Sept. 20, 1960 V. ANDERSON 2,953,135

STRIP DETECTOR FOR CIGAR ROLLING DEVICE

Filed Dec. 11, 1958

FIG. 1

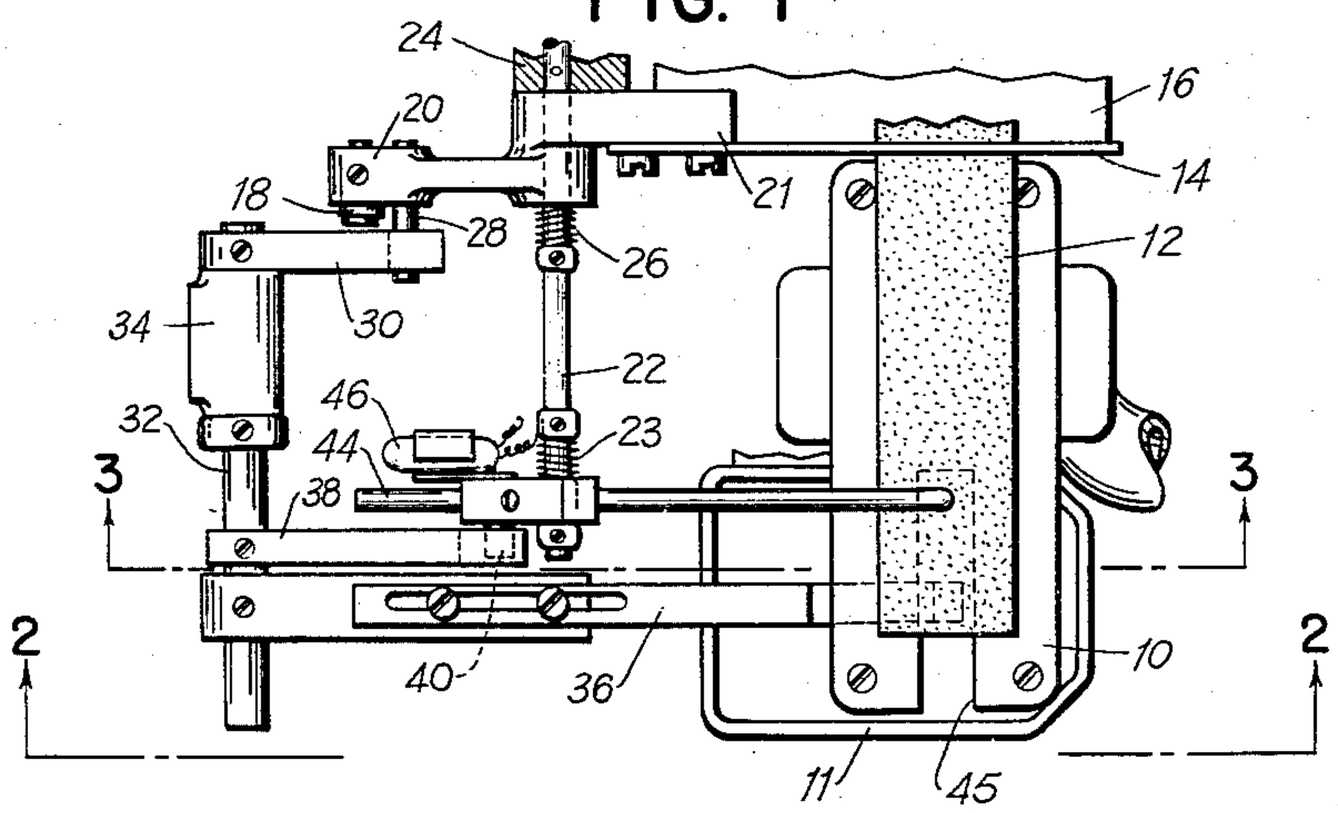
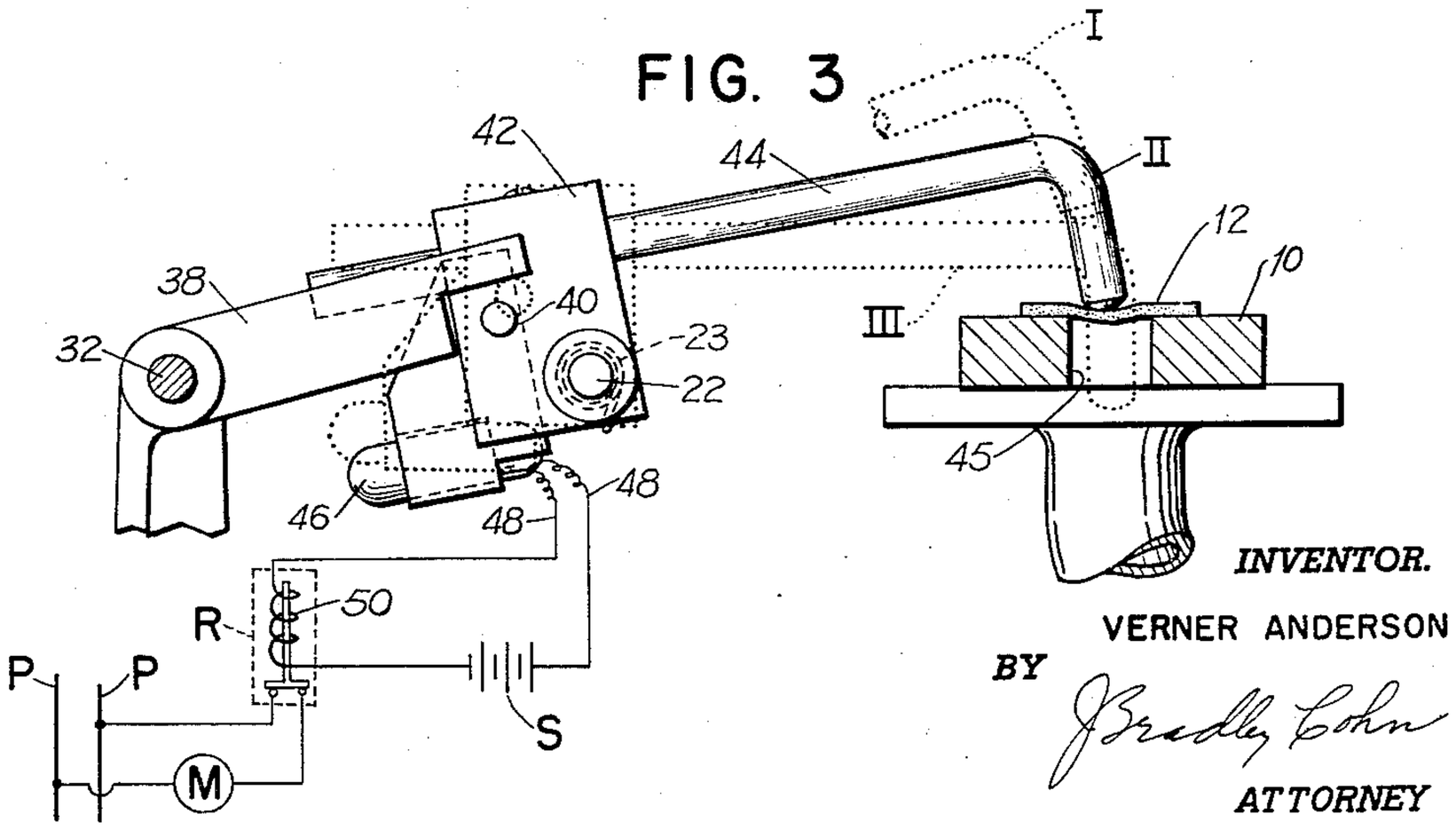


FIG. 2

FIG. 3



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STRIP DETECTOR FOR CIGAR ROLLING DEVICE

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6 Claims. (Cl. 131—21)

This invention relates to the manufacture of cigars and more particularly to manufacturing cigars having a reinforced head end.

With both natural and processed leaf, it is frequently necessary or desirable to provide a reinforcing strip at the head end of the cigar. There has recently been developed mechanisms for applying a reinforcing strip to the head end of the cigar binder during manufacture. Such reinforcing strips are associated with the binder on the rolling table so that an end or the ends of the strip extend beyond the binder. Paste is then applied to the extending end or ends. In the event of failure of feed of the reinforcing strip, paste is applied to the rolling belt itself, resulting in gumming and soiling of the belt.

It is therefore an object of this invention to provide mechanism for interrupting the operation of the entire machine when reinforcing strip is not fed to the strip delivery mechanism. It is an object of the invention to provide in a simplified structure such a device operated by the strip cutoff mechanism.

In the accompanying drawings:

Fig. 1 is a plan view illustrating the reinforcing strip detector in conjunction with the paste applying mechanism as well as the strip receiving and cutting mechanisms;

Fig. 2 is an end elevation of the same, taken on line 2—2 of Fig. 1; and

Fig. 3 is an enlarged sectional end elevation taken on line 3—3 of Fig. 1 illustrating the strip detector during detecting operation.

Referring to the drawings, a strip receiving applicator platform **10** is shown in Figs. 1 and 2 in its receiving position above paste pot **11**. Platform **10** corresponds to structure 14 of the copending application of Sigurd Clausen, Serial No. 756,793, filed August 25, 1958. Reinforcing strip **12** is intermittently fed thereto. During an intermittency in the feed the leading portion of the strip **12** is severed by the knife **14** against the ledger plate **16**. The knife **14** is operated from the vertically reciprocating twisted link **18** which corresponds to the link 188 of the aforesaid application. The link **18** is connected to the free end of the knife actuating arm **20** which is rotatably supported by a stud **22** mounted on a bracket **24**. The hub of arm **20** has a knife supporting flange **21** to which the knife is secured. A tension spring **26** surrounding stud **22** urges the knife **14** against ledger plate **16**. The arm **20** carries a pin **28** which engages with the forked end of a lever **30** secured on a horizontal rock shaft **32** rotatably supported by the bearing bracket **34**. Movement of link **18** therefore rocks the shaft **32**. Secured to the shaft **32** is the adjustably mounted paster arm **36**. Also secured to the rock shaft **32** is an adjustably mounted stepped lever **38** contacting a pin **40** protruding from the block **42** rotatably mounted on the stud **22** and urged clockwise, as viewed in Fig. 2 or 3, by the torque spring **23**. The feeler finger **44** is mounted in the block **42**. Also secured to block **42** is a mercury

switch **46** provided with the leads **48**. The leads **48** may control the power feed to the cigar machine. As shown in Fig. 3, the leads **48** are in circuit with a power source S and a relay coil **50** of a relay switch R. The relay switch R is in circuit between the power lines P and the motor M operating the cigar machine. When the feeler finger **44** moves downward to the dotted line position III of Fig. 3, the normally closed relay switch R is activated to open the contacts in the motor circuit.

Operation

In operation, the vertically reciprocating link **18**, which is operated from and timed to the cigar machine, moves upwardly after the leading portion **12** of reinforcing strip has been placed on the applicator platform **10** by mechanism (not shown). This action of the link moves the knife **14** downwardly in a cutting motion to complete the feed of web to platform **10** and at the same time raises the forked lever **30** to rock the shaft **32** counter-clockwise as viewed in Fig. 2 or 3. This motion of the rock shaft **32** raises the paster arm **36** and also raises the stepped end of the lever **38** from the pin **40** to permit the spring **23** to rotate the block **42** clockwise. If the web portion **12** has been fed over the applicator platform **10**, the clockwise rotation of the block **42** is arrested by the feeler finger **44** contacting the upper surface of the web portion **12** as shown in the full line position II of Fig. 3. Even a web of only slight stiffness will support the feeler finger over the small opening **45**. The arrangement of the mercury switch is such that it will not be actuated by this much movement of the block **42**. In the absence of a web portion **12**, the feeler finger and block **42** continue their clockwise rotation to the dotted line position III shown in Fig. 3. This actuates the mercury switch **46** so that it may, through the leads **48**, control or cut off power to the cigar machine. By reference to Fig. 3 it may be noted that the position of the stepped lever **38** and the pin **40** is such that in the absence of a strip **12** the feeler finger **44** cannot drop lower than the dotted line position III because the pin **40** will strike stepped lever **38** here shown in its highest or raised position. This prevents the tip of finger **44** cocking and catching in slot **45**. When the knife **14** is in its upward or non-cutting position (as during feed of the strip **12**) the rock shaft **32** is rotated clockwise, the stepped lever **38** is engaged with the pin **40** and the feeler finger is in the raised position I also shown in dotted lines (Fig. 3).

When, as is normally the case, power to the cigar machine is not cut off and the vertically reciprocating link **18** moves downwardly, the rock shaft **32** is rocked clockwise, lowering the stepped lever **38** on the pin **40**, thereby rotating the block **42** counter-clockwise to raise the feeler finger **44** to the position I, as also shown in dotted lines in Fig. 3, at the same time that the paster finger is descending into the pot **11** due to the same rotative motion of rock shaft **32**.

I claim:

1. In a device securable to and operable from a cigar machine having intermittent feed means to supply a section of reinforcing material, a platform positioned to receive and support said section of reinforcing material, said platform having an opening formed therein underlying a portion of said section, a feeler finger, means normally urging said finger in one direction into said opening, detecting means operatively associated with said finger and constructed and arranged to be activated in response to the movement of said finger into said opening, said finger being normally obstructed from entering said opening by the presence of the section of reinforcing material overlying said opening, and a movable stop member movable during the operation of said feed means

to obstruct movement of said feeler finger to said strip and said platform whereby said feeler finger and said detecting means will be operable only during a predetermined time in the cycle of said feed means.

2. In a device securable to and operable from a cigar machine, a platform positioned to receive and support the leading end portion of a strip of reinforcing material, said platform having an opening formed therein underlying a section of said leading end portion, severing means movable to and from a severing position to sever said strip adjacent said platform, a feeler finger, means normally urging said finger in one direction into said opening, detecting means operatively associated with said finger and constructed and arranged to be activated in response to the movement of said finger into said opening, said finger being normally obstructed from entering said opening by the presence of said portion of strip overlying said opening, and a member movable with said severing means and operative to raise said feeler finger from said strip and said opening when said severing means moves from said severing position, whereby the absence of a strip may be detected on each severing cycle of said severing means.

3. In a device securable to and operable from a cigar machine, a platform positioned to receive and support a leading section of reinforcing web material, said platform having an opening formed therein underlying said section, a knife movable to and from a severing position to sever said section received and supported on said platform, a feeler finger movable into and out of said opening, detecting means operatively associated with said finger and constructed and arranged to be activated in response to the movement of said finger into said opening, said finger being normally obstructed from entering said opening by the presence of the said section of reinforcing material overlying said opening, and an arresting member movable with said knife and operative to move said feeler finger toward said strip and said platform during a predetermined appropriate time cycle of said knife, whereby the absence of a strip may be detected once during each severing cycle of said knife.

4. In a device securiable to and operable from a cigar machine, a platform positioned to receive and support the leading end portion of a strip of reinforcing material, said platform having an opening formed therein underlying said strip, a knife movable to and from a severing position to sever said leading end portion of said strip at the receiving end of said platform, a feeler finger, means normally urging said finger in one direction into said opening, detecting means operatively associated with said finger and constructed and arranged to be activated in response to the movement of said finger into said opening, said finger being normally obstructed from entering said opening by the presence of the portion of said strip overlying said opening, and a member movable with said knife and operative to raise said feeler finger from said strip and said platform when said knife moves from said severing position, whereby the absence of a strip may be detected on each severing cycle of said knife and said detecting means will be incapacitated during the period of normal absence of said web from said platform during a severing cycle.

5. In a device securable to and operable from a power driven cigar machine having power drive means, a platform positioned to receive and support a strip of reinforcing web material, said platform having an opening formed therein underlying said section, a feeler finger movable into and out of said opening, switch means operatively associated with said finger and constructed and arranged to be activated in response to the movement of said finger into said opening, said switch means being interconnected into said power drive means and operative when activated to disconnect said power drive means from said cigar machine, said finger being normally obstructed from entering said opening by the presence of said strip of reinforcing material overlying said opening, and means to raise said finger from said strip and said opening during a cycle of said cigar machine when a section of strip is not normally on said platform, whereby the absence of a strip may be detected once during each cycle of said cigar machine and the power drive to said cigar machine may be arrested.

6. In a device securable to and operable from a cigar machine having intermittent feed means operable on each cycle of said machine to supply a section of reinforcing material, a platform positioned to receive and support said section of reinforcing material, said platform having an opening formed therein underlying a portion of said section, a feeler finger, means operable from said mechanism to move said finger into said opening once during each cycle of said mechanism, detecting means operatively associated with said finger and constructed and arranged to be activated in response to the movement of said finger into said opening, said finger being normally obstructed from entering said opening by the presence of the section of reinforcing material overlying said opening, whereby said feeler finger and said detecting means will be operable only during a predetermined time in the cycle of said feed means.

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