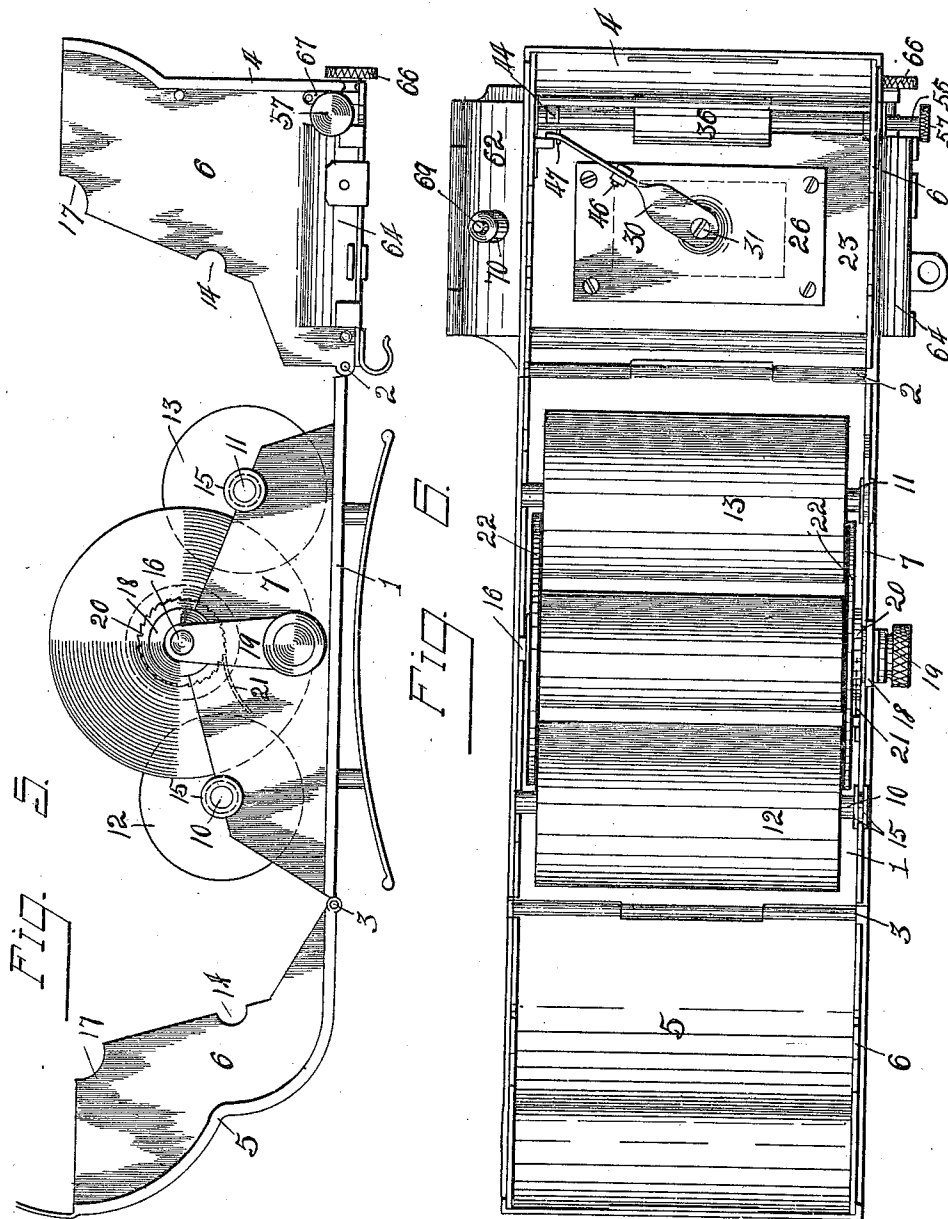


972,546.

S. C. LAUBER,
CARRYING REGISTER.
APPLICATION FILED MAY 20, 1910.

Patented Oct. 11, 1910.

3 SHEETS-SHEET 2.



WITNESSES:

G. H. Bills.
L. Gaskell.

INVENTOR.

Simon C. Lauber,
By Owen & Owen,
His attys.

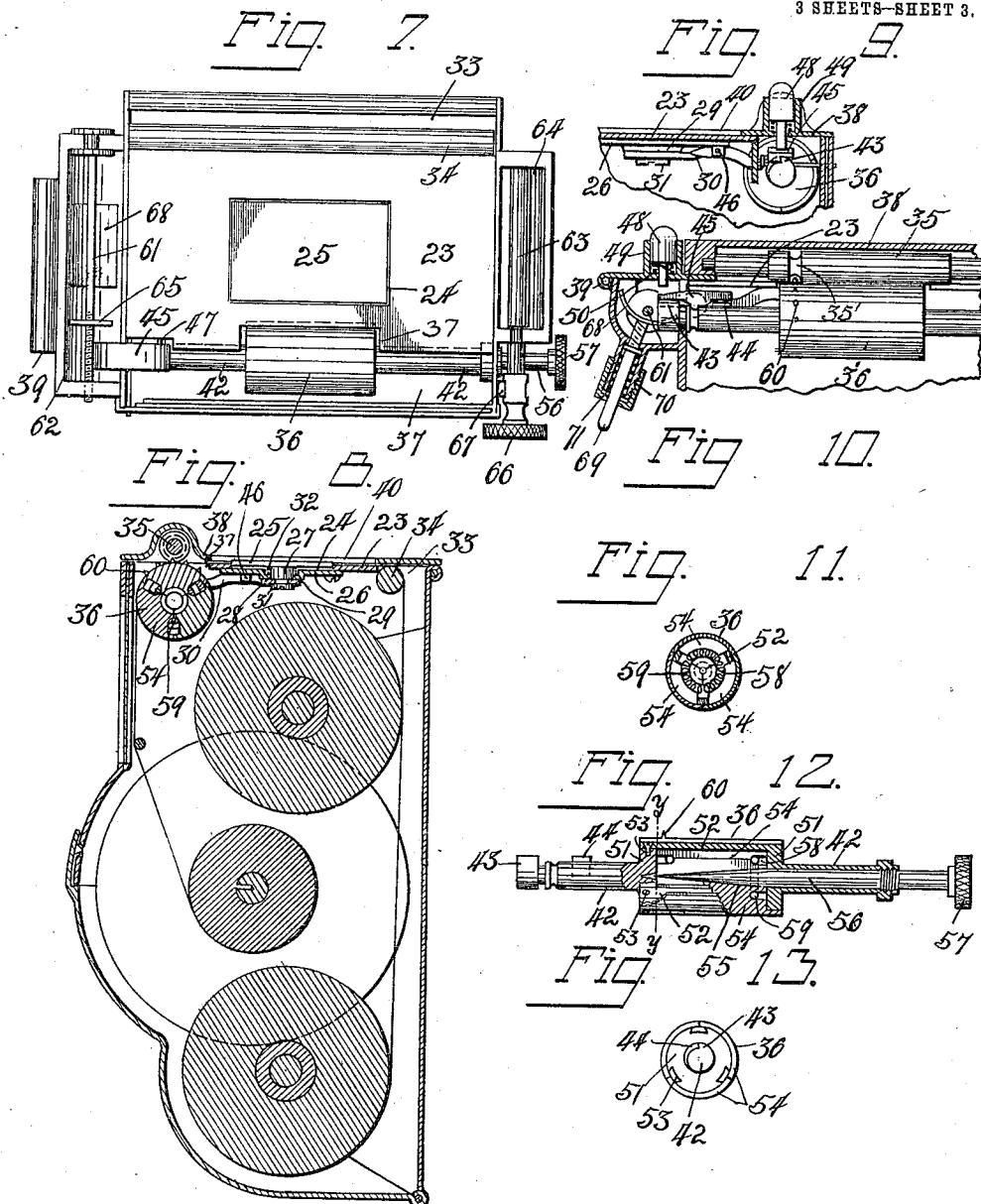
S. C. LAUBER.
CARRYING REGISTER.

APPLICATION FILED MAY 20, 1910.

972,546.

Patented Oct. 11, 1910.

3 SHEETS-SHEET 3.



WITNESSES:
G. H. Bills.
G. Gaskell.

INVENTOR.
Simon C. Lauber,
By Owen & Owen,
His attys.

UNITED STATES PATENT OFFICE.

SIMON C. LAUBER, OF TOLEDO, OHIO.

CARRYING-REGISTER.

972,546.

Specification of Letters Patent.

Patented Oct. 11, 1910.

Application filed May 20, 1910. Serial No. 562,398.

To all whom it may concern:

Be it known that I, SIMON C. LAUBER, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Carrying-Register; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to registering apparatus, and particularly to duplicating apparatus of this class adapted to be carried by persons, such as conductors or the like, who issue receipts for money received, but is not restricted to such use as it may be employed in any connection for which it may be adapted or appropriate.

The object of my invention is the provision of an apparatus of this class, which is simple, light and durable in its construction, and adapted to be carried on the person in convenient position for writing, whereby a conductor or other person carrying the same may easily and quickly note the amount or article received, operate the register to wind the duplicate of such receipt therein, to project the original therefrom to permit it to be torn off and given to the party from whom the money or article is received as a receipt therefor, and to move another receipt portion and its duplicate in position for a subsequent notation.

A further and very important object of my invention is the provision of a register of this character which cannot be manipulated by the operator to change the amounts or matter noted thereon after issuing a receipt therefor, thus providing a safe and sure means for recording amounts of money or other matter actually received by the operator and positively preventing a "beating" of the apparatus whereby to defraud the company or employer.

The invention is fully described in the following specification, and while in its broader aspect it is susceptible of numerous modifications, a preferred embodiment there-

of is illustrated in the accompanying drawings, in which,—

Figure 1 is a top plan view of the apparatus. Fig. 2 is a front and Fig. 3 a side elevation thereof. Fig. 4 is an inner side view of the hinged frame carried by the top of the apparatus. Fig. 5 is a side view of the apparatus opened up. Fig. 6 is a plan view of the same opened up. Fig. 7 is an upper end view of the apparatus with the top frame removed. Fig. 8 is a central vertical section on the line *x x* in Fig. 2. Fig. 9 is an end detail of the feed roll locking means. Fig. 10 is a front detail thereof with the associated casing parts in section. Fig. 11 is a cross-section of the expansible feed roll on the line *y y* in Fig. 12. Fig. 12 is a side view of such roll partly in central longitudinal section, and Fig. 13 is an end view of such roll.

Referring to the drawings, 1 designates the back of the case in which the rolls of recording material are disposed as herein-after described. Pivoted to the opposite ends of this back, as at 2 and 3, are the front cover or closure parts 4 and 5, respectively, of the case. These portions when closed respectively form the top and bottom of the case and combine to form the front thereof. Each of the parts 4 and 5 has a flange or side portion 6 projecting inwardly from each side edge thereof, which flanges cooperate with each other and with the flanges or side portions 7 projecting from the side edges of the back 1 to form the sides of the case, as indicated. The case parts are securely locked in closed position by a lock 8 engaging perforated ears 9, 9 projecting in contiguous position from the flanges 6 at one side of the case, or this may be accomplished in any other suitable manner.

10 and 11 designate shafts on which rolls of tape or paper 12 and 13 are respectively mounted. These shafts are vertically or longitudinally spaced relative to the case, and each has its ends journaled in openings in the case sides, which openings are preferably provided in the meeting edges of the side portions 6 with the side portion 7, as indicated at 14, Fig. 15. The shafts 10 and 11 are preferably provided at one end with spaced disks 15, which coast with opposite mar-

ginal walls of the openings 14 to prevent longitudinal movement of the shafts therein.

16 designates the shaft on which the copy paper or tape 13 winds after matter written on the paper or tape 12 has been duplicated thereon, as hereinafter described. This shaft is disposed intermediate the shafts 10 and 11, as indicated, and has its ends journaled in registering openings 17 in the case sides the same as the shafts 10 and 11, and is provided at one end with disks 18 to coöperate with the marginal walls of one of such openings to prevent endwise play of the shaft. A crank-handle 19 is carried at one end of the shaft 16 without the case to facilitate a turning of the shaft 16 a ratchet or notched-wheel 20 is fixed thereto adjacent the disks 18, but within the case, and is engaged by a spring 20 detent 21, secured to the case side.

Mounted on the shaft 16 to turn loosely thereon at opposite ends of the roll of paper or tape winding on such shaft are the disks 22, 22', which are of suitable size to overlap the ends of the rolls of material 12, 13 on the shafts 10, 11 and are adapted to frictionally bear against such roll ends to resist a free turning thereof, whereby to place a drag on the material unwinding therefrom and cause the material 13 to be tightly wound upon the shaft 16, as is apparent.

The upper end of the case, which forms a part of the case part 5, is of flat form to provide an impression platen 23, and has a socket or recess 24 provided centrally in its top, in which is disposed a movable impression platen or table 25. The bottom of the recess 24 is shown in the present instance as being formed by a plate 26 secured to the underside of the platen 23. The table 25 has a stud 27 projecting centrally from its under side and working through a registering opening 28 in a depressed portion 29 of the plate 26, and has its outer or free end attached to one end of a lever 30, as by a screw 31, see Fig. 8. The table 25 is normally held in yieldingly elevated position by a coiled compression-spring 32 which encircles the stud 27 and has its opposite ends thrust against the under side of the table 25 and the depressed portion 29 of the plate 26, see Fig. 8. The purpose of the table 25 and lever 30 will be hereinafter described.

The tapes 12 and 13 as they unwind from their respective rolls pass upwardly through an opening 33 in the rear of the case top or platen 23 and over an idler roll 34 disposed in such opening thence across the platen 23 and between rolls 35 and 36, the lower of which is journaled within the case sides and has its upper peripheral portion projecting through a registering opening 37 in the front edge of the platen 23. The other

roll, 35, is suitably journaled within a registering raised portion of a shield or guard frame 38, which is hinged at one end to the case side, as at 39, and has a central opening 40 therein, which when the shield is resting upon the case end, exposes a portion of the platen 23 or of the tape passing thereover. The shield 38 may be secured in closed position in any suitable manner, as by engaging perforated ears 41, 41', projecting from it and the case, by a pad-lock (not shown).

In order to positively lock the feed roll 36 against movement when a predetermined length of the tape 12 and 13 has been fed thereover and at the same time provide means which are automatically operative to release the roll locking means when the operator writes upon the yielding depressible table or platen part 25, I provide the mechanism which will now be described. One of the trunnions or shaft ends 42 supporting the roll 36 is shown in the present instance as provided with two stops or lugs 43 and 44, which are spaced longitudinally of the trunnion or shaft end, and form cam surfaces which extend in opposite directions therearound and gradually merge with the shaft periphery. Pivoted to a convenient part of the case above the trunnion 42 and intermediate the stops 43, 44 is a dog 45, which has one end provided with a shoulder or portion adapted to coact with one of such stops and its other end provided with a shoulder for coacting with the other stop. The dog 45 when in register with such stops is in engagement with one or the other but not both, so that the roll will be prevented from turning in one or the other direction depending upon which cam end is engaged. The lever 30 attached to the impression table 25, is pivoted as at 46 and, when oscillated by a depression of the table 25 against the tension of the spring 32, is adapted to have its free end engage a pin 47 projecting from one end portion of the dog 45 and move such dog to release the stop 44, when in engagement therewith, and thus permit another predetermined movement of the roll.

Should the table 25 and lever 30 for any reason fail to work to effect a release of the dog 45 and stop 44, a plunger 48 is mounted in a suitable socket 49 in the shield 38 in position to adapt it when depressed to coact with the outer end portion of the dog 45 and move it to release the stop 44. A coiled compression-spring 50 is mounted in the base of the socket 49 and acts on the plunger 48 to normally retain it out of engagement with the dog 45.

Of the two tapes 12 and 13 the former at least is printed in blank receipt form with

the impressions equidistantly spaced longitudinally thereof so that they will be successively brought in register with the shield opening 40 as the shaft 16 is turned, the diameter of the roller 36, if only one stop 44, is employed, being properly proportioned for such purpose. It is found, however, that if the feed roll 36 is fixed in diameter great difficulty is encountered in getting each successive impression to register accurately with the shield opening 40, as the stretching of the paper when being drawn across the platen 23, and also inaccuracies of printing when printing a long roll, cause the impressions to gradually feed too far ahead or not far enough. To compensate for such inaccuracy in the feeding of paper when in long strips, which inaccuracy is found to be invariably present, I make the roll 36 expandable whereby its diameter may be slightly increased or diminished as the paper may be feeding too slow or too fast for the impressions thereon to accurately register with the opening 40.

The roll 36 shown, which illustrates one form of an expansible roll, comprises the opposed end portions 51 which are in disk form and have the roll trunnions 42 projecting therefrom. The portions 51 are connected by bars or strips 52, which are shown as being three in number and as integrally projecting from the edge of one end portion and being secured to the other by screws 53 or in any other suitable manner. Fitting between the end portions 51 and coöperating to form the periphery of the roll are the three segments 54, in the present case, which have their end edges flanged over the end portions 51 and their outer side edges flanged over the bars or strips 52 to meet thereover when the segments are fully retracted, as shown in Fig. 11. The inner sides of the segments are fashioned to combine to form a conical axial opening 55 into which the conical end of a pin 56 projects. This pin is threaded through one of the trunnions 42, which is made hollow for such purpose, and when turned into the roll effects an outward radial movement of the segments and a consequent enlarging of the roll diameter. The outer end of the pin 56 projects without one side of the case and has a knurled head 57 to facilitate a turning thereof. The ends of the segments are circularly notched as at 58, to receive the coiled ring springs 59 which tend to resist an outward movement of the segments.

The feed-roll 30 is shown as having its periphery provided with one or more radial spurs or pins 60 which are arranged in any desired form to perforate the two strips 12 and 13 at some point on each impression

blank to provide them with identifying marks. This provides a simple means of giving the checks issued by each conductor or other person a distinctive identifying mark, and obviates the necessity of the conductor placing his individual mark on the receipts when issued. The provision of these marks on the duplicate strip 13 also enables a person to quickly determine the number of receipts which have been issued as he can quickly count the sets of perforations and a receipt should have been issued for each of such sets. Other advantages also arise from the use of this method of marking the receipts and duplicates. The upper feed roll 33 is grooved, as at 35, to prevent contact with such pins.

The carbon strip which is intended to pass over the platen 23 between the paper strips 12 and 13 unwinds from a roll which is mounted on a shaft 61 within a casing part 62 at one side of the case and winds upon a shaft 63 within a casing part 64 at the opposite side of the case, see Figs. 7 and 10. The shafts 61 and 63 are removably journaled in a suitable manner within the respective casing parts and the shaft 61 has a disk 65 threaded on one end thereof to prevent the end of the carbon roll from having contact with the dog 45, an end of which projects within such casing part. The shaft 63 has one end projected without its casing part, and provided with a knurled head 66 to facilitate a turning of such shaft to wind the carbon paper thereon. A back-turning of the shaft 63 is resisted by a spring finger 67 which bears against flattened surfaces on the shaft side, see Fig. 7.

To resist an unwinding of the carbon roll from the shaft 61, I provide a pressure plate 68 within the casing part 62 beneath the shaft 60, such plate being carried by a stem 69 projecting outwardly through a socket part 70 attached to said casing part. A coiled compression-spring 71 is disposed within the socket part 70 and acts on such part and a shoulder on the stem 69 to cause the plate 68 to yieldingly bear against the carbon roll. The casing parts 63 and 64 are covered by the shield 38, as indicated.

The back 1 of the case is provided on its outer side with a plate 72, which is spaced from the back by studs 73 to provide an opening 74 through which a waist strap may be inserted for securing the apparatus to the body.

75 designates a window in the front of the case through which the amount previously duplicated on the paper strip 13 is exposed. This window is closed by a transparent material such as glass, isinglass, or the like.

The operation of my invention is as follows:—A person using the same, on receiv-

ing a cash fare, supposing him to be a conductor, on a car, fills in the proper blank spaces on the receipt blank exposed through the opening 40 in the shield 38. One of the blank spaces preferably that for the amount received, is disposed over the depressible table or portion 25 of the platen so that upon making a notation upon such space the pressure of the pencil thereon depresses such table against the tension of its supporting spring and effects an oscillation of the attached lever 30 to move the dog 45 out of engagement with the stop 44 on the shaft 42 to permit a turning of such shaft and its roll 36. The receipt blank having been filled out the conductor turns the crank 19 on the shaft 16 and effects a feeding of the strips 12 and 13 the length of one receipt blank, the feeding then being automatically stopped by reason of the stop 44 striking the nose of the dog 45, which has been positively forced into the path of revolution of such stop by the cam-surface 43 acting on the tail of the dog. The feed parts being thus locked they cannot again be moved until the dog has been moved out of engagement with such stop either by a pressure on the table 25 or by a depression of the auxiliary plunger 48, which latter is only for emergency purposes. As the strips 12 and 13 feed forward, the former feeds out from the case through the slot provided between the front top edge of the case and the adjacent edge of the shield 28 and when the full receipt form has been fed out is torn off and handed to the person from whom the money is received, while the duplicate strip 13 passes down within the case and winds upon the shaft 16. As the receipts are fed out each one and its duplicate are perforated by the spurs or pins 60 on the roll 36, as is apparent. Should the strips be running ahead or not advancing sufficiently at each operation to cause a receipt blank to accurately register with the shield opening 40, the operator turns the pin 56 to effect either an enlarging or diminishing of the diameter of the roll 36 as it may be desired to increase or reduce the length of material fed forward at each operation. To adjust the carbon paper it is only necessary to turn the shaft 63, which draws the carbon across the platen 23, from the shaft 61.

I wish it understood that my invention is not limited to any specific construction or arrangement of the parts except in so far as such limitations are specified in the claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is,—

1. In an apparatus of the class described, the combination with supporting means, of a set of feed rolls one of which has its periphery formed of a plurality of radially

adjustable segments, means yieldingly acting on the segments to retain them in contracted state, and a pin threaded within the roll and having a conical portion cooperating with the inner sides of the segments to effect or permit outward or inward radial adjusting movements of the segments to expand or contract the roll.

2. In an apparatus of the class described, a set of tape feeding rolls, one of which rolls is provided with a plurality of peripheral radially adjustable segments, resilient members encircling such segments to normally influence an inward movement of the same, and a member having a conical part cooperating with such segments to effect or permit outward or inward radial adjustment of such segments to expand or contract the roll.

3. In an apparatus of the class described, the combination with a tape feeding roll, of means for locking such roll against rotation at a predetermined point in a revolution thereof, a movable platen part, and means connecting such platen part and locking means and operative by a movement of the platen part to effect a release of the locking means.

4. In an apparatus of the class described, the combination with a tape feeding roll of means for locking such roll at a predetermined point in a turning movement thereof, a yieldingly movable platen part, and means connecting said platen part and locking means and operative by a movement of such platen part to effect a release of said locking means.

5. In an apparatus of the class described, the combination with a tape feeding roll, of a stop movable with such roll, a dog operative to engage said stop at a predetermined point in the rotation of the roll, a yieldingly movable platen part, and means operated by a movement of said platen part to effect a release of said dog from engagement with the stop.

6. In an apparatus of the class described, the combination with a feed roll having a stop associated therewith, of a platen part yieldingly held in one position and movable by a pressure thereon, a dog operative to engage said stop at a predetermined point in a rotation of the roll, and a lever movable by the platen part to effect a release of said dog from engagement with the stop.

7. In an apparatus of the class described, the combination with a feed roll having a stop associated therewith, of a dog for cooperating with such stop at a predetermined point in a revolution of the roll, means for causing a positive engagement of the dog and stop, a yieldingly movable platen part having connection with such dog whereby a

movement of said part effects a release of such dog.

8. In an apparatus of the class described, a set of feed rolls, and means on one of said rolls for perforating matter fed therebetween to equidistantly provide the same with identifying marks.

9. In an apparatus of the class described, the combination with a feed roll, of means for locking such roll against movement at a predetermined point in a turning movement thereof, a platen part having connection with such means and automatically operative by external pressure thereon to effect a release of such locking means and auxiliary means for effecting a release of such locking means.

10. In an apparatus of the class described, a plurality of shafts for carrying tape rolls, a shaft upon which the tape feeds from one of such rolls, and means loosely carried by such shaft and adapted to cooperate with the tape rolls carried by the other shafts to place a drag on the unwinding movements of such rolls.

11. In an apparatus of the class described, the combination with a plurality of tape-roll carrying shafts, of a disk loosely carried by one of such shafts and adapted to cooperate with the ends of the tape rolls carried by the other shafts to place a drag on the unwinding movements thereof.

12. In an apparatus of the class described, the combination with a plurality of tape-roll carrying shafts, of disks loosely carried by one of such shafts and adapted to coast with the ends of the rolls carried by the others of such shafts to tend to prevent rotary movements of such rolls.

13. In an apparatus of the class described, a case having a back portion, a portion hinged to the upper end of such back portion and forming the upper end and a portion of the front and sides of the case, said upper end being disposed at substantially right angles to the back portion and forming

a platen, a portion hinged to the lower edge of said back and forming the lower end and a portion of the front and sides of the case, said back portion having side flanges which cooperate to form the case sides, feed rolls disposed at the upper end portion of such case and a frame carried by such upper end portion and cooperating with the feed rolls to hold material passing therebetween in place.

14. In an apparatus of the class described, a case comprising a back portion and portions pivoted to the upper and lower ends of such back portion and forming the ends and front of the case, said portions having flanges at their sides which cooperate to form the case sides and the upper and lower end portions when opened up being adapted to stand in substantially the plane of the back portion, shafts removably journaled in such sides, and a platen at the upper end of such case over which material passes from a portion of said rolls.

15. In an apparatus of the class described, a case comprising a back portion and portions pivoted at the upper and lower ends of such back portion in substantially the plane therewith and extending outwardly from their pivotal points to form the upper and lower ends of the case and thence extending at an angle to the end portions and meeting adjacent the longitudinal center of the case to form the front thereof, said back and pivoted portions having flanges which cooperate to form the case sides, a shaft removably journaled in such sides, and a platen at the upper end of the case over which material passes from a portion of such rolls.

In testimony whereof, I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

SIMON C. LAUBER.

Witnesses:

C. W. OWEN,
G. GASKELL.