

Sept. 1, 1953

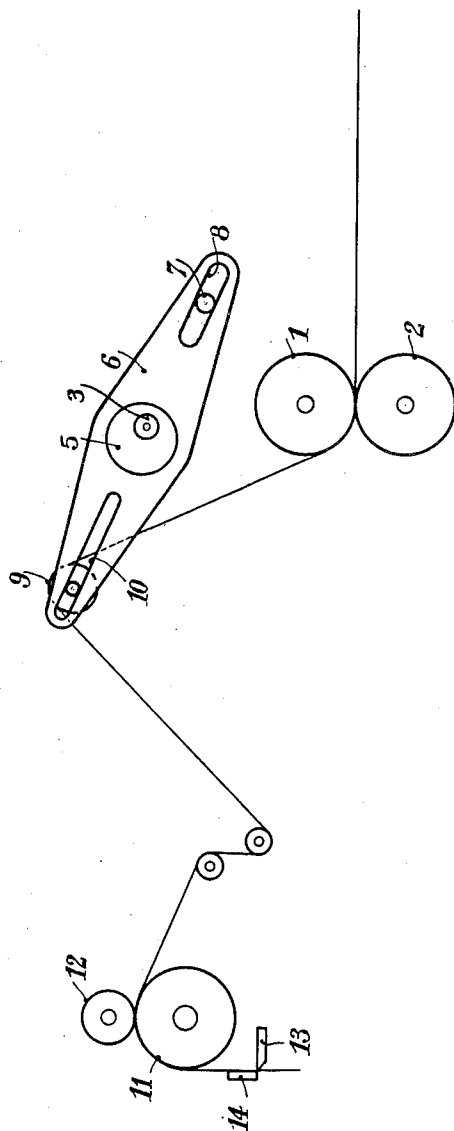
J. L. CHAMBON
DEVICE FOR INTERMITTENTLY STOPPING
THE MOTION OF A STRIP OF MATERIAL

2,650,823

Filed Sept. 26, 1950

3 Sheets-Sheet 1

Fig. 1



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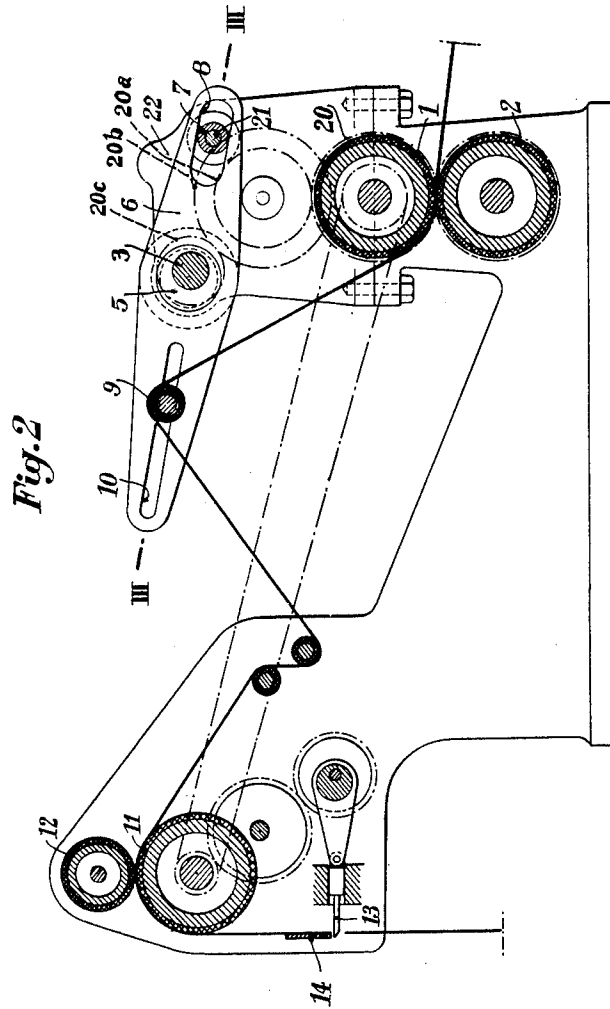
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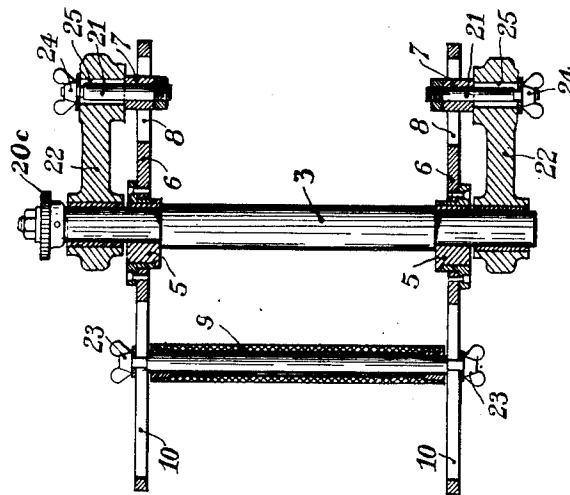
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Fig. 3



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UNITED STATES PATENT OFFICE

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DEVICE FOR INTERMITTENTLY STOPPING
THE MOTION OF A STRIP OF MATERIALJean Louis Chambon, Paris, France, assignor to
Société à Responsabilité Limitée dite: Société
d'Etudes de Machines Speciales, Paris, FranceApplication September 26, 1950, Serial No. 186,706
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3 Claims. (Cl. 271-2.4)

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Apparatus are already known which are adapted to cut up strip material, for instance paper, fed continuously from a spool or reel, wherein the strip is stopped during a given interval of time for allowing the cutting operation to proceed.

As a rule, the strip is stopped by means of a clamping device arranged in the cutting portion of the apparatus. It is controlled by a cam and when this control occurs a loop is formed between the paper feeding device and the point where the strip is stopped. Of course, this loop is taken up during the period in which the clamping device is released.

However this arrangement offers important drawbacks. For instance, the mass of the clamping device makes it impossible to use high speeds as this would make inaccurate the moment in which the clamps engage the paper whereby variable cut lengths would result. Moreover, the extremely sudden loop take-up would bring about irregularities when re-tensioning the strip as the latter would vibrate around its position of equilibrium like a tight-rope submitted to an impulse in its middle portion.

The object of the present invention is to provide a device adapted to stop intermittently a band or strip fed continuously by rollers, the arrangement permitting in particular, in combination with a known cutting device, to cut up the band or strip while avoiding the drawbacks above referred to.

For this purpose the strip material from the feeding rollers is passed over a guiding roller having its shaft operatively connected to the shafts of these feeding rollers so that the guiding roller will be submitted to an intermittent swinging movement likely to periodically stop the strip movement at the outlet side of the guiding roller.

In the affixed drawing forming part of this specification there is shown by way of example a practical embodiment of the invention.

Fig. 1 of the drawing is a diagrammatic side elevational view of an apparatus for cutting up band or strip material fed continuously from a reel or other source (not shown).

Fig. 2 is a more detailed axial vertical section of the apparatus.

Fig. 3 shows a sectional view through line III-III of Fig. 2.

In the drawing, an eccentric 5 is fixed on a shaft 3 rotatably driven by conventional means 20, 20a, 20b, 20c so that a given ratio will be obtained between this shaft and a pair of rollers 1, 2 driven at a constant speed.

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The eccentric 5 is journaled in a central bore of a rocking frame 6 having one end guided by slots 8 acting as slideways and engaging guide-members 7 pivotally mounted on pins 21 fixed in an adjustable manner on the fixed framework 22 of the machine. The opposite end of the rocking frame 6 is formed with other slots 10 having fixed therein the shaft of a guiding-roller 9 in a position corresponding to the length of each piece of strip material to be cut. The shaft of the guiding-roller 9 is fixed in slots 10 by the means of thumb-nuts 23. The pin 21 is fixed by the means of thumb-nuts 24 inside slots 25 provided in the framework 22.

The strip of paper or other material is introduced in the various parts of the machine, as illustrated in Figs. 1 and 2, and pulled at a constant speed through the pair of rollers 11, 12 in slipping contact therewith.

The peripheral speed of rollers 11, 12 is definitely greater than that of rollers 1, 2 as is usual in apparatus adapted to accelerate or retard the band fed at a constant speed on the inlet side of the machine.

Owing to the swinging movement imparted to roller 9 by the rotation of the eccentric 5 a certain intermittently variable speed will be added to or subtracted from the constant feeding speed of the paper strip. By suitably adjusting the position of the axis of the roller 9 on the rocking frame 6 and, if necessary, the position of the axis of guide members 7 on the framework, a sufficient pause will be obtained at each swinging movement of the rocking frame 6 to allow the cutter 13 and counter-cutter 14 to cut the strip up during the resulting interval. By modifying the adjustment of roller 9 and guide members 7 it is also possible to obtain a slight backward movement of the strip material after the cutting step has been effected. This is advantageous in that both cutters will overlap each other by a greater extent so that the cutting force required will be less.

With the device according to this invention a certain number of cutting lengths can be obtained without changing the eccentric.

Various modifications may be brought to the above description without departing from the spirit and scope of the invention. Thus, when relatively narrow bands are to be cut up the rocking frame 6 can be replaced by a mere rocking lever on which a short roller 9 is mounted through a single one end-trunnion.

What I claim as my invention and desire to secure by Letters Patent is:

1. In a device for producing intermittent stops

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in the motion of a strip of material fed continuously from feeding-rollers driven at a constant speed, by the means of an idle guiding-roller periodically actuated in a swinging movement in order to cause corresponding periodic variations in the linear speed of the portion of strip which flows from the outlet side of said guiding roller and to produce consequently intermittent stops of said portion of strip, a shaft driven synchronously with the feeding-rollers, an eccentric carried by said shaft, a rocking member having its middle portion pivoted on said eccentric, an idle guiding roller mounted on one end portion of said rocking member, a longitudinal slideway on the opposite end-portion of the same, and a guide member pivotally mounted around a fixed axis and engaging said slideway of the rocking member.

2. In a device for producing intermittent stops in the motion of a strip of material fed continuously from feeding-rollers driven at a constant speed, by the means of an idle guiding-roller periodically actuated in a swinging movement in order to cause corresponding periodic variations in the linear speed of the portion of strip which flows from the outlet side of said guiding roller and to produce consequently intermittent stops of said portion of strip, a shaft driven synchronously with the feeding-rollers, an eccentric carried by said shaft, a rocking member having its middle portion pivoted on said eccentric, an idle guiding roller mounted on one end portion of said rocking member, means for adjusting the position of said guiding roller on the same,

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a longitudinal slideway on the opposite end portion of said rocking member, and a guide member pivotally mounted around a fixed axis and engaging said slideway of the rocking-member.

3. In a device for producing intermittent stops in the motion of a strip of material fed continuously from feeding-rollers driven at a constant speed, by the means of an idle guiding-roller periodically actuated in a swinging movement in order to cause corresponding periodic variations in the linear speed of the portion of strip which flows from the outlet side of said guiding roller and to produce consequently intermittent stops of said portion of strip, a shaft driven synchronously with the feeding-rollers, an eccentric carried by said shaft, a rocking-member having its middle portion pivoted on said eccentric, an idle guiding-roller mounted on one end portion of said rocking-member, a longitudinal slideway on the opposite end-portion of the same, a guide member engaging said slideway of the rocking-member, a fixed pivot for said guide-member, and means for adjusting the position of said fixed pivot.

JEAN LOUIS CHAMBON.

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