Aug. 6, 1940. F. M. CARROLL 2,210,567

STRIPING MEANS

Original Filed Jan. 26, 1937

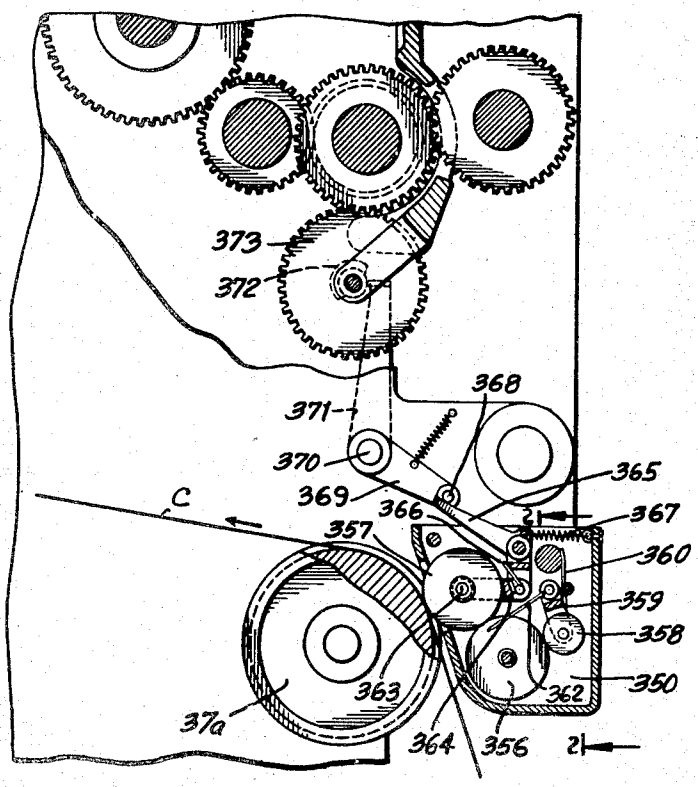


FIG. 1.

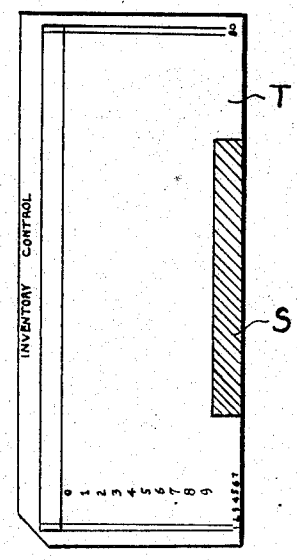


FIG. 3.

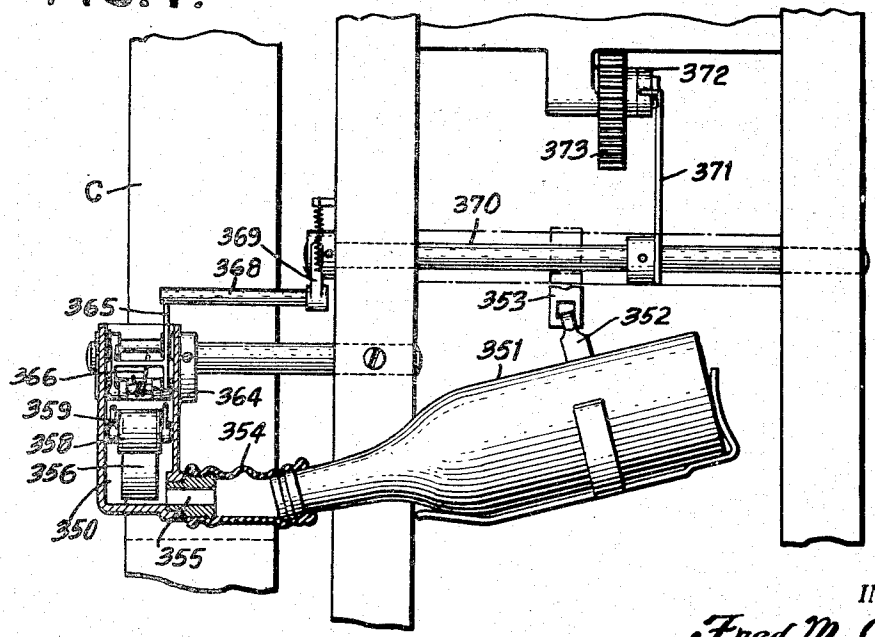


FIG. 2.

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STRIPING MEANS

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Original application January 26, 1937, Serial No. 122,360. Divided and this application April 26, 1938, Serial No. 204,335

2 Claims. (Cl. 91—12)

This case relates to the striping means of a machine for operating on a web to produce printed record cards therefrom, and is a division of my application Serial No. 122,360, filed January 26, 1937 and granted as Patent No. 2,181,935, dated December 5, 1939.

The machine operates on a blank continuous strip of material; i. e., the web, to print record forms thereon which are cut apart to form card lengths, each bearing one printed form. The particular record produced is known as a tabulating card which in subsequent use is punched to control automatic bookkeeping or accounting machines.

To provide rough classification means for the cards, they are often striped along one edge. The simplest and most economical method of producing the stripe on each card is to apply the striping material to one longitudinal edge of the web while the web is feeding through the card forming machine, which forms the cards from the web. The striping material, when applied to the edges of the web or cards, tends to swell and soften such edge. One result is that if one edge of the card is provided with a continuous stripe along its entire length, there is a tendency for the card to curl or warp.

Another result of providing a continuous stripe along the entire length of an edge of the card is that during the handling of this card in an accounting machine or the like, the engagement of the softened edge with the handling means, such as the ordinary card picker, has a tendency to bend, crimp and damage the card.

In order to avoid the above undesirable results, an object of this invention is to provide means for producing an intermittent stripe along an edge of the web from which the cards are being formed.

Further, the object is to provide means for intermittently striping a continuously fed web so that each card produced therefrom has a stripe along an intermediate portion of an edge, leaving the remaining portions of the edge, at either side of the stripe, unstriped.

A more general object is to provide novel means for producing a stripe on cards, such as tabulating cards.

Another general object is to provide novel striping means for any web.

Further objects of the instant invention reside if any novel feature of construction or operation or novel combination of parts present in the embodiment of the invention described and shown in the accompanying drawing, whether within or without the scope of the appended claims and irrespective of other specific statements as to the scope of the invention contained herein.

In the drawing:

Fig. 1 is a sectional view through the main parts of the striping mechanism;

Fig. 2 is a section along lines 2—2 of Fig. 1;

Fig. 3 shows the card produced by the machine.

The striping means comprises a well **350** for the striping ink. The supply of striping ink, which may be red, green or some other suitable color, is contained in a bottle **351** carried on an incline by a spring clamp **352**, which is suspended by a strap **353** from the frame. The neck of the bottle is connected by a rubber tube **354** to a ferrule **355** fitted into an orifice at the bottom of ink well **350**. The ink flows by gravity from bottle **351** through tube **354** and ferrule **355** into the well **350** where it occupies a lower level than in the bottle due to the well being open at the top so that the ink therein is subjected to atmospheric pressure, whereas the ink in the bottle is below a vacuum until it reaches a level below the top of the opening in ferrule **355**.

Journaled in the well **350** is a rotatable rubber roller **356**, the lower portion of which dips into the ink to keep the surface of the roll wet with ink. Near its upper end, roll **356** is in peripheral engagement with a rotatable rubber-covered striping roll **357** which takes the ink from roll **356**. The web C is fed continuously from a supply roll (not shown) to the web forming means (not shown), and during its continuous travel to the latter passes, in the direction indicated by the arrow in Fig. 1, between a guide roller **37***a* and the striping roll **357**. The means for feeding the web C and the means for producing from this web the individual cards T (Fig. 3) are explained in my aforementioned application, Serial No. 122,360, of which this is a division, and need not be described herein. It is understood that the striping means herein disclosed is applicable to any continuously fed web. As the web is fed between roll **37***a* and a striping roll **357**, the friction between the web and the two rollers causes their rotation. The peripheral engagement of the striping roll **357** with the wiping roll **356** in turn causes rotation of the latter roll. Rotation of roll **356** causes rotation of roll **358**. During engagement of the roll **357** with the web and its rotation thereby, the latter roll applies the ink to the web to stripe it along the left edge (as viewed in Fig. 2).

To wipe off the excess ink from the periphery of ink roll **356**, the latter is constantly engaged by a roller **358** carried by a pivotally suspended yoke **359** which is urged by a wire spring **360** toward the roll **356**. Thus, roller **357** is yieldingly maintained against the periphery of roll **356**. Also carried by arm **359** are wiping wires **362** constantly engaging the sides of the roll **356** to wipe off the ink therefrom. The wiping elements **358** and **362** engage portions of the ink roll **356** as these portions travel toward striping roll **357** so that the excess of ink is removed before reaching the striping roll.

Striping roll **357** is rotatably mounted on a rod **363** carried by the forward end of a bail **364** pivoted at the rear to the lower end of a bell crank **365**. Between the bail **364** and crank **365** is a wire spring **366** for lightly holding the striping roll **357** against the periphery of ink roll **356**. A coil spring **367** connected to bell crank **365** urges the latter clockwise (Fig. 1) to maintain striping roll **357** in a forward position, firmly against the web C feeding over roll **37***a*. The upper arm of bell crank **365** abuts a rod **368** extending horizontally from the lower end of an arm **369** fixed to a shaft **370**. Shaft **370** has an upwardly extending arm **371**, the upper end of which is bent laterally to engage the periphery of a cam **372** carried by the hub of a gear **373** in the driving train of the machine. During each revolution of gear **373**, cam **372** acts on the upper end of arm **371** to oscillate shaft **370** and its arm **369**. During the clockwise stroke of arm **369**, the rod **368** thereof acts on the upper arm of bell crank **365** to rock the latter counterclockwise (Fig. 1), causing bail **364** to move rearwardly, or to the right. As bail **364** moves to the rear, it causes striping roll **357** to roll rearwardly on the periphery of ink roll **356**, thereby departing completely from the web. It may be noted that roll **356** acts as a guide for the movement of striping roll **357** away from and towards the web, and so guides the striping roll that it leaves or engages the web abruptly in a direction substantially at right angles to the web. As the striping roll withdraws from the web, its rotation by frictional engagement with the latter ceases, and since the striping roll has ceased rotating, ink roll **356** also stops rotating. Thus, when in retracted position, the striping roll has no striping fluid fed thereto by roll **356**, and since the striping roll has stopped rotating it does not tend to throw off any of the striping fluid through the opening in the well **350**.

The web continues to feed uninterruptedly during the interval in which striping roll **357** is withdrawn therefrom. During the counterclockwise stroke of shaft **370**, spring **367** returns bell crank **365** in a clockwise direction, causing bail **364** to move to the left and restore striping roll **357** to engagement with the web C. While engaged with web C, striping roll **357** paints a stripe along the edge of the web. Due to the intermittent engagement with and withdrawal from the web C of the striping roll **357**, a regularly broken or interrupted stripe S (see Fig. 3) is painted by the striping means along one longitudinal edge of the web. Gear **373** makes one revolution for each individual card length produced from the web C, and the cam **372** of the gear is so proportioned as to cause the successive engagement and disengagement of the striping means to be of substantially equal duration, so that the length of the stripe S and the length of the unpainted portion between the stripes are substantially the same. The timing of the operation of the striping roll **357** is such that when the web is subsequently cut into cards T the stripe S is located intermediately between the side edges of the card and along the bottom edge thereof, as indicated in Fig. 3.

By thus providing an intermediate stripe along the bottom edge of the card, unstriped portions are left adjacent each side edge of the card. These unstriped portions of the card are usually the ones which are engaged by the feed means during the subsequent handling of the card in accounting machines or the like. Since the unstriped edge portions of the card are in the original condition, they are sufficiently resistant to bending, crimping or distortion by the feeding engagement. At the same time, the cards are striped to provide rough classification means.

While there has been shown and described and pointed out the fundamental novel features of the invention as applied to a single modification, it will be understood that various omissions and substitutions and changes in the form and details of the device illustrated and in its operation may be made by those skilled in the art without departing from the spirit of the invention. It is the intention, therefore, to be limited only as indicated by the scope of the following claims.

What is claimed is:

1. In a machine through which a web is continuously feeding; striping means for the web comprising a striping roll engageable with the web and rotated thereby during feed of the web for striping the latter in its direction of feed, means for supplying striping fluid to the periphery of the roll, a carrier for the striping roll mounted for reciprocation, and means for automatically reciprocating the carrier to periodically retract the striping roll from engagement with the web so as to interrupt the striping action of the roll and provide the web with an intermittent stripe, the disengagement of the roll from the web also interrupting the rotation of the roll to prevent the roll from throwing off striping material onto the web while the roll is disengaged from the web.

2. In a machine through which a web of sheet material is feeding; striping means for the web comprising a striping roll engageable with the web and rotated by such engagement during feed of the web to stripe the latter in the direction of feed, a roller in peripheral engagement with the striping roll to be rotated thereby during rotation of the latter roll so as to feed striping material to the periphery of the striping roll during the engagement of the latter with the web, and means for automatically periodically retracting the striping roll from engagement with the web so as to periodically interrupt the striping action and the rotation of the striping roll and of said roller, whereby feed of the striping material to the striping roll ceases and whereby tendency of the striping material to be thrown off by the striping roll is obviated due to cessation of rotation of the latter roll.

FRED M. CARROLL.