, um das Haften der von den Spulen abgezogenen Fäden (30) zu verhindern.

2. Schäranlage nach Anspruch 1, **dadurch gekennzeichnet, daß** die angetriebene Walze (11) mit Motormitteln (14) zum Drehen derselben verbunden und von dem Rahmen gehalten ist und die Andruckwalze (12), die von einem beweglichen Rahmen (20) gehalten ist, lösbar mit der angetriebenen Walze (11) in Kontakt gebracht werden kann.

3. Schäranlage nach Anspruch 2, **dadurch gekennzeichnet, daß** der bewegliche Rahmen (20) an einem Ende schwenkbar an dem Rahmen (5) angebracht und an seinem anderen Ende mit Druckzylindern (22) verbunden ist.

4. Schäranlage nach Anspruch 2, **dadurch gekennzeichnet, daß** sie Mittel (16) zum Spannen eines Riemens (13) zum Verbinden der Motormittel und der angetriebenen Walze (11) enthält.

Revendications

1. Ourdissoir (1) pour fils en général avec dispositif perfectionné pour retirer les résidus de fil, comprenant, entre un cantre (2) et un bobinoir (3), un dispositif (4) pour retirer les résidus de fil, **caractérisé en ce que** ledit dispositif (4) pour retirer les résidus de fil est muni de rouleaux mutuellement opposés et motorisables qui peuvent être placés de manière amovible au contact des fils (30) afin de retirer les résidus de fil de bobines du cantre, lesdits rouleaux motorisables comprenant un rouleau presseur (12) qui agit contre un rouleau motorisé (11) afin de retirer les fils (30), ledit dispositif (4) pour retirer les résidus de fil ayant un bâti (5) monté sur des roues (6) dont une paire peut glisser dans un rail de guidage (7) pour placer de manière sélective dans une position inactive et dans une position active ledit dispositif (4) pour retirer les résidus de fil, et **en ce qu'**il comprend une lame (40) qui agit sur la surface dudit rouleau motorisé (11) afin d'empêcher l'adhérence des fils (30) retirés des bobines.

2. Ourdissoir selon la revendication 1, **caractérisé en ce que** ledit rouleau motorisé (11) coopère avec un moyen moteur (14) pour faire tourner celui-ci et est supporté par ledit bâti, et ledit rouleau presseur (12) est supporté par un cadre mobile (20) qui peut être placé de manière amovible au contact dudit rouleau motorisé (11).

3. Ourdissoir selon la revendication 2, **caractérisé en**

ce que ledit cadre mobile (20), à une première extrémité, pivote sur ledit bâti (5) et, à son autre extrémité, est connecté à des cylindres presseurs (22).

4. Ourdissoir selon la revendication 2, **caractérisé en ce qu'**il comprend un moyen (16) pour tendre une courroie (13) pour connecter ledit moyen moteur et ledit rouleau motorisé (11).

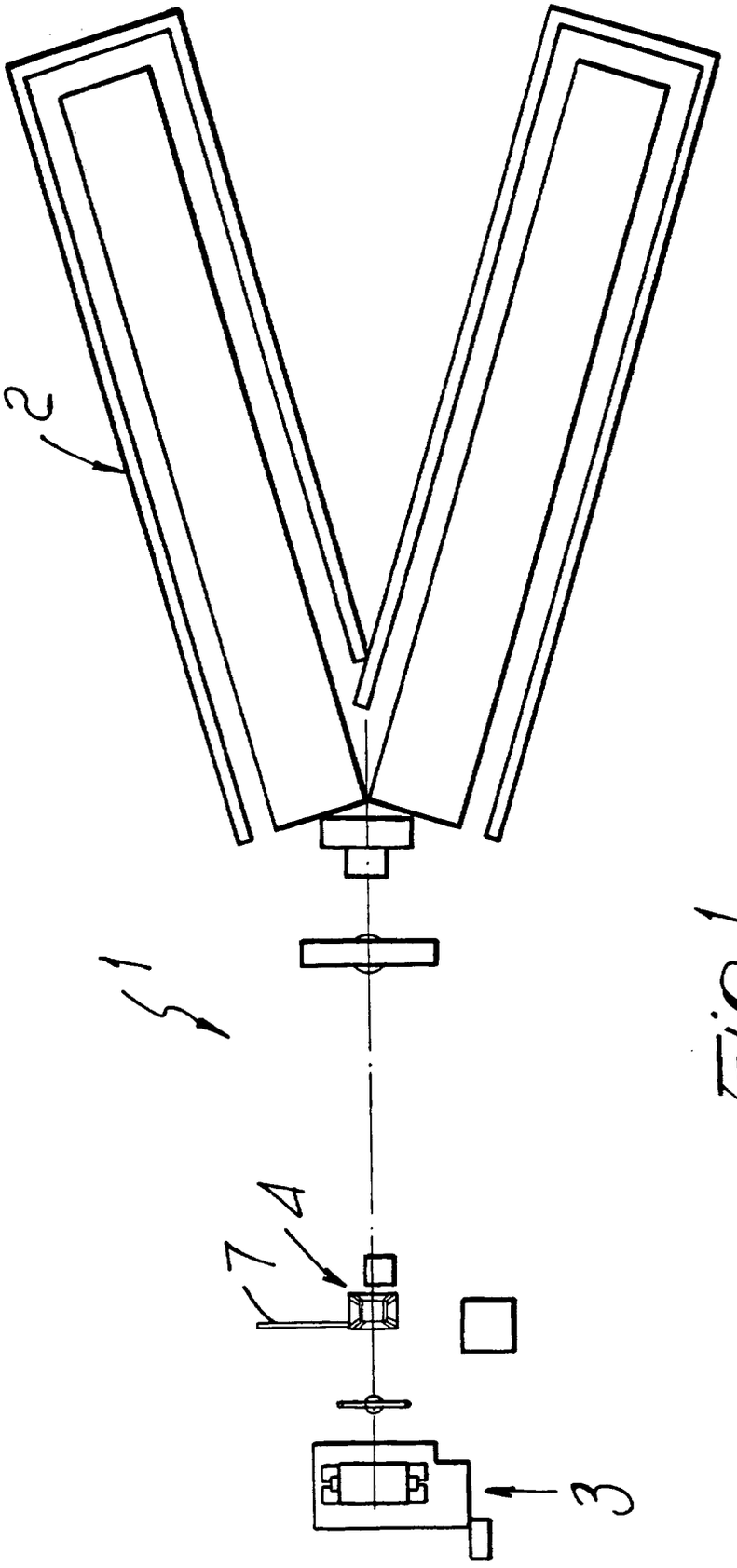

Fig.1

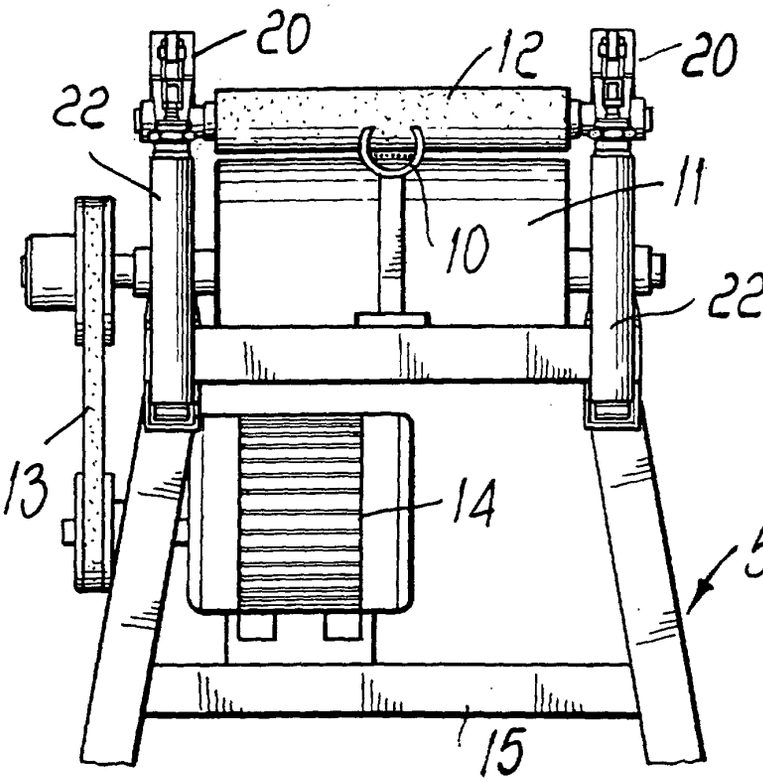

Fig. 2

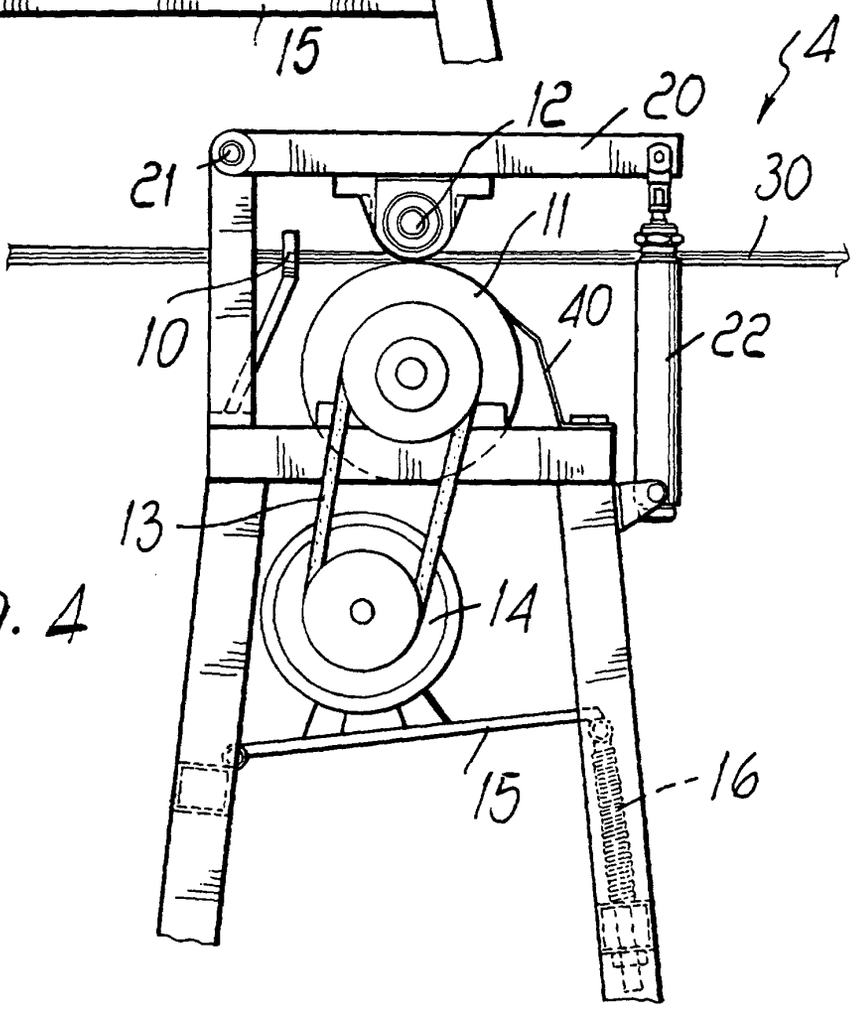

Fig. 4

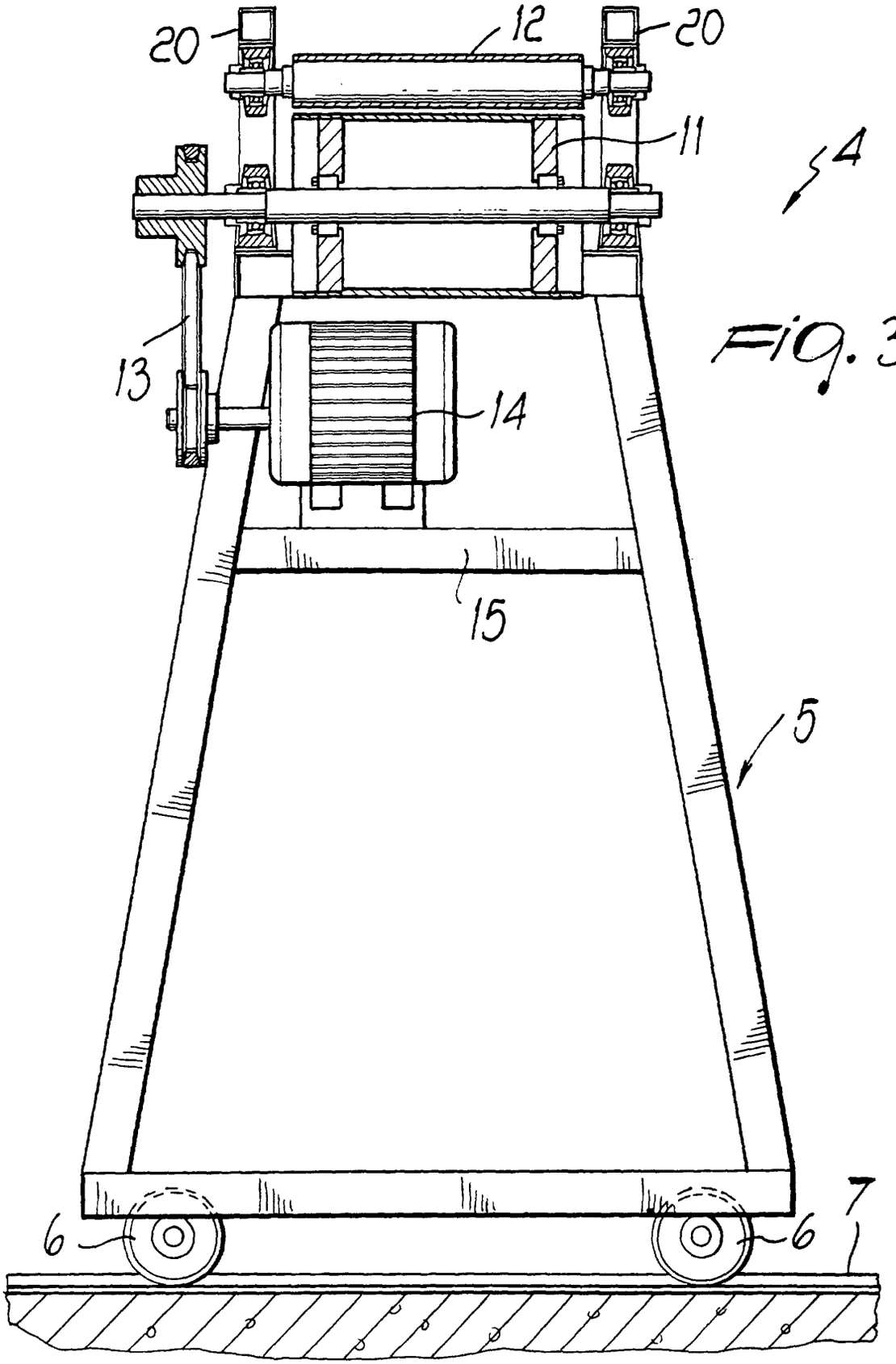

Fig. 3