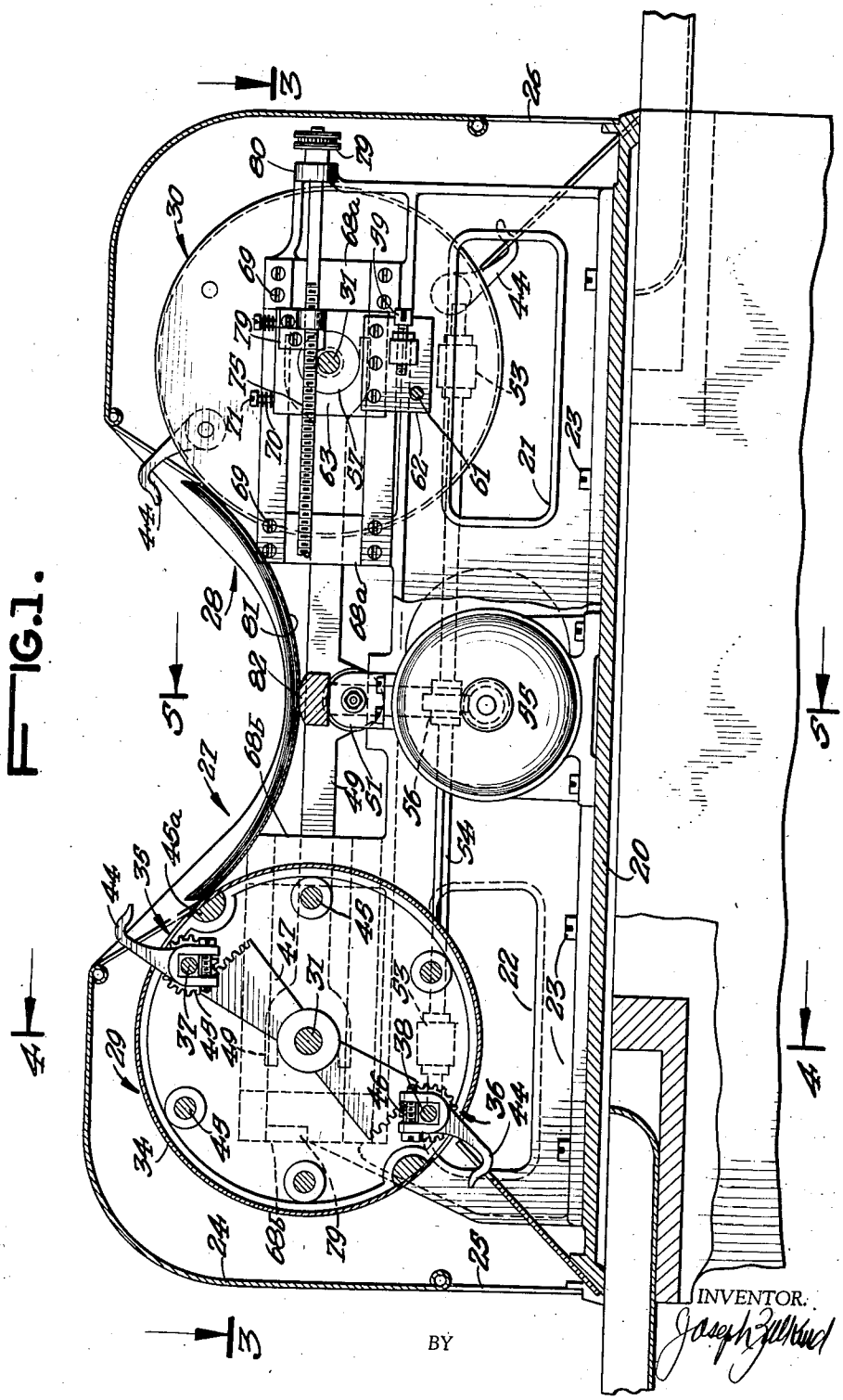
July 7, 1942. J. ZALKIND 2,289,161

MACHINE FOR TEARING OFF BILL FOLDERS

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FIG. 1.



INVENTOR.

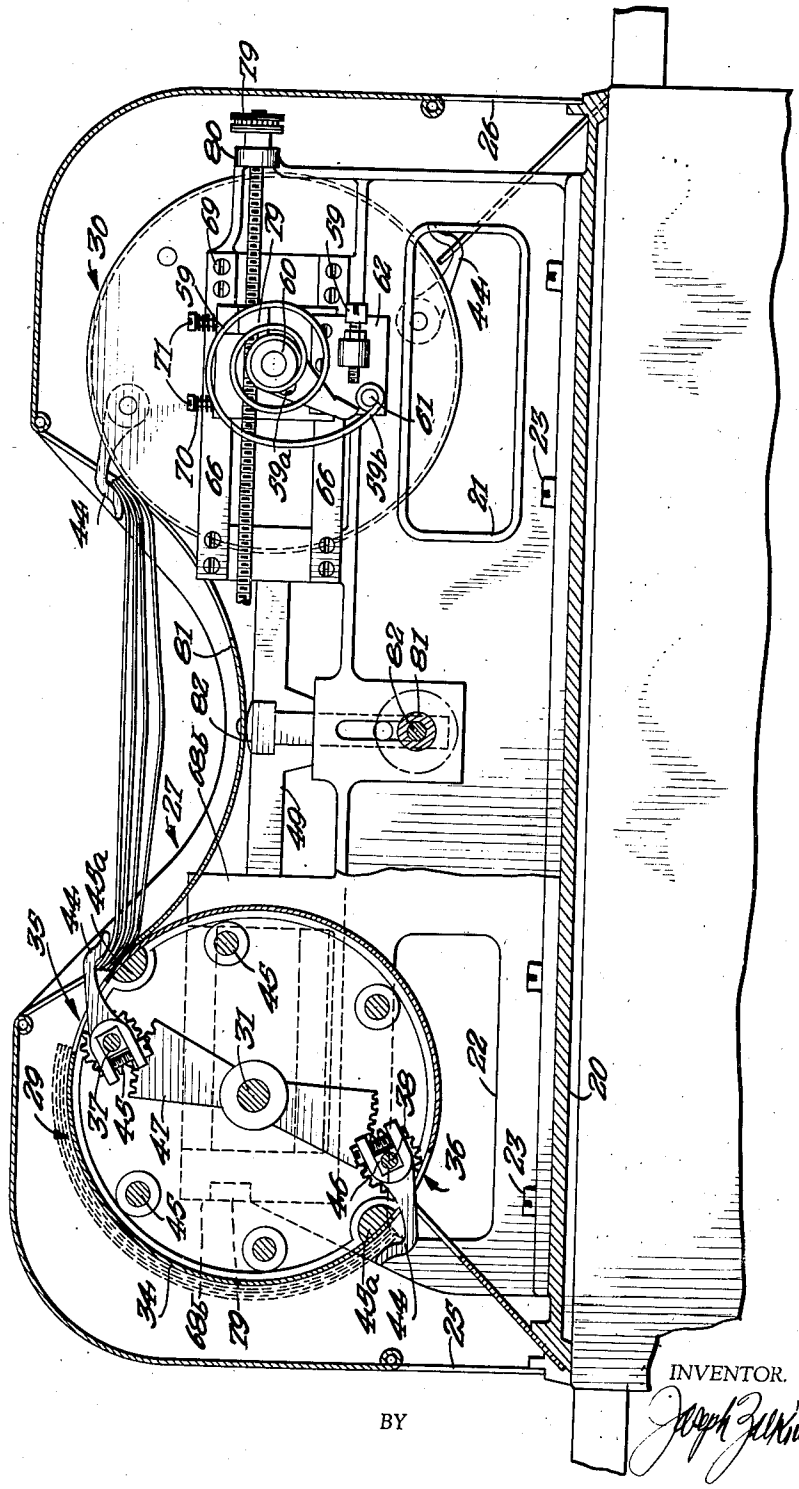
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FIG. 2.



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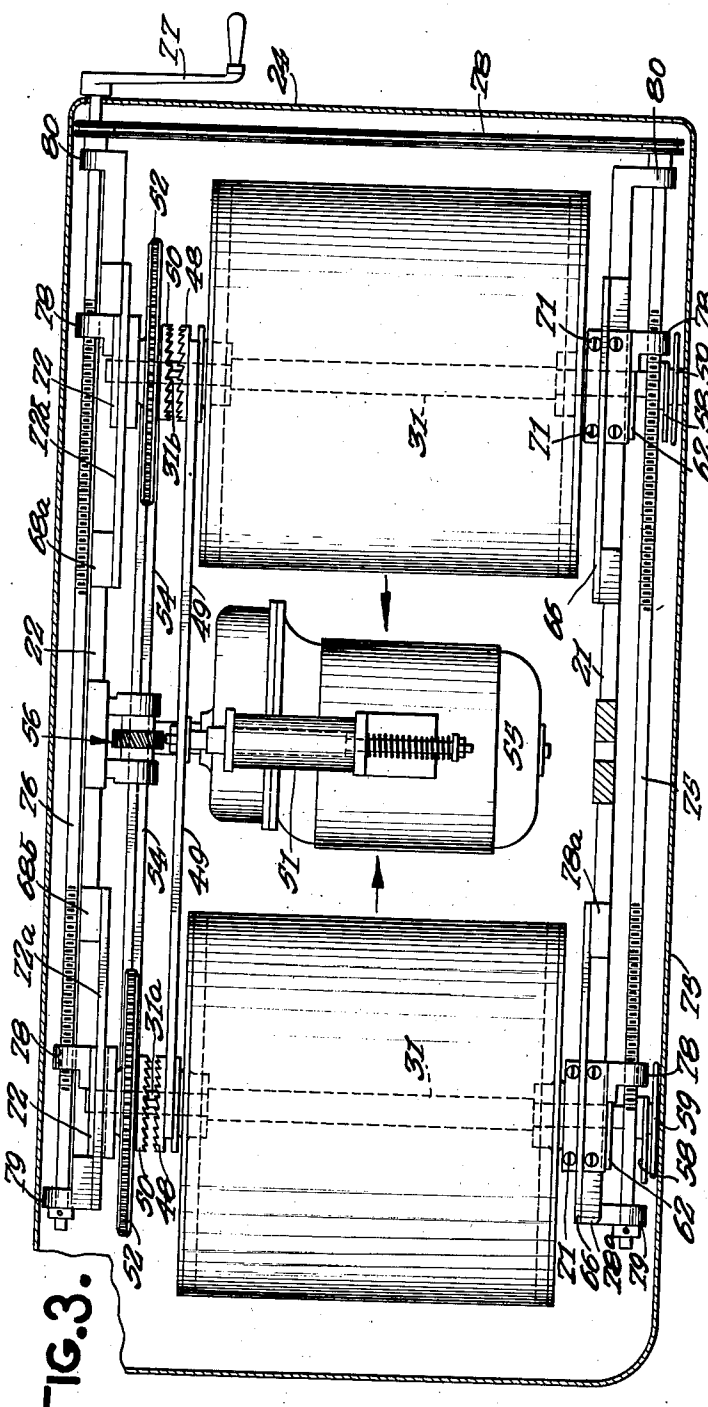


FIG. 3.

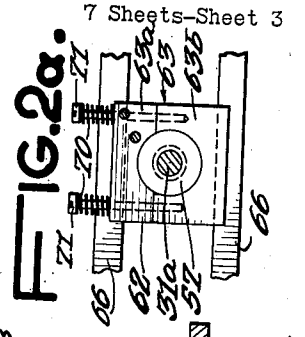


FIG. 2a.

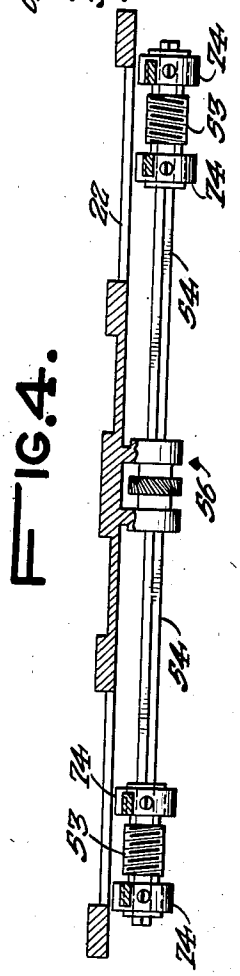


FIG. 4.

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FIG. 6.

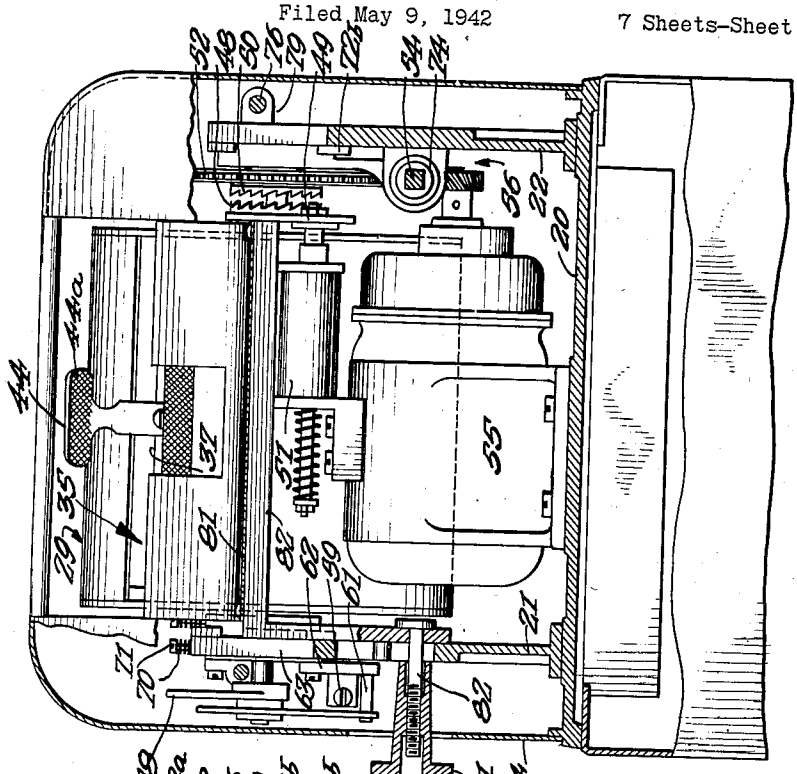
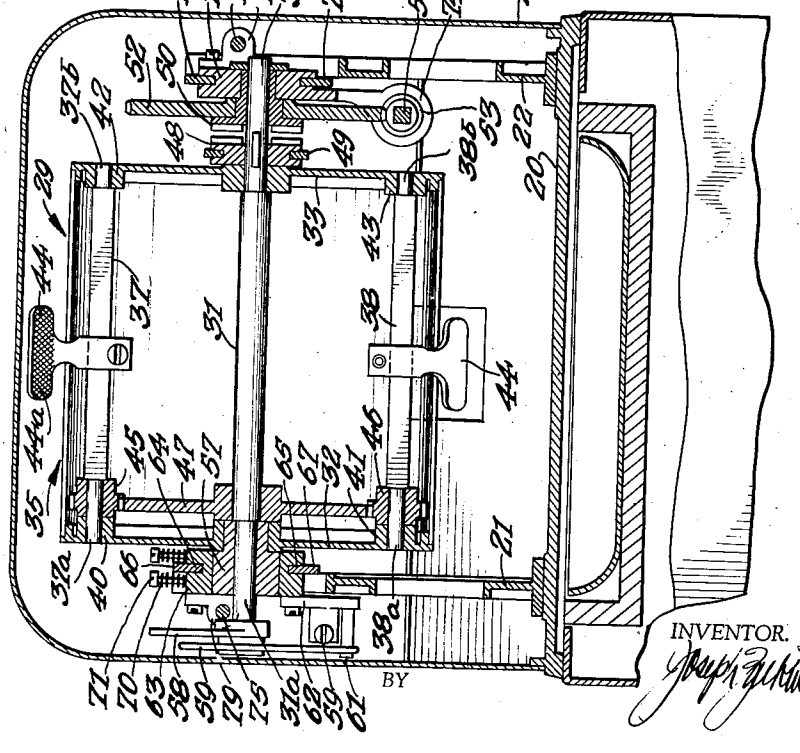


FIG. 5.



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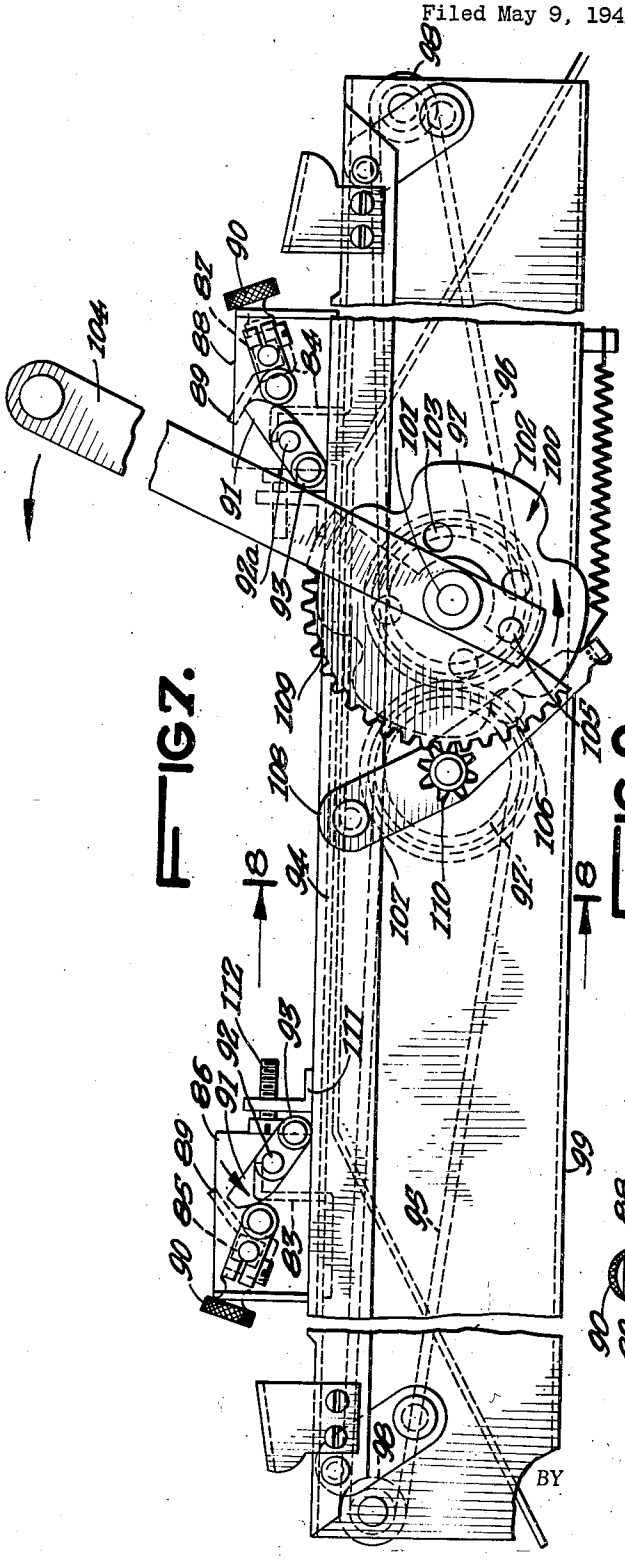


FIG. 7.

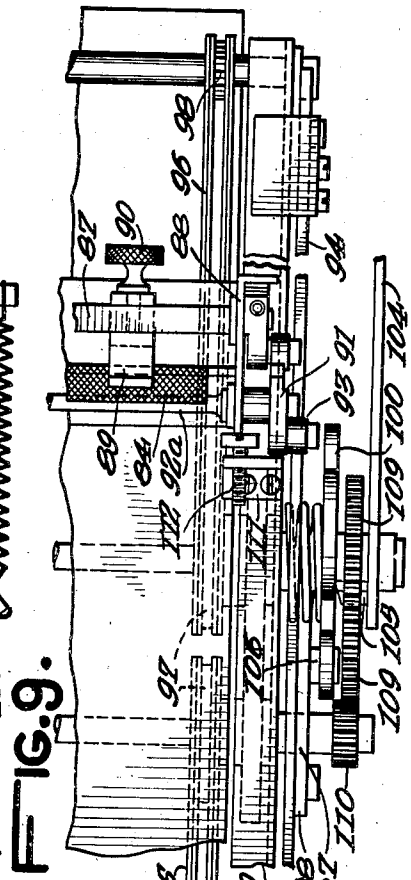


FIG. 9.

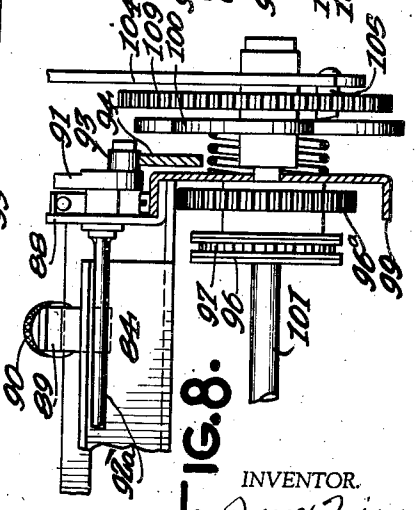


FIG. 8.

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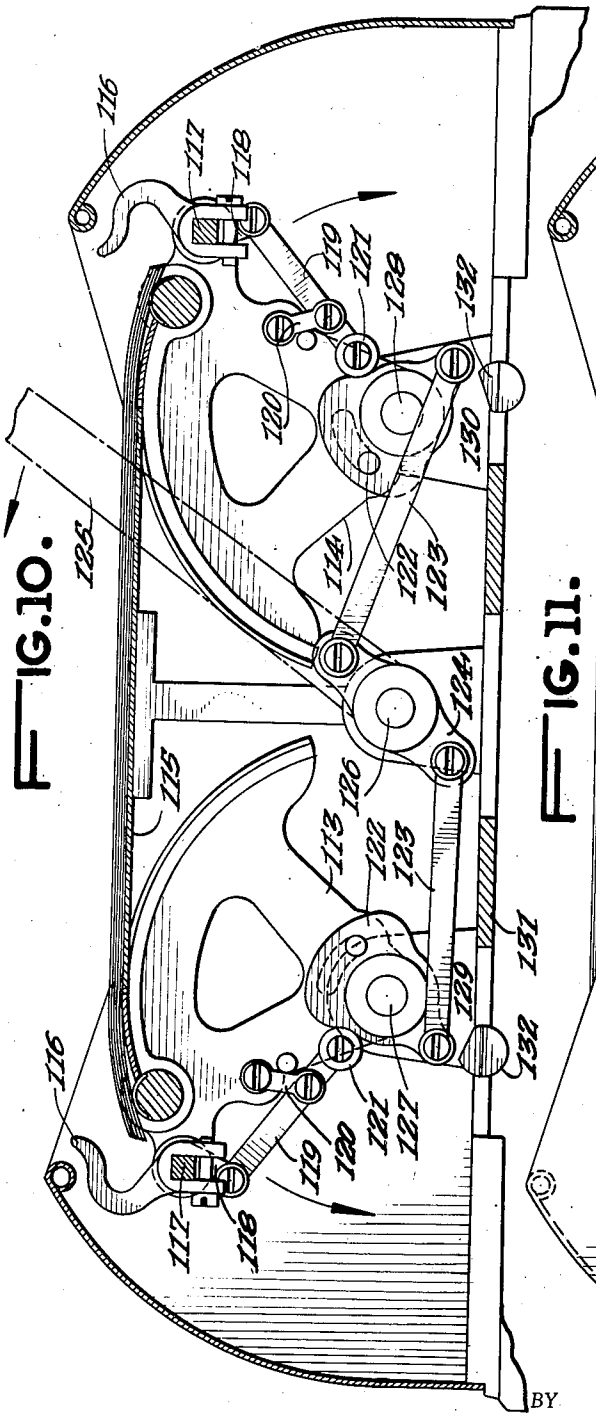


FIG. 10.

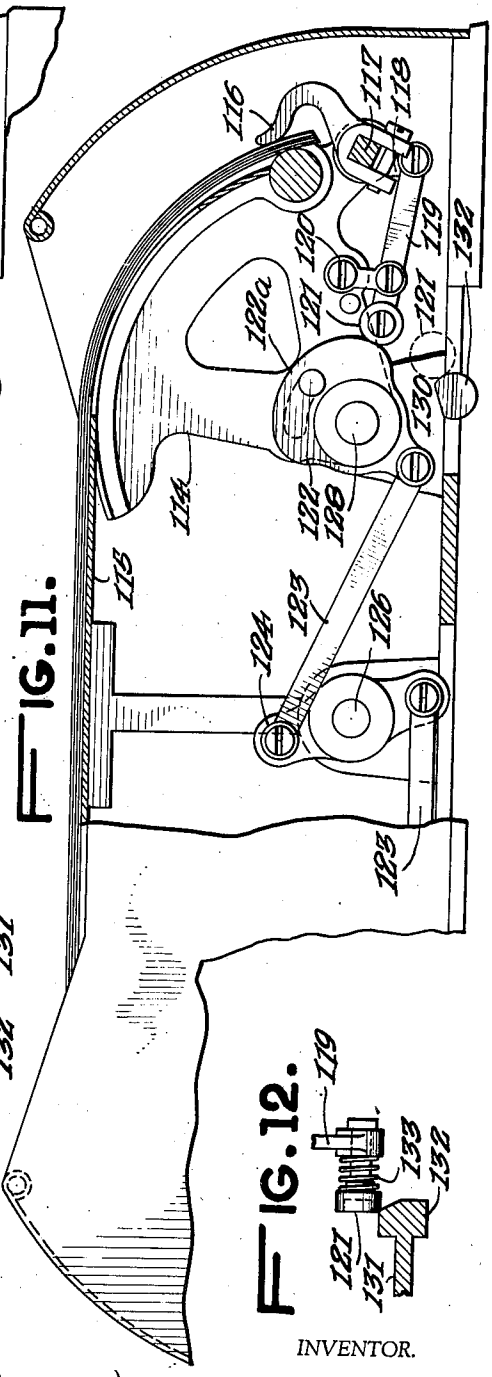


FIG. 11.

FIG. 12.

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MACHINE FOR TEARING OFF BILL FOLDERS

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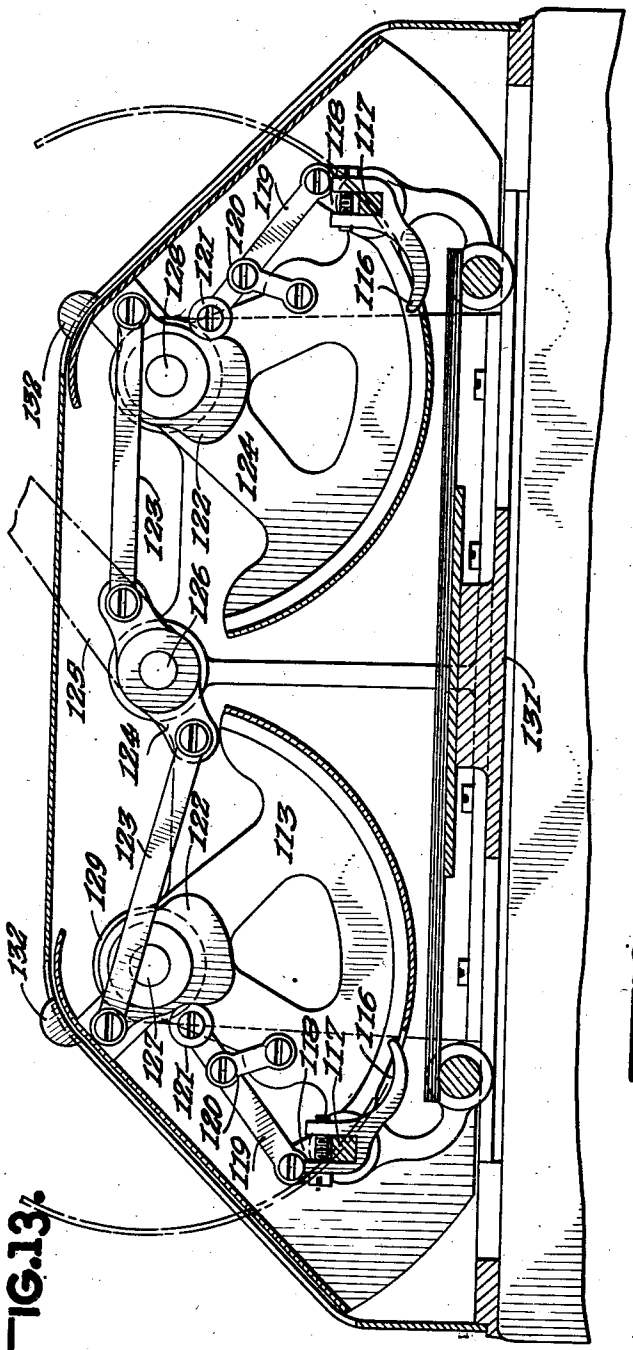


FIG. 13.

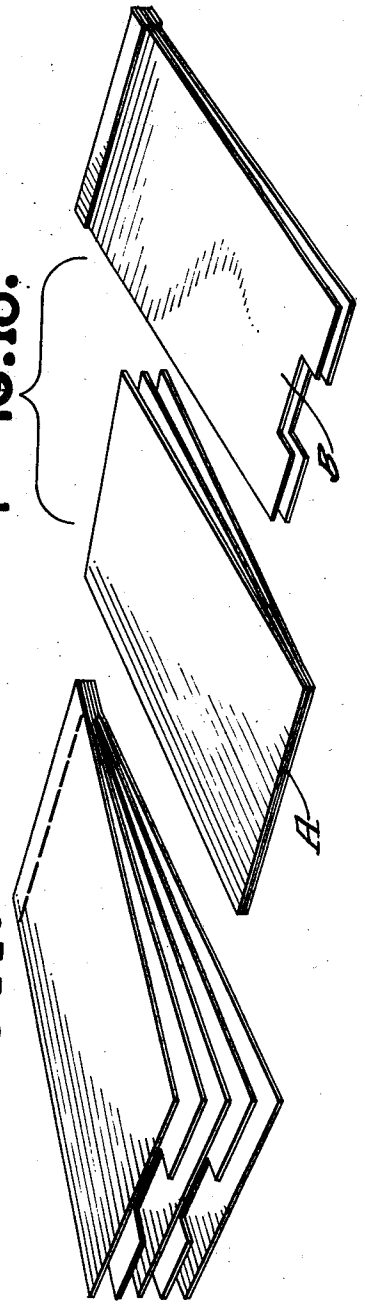


FIG. 14.

FIG. 15.

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Patented July 7, 1942

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UNITED STATES PATENT OFFICE

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MACHINE FOR TEARING OFF BILL FOLDERS

Joseph Zalkind, New York, N. Y.

Application May 9, 1942, Serial No. 442,300

23 Claims. (Cl. 164—84.5)

This invention relates to hand and electrically operated multiple tear off bill folders snapping machines and especially of the kind used in snapping apart the copies of bill or statements from the intermediate carbon or layers of carbon paper.

The customary tear off bill folder as illustrated in Fig. 14 of this invention consists of an upper sheet which is used to typewrite the amount of the bill and a number of copies arranged underneath said upper sheet. To facilitate the simultaneous printing upon all of the copies a carbon paper is inserted under and in between each of the bill copies. This operation in the past has been done manually and in the case of ten or more bill copies it required a considerable amount of time to insert a carbon paper for each copy. To save this time these multiple bill folders are delivered for use in prepared forms. In short, the carbons are placed in position by the manufacturer of the bill folders and the whole number of bills and carbons are secured together on one side through pasting or stapling, (see Fig. 14).

On the side that the bill folders are pasted together there are provided a number of perforations. The other side, the one that is opposite to the side of the bill folder that is pasted, the carbons have a cut out as shown in Fig. 14. After the bills have been typed, the operator grips one side of the bill folder with one hand and the other side with the other hand and tears or prys them apart. As the bills are perforated at one side of the sheet the tearing off operation tears off the bill sheets and separates them from the carbons as shown in Fig. 15.

In the past, this tear off operation has been done by hand. As the operator can not tear off more than a dozen of bills at a time and these bills sometimes may run into hundreds or thousands of individual bill folders, this is very tedious work.

The object of this invention is to eliminate all this manual labor and to provide a machine or device whereby the operator can place a number of bill folders upon it, press a button and the machine automatically will tear the bills apart from the carbons.

Another object of this invention is to provide a tear off machine for bill folders which can be used for bill of 12 inches or longer and for less than 12 inches long.

Another object of this invention is to provide a machine or device to tear off bills from carbons and to provide an arrangement whereby the machine may be adjustable for different sizes of bills.

Another object of this invention is to provide a machine which will be provided with a set of gripping fingers to engage the ends of the bills to be separated from the carbons.

A further object of this invention is to provide an arrangement whereby a pair of drums may be utilized and which drums will be provided with a set of gripping fingers to be located upon the periphery of said drums and to be used to engage the ends of the bill folder sheets.

A further object of this invention is to provide a machine that will be adaptable for hand or electrical operation.

A further object of this invention is to provide a set of gripping fingers to be attached to a pair of rocking drum segments. These drum segments to be operating in a hinging motion away from each other.

A further object of this invention is to provide a machine which will tear off bill folders and which will be adjustable for different sizes of bill folders. This machine to be provided with a set of gripping fingers which will be operated horizontally and away from each other.

A further object of this invention is to provide a machine which will be easy to operate, efficient and inexpensive to manufacture.

Further objects will be seen as the description of the invention proceeds.

Referring to the drawings:

Fig. 1 is a side sectional view showing of the device. Drum is shown in section disclosing the gear segment for operating the gripping fingers. The other drum is shown in outside view disclosing the arrangement used for sliding the drum for the purpose of adjustment to accommodate different sizes of bills.

Fig. 2 is a side section of the device shown in operation. One of the drums is shown in section disclosing the position of the gear segment and the gripping fingers. The other drum is shown in outside view. The spring arrangement for returning the gear segment to its original position is also shown.

Fig. 2*a* is a view showing the split bearing for restraining the rotation of the drums.

Fig. 3 is a section of the machine taken on the line 3—3 of Fig. 1 showing the location of the gripping drums.

Fig. 4 is a detailed view of the drum drive showing the worms and the spiral gear for operating the worm gears.

Fig. 5 is a vertical section of the machine taken

on the line 5—5 of Fig. 1, it shows the gripping drum in section, alsi the arrangement of parts for driving the drum.

Fig. 6 is a vertical section through the machine taken on the line 6—6 of Fig. 1. It shows the adjustment for regulating the receiving table and the solenoid for operating the clutch lever.

Fig. 7 is a side view of a machine showing a modified arrangement for tearing bill folders. In this case instead of a rotating motion for tearing off the bills a sliding motion is used. This machine is shown operated manually through a handle.

Fig. 8 is a section through the machine taken on the line 8—8 of Fig. 7.

Fig. 9 is a partial elevational view of the machine shown in Fig. 7. It shows the arrangement of parts for operating the machine and the gripping fingers to grip the bills.

Fig. 10 is another modification of the machine shown in Fig. 1. In this case instead of a continuous rotative motion a hinging motion is utilized to tear off the bill heads. This view is showing the machine before being operated by the operator.

Fig. 11 is a view showing the machine in Fig. 10 at operation.

Fig. 12 is a side view of the roller for operating the gripping fingers as shown in Fig. 11.

Fig. 13 is another modification of the machine as shown in Fig. 1. In this case the hinging segments as utilized in inverted position are shown.

Fig. 14 illustrates a standard tear off bill head before the tear off operation, showing the intermediate layers of blank paper copies and carbons.

Fig. 15 illustrates the condition of the tear off bill head after the tear off operation, showing the bill heads separated from the carbons shown at B.

Referring to Fig. 1, 20 is the base of the machine. Numerals 21 and 22 are a pair of side frames which are attached to the base 20 by screws 23. An outside casing 24 incloses the machine proper.

The casing 24 has an exit opening 25 and 26. A half round cut out opening 27 is located at the upper part 28 of the casing 24.

A pair of drums 29 and 30 are located between the side frames 21 and 22. The drums 29 and 30 are loosely mounted upon shafts 31. The drums 29 and 30 consist of a pair of round side frames 32 and 33. A round shell 34 is placed over the periphery of the drum side frames 32 and 33 to form a continuous drum. An elongated slot opening 35 and 36 is cut out in the drum shell 34. A pair of square shafts 37 and 38 are located within the drum 29 and 30. The ends 37*a* and 38*a* of the square shafts 37 and 38 are round and are fitted into bearings 40 and 41 which are located in the drum side frames 32. The other end 37*b* and 38*b* of the shafts 37 and 38 is fitted into bearings 42 and 43 located in the drum side frame 33. An adjustable gripping finger 44 is attached to either one of the square shafts 37 and 38 of the drum 29. The drum 30 has two gripping fingers 44 attached to either one of its respective shafts 37 and 38. A number of frame spacer shafts 45 are located within the drums 29 and 30.

The round end extensions 37*a* and 38*a* of the square shafts 37 and 38 carry spur gears 45 and 46 respectively. These spur gears are in mesh with a gear segment 47 which is rigidly attached to the shaft 31. The shaft 31 has a reduced extension shaft 31*a* at one end and a reduced extension shaft 31*b* at the other end. A slidably mounted clutch member 48 is located over the shaft extensions 31*b*. A forked arm 49 serves to clutch in the clutch member 49 with the clutch member 50 when the solenoid 51 is energized.

The clutch member 50 is attached to a worm gear 52 which is loosely mounted upon the shaft extension 31*b*. The worm gear 52 is operated by a worm 53 which is rotated by a square shaft 54. The shaft 54 is rotated by the electric motor 55 and by the medium of a set of spiral gears 56. The motor 55 and the solenoid 51 are simultaneously operated when the attendant switches in the current by operating a switch.

A pulley 57 is attached to the drum side frame 32 and is fitted loosely over the shaft extension 31*a* of the shaft 31. The extreme end of the shaft extension 31*a* is secured to a segment arm 58 which is in contact with the limiting stop screw 59 when the shaft 31 is in nonoperative position. A spiral spring 59 is located over the end of the extension shaft 31*a*. One end 59*a* of the spring 59 (see Fig. 2) is attached to the shaft extension 31*a* through the hub 60. The other end 59*b* of the spring 59 is attached to a pin 61 which is located on a plate 62 which is rigidly fastened to the sliding bearing 63.

Referring to the sliding bearing 63 it has a pair of slide grooves 64 and 65 which slide within a pair of flat slide bars 66 and 67. The bars 66 and 67 are attached by the screws 69 to the frame extensions 68*a* and 68*b*.

The sliding bearing 63 is split in half and comprises an upper part 63*a* and a lower part 63*b* (see Fig. 2*a*). The pulley 57 is fitted and rests upon the lower part 63*b* of the bearing 63. The upper part 63*a* of the bearing is under the tension of the coil springs 70 which are located over the shanks of the screws 71. The upper part 63*a* of the bearing 63 can slide upon the shanks of the screws 71. The screws 71 are screwed into the lower part 63*b* of the bearing 63. The pressure of the springs 70 can be regulated by adjusting the position of the screws 71.

As it can be seen the upper part 63*a* of the bearing 63 is pressed over the pulley 57 which is rigidly attached to the drum 29. This action of the upper part 63*a* upon the pulley 57 is restraining the drum 29 from rotating freely when the drum is in operation. The purpose for this action will be described hereinafter. The drum 30 has a similar arrangement of a split bearing as described for the drum 29. The shaft extension 31*b* of the shaft 31 is also located within a sliding bearing 72. The bearing 72 runs within the slide bars 72*a* and 72*b*. These bars are attached to the frame extensions 68*a* and 68*b* of the frame 22. The bearing 72 has a lower extension 73 which ends in a bearing member 74 which serves as a bearing for the square shaft 54 (see Figs. 4 and 5).

A pair of threaded shafts 75 and 76 are rotated by the handle 77 and the chain drive 78 when it is required to bring the drums 29 and 30 closer together in the direction shown by the arrows (see Fig. 3). To this effect a threaded bearing 78 is attached to each of the sliding bearings 63 and 72. The threaded shafts 75 and 76 are fitted into the threaded bearings 78. The threaded shafts 75 and 76 are supported upon the side frames 21 and 22 within the bearings 79 and 80 which are located upon either end of the frames.

An operating table 81 which is adjustable vertically is used to support the tear off bill folders

in the proper position within the machine. The table 81 is arranged to be raised or lowered by loosening the knob handle 81 which is located over the screw bolt 82. The table 81 is secured to a supporting I-shaped member (see Figs. 1, 2 and 6).

Referring to the modification of the machine as shown in Figs. 7, 8 and 9, the parts are essentially the same as the ones used in the machine in Figs. 1 to 6 inclusive. In the case of this modification instead of a pair of rotatively mounted drums there are provided a pair of slidable mounted base members 83 and 84. A square shaft 85 is mounted horizontally in side extensions 86 on both sides of the member 83. Another square shaft 87 is mounted in the side extensions 88 on both sides of the sliding member 84. A set of gripping fingers 98 are located on the square shafts 85 and 87. The fingers 89 can be adjusted upon the shafts 85 and 86 by the knobs 90.

A hinging arm 91 is hinged at the shaft 92 and 92*a* at the side extensions 86 and 88. A roller 93 is attached to the end of a hinging arm 91. The roller 93 contacts an elongated bar 94.

The sliding member 83 and 84 is attached to a link chain 95 and 96 respectively. The link chains are operated through a set of gears 96*a* and a set of sprocket gears 97 and 98 within the casing 99 of the machine.

A cam 100 which is rotatively mounted upon the shafts 101 has in this case four working surfaces as shown in the drawings. There are also four openings 103 located upon the flat surface of the cam 100. When the handle 104 is operated manually in the direction indicated by the arrow a pin 105 is forced into one of said openings 103. This action will rotate the cam 100 in the direction shown by the arrow. A roller 106 which is attached to a hinging arm 107 will force the end 108 of the arm 107 to go upwards. As the end 108 is attached to the elongated bar 94 the bar 94 will be raised, the hinging arm 91 will be operated in the direction shown by the arrow and the gripping fingers 86 will be made to grip the ends of the bill folders to be separated from the carbons.

The further movement of the handle 104 will rotate the gear segment 110 and operate the gear 109. The operation of the gear 109 will operate the link chains 95 and 96 and will transmit a sliding motion to the sliding base members 83 and 84 in a direction away from each other.

Numeral 111 indicates an adjustable bracket which is used in connection with a screw 112 for the purpose of adjusting the machine to be used for different number of sizes of tear off bill folders.

Referring to the modification as shown in Figs. 10, 11 and 12 in this case instead of full drums there are used a pair of hinging or rocking drum segments 113 and 114.

A supporting table 115 serves to support the bill folders in the proper position within the machine. A set of gripping fingers 116 are positioned upon square shafts 117 on each side of the drum segments 113 and 114. The gripping fingers 116 are operated by a set of link arms 118, 119 and 120. A roller 121 is attached to the lower end of the link 119. This roller contacts a cam 122 which is operated by the link arm 123. The link arm 123 is attached to a hinging member 124. The drum segment 114 has the same arrangement for operating the gripping fingers 116 as described for the drum 113.

When the handle 125 which is attached to the hinging member 124 and the shaft 126 is manually operated in the direction shown by the arrow, the cams 122 will raise the links 120, 119 and 118 and force the gripping fingers 116 to contact the ends of the bill folders. The further motion of the handle 125 in the directions shown will force the drum segments 113 and 114 to move in a rocking motion and away from each other as shown by the arrows.

This motion will tear off the bills from the carbons. The drum segments are operated over the shafts 127 and 128 which are fitted into bearings 129 and 130 which are attached to the case casting 131. When the roller 121 will reach the position 121*a* as shown in dotted lines in Fig. 11, a tapered extension of the base casting 131 will push the roller 121 out of engagement with the surface 122*a* of the cam 122. The base extension is indicated by the numeral 132. This operation will free the gripping fingers and will release the ends of the bill folders and let the bills and carbons fall into collecting baskets or trays (not shown).

Operation

The tear off bill folder as shown in Fig. 4, consists of a successive row of bill sheets and carbon papers which are stitched together at one of their margins. The bill sheets are perforated underneath the margin where they are stitched together (see Fig. 14). This type of bill sheet tear off folder is not new, it has been used for many years all over the world. The usual way to tear off the carbon pages from the rest of the bill folder is to grip the stitched margin of the bill folders with the thumb and fingers of one hand and the opposite margin with the thumb and fingers of the other hand and give it a quick pull. Bill folders of three or four bills can be torn asunder in this manner, but for larger numbers of bill folder sheets, this manual operation becomes too tiresome, especially when thousands upon thousands of bill folders have to be torn asunder, as is the case in big corporations such as banks; insurance, electric, gas, gasoline companies, etc.

The applicant's device serves to tear off the bill folders automatically by simply placing a number of bill folder sets upon the table 81 as shown in Fig. 1 and press a button (not shown) to start the electric motor 55 that operates the device.

A secondary press button (not shown as it is not a part of this invention) is then depressed. This button connects the solenoid 51 (see Fig. 3) to the electric current. The solenoid armature is stationary attached to the machine proper (above the motor 55) but the solenoid core is attached to the forked arm 49. When the solenoid 51 is energized, the forked arm 49 engages the slidably mounted clutch member 48 to the clutch member 50. The clutch member 50 is attached to the spiral gear 52 which is constantly rotating, being driven by the electric motor 55 and the worm 53.

The clutch members 48 are slidably attached to the shaft extensions 31*b* of the shaft 31 (see Fig. 5). When the clutch members 48 are engaged with the clutch members 50, the gear segments 47 in both of the drums 29 and 30 begin to rotate. The gear segment 47 which is located inside the drum 29 rotates in an anti-clockwise direction while the gear segment 47 which is located inside the drum 30, rotates in a clockwise direction.

The gear segments 47 are in mesh with the spur gears 45 and 46 which are attached to the shafts 37 and 38 respectively. The gripping fingers 44 are also attached to the shafts 37 and 38. When the gear segments 47 are rotated, the gripping fingers 44 are moved downwardly and engage the margins of the bill sheets which have been placed upon the table 81 beforehand.

The movement of the gripping fingers 44 is limited by the limiting bars 45a and the thickness of the bill sheet folder sets. When this limit has been reached, the fingers 44 remain stationary but the drums 29 and 30 begin to rotate.

The margins of the bill sheets are clamped between the bars 45a and the fingers 44. The rotation of the drums 29 and 30 will raise the bill folder sheets off the table 81 and at the same time they will be shingled, (see Fig. 2). This action of shingling is made possible due to the inner curvature of the table 81. In this position each sheet is torn asunder separately. This action makes possible the operation of this device.

It can be seen that the bill sheets are not torn asunder all at once but each one separately yet at the same time.

The drums 29 and 30 are kept stationary by the sliding bearings 63. The upper portion of the bearings 63 is under the influence of the spring 70. When the fingers 44 are moved to their limit, then the resistance of the split bearing 63 is overcome and the drums 29 and 30 begin to rotate.

After the drums 29 and 30 will turn one half revolution (180 degrees) the switch which connects the solenoid to the current is automatically or manually opened and the rotation of the drums 29 and 30 is discontinued. The shafts 31 being under the influence of the spiral springs 59 are rotated in the opposite direction (back) to their original position. The segments 47 are also returned to their original starting position. As the gear segments 47 are in mesh with the gears 45 and 46 the return of the gear segments 47 will rotate the gears 45 and 46 and open the gripping fingers 44 to release the bill sheets on one side of the device and the carbon papers at the other side of the device.

While the arrrangement herein illustrated and described is confined to certain structural details, I do not wish to limit myself to such details, but desire to cover all forms and arrangements which come within the scope of my invention, being only limited by the scope of the appending claims.

What I claim is:

1. In a machine of the class described including rotatively operated drums, a set of gripping fingers mounted upon said drums, a gear segment mounted within each of said drums, gears attached to said fingers and being in mesh with said gear segments, the rotation of said gear segments transmitting a gripping motion upon the gripping fingers aforesaid.

2. In a machine of the class described including a pair of drums and a set of gripping fingers mounted upon each of said drums, said drums loosely mounted upon shafts, a gear segment within said drums and secured upon said shafts, a clutch member slidably attached to said shafts, said gripping fingers mounted upon secondary shafts and having a gear in mesh with said gear segment, sliding means for operating said clutch member and means for operating the gear segment aforesaid.

3. In a machine of the class described including a pair of drums mounted upon shafts, said shafts mounted within slidably movable bearings, said bearings located on either side of said drums, threaded shafts attached to said movable bearings, and means included for sliding simultaneously both bearings on either side of said drums.

4. In a machine of the class described including a pair of drum segments mounted upon shafts and operated in a hinging motion away from each other, gripping fingers attached to said drum segments, operating cams attached to said shafts; link means having a roller in mesh with said cams, said link means operating said fingers; and means for operating said cams and gripping fingers respectively.

5. In a machine of the class described having a pair of inverted drum segments mounted upon shafts and operated in a hinging motion away from each other, gripping fingers attached to secondary shafts mounted upon the periphery of said drum segments, link arm means included for operating said gripping fingers and cam means for operating the link arm means aforesaid.

6. In a machine of the class described including a set of gripping fingers attached upon shafts mounted to a pair of sliding members, and elongated bar, rocking arm means attached to said shaft and having a roller in contact with said bar, cam means for raising said bar, and gear means for operating said sliding member; the raising of said bar transmitting a gripping motion to said fingers in advance time relative to the operation of the sliding members aforesaid.

7. In a machine of the class described including a set of gripping fingers attached upon shafts and mounted upon slidably operated members, a cam operating a roller and attached to a rocking arm, said rocking arm operating an elongated bar in an upward direction, secondary rocking arm attached to each of said shafts and contacting said bar and gear means for sliding said members, said cam rotated in advance time relative in respect with the moving of the sliding members aforesaid.

8. In a machine of the class described for separating tear off bill folders including a pair of rotatively operated drums, a set of gripping fingers fitted over shafts mounted upon said drums, spur gears attached to said shafts, a double gear segment located within said drums, said segment attached upon an operative shaft, said drum loosely attached to said shaft; means for operating said operative shaft, the operation of said shaft transmitting a rocking motion to said segment, and said gripping fingers respectively, said gear segment rotating said drums when said gripping operation has been completed, and spring means for resetting said gear segment to its original nonoperative condition after the tear off operation upon said bill folders has been completed.

9. In a machine for separating tear off bill folders including a pair of rotatively operated drums, a set of gripping fingers fitted over shafts and mounted within said drums, spur gears attached to said shafts and contacting a gear segment also included within said drums, said segment attached upon an operative shaft, said drums being loosely rotated upon said shaft, a pulley attached to said drums and fitted within a split bearing, spring pressure applied upon said spring bearing for restraining said drums from

free rotation, said operative shaft transmitting a rocking motion upon said gear segment and gripping motion upon said gripping fingers respectively, and a rotative motion upon said drums when said gripping motion upon said gripping fingers has been completed.

10. In a device for separating tear off bill folders including a pair of drums, said drums positioned opposite to each other, a set of gripping fingers fitted over shafts and mounted within said drums, spur gears attached to said shafts and in mesh with a gear segment also included within said drums, said gripping fingers arranged to facilitate a gripping and holding action upon the ends of said bill folders when said gear segment respectively gripping fingers are operated, and means for rotating said drums away from each other.

11. In a device for tearing off bill folders of the class described including a pair of drums, a set of gripping fingers fitted over shafts and attached to said drums, spur gears attached to said shafts and in mesh with a gear segment included within said drums and attached upon an operative shaft, said drums loosely held upon said operative shaft, said shaft rotated within a pair of slidably mounted bearings located on either side of said drums, clutch means included for connecting said operative shaft to a driving shaft, and spring means for restraining and returning said operative shaft to non-operative position after the tear off operation has been completed.

12. In a device of the class described including a pair of drums located in a position opposite to each other, and gripping fingers mounted upon the periphery of said drums for contacting the ends of tear off bill folders, said drums mounted upon shafts rotated within a pair of sliding bearings on either side of each drum, a pair of threaded shafts being threaded into extensions of said sliding bearing on either side of said drums, the operation of said threaded shafts moving said drums toward each other for the purpose of facilitating the proper gripping effect upon the tear off bill folders aforesaid.

13. The same as set forth in claim 12, sprocket wheels attached to either one of said threaded shafts and driven by a chain, for the purpose of operating simultaneously both threaded shafts for moving said drums toward each other as set forth.

14. In a device of the class described including a pair of drums, a pair of frames, shafts secured to said frames, said drums loosely rotated upon said shafts, slidably mounted bearings also included in said machine and located on either side of said drums, motor means for operating said drums and manually operated means for moving said drums toward each other.

15. In a device of the class described including a pair of rotatively mounted drums, gripping fingers attached to shafts and operated within said drums, a gear segment also included in said drums, said gear segment being attached to a shaft fitted in a pair of slidably adjustable bearings, said bearings located on either side of said drums, means included for operating said shaft and means for adjusting the position of the bearings aforesaid.

16. In a machine for tearing off bill folder sheets from carbon sheets including a pair of rotatively mounted drums, a set of gripping fingers mounted upon said drums for gripping said sheets at their margins, said sheets being shingled when said drums are operated in a motion away from each other, and means for operating the drums aforesaid.

17. In a machine of the class described including rotatively operated drums, a set of gripping fingers mounted upon said drums, means for supporting a set of bill folder sheets within said machine, means for operating said fingers to facilitate the gripping of said sheets at their margins, and means for rotating said drums; said sheets being shingled when said drums are operated in a motion away from each other for the purpose of tearing off said bill folders as set forth.

18. In a machine for tearing off bill folder sheets from carbon sheets including a pair of drums mounted upon parallel shafts, a set of gripping fingers for gripping said bill folder sheets and said carbon sheets at their margins, said gripping fingers mounted upon said drums, means for supporting said bill folders within said machine, said bill folder sheets and carbons being shingled and torn apart when said drums are operated in a motion away from each other.

19. In a machine of the class described including a set of automatically adjustable gripping fingers, said fingers being attached upon shafts, said shafts mounted upon a pair of sliding members, means included for operating said gripping fingers and means for moving said sliding members away from each other, and a handle included for operating said fingers operating means in timed relation with the moving means aforesaid.

20. In a machine of the class described including a pair of hingeably mounted drum segments, a set of adjustable gripping fingers mounted upon shafts, said shafts attached to said drum segments; means included for automatically operating said adjustable gripping fingers and means for hinging said segments, said means for operating said gripping fingers being operated in timed relation with the hinging means aforesaid.

21. In a machine for tearing off bill folders including a pair of rotatively mounted drums, a set of gripping fingers for gripping said bill folders at the margins thereof, means for operating said gripping fingers and means for adjusting the gripping capacity of said fingers.

22. In a machine of the class described including a pair of drums, gripping fingers located upon the periphery of said drums and attached to a shaft, means for operating said gripping fingers for gripping a set of bill folder sheets at the margins thereof and means for adjusting the gripping capacity of said fingers; spur gears also included and in mesh with a gear segment included within said drums, and means for operating said gear segment and gripping fingers respectively.

23. In a device of the class described for tearing off bill folders, a pair of drums included and attached upon shafts, gripping fingers to contact both ends of said bill folders at the margins thereof, and means for adjusting the gripping capacity of said fingers; and adjustable table means for supporting said bill folders within said machine as set forth.

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