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T. E. HALL
STRAP ROLLING MEANS
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2,076,458

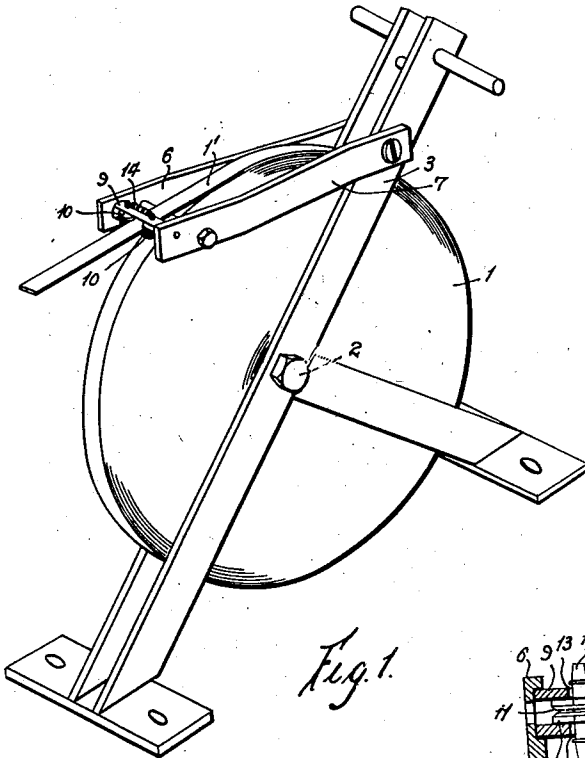


Fig. 1.

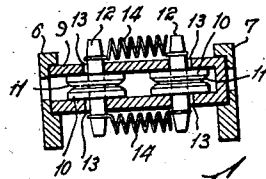


Fig. 4.

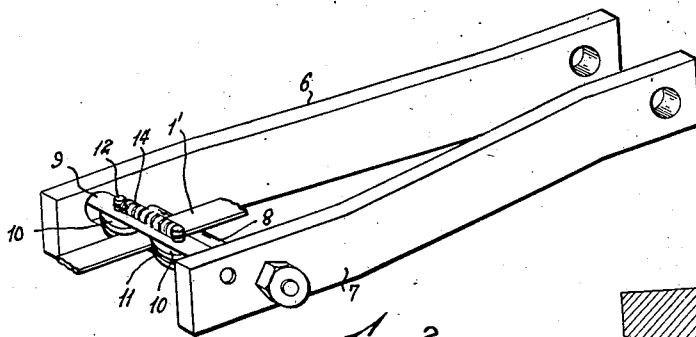


Fig. 2.

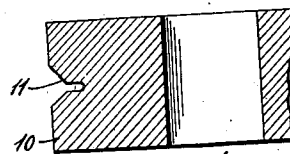


Fig. 5.

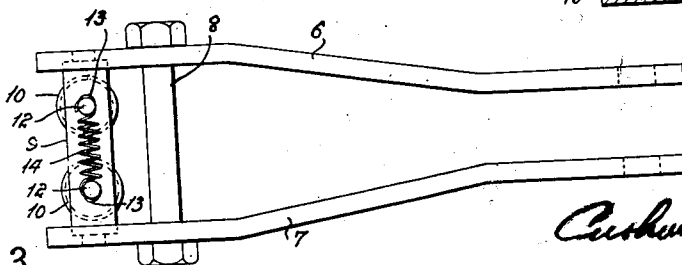


Fig. 3.

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UNITED STATES PATENT OFFICE

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STRAP ROLLING MEANS

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7 Claims. (Cl. 80—40)

This invention relates to improved means for treating metal strapping or bands for boxes, crates and the like, the object of the invention being to render the strapping free from sharp edges or other defects which are liable to cause injury to the hands of the operator.

The metal strapping or band is as a rule prepared by cutting a broad ribbon of material into narrow strips, and the edges of these strips are found to be very often extremely sharp, sometimes having sharp corners where the edge is cut clean, and at other times having burrs or feathers formed where the cutting tool has got blunt. The strips with these defects are very liable to cut the hands of the person using the metal strapping.

According to the present invention, a device is furnished which can readily be applied to the usual frame in which a coil of strapping or band is carried, so that the strapping or band can be treated to remove these defects as it is withdrawn from the coil for use. According to the present invention, the strapping or band is drawn through a device which operates upon the edges of the band and by pressure rolls down any feathers or burrs and rounds off any other sharp edges there may be on the metal band.

The invention is illustrated by way of example in the accompanying drawing in which

Fig. 1 is a perspective view showing the device according to the invention applied to a frame carrying a coil of metal band.

Fig. 2 is a perspective view of the device on a larger scale,

Fig. 3 is a plan view of the device also on a larger scale,

Fig. 4 is a sectional end elevation showing the method of mounting the rollers,

Fig. 5 is an enlarged sectional view of a part of one of the rollers.

Referring to the drawing, the coil of band or strapping 1 is supported for unwinding upon a bolt 2 carried by a frame comprising an upwardly extending arm 3 formed of a pair of metal strips between which the coil is inserted. A strut 4 and fixing plates 5 are provided whereby the frame may be fixedly mounted in a desired position.

Near the upper end of arm 3 of the frame is pivoted freely a pair of arms 6, 7 one at each side of arm 3 and the free ends of these arms 6, 7 are locked spaced apart by a suitable bolt 8.

Between the free ends of the arms 6, 7 a slotted transverse member 9, formed for example by longitudinally slotting a piece of circular section metal rod, is mounted so as to be capable of

rocking freely. In the slot in member 9 are mounted two hardened metal wheels or rollers 10 each provided with a deep narrow groove 11 on its periphery. The position of these rollers 10 is such that the grooves 11 embrace the opposite edges of the band or strapping 1, said band being drawn between the two rollers 10 as it is drawn off the coil 1 for use.

The rollers 10 are mounted to rotate freely on pins 12 which in turn are mounted with the requisite amount of longitudinal play in longitudinal slots 13 in transverse member 9 and the ends of the pins 12 are strongly drawn together by means of spiral springs 14 so that the slotted rollers 10 bear with considerable pressure upon the edges of the band 1' and as the band is drawn out the rollers 10 revolve and all sharp edges or burrs on the edges of the band are rolled down or blunted by the action of the grooved rollers 10.

The arms 6, 7 are preferably of such a length that as the diameter of the coil 1 diminishes, the band or strapping engaging rollers 10 drop approximately towards the centre of the coil. In this way, the whole of the band can be drawn through the rollers 10 without any difficulty, and without a kink or inconvenient bend being formed in the band.

The slots 11 in the rollers 10 are very little wider than the thickness of the band 1' to be dealt with. It has been found that good results are obtained if the width of the groove 11 in the rollers 10 is not more than one thousandth of an inch more than the thickness of the metal band or strapping being operated on.

The entrance to the groove 11 is bevelled as clearly shown in Fig. 5, so as to facilitate insertion of the metal band, and the bottom of the groove is finished rounded so as to assist in producing a rounded edge on the band.

I claim:

1. Device for smoothing the edges of metal band, comprising a pair of peripherally grooved rollers, means adapted to support said rollers for rotation about their own axes and also for movement to change the plane of rotation of said rollers, the peripheral grooves of said rollers being adapted respectively to embrace the opposite edges of a metal band and to accommodate themselves to changes in the position of the band relatively to the support, and means adapted to urge the rollers into engagement with a metal band when lying between said rollers.

2. Device for smoothing the edges of metal band, comprising a pair of peripherally grooved rollers, means adapted to support said rollers for

- rotation about their own axes and also for movement to change the plane of rotation of said rollers, the peripheral grooves of said rollers being adapted respectively to embrace the opposite edges of a metal band and to accommodate themselves to changes in the position of the band relatively to the support, and resilient means adapted to urge the rollers into engagement with a metal band when lying between said rollers.
- 10 3. Device for treating the edges of metal band comprising a pair of peripherally grooved rollers, a pair of spindles lying parallel to one another upon which said rollers can freely rotate, means supporting said spindles and permitting
15 a limited movement of said spindles towards and away from one another and also a movement about an axis at right angles to said spindles, and spring means adapted to urge said spindles towards one another.
- 20 4. Device for treating the edges of metal band comprising a pair of peripherally grooved rollers, a pair of spindles lying parallel to one another upon which said rollers are mounted, means adapted to urge said spindles towards one another, means supporting said spindles and permitting
25 a limited movement of said spindles towards and away from one another and a frame in which said spindle supporting means is mounted so as to be capable of rocking about an axis at right angles to said spindles and parallel
30 to a line joining said spindles.
5. A device for smoothing the edges of metal band, comprising a pair of peripherally grooved rollers, means adapted to support said rollers
35 for rotation about their own axes and also for movement to change the plane of rotation of said rollers, the peripheral grooves of said rollers be-

ing adapted respectively to embrace the opposite edges of a metal band and to accommodate themselves to changes in the position of the band relatively to the support and means adapted to urge the rollers into engagement, with a metal band when lying between said rollers, a coil holder adapted to allow a coil of metal band to rotate as the metal band is withdrawn and also adapted to carry the supporting means for the rollers.

6. A device for smoothing the edges of metal band comprising a coil holder adapted to allow a coil of metal band to rotate as the metal band is withdrawn, a pair of peripherally grooved rollers, the grooves in which are adapted to respectively embrace the opposite edges of a metal band, a support for the peripherally grooved rollers pivotally connected to the coil holder and adapted to permit rotation of the peripherally grooved rollers about their own axes and also to enable said rollers to drop approximately towards the centre of the coil in the coil holder as the diameter of the coil diminishes and means adapted to urge the rollers into engagement with a metal band when lying between said rollers.

7. Means whereby the edges of coiled metal strapping may be smoothed as the strapping is withdrawn from its coil, comprising a coil support adapted to allow a coil of strapping to be rotatably mounted in said support, edge smoothing members adapted to press upon the edges of the strapping as it is withdrawn from the coil, and means movably connecting said edge smoothing members with said coil support in such manner that the edge smoothing members are free to move in the plane in which the coil support is adapted to hold the coil.

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