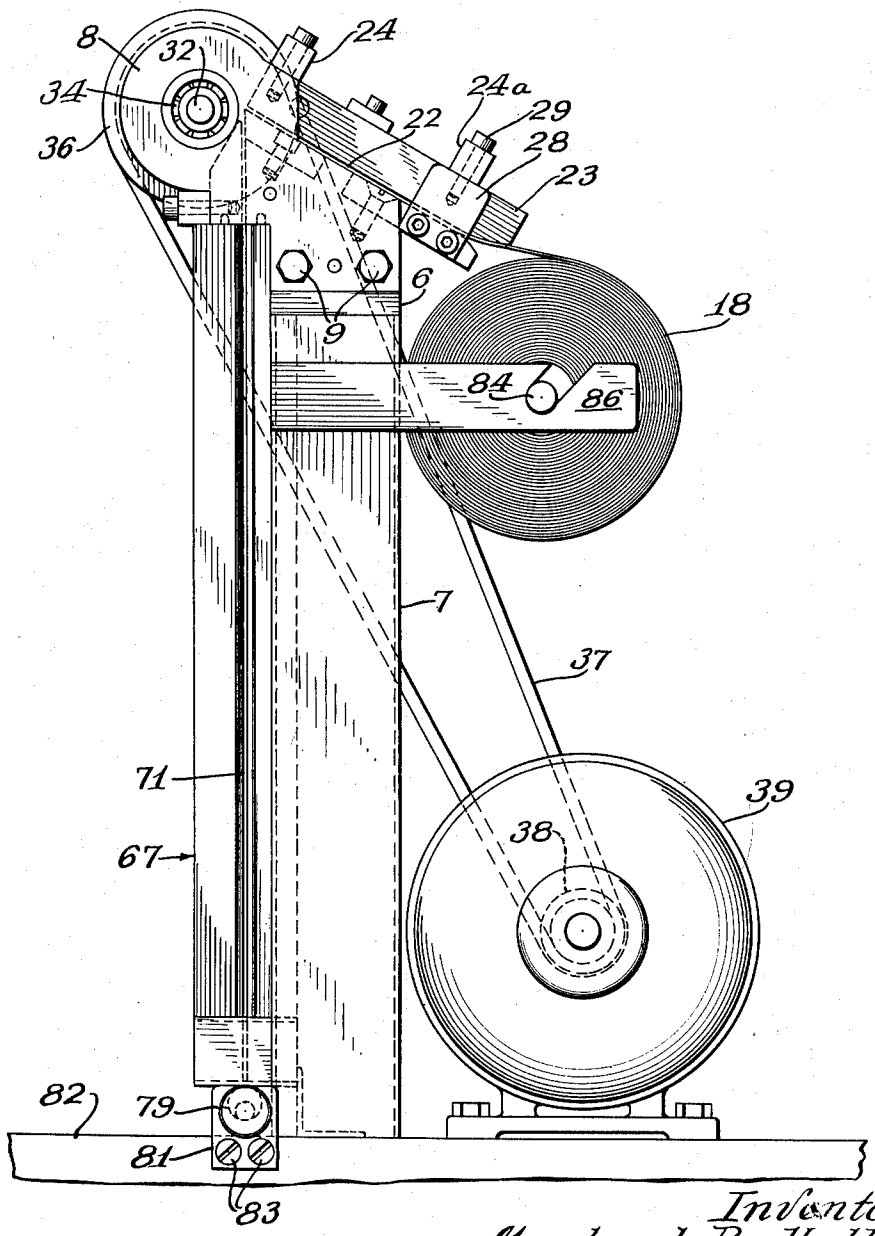
Dec. 2, 1952 M. B. HALL 2,620,034

APPARATUS FOR FORMIMG INDIVIDUAL RECORD STRIPS

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Fig. 1.



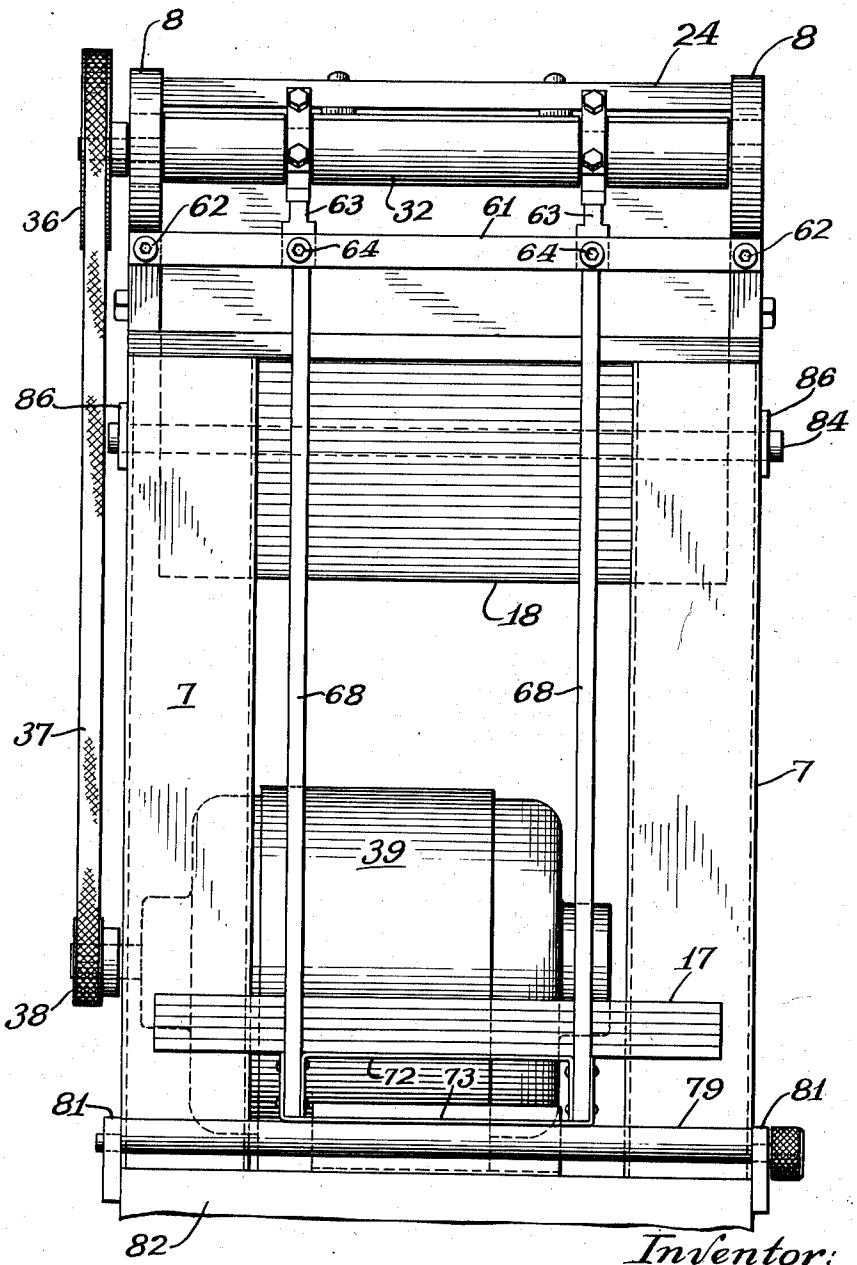
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APPARATUS FOR FORMIMG INDIVIDUAL RECORD STRIPS

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FIG. 2.



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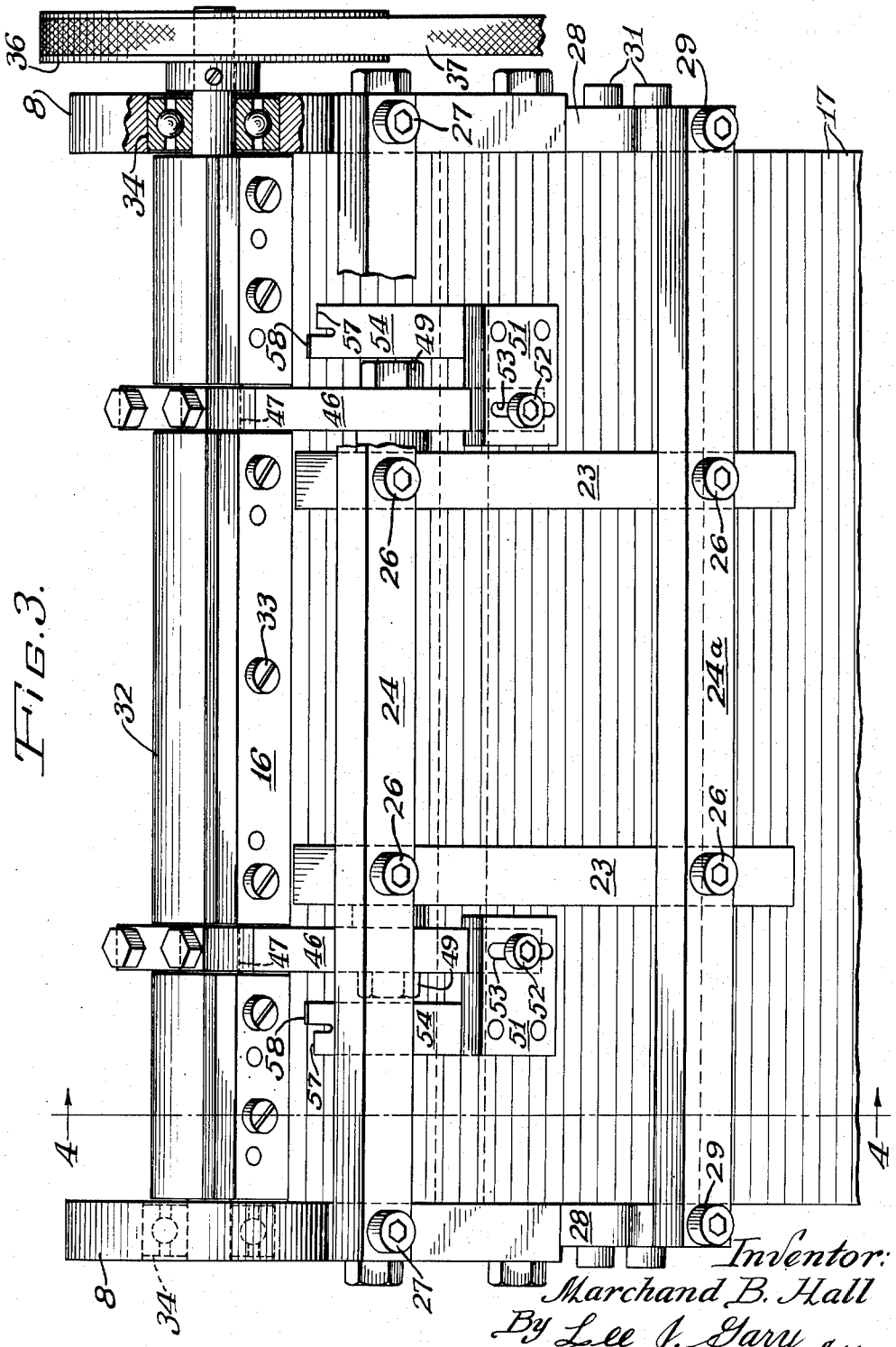


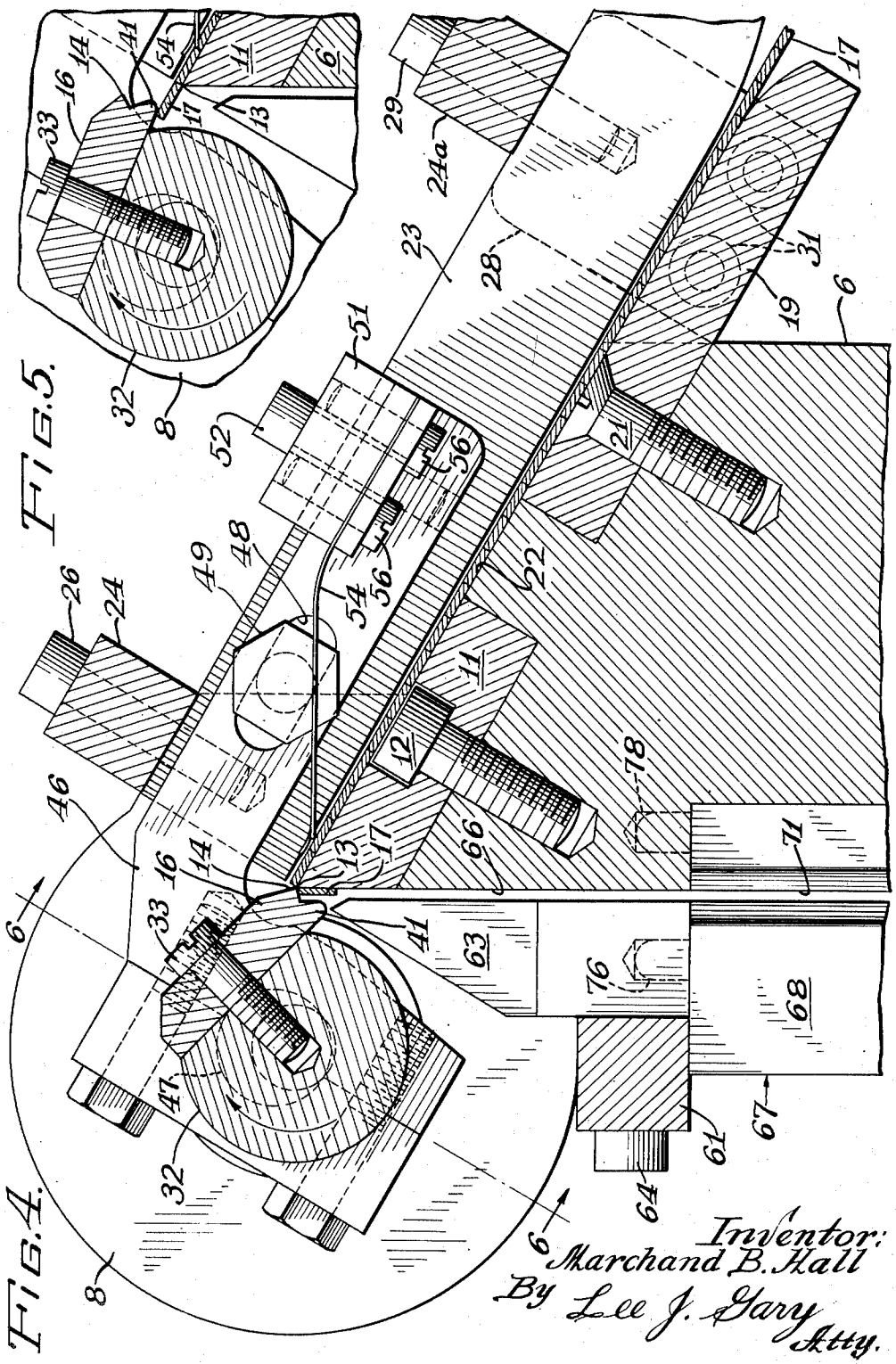
Fig. 3.

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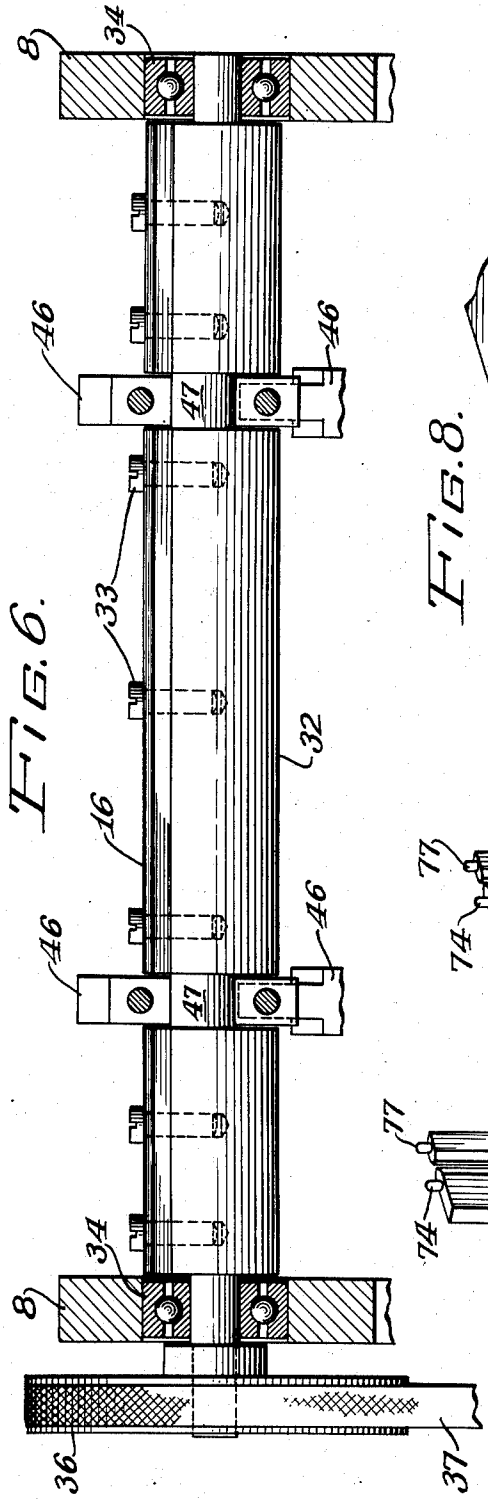


Fig. 6.

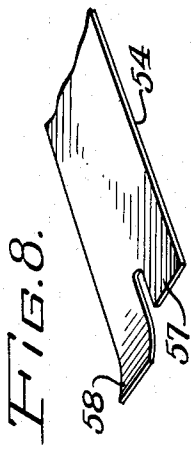


Fig. 8.

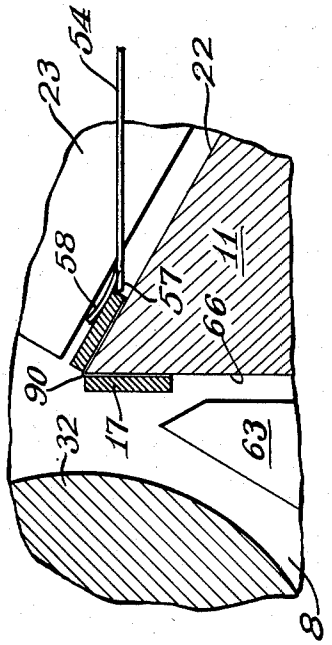


Fig. 7.

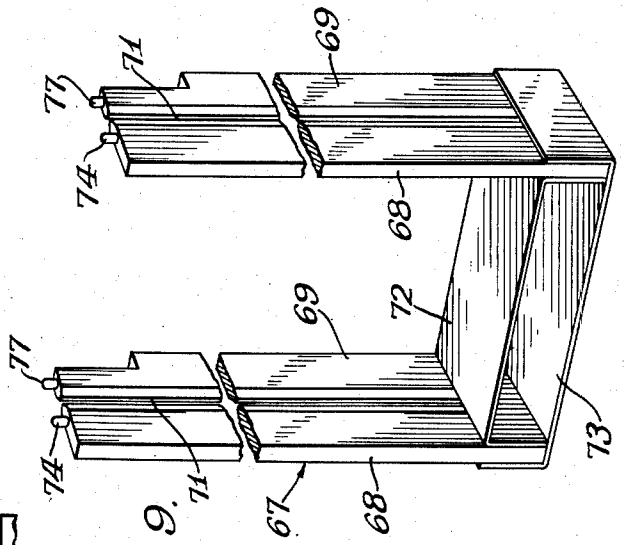


Fig. 9.

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2,620,034

UNITED STATES PATENT OFFICE

2,620,034

APPARATUS FOR FORMING INDIVIDUAL RECORD STRIPS

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Application January 26, 1950, Serial No. 140,695

7 Claims. (Cl. 164—68)

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This invention relates to an apparatus for forming individual record strips.

As described in Patent 1,594,112 issued July 27, 1926 to Frank D. Powell, record strips are provided in sheet or roll form for use in visible indexes. A sheet or roll of record strips comprises a relatively thin resilient wood veneer surfaced on both sides with paper, the sheet or roll being slit transversely through the upper sheet of paper and the wood veneer to form a plurality of record strips attached to each other by the lower sheet of paper. A sheet or roll of record strips is adapted to be inserted into a typewriter, addressing machine, duplicating machine or punched card machine printer for applying information to the record strips. After the information has been applied to the record strips, each strip is detached from its adjacent strip and mounted at its ends within a suitable frame. As set forth in my copending application filed January 26, 1950, Serial No. 140,694, the record strips are supplied in roll form with approximately 2100 strips in each roll for use on punched card printers which print the desired information on the record strips at a rate of 80 lines per minute, the roll of strips being formed with marginal holes for registry with a roll feed mechanism provided on the card printers. After the desired information has been printed upon the record strips, the roll of strips is trimmed along its marginal edges to decrease the width of the roll of strips.

The present invention is particularly concerned with the provision of a simple and inexpensive apparatus adapted for use in separating the record strips from each other and for positioning the separated record strips in stacked side-by-side relation within a suitable frame. It has heretofore been the practice to manually separate the record strips from each other after the printing operation. To adapt a roll of strips for use in a punched card printer, it has been found necessary to reinforce the bottom sheet of paper with a plurality of strips of adhesive tape which tend to prevent the separation of the record strips from the roll without causing damage to the strips. In the present invention a rotary cutter is employed for cutting the individual record strips from the roll.

This invention further contemplates the provision of an apparatus of the type described which is relatively simple and inexpensive in construction and which will not readily get out of order.

This invention embodies other novel features,

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details of construction and arrangement of parts which are hereinafter set forth in the specification and claims, and illustrated in the accompanying drawings, wherein:

Fig. 1 is a side elevational view illustrating an apparatus embodying features of the present invention.

Fig. 2 is a front elevational view of same.

Fig. 3 is a top plan view of same.

Fig. 4 is a transverse sectional view taken along the line 4—4 of Fig. 3.

Fig. 5 is a fragmentary transverse sectional view, corresponding to Fig. 4, to illustrate the manner in which each record strip is folded downwardly prior to being severed from the roll of strips.

Fig. 6 is a detail sectional view taken along the line 6—6 of Fig. 4.

Fig. 7 is a fragmentary sectional view illustrating the construction and operation of the strip feed finger.

Fig. 8 is a fragmentary detail perspective view showing the free end portion of the strip feed finger.

Fig. 9 is a detail perspective view illustrating the construction of the hopper means employed to receive the record strips as the latter are separated from the roll of strips.

Referring now to the drawings for a better understanding of this invention, the apparatus for separating individual record strips from a roll or sheet of record strips is shown as comprising a base 6 supported upon the upper end of a platform 7 and having a pair of bearing plates 8—8 secured to its opposite sides by means of cap screws 9. A cutter block 11 is secured to the upper surface of the base 6 by means of cap screws 12 and is provided with a chisel edge 13 to coact with a knife edge 14 of a cutter 16 in severing individual record strips 17 from a roll of record strips 18. A platform plate 19 is secured to the upper surface of the base 6 by means of flat head screws 21 and extends rearwardly from the back face of the base to support the record strips during their movement from the roll 18. The upper surface 22 defined by the base 6, cutter block 11 and platform plate 19 slopes in an upward direction to terminate at the chisel edge 13 provided on the cutter block.

A pair of guide shoes 23—23 are supported in spaced parallel relation above the inclined surface 22 by means of a pair of cross bars 24—24a, the cross bars being secured to the guide shoes by means of screws 26. The cross bar 24 is secured at its ends to the bearing plates 8—8 by

means of screws 27, and the cross bar 24a is secured at its ends to brackets 28—28 by means of screws 29. The lower ends of the brackets 28—28 are secured to opposite sides of the platform plate 19 by means of screws 31.

The cutting blade 16 is secured to a shaft 32 by means of cap screws 33, the shaft being journaled at its ends within anti-friction bearings 34—34 provided on the bearing plates 8—8. A pulley 36 is secured to the end of the shaft 32 to receive a belt 37 which leads to a pulley 38 keyed to the shaft of an electric motor 39. The forward edge of the cutting blade 16 is formed with a rounded lip 41 below the knife edge 14 to engage and deflect downwardly a record strip 17 as the latter passes over the chisel edge 13 of the cutting block 11.

The record strip feed mechanism is shown as comprising a pair of carriers 46—46 disposed in spaced parallel relation and having their front ends journaled on eccentric journals 47—47 formed on the cutter shaft 32. Each carrier 46 is slotted at 48 to receive a cap screw 49 threaded into its adjacent guide shoe 23. A feed finger supporting block 51 is secured upon the end of each carrier 46 by means of a cap screw 52, the block being slotted at 53 to permit adjustment of the block along its carrier. A feed finger 54 is secured to each block 51 by means of cap screws 56. Each feed finger 54 is preferably formed from a strip of resilient spring metal having its forward end shaped at 57 to engage the back edge of each record strip to move the connected record strips along the surface 22. The forward end of each finger 54 is rounded at 58 and projects beyond the edge 57 to engage against the upper surfaces of the record strips.

A guide supporting bar 61 is secured at its ends to the bearing plates 8—8 by means of cap screws 62, and a pair of guide members 63—63 are secured to the bar 61 by means of cap screws 64. As illustrated more clearly in Fig. 5 of the drawings, the guide members 63 are disposed in spaced parallel relation to the front wall of the base 6 and cutting block 11 to define vertical passageways 66 for the passage of record strips 17 after the latter have been severed from the roll of record strips by the cutter 16. A hopper 67 is disposed below the passageways 66—66 to receive the individual record strips 17. As illustrated more clearly in Figs. 2, 4 and 9, the hopper 67 comprises a pair of front members 68—68 disposed in spaced relation to a pair of rear members 69—69 to define a pair of vertically disposed passageways 71—71 in registry with the passageways 66—66. The lower ends of the members 68—68 and 69—69 are welded or bolted to a pair of metal plates 72 and 73 to form an integral hopper structure capable of being removed from the apparatus in transferring a load of individual record strips 17 to a machine (not shown) for inserting the record strips into an index frame. The upper ends of the front members 68—68 are provided with pins 74—74 for engagement in apertures 76—76 formed in the guide members 63—63, and the upper ends of the rear members 69—69 are provided with pins 77—77 for engagement in apertures 78—78 formed in the base 6. The hopper 67 is demountably engaged upon the machine by means of a cam member 79 journaled at its ends in bearings 81—81. The bearings 81—81 are secured to a suitable supporting base 82 by means of screws 83.

As illustrated in Fig. 1, the motor 39 and the lower ends of the members 7—7 are secured to the supporting base 82. As illustrated in Fig. 1, a roll 18 of record strips is adapted to be mounted upon a suitable reel 84 journaled at its ends in a pair of slotted bearing brackets 86 secured to the frame members 7—7.

As heretofore pointed out a roll 18 of record strips comprises a plurality of strips 17 hingedly connected together by means of a relatively thin sheet of paper 90, as illustrated in Fig. 7. When the roll of strips is formed for use on punched card printers, the strips 17 are also hingedly connected together by means of three strips of adhesive tape disposed in spaced parallel relation along the outer surface of the paper backing 90. After information has been printed upon a roll of record strips, it is necessary to separate the strips from each other for mounting in index frames.

During the operation of the apparatus thus shown and described, the motor 39 acts to rotate the cutter shaft 32 in a clockwise direction, as illustrated in Fig. 4. During rotation of the cutter shaft 32, the carriers 46—46 and their respective feed fingers 54—54 act to move the connected strips step-by-step upwardly along the inclined surface 22, the forward edges 57—57 of the feed fingers being moved into and out of engagement with the rear edges of each record strip 17. When the forward record strip 17 moves beyond the chisel edge 13 of the cutting block 11, it is first pivoted downwardly by the rounded lip 41 provided on the cutter 16, as illustrated in Figs. 4 and 5 in the drawing. The knife edge 14 on the cutter then acts with the chisel edge 13 on the cutting block to sever the paper backing 90 and the adhesive strips to separate the record strip from its adjacent strip. The several individual record strip 17 then passes by gravity downwardly through the slots 66—66 and into the slots 71—71 of the hopper 67. Each revolution of the cutter shaft 32 severs one record strip 17 from the roll of record strips. After the hopper 67 has been filled with individual record strips, it is removed from the apparatus by first manually rotating the cam 79 and then withdrawing the hopper from the machine.

While this invention has been shown in but one form, it is obvious to those skilled in the art that it is not so limited but is susceptible of various changes and modifications without departing from the spirit and scope of the claimed invention.

I claim as my invention:

1. In an apparatus for progressively separating record strips from a chain of record strips hingedly connected in side-by-side abutting relation by an adhesive backing strip, a base provided with an upper surface terminating at a transverse cutting edge, a cutting blade to coact with the cutting edge of said base to sever the backing strip to separate a record strip from its adjacent record strip, a feed mechanism to impart step-by-step movement to a chain of connected record strips positioned upon the upper surface of said base, means to actuate said cutting blade and feed mechanism, and means to progressively deflect each record strip downwardly over the cutting edge of said base prior to severance of said backing strip to position adjacent record strips in angularly related planes intersecting adjacent the cutting edge whereby the backing strip is exposed in the line of travel of the cutting blade.

2. In an apparatus for progressively separating record strips from a chain of record strips

hingedly connected in side-by-side abutting relation by an adhesive backing strip, a base provided with an upper surface terminating at a transverse cutting edge, a cutter shaft journaled in spaced parallel relation to the transverse cutting edge of said base, a cutting blade mounted on said cutter shaft and provided with a sharp edge to coact with the cutting edge of said base in severing the backing strip to separate a record strip from its adjacent record strip, said cutter shaft being formed with an eccentric journal portion, a feed finger carrier mounted on and actuated by said eccentric journal portion, a feed finger supported on said carrier to engage and move a chain of record strips step-by-step along the upper surface of said base, and means to rotate said cutter shaft.

3. An apparatus according to claim 2 in which the feed finger is formed from a strip of resilient metal having its one end projecting downwardly for movement into and out of engagement with the back edge of each record strip.

4. In an apparatus for progressively separating record strips from a chain of record strips hingedly connected in side-by-side abutting relation by an adhesive backing strip, a base provided with an upper surface terminating at a transverse cutting edge, a cutter shaft journaled in spaced parallel relation to the transverse cutting edge of said base, a cutting blade mounted on said cutter shaft and provided with a sharp edge to coact with the cutting edge of said base in severing the backing strip to separate a record strip from its adjacent record strip, means to progressively deflect each record strip downwardly over the cutting edge of said base prior to severance of said backing strip, said cutter shaft being formed with an eccentric journal portion, a feed finger carrier mounted on and actuated by said eccentric journal portion, a feed finger supported on said carrier to engage and move a chain of record strips step-by-step along the upper surface of said base, and means to rotate said cutter shaft.

5. An apparatus according to claim 2 in which the cutting blade is formed with a protruding lip to engage and pivot a record strip downwardly about the cutting edge of said base prior to severance of the backing strip.

6. In an apparatus for progressively separating record strips from a chain of record strips hingedly connected in side by side abutting relationship by an adhesive backing strip, a cutting block provided with a cutting edge, means to feed a chain of record strips step by step over said cutting block, means to progressively deflect each record strip downward over the cutting edge of said cutting block to position adjacent record strips in angularly related planes intersecting adjacent the cutting edge whereby the backing strip is exposed in the line of travel of the cutting blade, a cutter to coact with the said cutting block to separate a record strip from its adjacent record strip, means to actuate said cutter, and means to actuate said feed means in timed relation with said cutter.

7. In an apparatus for progressively separating record strips from a chain of record strips hingedly connected in side by side abutting relation by an adhesive backing strip, a cutting block provided with a cutting edge, means to feed a chain of record strips step by step over said cutting block, means to progressively deflect each record strip downward over the cutting edge of said cutting block to position adjacent record strips in angularly related planes intersecting adjacent the cutting edge whereby the backing strip is exposed in the line of travel of the cutting blade, a cutter to coact with the said cutting block to separate a record strip from its adjacent record strip, means to actuate said cutter, means to actuate said feed means in timed relation with said cutter, and means to guide the severed record strips downwardly in side by side alignment.

MARCHAND B. HALL.

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