Nov. 23, 1971 H. WOMACK 3,621,746

TRIMMERS

Filed April 24, 1970

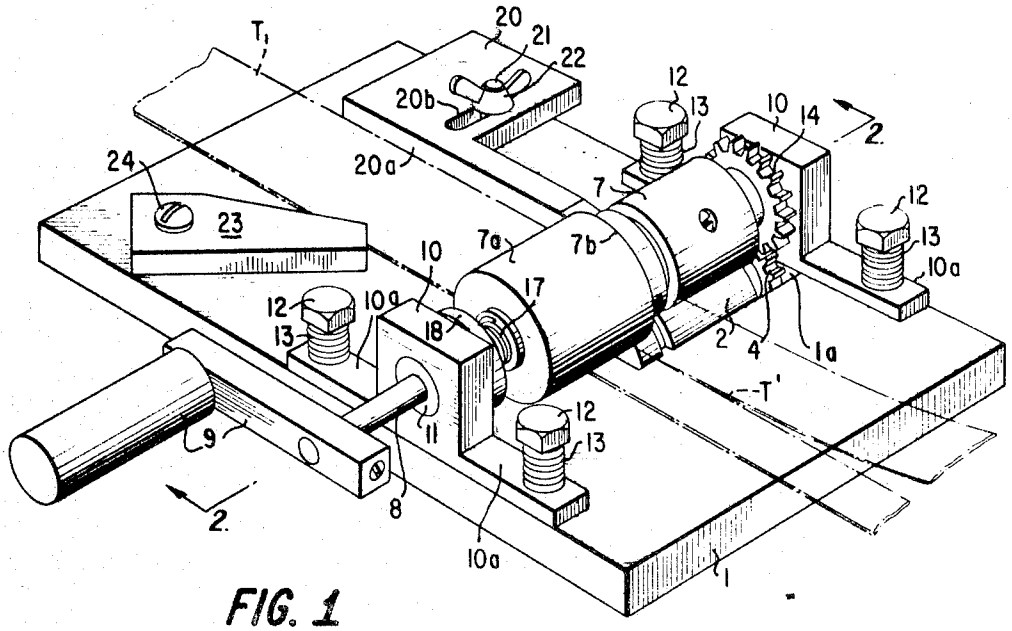


FIG. 1

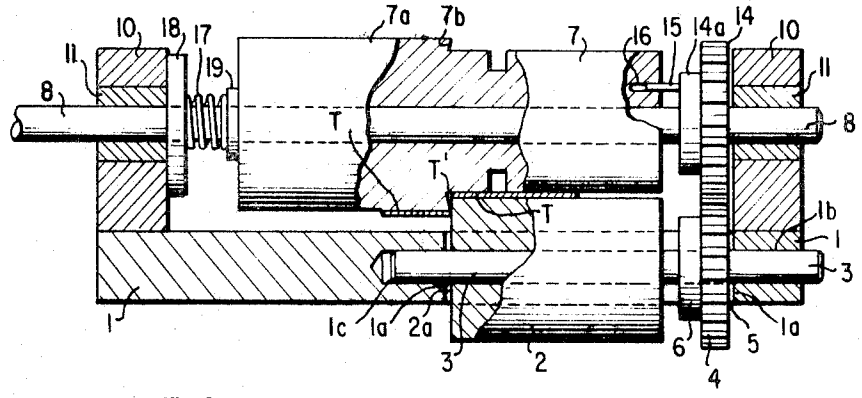


FIG. 2

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ABSTRACT OF THE DISCLOSURE

The machine for trimming tapes has a base having an opening therein adjacent one edge. A roll is journaled in the opening and is provided with a cutting end. A second roll cooperates with the first roll and has an enlarged portion providing a cutting shoulder which engages the cutting end of the first roll. A shaft on the base carries the second roll which is axially slidable thereon. Bearings on the base at the ends of the shaft yieldably maintain the rolls in peripheral contact. Intermeshing gears on the rolls rotate the rolls in opposite directions to feed a tape therethrough when caught in the bite of the rolls. A spring on the shaft yieldably urges the cutting shoulder into contact with the cutting end of the first roll to longitudinally sever the tape passing between the rolls. And guides on the base direct the tape into the bite of the rolls in desired relation to the cutting shoulder.

DESCRIPTION OF INVENTION

This invention is a novel machine for trimming newspaper tape to be used in the process of offset printing, and the principal object of the invention is to provide a machine for trimming tape from a headliner machine, or any other machine producing tapes of this type, preparatory to pasting-up for offset printing, the use of my machine guaranteeing a straight edge on the bottom of the trimmed tape to assure accuracy when pasted on a page. In addition to the above mentioned feature it also speeds up the process of trimming the tape.

The use of my machine will replace the use of plain scissors which are now being used generally by most offset newspapers. Although my invention is not designed necessarily for speeding up the process, although in many instances it would, it is designed mainly to assure accuracy which is necessary for producing a good product in offset printing.

I will explain the invention with reference to the accompanying drawing, which illustrates one practical embodiment thereof, to enable others familiar with the art to adopt and use the same; and will summarize in the claims the novel features of construction, and novel combinations of parts, for which protection is desired.

In said drawing:

FIG. 1 is a perspective view of my novel trimmer illustrating a tape passing therethrough for trimming.

FIG. 2 is an enlarged cross-section taken on the line 2—2, FIG. 1.

As shown in the drawing, my novel trimmer preferably comprises a base 1 which may be rectangular in shape and is of considerable thickness for the purpose hereinafter described. Preferably the base is made of aluminum for lightness in weight, but may be of any other desired metal or material.

Extending through the base 1, adjacent one side edge thereof is a rectangular opening 1*a* having one end wall thereof disposed parallel with the adjacent longitudinal side edge of the base 1 but spaced therefrom, as shown in FIG. 2, said opening being adapted to receive the lower roll 2 of a pair of tape advancing and cutting rolls 2–7 hereinafter referred to. Roll 2 is mounted upon a shaft 3, FIG. 2, one end thereof extending through a bore 1*b* in

one end wall of the opening 1*a* and the other end extending into a bore 1*c* in the opposite wall of the opening 1*a*. The roll 2 is mounted upon the shaft 3 within the opening 1*a* with its upper periphery extending slightly above the top of the base 1.

Formed integrally with the roll 2 at the outer end thereof is a gear 4, the outer face of which engages a collar or washer 5 which contacts the wall of the outer end of the opening 1*a*, as shown in FIG. 2, the gear 4 being connected with the adjacent end of roll 3 by means of a collar 6 which is integral with the end of the roller and the hub of the gear 4, so that the roll 2 and gear 4 will rotate as a unit upon the shaft 3 and may be moved slightly axially to maintain the collar 5 in constant engagement with the adjacent wall of the opening 1*a*, as shown in FIG. 2.

Disposed above the roll 2 is a cooperating cutting roll 7 which is slidably mounted upon a shaft 8 whose ends are vertically yieldably mounted in bearings fixed on the base 1 at opposite side edges thereof, as shown in FIG. 2, shaft 8 being provided with a handcrank 9 for rotation thereof.

As shown, each of the bearings for the shaft 8 comprises an inverted T-shaped lug 10 containing aligned bushings 11 for shaft 8, the lugs 10 having opposed extensions 10*a* disposed parallel with the edges of the base 1, each extension being provided with a bore receiving bolts 12 passing through said bores and into and through threaded bores in the base 1, the heads of the bolts extending above the tops of the extensions 1*a*. Coiled springs 13 are provided between the heads of the bolts 12 and the tops of the extensions 10*a*, normally urging the bearings 10 downwardly towards the base 1 to thereby maintain the rolls 2 and 7 normally in contact, but permitting the rolls 2 and 7 to yieldably separate when a tape T is passed between the rolls to form in the tape T a longitudinal slit T', as indicated in FIG. 1.

The inner end of the roll 7 is cylindrically enlarged as at 7*a*, forming with the main portion of the roll 7 a shoulder 7*b* which is normally opposite the inner end 2*a* of the underlying roll 2. However, the shoulder 7*b* is slightly undercut, as shown in FIG. 2, so that when the tape T is passed longitudinally between the rolls 2 and 7 the tape will be severed longitudinally, as at T'. The yieldable mounting of the lugs 10 on the base 1, however, permits the bite between the rolls to yieldably adjust to suit various thicknesses of the tape T, so that when the tape T is fed longitudinally between the rolls 2 and 7, as shown in FIG. 1, the tape will be severed longitudinally as at T'.

Fixed on the shaft 8 above the gear 4 is a mating gear 14 which normally meshes with the gear 4 to rotate the roll 2 by and with the rotation of the shaft 8. Gear 14 is provided with a collar 14*a* on its inner face which carries a horizontally disposed pin 15, FIG. 2, which enter a bore 16 in the adjacent end of the roll 7, as shown in FIG. 2, thereby causing the roll 7 to rotate by and with the gear 14 while permitting the roll 7–7*a* to be shifted axially of the shaft 8.

In order to maintain the shoulder 7*b* of the roll 8 in constant contact with the adjacent end 2*a* of the roll 2, I provide a spring 17 around shaft 8 disposed between a collar 18 which contacts the inner face of the lug 10 opposite from the gear 14 and also contacts a collar 19 around shaft 8 engaging the adjacent end of the roll 7, the spring 17 normally urging the roll 7 to the right, FIG. 2, to maintain the shoulder 7*b* in engagement with end 2*a* of roll 2, and maintaining the gear 4 in contact with the washer 5 which engages the outer wall of the opening 1*a*.

In order to position the tape T in desired cutting relationship to the shoulder 7*b* which severs the tape longitudinally, I provide a tape guide 20 which is preferably

L-shaped and has an inner straight edge portion **20***a* which is preferably elongated towards the rolls **2** and **7**, as shown, and has a transverse slot **20***b* therein through which extends an adjusting bolt **21** fixed to the base **1** and carrying at its upper end a thumb nut **22**, whereby the straight edge **20***a* may be adjusted transversely of the base **1** to properly position the adjacent edge of the tape T on the base **1** prior to passing the tape between the rolls **2** and **7**.

At the opposite side of the base **1** from the guide **20** is a second guide **23** which is pivoted at one end on a bolt or screw **24**, whereby the outer end of the guide **23** may be brought into contact with its adjacent edge of the tape T, as shown in FIG. 1. If desired, the guide **23** may have a spring (not shown) around the bolt **24** which would eliminate the necessity of providing a wing-nut or other tightening device on the bolt to hold the guide **23** in place with its outer end in engagement with its adjacent edge of the tape T.

By the above construction, when the guides **20** and **23** are adjusted to suit the width of the tape T and its relation to the shoulder **7***b* of the roll **7**, the end of the tape may be then pushed between the rolls **2** and **7**, and thereafter by operating the handcrank **9** the tape T will be drawn by pressure between the rolls **2** and **7**, severing the tape longitudinally as at T′ so that when the tape leaves the machine its edge is neatly trimmed and ready for use. The cutting shoulder **7***b* will never need sharpening as it is installed so as to be self-sharpening.

I claim:

1. A machine for trimming tapes comprising a base having an opening therein adjacent one edge; a roll journaled in said opening and provided with a cutting end; a second roll cooperating with the first roll and having an enlarged portion providing a cutting shoulder engaging the cutting end of the first roll; a shaft on said base on which the second roll is axially slidably mounted; yieldable bearings on the base at the ends of said shaft normally maintaining the rolls in peripheral contact; means for rotating the rolls in opposite directions to feed a tape therethrough when caught in the bite of the rolls; means for yieldably urging the second roll to bring the cutting shoulder into contact with the cutting end of the first roll to longitudinally sever a tape passing between the rolls; and means for guiding the tape into the bite of the rolls in desired relation to the cutting shoulder.

2. In a machine as set forth in claim **1**, said bearings comprising lugs having bushings receiving the ends of the shaft, said lugs having opposed extensions at their lower ends normally engaging the base and provided with perforations; bolts passing through said perforations and through tapped bores in the base, said bolts having heads disposed above the extensions; and springs around the bolts interposed between the heads and extensions yieldably urging the extensions towards the base.

3. In a machine as set forth in claim **1**, said rotating means comprising a handcrank on said shaft; intermeshing gears on one end respectively of said shaft and said first roll; and a horizontal offset pin on said gear on the shaft engaging a bore in the adjacent end of the second roll for rotating said second roll therewith while permitting the second roll to slide axially of said shaft.

4. In a machine as set forth in claim **3**, said urging means comprising a coiled spring on said shaft interposed between the bearing at the end of the shaft opposite from said gear and the adjacent end of the second roll.

5. In a machine as set forth in claim **1**, said guiding means comprising a block having a straight edge for engaging one side edge of the tape; means for adjusting the said block transversely of the base; a second guide pivotally mounted on the base having a portion adapted to engage the other side edge of the tape; and means for binding the second guide in adjusted position.

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U.S. Cl. X.R.

83—449, 492, 501