April 24, 1934. E. C. HARTLEY 1,955,806

BILL PRINTING MACHINE

Filed Nov. 1, 1929 6 Sheets-Sheet 1

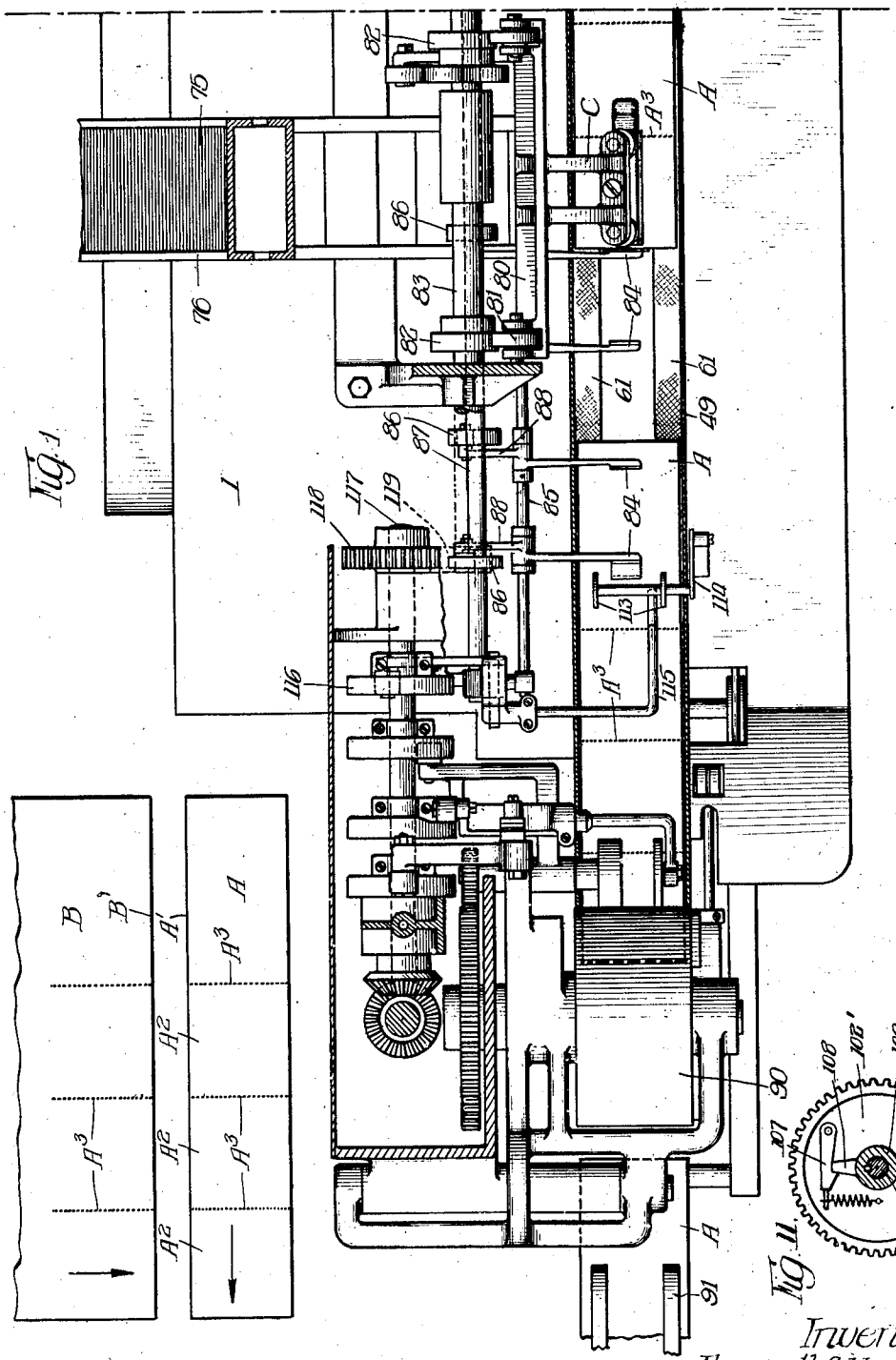


Fig. 1.

Fig. 10.

Fig. 11.

Inventor:
Emmett C. Hartley,
By Wm. O. Belt atty.

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BILL PRINTING MACHINE

Filed Nov. 1, 1929 6 Sheets-Sheet 2

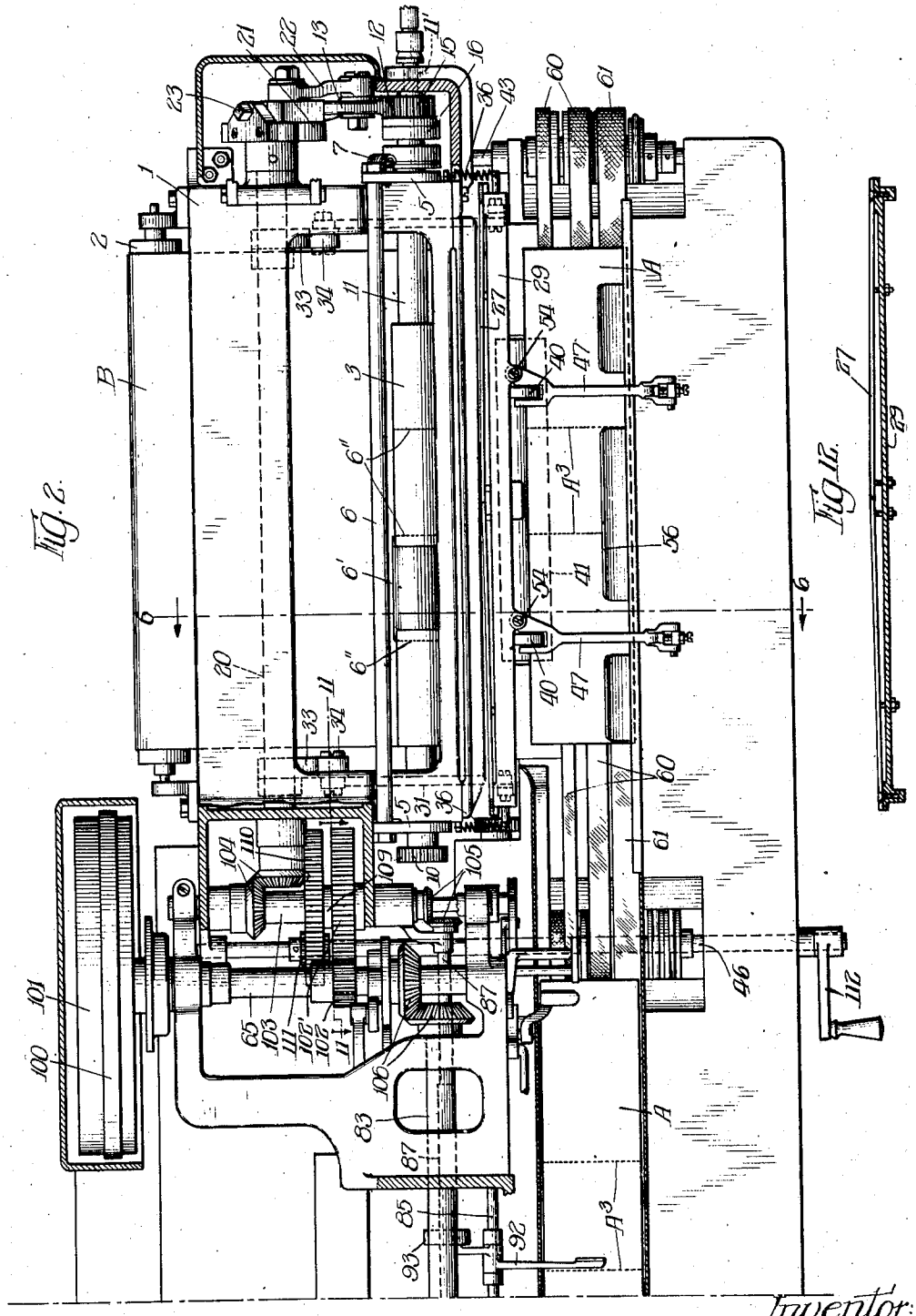


Fig. 2.

Fig. 12.

Inventor:
Emmett C. Hartley
By Wm. O. Bell Atty.

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BILL PRINTING MACHINE

Filed Nov. 1, 1929 6 Sheets-Sheet 3

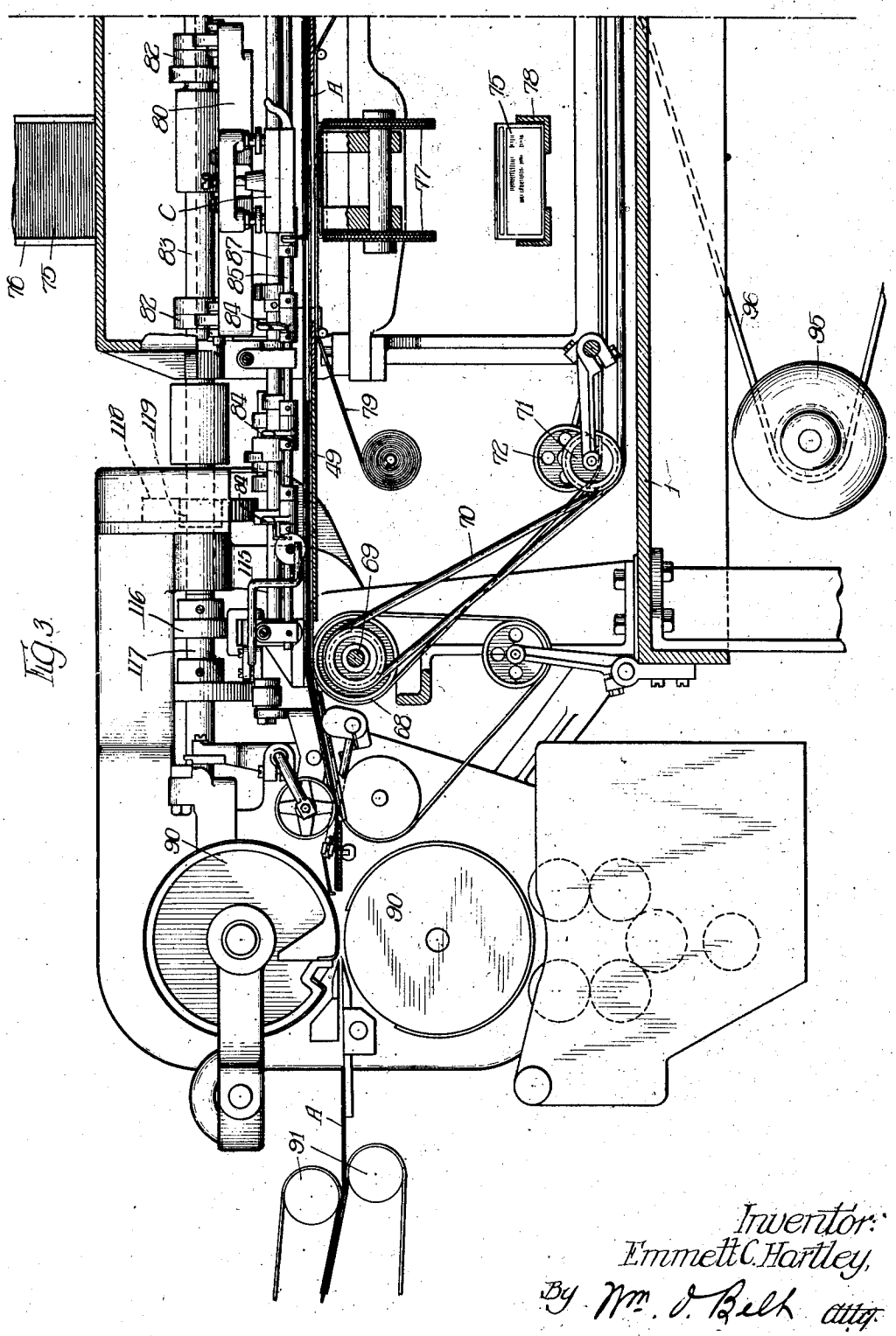


Fig. 3.

Inventor:
Emmett C. Hartley,
By Wm. D. Belk Attg.

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BILL PRINTING MACHINE

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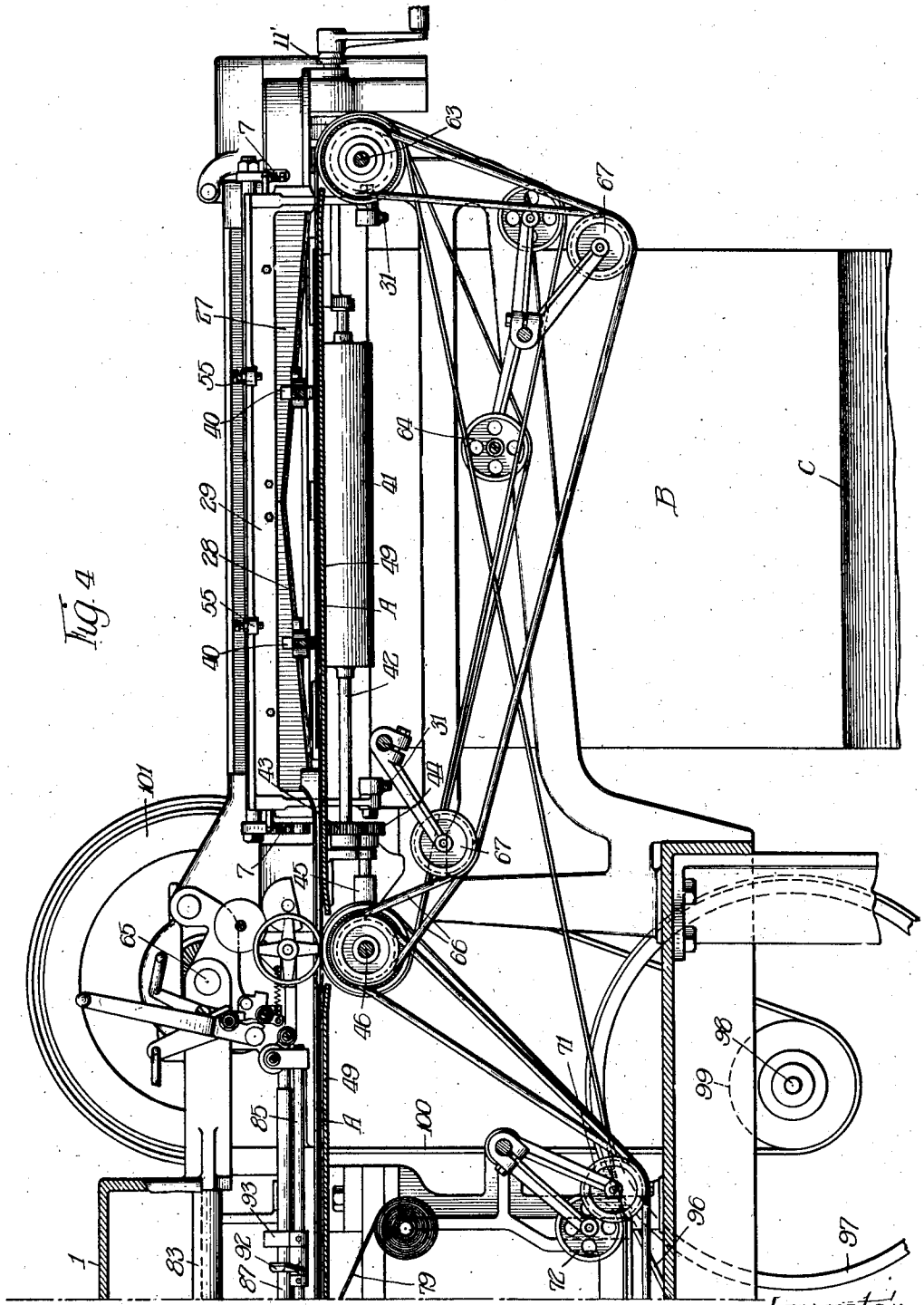


Fig. 4

Inventor:
Emmett C. Hartley,
By Wm. O. Belt Atty

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BILL PRINTING MACHINE

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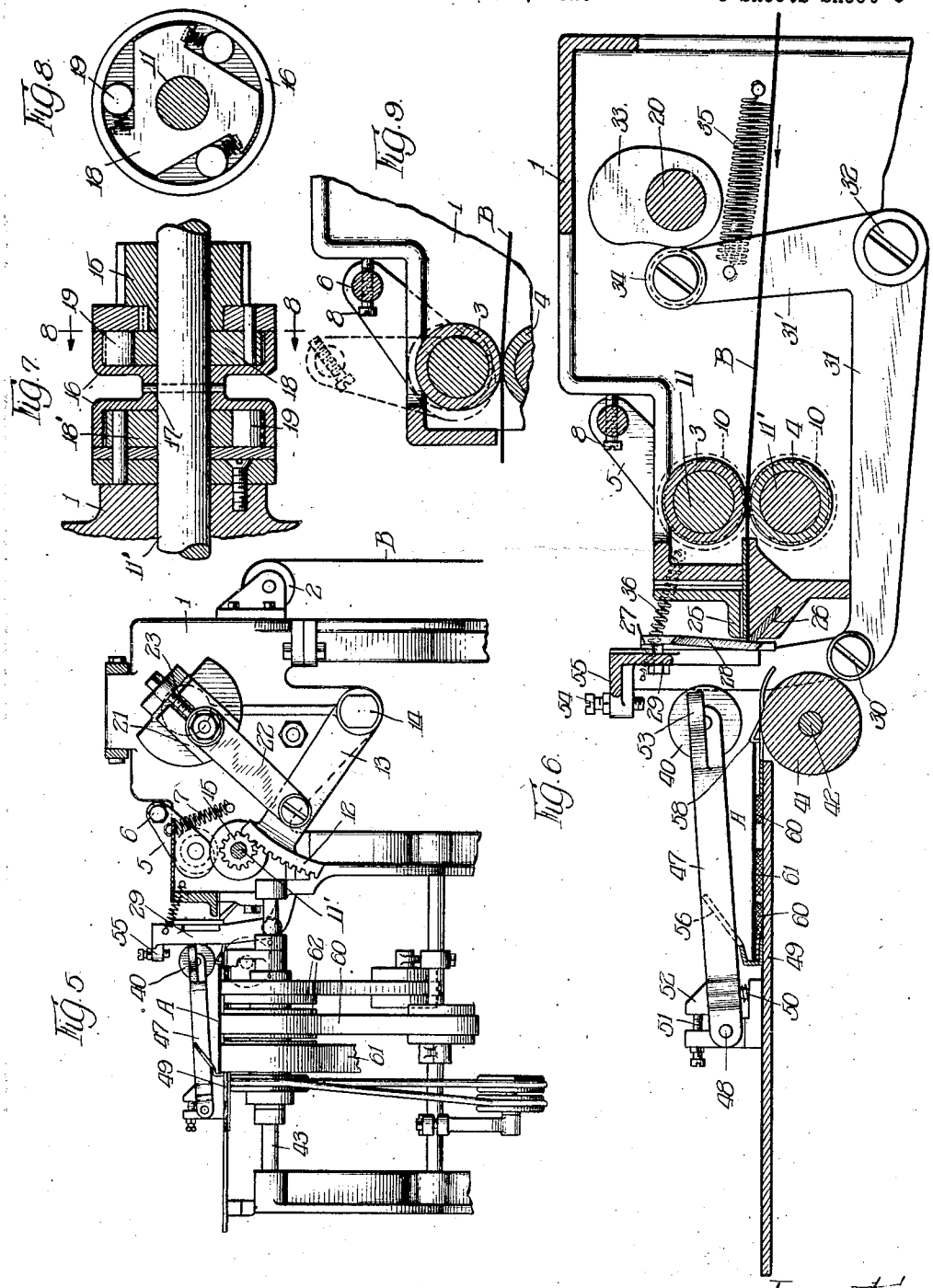


Fig. 8.

Fig. 9.

Fig. 7.

Fig. 5.

Fig. 6.

Inventor:
Emmett C. Hartley,
By Mr. O. Belk - atty.

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BILL PRINTING MACHINE

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Fig. 13.

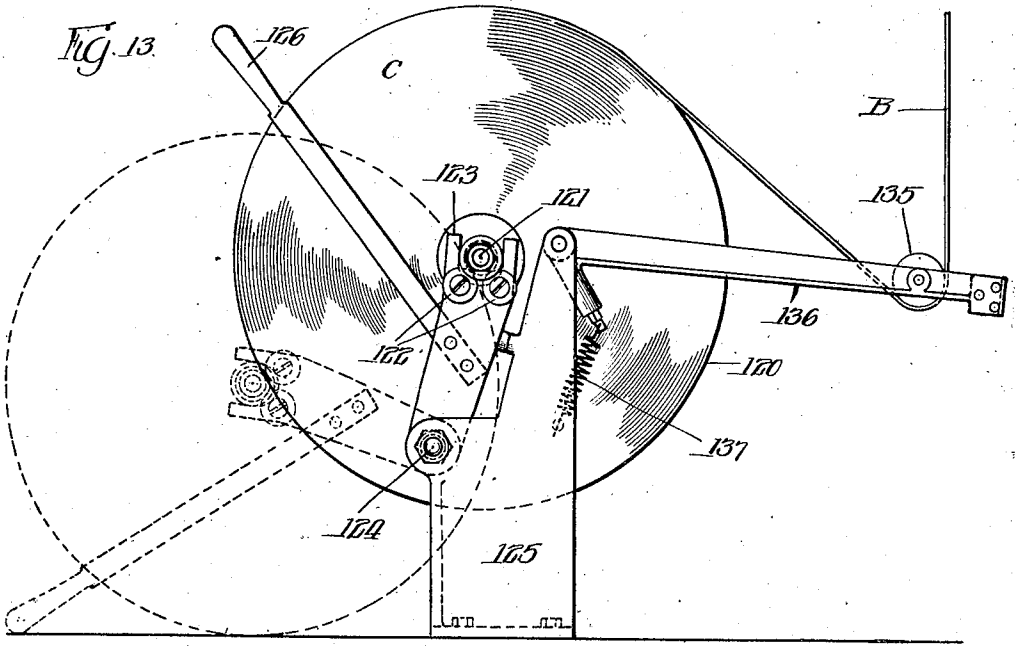
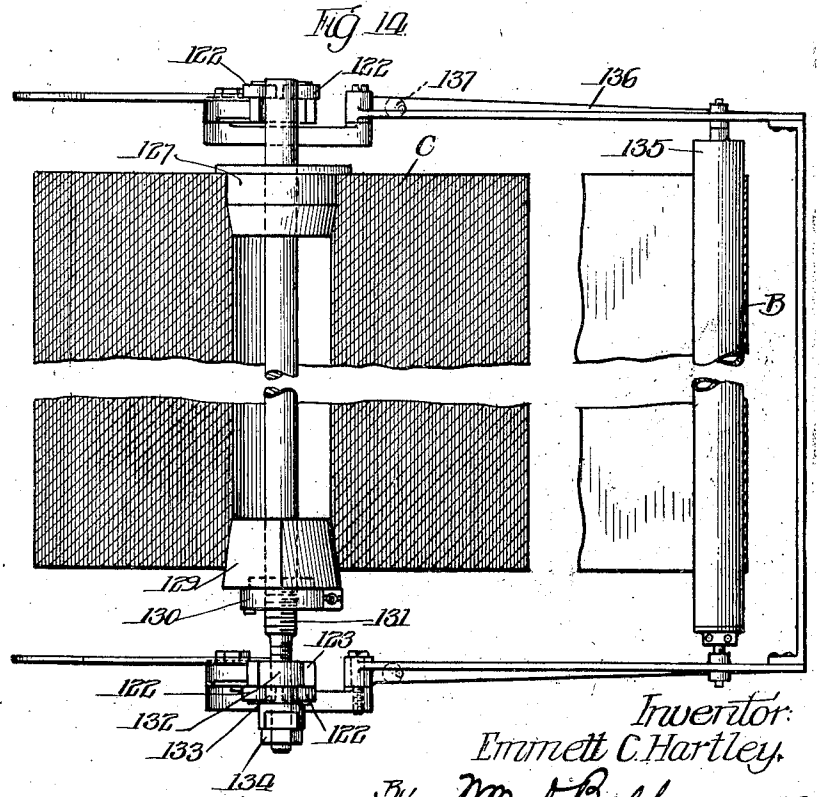


Fig. 14.



Inventor:
Emmett C. Hartley.
By Wm. V. Bell atty.

Patented Apr. 24, 1934 1,955,806

UNITED STATES PATENT OFFICE

1,955,806

BILL PRINTING MACHINE

Emmett C. Hartley, Chicago, Ill., assignor to Addressograph Company, Wilmington, Del., a corporation of Delaware

Application November 1, 1929, Serial No. 404,123

28 Claims. (Cl. 101—227)

This invention relates to machines for printing and addressing bills, statements, notices and the like of the kind used by public service, insurance and other companies and which are long and narrow and comprise a body portion and one or more stubs adapted to be separated from each other and from the body portion on scored lines.

One of the objects of the invention is to provide a novel machine of the character which will cut the sheets to be printed one at a time from a continuous web, print the address on the sheet as many times as may be required, and then print the standard form matter in proper position on the sheet and in proper relation to the address impressions thereon.

Another object of the invention is to cut the sheets one at a time from a continuous web, the width of the web forming the length of the sheet, and to carry the sheet lengthwise on a line at right angles to the line of movement of the web to printing position.

A further object is to score a continuous web at its end portion on lines parallel to its side edges and to cut a predetermined length from the end of the web to form an oblong sheet whose length is equal to the width of the web, the score lines dividing the sheet transversely into sections, and to carry said sheet lengthwise and in a direction at right angles to the feed of the web to an intermittently operating address printing mechanism for printing each section.

Further objects are to provide a machine of simple and substantial construction which will operate automatically to perform the various operations required for cutting, addressing and printing the sheet; to provide a novel feed for the web to hold it flat and free from wrinkles or creases; to perforate the end portion of the web before it is severed; to provide improved cutting mechanism to produce a clean cut without wrinkling or tearing the web; to provide automatic means for advancing the web to cutting position and cutting a narrow end length therefrom and advancing the end length from the cutting mechanism in the general direction of movement of the web and then moving the sheet lengthwise and without interruption to address printing mechanism and intermittently halting the movement of the sheet for a plurality of printing operations and finally printing standard form matter on the sheet at one printing operation; to provide simple means for disconnecting mechanism of the machine to enable the parts to be adjusted with the web and sheets in place to begin the operation of the machine, and for other purposes; to provide novel means for receiving and supporting and holding the roll, for adjusting the roll endwise and for maintaining the web at proper tension.

Other objects will appear hereinafter.

Referring to the accompanying drawings,

Figs. 1 and 2, when placed end to end, constitute a top plan view of a machine embodying the invention.

Figs. 3 and 4, when placed end to end, constitute a view in front elevation of said machine.

Fig. 5 is a detail end elevation of the right end of Figs. 2 and 4 showing the web feeding, sheet cutting and carrier mechanisms.

Fig. 6 is an enlarged section on the line 6—6 of Fig. 2.

Fig. 7 is a detail section of the ratchet mechanism for operating the web feeding rolls.

Fig. 8 is a detail section on the line 8—8 of Fig. 7.

Fig. 9 is a detail section of the feed roller showing the separated position thereof.

Fig. 10 is a diagrammatic view showing a sheet severed from a wide web, and in position to start its movement longitudinally of itself and transversely to the line of movement of the web.

Fig. 11 is a detail sectional view on the line 11—11 of Fig. 2.

Fig. 12 is a detail sectional view showing the top of the upper knife.

Fig. 13 is an end elevation showing the roll supporting means.

Fig. 14 is a horizontal sectional view of the parts shown in Fig. 13.

In the machine shown in the drawings, the sheets A which form the bills are cut successively from the end of a continuous web of paper B, Fig. 2, withdrawn from a supply roll C, Fig. 4, which is supported at the right hand end of the machine as viewed in the drawings. The web B is comparatively wide, as indicated in Fig. 10, and the sheets A which are severed from the end of the web on the transverse line B′ are comparatively narrow. In fact, the width of the web forms the length of the sheet and the length cut from the web on the line B′ forms the width of the sheet. The sheet comprises a body portion A′ and several stubs A^2 separated by score lines or perforations A^3. These score lines are transverse of the length of the individual sheets although they are formed on lines parallel with the movement of the web before the sheet is cut from the end thereof.

The web B extends upwardly and passes over an idler 2 at the rear of the machine frame 1 and

then extends horizontally forward between an upper feed roller 3 and a lower feed roller 4. The upper feed roller 3 is journaled in the arms 5 which are eccentrically mounted in the frame of the machine so that the upper feed roller can be swung upwardly from the lower feed roller to permit the web to be threaded between said rollers whenever necessary. The cross rod 6 which is connected to the upper ends of the arms 5 forms a convenient handle for swinging both arms together. Springs 7 are connected between the arms 5 and the frame for yieldingly maintaining the upper feed roller in feeding relation to the lower feed roller. The cross rod 6 has adjustable screws 8 adapted to engage the frame, Figs. 6 and 9, to regulate the pressure of the upper feed roller on the lower one. In order to feed a wide web of this character accurately it is important to maintain a uniform pressure throughout the width of the rollers. For this purpose I provide a short portion of the upper roller, Fig. 2, with a slightly enlarged diameter 6' so that this enlarged diameter is the only portion of the upper roller which grips the web between itself and the lower feed roller.

The score lines A^3 are formed by a series of perforating points or pins 6'', Fig. 2, around the periphery of the roller 3 which perforate the web on lines parallel with its line of feed and with the side edges of the web as the web passes between the feed rollers.

At the left ends of the feed roller shafts 11, 11', Fig. 2, intermeshing gears 10 are provided so that both feed rollers rotate exactly in unison. At the right end of these shafts, Fig. 2, the lower feed roller shaft 11' is driven by a toothed segment 12, Fig. 5, on an arm 13 which is pivoted at 14 on the frame. The segment 12 drives a pinion 15 rotatable on the shaft 11'. The shaft 11' has a housing 16 of a double roller clutch fastened thereto by a pin 17, Fig. 7, and the pinion 15 is connected to the inner member 18 of one of the clutches. A series of rollers 19 are positioned in notches in the member 18 in position to wedge between the member 18 and the wall of the housing, so that when the pinion 15 is driven in one direction the clutch rollers grip the housing 16 and rotate the feed roller shaft. When rotated in the reverse direction, however, the rollers release the housing and permit the free rotation of the pinion 15. The other roller clutch is a duplicate of the one just described except that the inner member 18' thereof is fastened to the frame of the machine. This acts in the reverse direction to the first mentioned clutch and prevents a reverse rotation of the feed roller. Roller clutches of this type are well known and require no further description. The arm 13 is rocked in its pivot 14 by means of a constantly rotating shaft 20 journaled in bearings in the frame and carrying an adjustable crank 21 at one end to which a link 22 is pivotally connected. The other end of the link 22 is pivotally connected to the rocker arm 13. The pivotal connection of the link with the crank 21 is adjustable by means of a screw 23 for the purpose of accurately regulating the stroke of the arm 13 so that it will advance exactly the proper length of web through the cutting position.

The web passes through a slot in a ledge 25, Fig. 6, on the frame and this ledge supports a stationary knife 26. A vertically reciprocable knife 27 slightly inclined from its ends to its center cooperates with the lower knife 26 to shear the web on the line B' transverse of its line of movement. The cutting edge 28, Fig. 4, of the upper knife is tapered upwardly from both ends to a central point so that the shearing action progresses from the edges of the web to the center thereof. This knife is mounted in a supporting frame 29, the lower ends of which are pivotally connected at 30 to the arm 31 of a bellcrank lever on each side of the frame. These bellcrank levers are rocked about their pivots 32 on the frame by means of cams 33 on the shaft 20, the arms 31' of the bellcranks having rollers 34 at their ends which ride on the cams 33. The rollers are maintained in contact with the cams by means of the springs 35 which are anchored to the frame and to the arms 31'. The springs also serve to return the knife to its upper position after each cutting operation. The knives are maintained in cutting relation by springs 36 which are connected to the machine frame and to the knife frame 29, and which yieldingly urge the upper knife against the lower one.

As the web is advanced the proper length by the feed rollers it is positioned between normally separated upper and lower discharge rollers 40 and 41 positioned on the opposite side of the cutting knives. The lower discharge roller 41 is mounted on a shaft 42 which is journaled in bearings in the frame, and this roller is positively driven by the gear 43, Fig. 4, which meshes with and is driven by a corresponding gear 44 on the shaft 45, the shaft being in turn driven by the shaft 46. The upper rollers 40 are mounted in the ends of arms 47 which pivot at 48 on suitable mountings on the opposite side of the sheet guideway 49. Springs 50 normally urge these arms upwardly to separate the feed rollers 40 from the lower feed roller 41, and adjustable screws 51 engage lugs 52 on the arms to provide upper limit stops for said arms. The ends of the arms have lugs 53 which are engaged by adjustable screws 54 on overhanging lugs 55 of the knife frame 29, hence as the knife reaches its lower position and completes the cutting operation the screws 54 engage lugs 53 and swing the discharge rollers 40 downwardly into gripping relation with the discharge roller 41. These rollers grip the severed sheet and quickly remove it from the cutting mechanism and discharge it in the line of movement of the web onto the guideway 49. The outer edge 56 of the guideway is inclined angularly to direct the sheet into place in the guideway. The inner edge 58 of the guideway engages the edge of the sheet and prevents it from shifting laterally in the guideway. The scored and severed sheet is now in position to be carried to the address printing mechanism in a direction lengthwise of itself but in a line at right angles to the line of movement of the web from which it is severed.

The guideway 49 is positioned at the front of the machine and extends in said right angled line entirely through the address printing mechanism and to the mechanism at the opposite end of the frame for printing standard matter on all sheets. The sheets are carried by conveyor belts 60 and 61 along the guideway. The belts 60 travel around the pulleys 62 which are mounted on shafts 46 and 63 journaled in the frame beneath the guideway. The two belts 60 travel around belt tightening idlers 64 mounted on arms which are pivoted in the frame. The shaft 46 is driven from the main shaft 65 of the machine through the medium of suitable gearing hereafter described and an endless drive belt 66 extends around the pulleys on the shaft 46 and

drives the shaft 63. The drive belt 66 also extends around idler tightener pulleys 67 mounted in the frame. The belt 61 extends the entire length of the guideway and around the pulleys 68 on a shaft 69 at the opposite end of the guideway. This shaft 69, Fig. 3, is driven by a driving belt 70 which extends to and is driven by a pulley on the drive shaft 46. Idlers 72 are also provided for the conveyor belt 61. As the sheets are carried along the guideway they pass through the printing position of the address printing mechanism and are stopped at intervals to present different portions in printing position.

The address printing mechanism may be of any suitable type for the purpose. That which is shown in the drawings, Figs. 1 and 3, is of a type which is well known in the art and comprises in general a reciprocating stamper arm C' adapted to be intermittently operated to impress the sheet upon individual addressing devices 75 which are carried in a stack in a magazine 76 at the rear side of the machine. These printing devices are successively fed forward to printing position beneath the stamper by the feed conveyor 77. After leaving the printing position the printing devices are discharged into a tray 78. An inking ribbon 79 is shown as extending beneath the stamper arm and interposed between the sheet and the printing devices. The stamper arm C' is carried by a yoke 80 which is pivotally mounted in the frame and which has rollers 81 operated by the cams 82. The cams 82 are carried on a main cam shaft 83 extending lengthwise of the machine parallel to the guideway.

In order to repeat the same address on the several stubs and body of the sheet, the sheet is stopped at intervals in its movement to present these stub and body portions successively in printing position. For this purpose a plurality of stop fingers 84 are provided which project over the guideway and swing vertically into and out of the path of the moving sheet. The stop fingers are pivotally mounted on the rod 85 extending parallel to the guideway, and they are operated by cams 86 mounted on the cam shaft 87 extending parallel to the pivot rod 85. The stop fingers have rearwardly extending arms 88 carrying rollers which engage the cams 86. The stop fingers are timed to operate successively, the first being lowered to stop the sheet in position with the end stub beneath the stamper arm for the first printing operation. After the first printing operation the first stop is raised and the sheet is fed onward against the second stop for the second printing operation and this is repeated until all the printing operations have been completed at which time the sheet will be stopped against the last stop of the series.

Gripping rollers 113 are carried by an arm 114 pivotally mounted on the main frame, Fig. 1, and these rollers are arranged in advance of the last stop to engage the sheet when it is released from the last stop and press it upon the feed belts 61 to insure quick feed to the printing cylinders 90. Just before the sheet reaches the printing cylinders the gripping rollers are raised by the crank arm 115, Fig. 1, which is operated intermittently by the cam 116 on the shaft 117 which carries a gear 118 driven by a pinion 119 on the shaft 83. The printing cylinders operate to print fixed data, such as the forms for a bill and stubs, on the face of the sheet in proper position thereon and in proper relation to the previously printed addresses. This printing mechanism forms the subject matter of the application of Curtis George Kranz, Serial No. 404,092, filed Nov. 1, 1929. The printed sheet is carried away from the machine by a conveyor 91.

The sheets are timed in entering address printing position by stop finger 92, Fig. 2, which stops each sheet and delays the movement thereof until the preceding sheet has been addressed and moved on from final address printing position. This stop finger 92 is also pivotally mounted on the rod 85 and is operated by a cam 93 on the cam shaft 87.

The entire machine may be driven in any suitable manner as for instance by a motor 95, Fig. 3, positioned in the lower part of the frame. This motor, through the medium of a belt 96, drives the pulley 97, Fig. 4, mounted on a shaft 98. A smaller pulley 99, through the medium of the belt 100, drives a flywheel 101 which is mounted on the main shaft 65, Fig. 2. The main shaft 65, through gears 102 and 102' drives the counter shaft 103. Bevel gears 104 are provided on the shaft 103 and on the shaft 20 of the cutting mechanism for driving said shaft 20. The counter shaft 103 also drives the cam shaft 87 through the bevel gears 105. The main shaft 65 drives stamper arm cam shaft 83 through the bevel gears 106. The gear 102' is loose on counter shaft 103 and is connected to said shaft by a spring controlled dog 107, Fig. 11, which is pivoted on the gear 102' to engage an arm 108 on the hub 109 of a gear 110, the hub being keyed to the counter shaft. Thus the gear 102 on the main shaft drives the gear 102' and the dog on the latter gear drives the gear 110 which is keyed to the counter shaft. This feature of construction is important because it permits the counter shaft and its connected parts to be operated by hand and independently of the drive shaft whenever this is desirable. The gear 110 is in constant mesh with pinion 111 on shaft 46 and the crank handle 112 is detached from said shaft. When it is desired to operate the counter shaft manually the crank handle 112 is applied to shaft 46 for this purpose and thereupon motion is communicated from the shaft 46 through the pinion 111 to the gear 110 which is keyed to the counter shaft. In this operation the gear 102' remains stationary in mesh with the gear 102 on the drive shaft that the arm 108 rides past the dog 107 in each revolution of the counter shaft.

The roll 120 from which the web B is fed to the machine is mounted on an axle 121 which is supported on rollers 122 in the yokes 123 which are pivoted at 124 on the standards 125 suitably fastened in upright position. In practice the yokes are swung to down position as shown in broken lines in Fig. 13. The yokes are provided with handle levers 126. A plug 127 is rigid on the axle and is adapted to enter the opening 128 in the roll. Another plug 129 is loosely mounted on the axle to enter the other end of the opening in the roll and this last plug is adjusted on the axle to clamp the roll between the two plugs. This adjustment is effected by operating the collar 130 which threadedly engages the axle at 131. In practice the yokes are drawn down to position shown in broken lines, Fig. 13, and the roll with the axle therein is rolled into place with the axle engaging the yokes. The handle levers support the yokes at this time. Then the handle levers are used to lift the roll into operative position, Fig. 13, the yokes being swung past center and resting against the standards 125. To adjust the roll and web to proper position laterally with respect to the machine, the threaded end 131 of

the axle is threadedly supported in a nut 132 which acts as a bearing in one of the yokes 123. This nut has an annular groove 133 to receive the rollers 122 which are mounted on the side of the ycke, Fig. 14. A tool may be applied to the nut to turn the nut and in that way adjust the axle and the roll lengthwise. A lock nut 134 is tightened after the roll has been adjusted to lock the nut 132 to the axle during the unwinding of the roll. A diabolo 135 is mounted in a yoke frame 136 which is pivoted on the standards 125 and is controlled by springs 137 to maintain the web at tension.

I am aware that changes may be made in the ccnstruction, operation and arrangement of parts without departing from the spirit of the invention and I hereby reserve the right to make such changes as fairly fall within the scope of the appended claims:

I claim:

1. In a machine of the class described, the combination of means for advancing a continuous web intermittently to a cutting position, a printing mechanism, a conveying mechanism for carrying sheets severed from said web to the printing mechanism on a line at right angles to the advance movement of the web, and means severing the web into sheets and depositing the severed sheets on said conveying mechanism.

2. In a machine of the class described, the combination of means for advancing a continuous web to cutting position, a printing mechanism, a conveyor means for carrying sheets severed from said web to said printing mechanism on a line at an angle to the movement of the web, means severing the web into sheets and depositing the sheets on the conveyor means, and means for operating said cutting mechanism in timed relation to the advance of said web whereby sheets of predetermined width are severed from said web.

3. In a machine of the class described, the combination of means for intermittently advancing a continuous web in the direction of its extent to a cutting position, a conveyor for sheets severed from said web and extending at an angle to the extent of said web, cutting mechanism for severing end lengths of said web on a line transversely of the web to form individual sheets, and means independent of the conveyor for moving the severed sheets in the line of movement of the web to clear the sheets from the cutting mechanism and to position them on the conveyor.

4. In a machine of the class described, the combinatien of means for advancing a continuous web in a direction lengthwise of itself, means for intermittently severing lengths from the end of said web to form individual sheets, printing mechanism offset from the line of movement of the web, means for conveying the sheets to the printing mechanism laterally at right angles to the line of movement of the web, and means for moving the sheets in the line of movement of the web to position the sheets on the conveying means.

5. In a machine of the class described, the combination of means for advancing a continuous web in a direction lengthwise of itself, means for intermittently severing lengths from the end of said web to form oblong sheets whose length is equal to the width of the web, printing mechanism offset from the line of movement of the web, means for operating the severing means in time relation to the advance of the web whereby sheets of predetermined width will be severed therefrom, means for conveying the sheets to the printing mechanism at an angle to the line of movement of the web, and means moving the severed sheets in a line parallel with the line of movement of the web to position said sheets on the conveying means.

6. In a machine of the class described, the combination of means for advancing a continuous web in a direction lengthwise of itself, means for intermittently severing lengths from the end of said web to form oblong sheets whose length is equal to the width of the web, means for moving the sheets transversely thereof away from the cutting mechanism, printing mechanism offset from the line of movement of the web, and means for conveying the sheets to the printing mechanism at an angle to the line of movement of the web.

7. In a machine of the class described, the combination of means for advancing a continuous web in a direction lengthwise of itself, means for intermittently severing lengths from the end of said web to form individual sheets, printing mechanism offset from the line of movement of the web, means for conveying the sheets to the printing mechanism laterally at right angles to the line of movement of the web, and means for feeding the severed sheets to the conveying means in the direction of movement of the web.

8. In a machine of the class described, the combination of intermittently operating feed rolls for successively advancing a continuous web to cutting position, intermittently operating cutting means for severing lengths from the web to form individual sheets, feed rolls for carrying the sheets away from the cutting mechanism in the same direction as the line of movement of the web, and a conveyor operating in a direction transversely of the line of movement of the web for conveying the severed sheets laterally.

9. In a machine of the class described, the combination of intermittently operating feed rolls for successively advancing end lengths of a web to cutting position, intermittently operating cutting means for severing said end lengths from the web to form individual sheets, feed rolls for carrying the sheets away from the cutting mechanism in the same direction as the line of movement of the web, a conveyor operating in a direction transversely of the line of movement of the web for conveying the sheets laterally, and a printing mechanism offset laterally with respect to the line of movement of the web for intermittently printing said sheets as they are conveyed by said conveying means.

10. In a machine of the class described, the combination of intermittently operating feed rolls for successively advancing end lengths of a web to cutting position, means for scoring said end lengths of the web on lines parallel to the line of movement of the web, intermittently operating cutting means for severing said end lengths from the web to form individual sheets, feed rolls for carrying the sheets away from the cutting mechanism in the same direction as the line of movement of the web, and a conveyor operating in a direction transversely of the line of movement of the web for conveying the sheets laterally.

11. In a machine of the class described, the combination of intermittently operating feed rolls for successively advancing end lengths of a web to cutting position, scoring means on said web feed rolls for perforating the web on lines parallel to the line of movement of the web, intermit-

tently operating cutting means for severing said end lengths from the web to form individual sheets, feed rolls for carrying the sheets away from the cutting mechanism in the same direction as the line of movement of the web, and a conveyor operating in a direction transversely of the line of movement of the web for conveying the sheets laterally.

12. In a machine of the class described, the combination of a pair of web feed rolls, means for intermittently rotating said rolls to advance a continuous web to cutting position, cutting mechanism for severing end lengths from said web to form individual sheets, a pair of discharging rolls, means for bringing said discharging rolls into operation as each sheet is severed from the web for carrying the sheet from the cutting mechanism, and a conveyor moving at right angles to the line of movement of the web for receiving said sheets and conveying them laterally.

13. In a machine of the class described, the combination of a pair of web feeding rolls, means for intermittently rotating said rolls to advance a continuous web to cutting position, a reciprocating knife for severing end lengths from said web to form individual sheets, a pair of discharging rolls, means for bringing said discharging rolls into operation as each sheet is severed from the web to carry the sheet from the cutting mechanism, a conveyor moving at right angles to the line of movement of the web for receiving said sheet and convey it laterally, a printing mechanism having its printing position in the line of movement of the conveyor, and means for intermittently stopping the conveying movement of the sheet to present different portions thereof in printing position.

14. In a machine of the class described, the combination of a pair of web feed rolls, means for intermittently rotating said rolls to feed the web step by step to cutting position, cutting mechanism for severing end lengths from said web to form individual sheets, a pair of normally separated discharging rolls, means operable upon the completion of the cutting operation for bringing said discharging rolls into gripping relation to the sheet to carry it away from the cutting mechanism, and conveyor means moving past said discharging rolls and adapted to receive the individual sheets from said discharging rolls after said discharging rolls have moved said sheets away from said cutting mechanism.

15. In a machine of the class described, the combination of a pair of web feed rolls, means for intermittently rotating said rolls to feed the web step by step to cutting position, means associated with said web feed rolls for scoring the web on lines parallel with the movement thereof through said feed rolls, cutting mechanism for severing end lengths from said web to form individual sheets, a pair of normally separated discharging rolls, means operable upon the completion of the cutting operation for bringing said discharging rolls into gripping relation to the sheet to carry it away from the cutting mechanism, and feed tapes moving past said discharging rolls and adapted to receive the sheets moved away from said cutting mechanism by said discharging rolls whereby said sheets are moved away from said cutting mechanism on a line parallel to the severed edge thereof.

16. In a machine of the class described, the combination of cutting mechanism for intermittently severing end lengths from a continuous web to form individual sheets, a pair of rollers for receiving the sheets and carrying them from the cutting mechanism, means normally holding one of said rollers in spaced relation to the other roller, means operable upon the completion of the cutting operation for moving said spaced roller into operative relation to the other roller to grip the sheet and for moving the spaced roller out of operative relation with the other roller to release the sheet, and conveyor means for receiving the sheet when released by said rollers to thereby carry the sheet away from said cutting mechanism and rollers.

17. In a machine of the class described, the combination of cutting mechanism for intermittently severing end lengths from a continuous web to form individual sheets, a pair of rollers for receiving the sheets and carrying them from the cutting mechanism, means normally holding one of said rollers in spaced relation to the other roller, means operable upon the completion of the cutting operation for moving said spaced roller into operative relation to the other roller to grip the sheet, a guideway disposed at right angles to the line of movement of the web to receive the sheets from said rollers, and a conveyor operating in said guideway to carry the sheets along said guideway.

18. In a machine of the class described, the combination of an intermittently operating printing mechanism, a carrier for conveying a sheet endwise and successively through printing position, means for stopping the sheet at intervals to present different portions thereof in printing position, means for advancing a continuous web in a line at right angles to the line of movement of the carrier, means for intermittently severing end lengths from said web to form oblong sheets, and means for receiving the severed sheets from said severing means and for moving the sheets from the severing means and positioning said sheets on the carrier.

19. In a machine of the class described, the combination of means for advancing a continuous web in a direction lengthwise of itself, means for intermittently severing lengths from the end of said web to form oblong sheets whose length is equal to the width of the web, means for operating the severing means in timed relation to the advance of said web whereby sheets of predetermined width are severed from said web, means for moving the sheets transversely thereof away from the cutting mechanism, intermittently operating printing mechanism offset from the line of movement of the web, a continuously operating conveyor for receiving the sheets from said moving means and carrying them lengthwise to said printing mechanism, means for accurately positioning said sheets on said conveyor, and means for stopping the movement of the sheets for successive printing operations.

20. In a machine of the class described, the combination of means for advancing a continuous web in a direction lengthwise of itself, means for scoring an end length of the web on lines parallel with the side edges of the web, means for cutting said end length to form an oblong sheet divided into sections by transverse score lines, intermittently operating printing mechanism, means for receiving the sheet transversely and carrying it lengthwise to the printing mechanism, and means for stopping the sheet temporarily for a printing impression in each section.

21. In a machine of the class described, the combination of intermittent means for advancing a web to cutting position, intermittently operating

cutting means for severing a sheet from the web, feeding means for carrying the sheet to printing position, means for printing on the sheet in several operations, power devices for operating all of said means, and means to enable the manual operation of said advancing means, cutting means, and feeding means independently of the printing means.

22. In a printing machine, an intermittently operating printing mechanism, a continuously operating conveyor adapted to move sheets to be printed longitudinally past said printing mechanism, pivotally mounted stop fingers including portions at corresponding ends thereof for interrupting movement of said sheets without interrupting movement of said conveyor, and cam means engaging the other ends of said stop fingers for operating said stop fingers to interrupt movement of said sheets at predetermined times whereby impressions are made at longitudinally spaced positions on said sheets.

23. In a machine of the class described, the combination of means for advancing a continuous web in a direction lengthwise of itself, means for intermittently severing lengths from the end of said web to form individual sheets, an intermittently operating printing mechanism offset from the line of movement of the web, a conveyor means for receiving sheets severed from the web and for moving said sheets past said printing mechanism, stop fingers for interrupting movement of said sheets to dispose portions of said sheets in position to receive impressions from said printing mechanism, and cam means for operating said stop fingers at predetermined times whereby the impressions will be made at longitudinally spaced positions on said sheets.

24. In a printing machine, printing means, a continuously operated conveyor adapted to move sheets to be printed past said printing means, means for severing the sheets from a web, means for feeding the web to the severing means, means for operating the feeding means in but one direction, and means for driving said operating means and including a crank embodying an adjustable portion adapted to be adjusted to vary the amount of movement of said feeding means to determine the width of the sheets.

25. In a machine of the class described, the combination of means for advancing a continuous web intermittently to a cutting position, a printing mechanism, a conveying mechanism carrying the sheets severed from the web to the printing mechanism on a line at an angle to the advance movement of the web, means severing the web into sheets and depositing the severed sheets on the conveying mechanism, and means for intermittently stopping the conveying movement of the sheet to present different portions thereof in printing position.

26. In a machine of the class described, the combination of means for advancing a continuous web to cutting position, a printing mechanism, a continuously operating conveyor for carrying sheets severed from said web to said printing mechanism on a line at an angle to the movement of the web, means severing the sheets and depositing the sheets on the conveyor, means operating said cutting mechanism in timed relation to the advance of the web whereby sheets of predetermined width are severed from the web, and means for intermittently stopping the conveying movement of a sheet severed from the web and positioned on the conveyor to present different portions thereof in printing position without interrupting operation of the conveyor.

27. In a machine of the class described, the combination of intermittent means for advancing a web to cutting position, intermittently operating cutting means for severing a sheet from the web, feeding means for carrying the sheet to printing position, means for printing on the sheet in several operations, power devices for operating all of said means, means to enable the manual operation of said advancing means, cutting means, and feeding means independently of the printing means, and means including an adjustable crank for varying the amount of movement of the intermittent means for advancing a web to cutting position.

28. In a printing machine, printing means, a conveyor adapted to move sheets to be printed past the printing means, means for severing the sheets from a web, means for feeding the web to the severing means, operating means for the feeding means and including an adjustable crank adapted to vary the amount of movement of said feeding means to vary the width of the sheets, means adapted to be engaged to move said feeding means in one direction, and means adapted to be engaged to hold said feeding means against movement in the other direction.

EMMETT C. HARTLEY.