J. M. JENSEN & E. C. LE BLANC.

GRINDER ATTACHMENT.

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987,466. Patented Mar. 21, 1911.

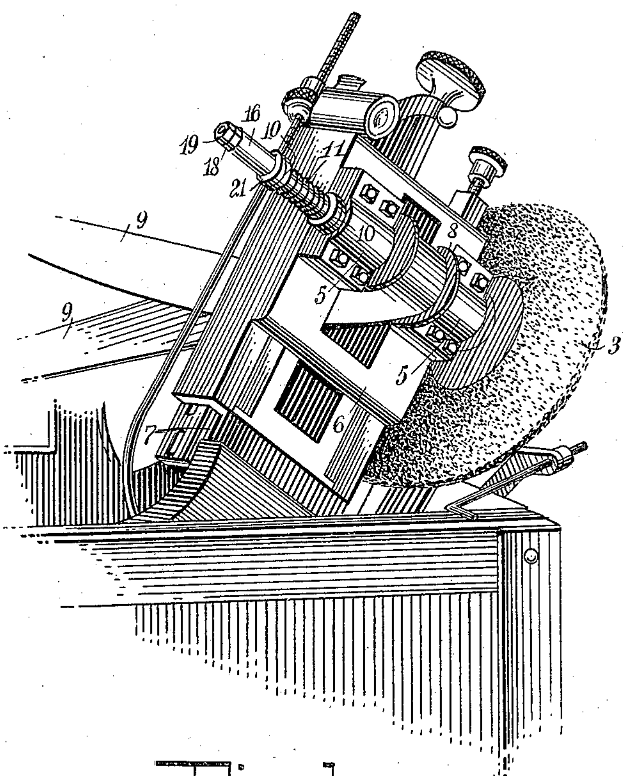

Fig. 1

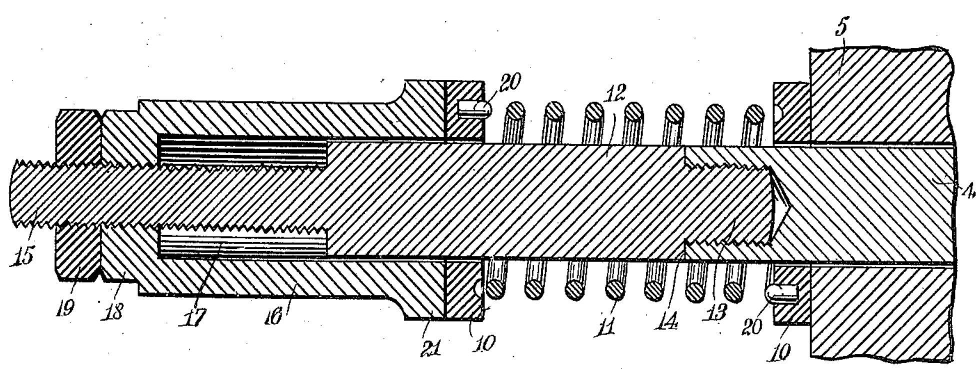

Fig. 2

WITNESSES:

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GRINDER ATTACHMENT.

987,466. Specification of Letters Patent. Patented Mar. 21, 1911.

Application filed July 6, 1910. Serial No. 570,528.

To all whom it may concern:

Be it known that we, JOHN M. JENSEN and ERNEST C. LE BLANC, citizens of the United States, and residents of Bowie, in the parish of Lafourche and State of Louisiana, have invented a new and Improved Grinder Attachment, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: To provide an adjustable, spring-actuated tension device to relieve the pressure on the grinding wheel when the same exceeds the calculated strain; and to provide a tension device for the mandrel of a grinder head which is simple, efficient and durable in construction.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in both views, and in which—

Figure 1 is a perspective view of a grinder head set for grinding teeth of gang or band saws; and Fig. 2 is a longitudinal section, fragmentary in form and on an enlarged scale, showing the tension device constructed and arranged in accordance with the present invention.

In the operation of grinding saw teeth, a thin grinding wheel 3 is mounted on a mandrel 4, and disposed in the inclined position substantially as illustrated in Fig. 1. The mandrel 4 is mounted in bearing boxes 5, 5, set out from a face plate 6. The face plate 6 is adjustably and slidably mounted on the tilting head 7 of the grinding machine. The mandrel 4 is provided with a high speed driven pulley 8, fixedly secured thereto. The length of the pulley 8 is reduced to permit a play between the bearings 5, 5 and the said pulley, or the hub extensions thereof. The pulley 8 is driven by a belt 9.

When feeding a saw to a grinder constructed and disposed as above described, the movement of the saw tends to pull the mandrel toward the side of the face plate 6, from which the grinding wheel 3 is extended. With a wheel running at the high speed often desirable for grinding wheels or disks, it is easy to burn the metal and take the temper therefrom by an accumulated or undesigned pressure on the grinding wheel. It is for this purpose that we have arranged the loose collars 10, 10 and the spiral spring 11 in the manner shown in the drawings, to surround the mandrel 4 and the auxiliary stem 12.

To apply the present tension device to grinding attachments of the standard make, the mandrel 4 is bored and tapped at the free end, as shown in Fig. 2 of the drawings. It is within the tapped boring thus provided that the threaded extension 13 of the stem 12 is driven to hold the said stem in fixed relation with the mandrel 4. The extension 13 is reduced in diameter to provide on the stem 12 an abutment shoulder 14 for truing the alinement of the said stem and mandrel when the same are joined. At the outer end of the stem 12 there is provided an elongated extension 15, which is reduced in diameter and screw threaded throughout its length, as shown in Fig. 2 of the drawings. Fitted over the stem 12, and provided with a central threaded perforation to engage the extension 15 is an enlarged cap nut 16. The bore 17 in the cap nut 16 is formed to provide a guide in conjunction with the stem 12. The cap nut 16 is provided with a wrench head section 18 whereby the said cap nut is manipulated to advance or recede the same on the extension 15 and the stem 12. Mounted on the extension 15, and holdingly engaged therewith, is a jam nut 19 of any suitable form.

When the mandrel 4 is provided with a tapped bore in the free end thereof, the parts above described are assembled in operative position upon the said mandrel by first screwing the extension 13 of the stem 12 firmly into the tapped bore of the said mandrel. One of the said collars 10 is then passed over the stem 12 and rested against the outer side of the bearing box 5. The spring 11 and the second collar 10 are then, in the order named, passed over and upon the stem 12. The spring 11 is provided with downturned ends 20, 20, to receive which holes are bored in the face of the collars 10, 10, whereby the spring 11 is prevented from rotating relative to the said collars. The spring 11 and the collars 10, 10 being thus adjusted, the nut 16 is inserted over the stem 12 and screwed upon the extension 15, until the bearing flange 21 of the nut 16 abuts the outer collar 10. The collars 10, 10 are machined to form a bearing surface with the side of the box 5 and the flange 21 of the nut 16. The loose engagement of the collars thus provided, secures the same against becoming

jammed or exerting a frictional wear upon either of the surfaces with which the said collars are in bearing relation.

By manipulating the nut 16 it will be seen that the spring 11 may be compressed to any desired tension between the collars 10, 10 and the bearing boxes 5 and nut 16. When the desired tension is attained, the nut 16 is locked in position by setting up the jam nut 19. When now the operator in shifting the saw pulls against the disk or wheel 3 before the pressure attains the degree at which the metal would burn, and thereby endanger the temper of the saw, the mandrel 4 yields, pulling against the tension of the spring 11, and thus preventing the overheating referred to.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:—

A grinder attachment, comprising a mandrel having a screw threaded bore in the free end thereof; an auxiliary stem having screw threaded extensions at the opposite ends thereof, one of said extensions adapted for engagement with said mandrel; a plurality of bearing collars loosely mounted on said stem and mandrel; a spiral spring fixedly connected with said collars and extended therebetween; an elongated cap nut having a central bore to slide on the body of said stem, said cap having a wrench head and a screw threaded perforation therein for engagement with the threaded extension of said stem; and a lock nut mounted on the said screw threaded extension of said stem in holding relation therewith.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN M. JENSEN.
ERNEST C. LE BLANC.

Witnesses:
FIRMIN THIBODEUX,
RICHARD S. GUIDUZ.