Nov. 9, 1954 E. PERSSON 2,693,754

CUTOUT MECHANISM FOR ENDORSING MACHINES

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FIG. 1

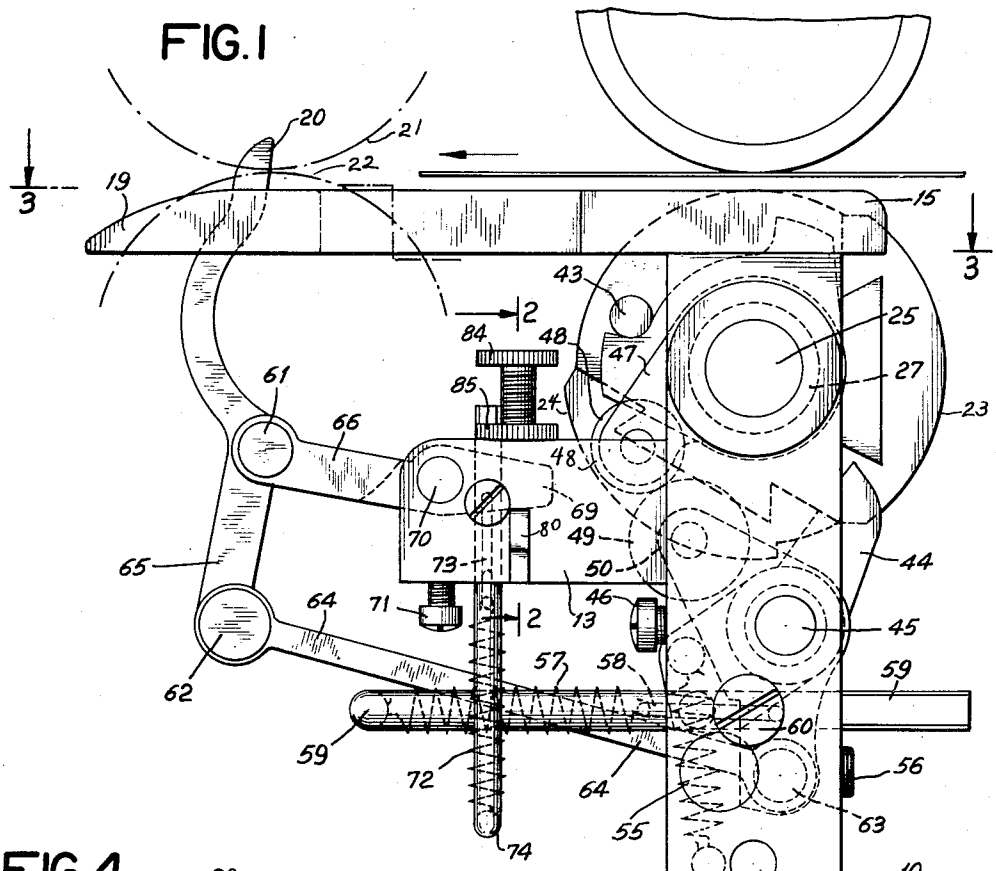

FIG. 4

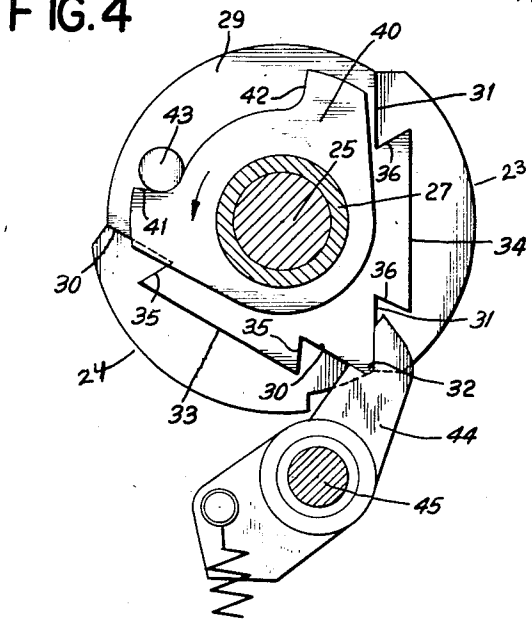

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FIG. 2

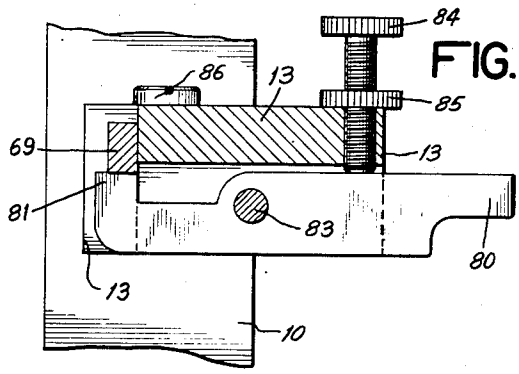

FIG. 3

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CUTOUT MECHANISM FOR ENDORSING MACHINES

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2 Claims. (Cl. 101—235)

This invention relates to check endorsing machines and the like and has for its object the provision of a novel cut-out arrangement by which a check endorsing die may be made operative or inoperative at will.

Many check endorsing machines are provided with a plurality of independent endorsing dies each with its own trip lever. The respective dies are usually arranged to print different matter on the checks. Sometimes it is desirable to have the matter from but one die printed on a check and the present invention provides a simple arrangement by which the trip mechanism of any die may be disabled at will to prevent the operation of the same.

Another object of the invention is the provision of an arrangement for adjusting the trip mechanism of a check endorsing machine to compensate for wear of the feed rollers.

Still another object of the invention is the provision of a novel printing die structure in which a plurality of dies are removably mounted on a single hub, provision being made to rotate the structure for supporting the dies with respect to a stop arm so that the respective dies may be slid past the stop arm when installing or removing the same. With this arrangement, separate dies may be mounted side by side on a hub, the arrangement permitting the greater part of the surface of the structure to be available for printing. In the novel structure disclosed, a stop arm is fixed to a driven shaft or sleeve which operates intermittently under control of a start-stop mechanism. A hub mounted on the sleeve carries a pair of printing dies side by side in spaced relation. The hub and die structure is such that the dies may be slipped on or off dove tailed supports in an axial direction. With the ordinary construction, the fixed stop arm would block removal of one of the dies. In the present invention, however, the hub is normally free to turn on the driven sleeve with respect to the stop arm for an angular distance limited by a depressible pin in the movable hub which is positioned normally between a pair of short angularly spaced arms fixed with respect to the stop arm. The pin may be depressed to pass under either of the spaced arms to permit further rotation of the hub with respect to the stop arm and with this arrangement the respective dies may be moved on their supports past the stop arm.

This loose coupled mechanism has the further advantage in that during operation, the entire weight of the hub and stop arm structure is not stopped on the initial impact of the stop arm and the arresting structure therefor, since after the stop arm has come to rest, the hub turns an appreciable angular distance before the pin carried by the hub engages one of the short arms fixed with respect to the stop arm which lessens the initial shock of the engagement of the stop arm with its arresting apparatus. When the stop arm is released, the starting load on the driving clutch is less and the driven sleeve picks up more quickly since the driven sleeve travels an appreciable distance before picking up the load of the hub.

The invention will now be described with reference to the accompanying drawings, of which

Fig. 1 is a plan view of a check endorsing machine in accordance with a preferred embodiment of the invention;

Fig. 2 is a section taken through 2—2 of Fig. 1;

Fig. 3 is a view partly in section taken through 3—3 of Fig. 1; and

Fig. 4 is a view partly in section taken through 4—4 of Fig. 3.

Referring now to the drawings: An endorsing die and a controlling mechanism shown in the various figures of the drawings is supported in a detachable bracket arrangement of a known type which includes a horizontal arm **10**, Fig. 1, slotted at **11** in one end and provided with a pair of round openings, one of which is shown in the drawings, which fit over upright supporting rods **12** to which they are clamped by a suitable thumb screw, not shown.

A block **13** is fastened to one side of arm **10**. About one half of this block projects beyond the upper surface of the arm to give access to an adjusting means mounted in the block which will be referred to further on.

At the end of arm **10** a generally flat member **15** is fastened by a screw **16**, Fig. 3, which serves as one side of a guideway through which checks or other objects to be endorsed are fed by suitable feed rollers. Immediately to the rear of arm **10**, the lower portion of guide member **15** is cut away to provide clearance for a printing die, to be described, while the opposite end of guide member **15** is formed with a depending offset bifurcated portion having parallel spaced horizontal arms **18** and **19** between which a trip release tongue **20** projects, the arms **18** and **19** serving as a guard therefor.

The trip tongue **20**, which is one arm of a two-armed lever, controls a start-stop printing die to be described which is driven through a suitable clutch, such as a friction clutch, not shown. The printing die structure is provided with a stop arm which is arrested each revolution and then released when a check or other object fed through the guideway rocks the trip tongue **20**.

Referring to Fig. 2, shaft **25** is formed with a spline **26** by which it may be detachably connected to the driven member of a suitable friction clutch, not shown. A sleeve **27** is secured to shaft **25** by any suitable means. A gear **28** for driving a counter is detachably secured to sleeve **27**. Referring to Fig. 4, a die supporting hub **29** referred to herein generally as a printing roller is free to turn on sleeve **27**. A pair of longitudinally flattened surfaces **30** and **31**, the edges of which meet forming a longitudinal spline **32** are provided respectively with large raised surfaces **33** and **34** formed with under cut or dovetailed vertical edges **35** and **36**. A pair of printing dies **23** and **24** undercut at the base with complementary dove tail recesses fit over the raised surfaces **33** and **34**. As already described, the printing roller structure is normally free to turn on sleeve **27** for a limited angular distance by an arrangement now to be described.

Overlying the printing roller **29** is a plate **40** formed with two angularly spaced opposed arms **41** and **42**. This plate is fixed to the sleeve **27**. A depressible pin **43** extends upwardly from printing roller or die hub **29** between arms **41** and **42** and forms the driving connection between the printing roller and sleeve **27**. A spring actuated stop pawl **44** pivoted on a stud **45** fastened in bracket arm **10** by screw **46** engages the rib **32** on the print roller to prevent rebound of the print roller on the engagement of pin **43** with arm **41** when shaft **25** is stopped.

A stop arm **47**, Fig. 1, carrying a roller **48**, Fig. 3, pivoted in the end thereof is secured to sleeve **27** overlying plate **40**. The stop arm roller **48** cooperates with a roller **49** mounted near the end of a stop lever **50** pivoted in spaced relation on stud **45** together with the already mentioned stop pawl **44**. The construction is such that the centers of rollers **48** and **49** and stud **45** when in a position of rest are disposed in a straight line. With this arrangement a very light impact on the arm of lever **50** will disturb the alignment of the parts, releasing roller **48** and the shaft **25**. Once released, roller **48** will cam roller **49** out of its path and shaft **25** will be free to turn for one revolution when it will be stopped again by roller **49**.

A fibre stop pin **55** for lever **50** having a flattened engaging surface is fastened in an opening in bracket arm **10** by screw **56**. Lever **50** is held against stop pin **55** by a spring **57** having one end connected by a link **58** to the lever and the other fastened to the turned over end of a spring post **59** adjustably secured in an opening in bracket **10** by screw **60**.

Lever 50 is pivoted at 63 to a link 64 which in turn is pivoted on pin 62 to arm 65 of trip tongue lever 20. The latter is fulcrumed in between members 66 and 67 of a bifurcated lever arm on a pin 61 which extends therethrough, the bifurcated arm being formed integrally with one end portion of a sleeve fulcrum section 68 which has a second lever arm 69 extending from near its opposite end. This lever arrangement is pivoted to the under side of bracket block 13 by a stud 70 which is fastened to the block by a screw 71, Fig. 1. A spring 72 having one end fastened to a link 73 to lever arm 69 and the other end to the turned over end of an adjustable spring post 74 adjustably fastened in a hole in block 13 by screw 75 tends to turn lever 66—67—69 in a clockwise direction as shown in Fig. 1.

A novel cut-out arrangement and adjustment for wear on the usual check-feeding rollers indicated by the dot and dash arcs 21 and 22 cooperates with the lever arm 69. The cut-out arrangement is a small flat lever 80 frictionally mounted in a vertical slot cut in one face of block 13. The lower end 81 of lever 80 projects below a cut away portion of block 13, Fig. 2, into the path of lever arm 69 and serves as a back stop therefor. Lever 80 is mounted on a pivot 83 held by block 13. Above pivot 83 an adjusting screw 84 provided with a lock nut 85 engages one edge of lever 80 to regulate the position of rest thereof and also thereby the normal position of rest of lever arm 69.

The cut-out arrangement operates as follows: The levers and associated linkages per se for tilting the lever 50 and cyclically releasing the printing die is a known mechanism which is designed so that irrespective of the length of a check or other object fed through the machine the rotation of the die assembly will be invariably arrested after one revolution. A check fed through the device is engaged by suitable known rubber rollers indicated by the dash and dot arcs 21 and 22 and brought up against the end portion of trip tongue 20 initially rocking the same a short angular distance on pivot 61 which movement is communicated by link 64 to lever 50 which is rocked slightly on its pivot pin 45 in a counterclockwise direction as shown in Fig. 1 upsetting the aligned arrangement of the centers of stop arm roller 48 and roller 49 with pivot 45 thus releasing the printing roller which is constantly urged to turn by its friction drive. Roller 48 carried by the stop arm, cams roller 49 out of its path. As the check progresses between rollers 21 and 22, it forces lever 66—68—69 to turn on its pivot 70 in a counterclockwise direction, the check overriding the end of the trip tongue lever. This moves lever arm 69 away from its stop 81 which is the lower end of cut-out lever 80. In the meantime, spring 57 has turned lever 50 so that roller 49 carried thereby is again positioned in the path of roller 48 mounted on stop arm 47 to arrest the same at the end of the revolution of the printing die.

With the arrangement just described, an initial downward pressure exerted on the end of the trip tongue 20 as shown in Fig. 1 does not effect a turning movement of lever 50 but merely causes lever 66—68—69 to turn on its pivot in a counterclockwise direction. When it is desired to cut out a printing die, cut-out lever 80 is turned and the lower end thereof engages lever arm 69 turning this lever which movement is effective to withdraw the trip tongue 20 from the path of the checks to a position of rest between the arms 18 and 19 of the guide 15. Reversing the position of lever 80 returns the device instantly to operative condition without tripping the same.

One of the feed rollers, usually roller 21, is customarily mounted on a movable spring pressed spindle which keeps the rollers 21 and 22 pressed against each other. As the rollers wear, and their diameters become reduced, their position of contact with respect to the end of trip tongue 20 changes, the contact point gradually moving toward the guiding member 15 approaching fulcrum 61, decreasing the effective length of the lever arm and reducing the sensitivity of the arm 65 of the trip tongue lever 20. Screw 84 is provided which may be adjusted to tilt lever 80 slightly so that the position of rest of lever arm 69 is changed so that it is rotated slightly in a counterclockwise direction, as shown in Fig. 1 to withdraw the trip tongue 20 sufficiently to correct for the changed position of engagement of feed rollers 21 and 22.

In Figs. 1 and 4 the die assembly and release mechanism are shown in their position of rest. When the print roller is released by the operation of trip tongue 20, shaft 25 and sleeve 27 turn until arm 40 engages pin 43 and the hub assembly is turned thereby. When roller 48 on the stop arm engages roller 49 the rotation of shaft 25 and sleeve 27 is arrested, but the momentum carries the hub assembly further on until the movement thereof is stopped by pin 43 engaging arm 41. At this position of the hub, pawl 44 engages spline 32 preventing rebound of the hub.

What is claimed is:

1. In an intermittently operable printing mechanism suitable for printing on checks or the like, a bracket, a guideway adjacent the bracket, means including a pair of cooperating feed rollers for feeding checks along the guideway, a trip tongue lever having a pair of arms, a portion of the first of the arms extending into the guideway so as to be tripped by the leading edges of the respective checks passing therethrough, a rotary frictionally driven printing die supported by the bracket, a stop arm fixed to the printing die, a spring loaded stop lever having a pair of arms one of which is normally positioned in the rotary path of the stop arm to arrest the same and hold the printing die against rotation, a link pivotally connecting the second arm of the trip tongue lever with the second arm of the stop lever whereby the trip tongue lever on being tripped disengages the stop lever arm from the stop arm permitting the printing die to turn, a fulcrum lever pivotally mounted on the bracket having a pair of arms one of which is pivoted to the trip tongue, and means for limiting the movement of the fulcrum lever in one direction comprising a stop screw mounted in the bracket, a member in the rotary path of the second arm of the fulcrum lever displaceable by the stop screw, the screw and the member serving to adjust the length of the portion of the trip tongue extending into the guideway to compensate for wearing of said feed rollers.

2. In an intermittently operable printing mechanism suitable for printing on checks or the like, a bracket, a guideway adjacent the bracket, means including a pair of cooperating feed rollers for feeding checks along the guideway, a trip tongue lever having a pair of arms a portion of the first of the arms extending into the guideway so as to be tripped by the leading edges of the respective checks passing therethrough, a rotary frictionally driven printing die supported by the bracket, a stop arm fixed to the printing die, a spring loaded stop lever having a pair of arms one of which is normally positioned in the rotary path of the stop arm to arrest the same and hold the printing die against rotation, a link pivotally connecting the second arm of the trip tongue lever with the second arm of the stop lever whereby the trip tongue lever on being tripped disengages the stop lever arm from the stop arm permitting the printing die to turn, a fulcrum lever pivotally mounted on the bracket having a pair of arms one of which is pivoted to the trip tongue, means for limiting the movement of the fulcrum lever about its pivot in one direction comprising a stop screw threaded into the bracket, the screw serving to adjust the length of the portion of the trip tongue extending into the guideway to compensate for wearing of said feed rollers, said limiting means also including a manually operable lever frictionally mounted on the bracket, the lever being disposed between the end of the stop screw and the second arm of the fulcrum, the latter lever being effective when turned to rock the fulcrum lever on its pivot and withdraw the trip tongue from the guideway and thus arrest the operation of the printing mechanism.

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