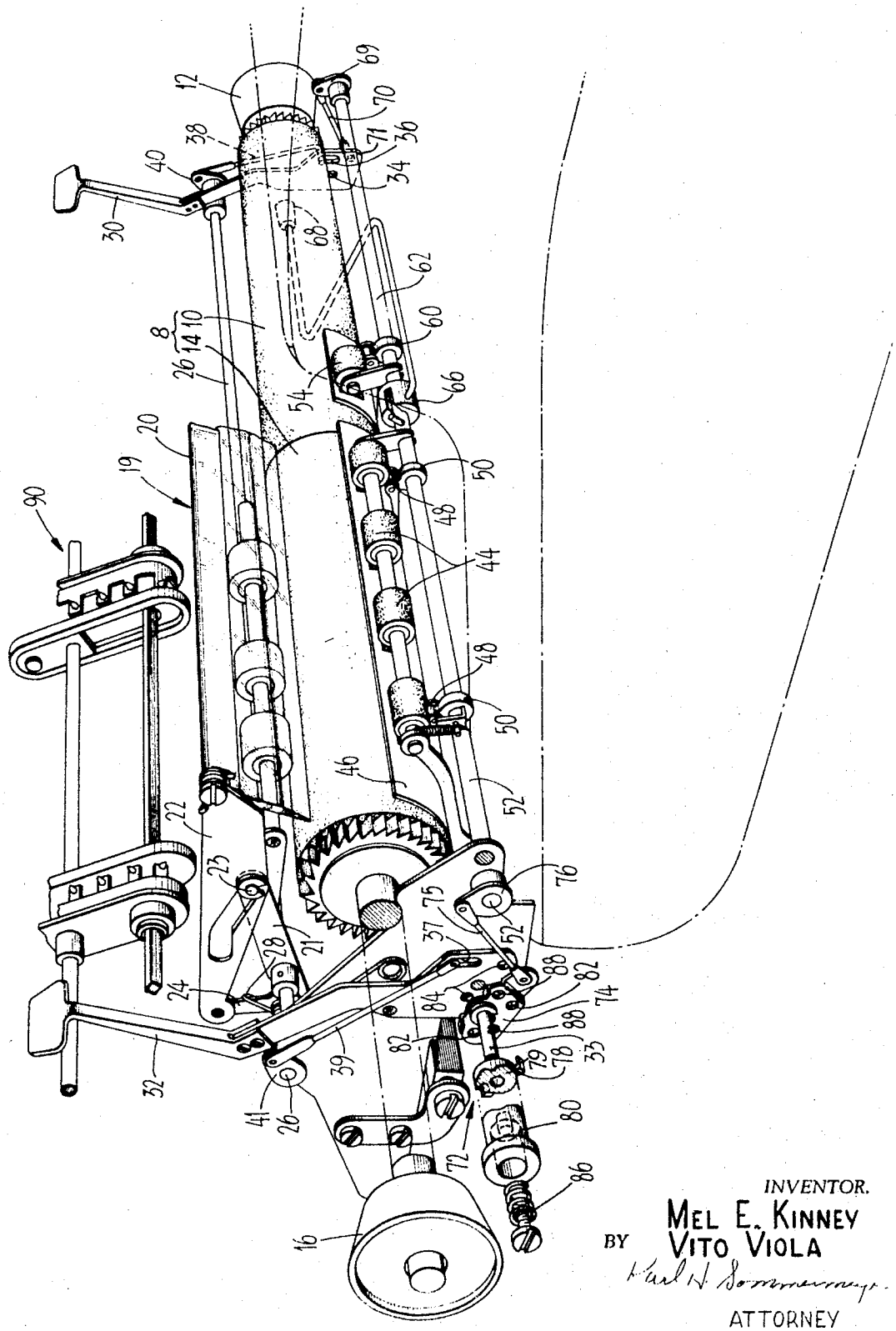
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MODE SELECTION FOR THE CONTROL OF A PLURALITY OF WORK SHEETS IN A BILLING MACHINE

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MODE SELECTION FOR THE CONTROL OF A PLURALITY OF WORK SHEETS IN A BILLING MACHINE

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ABSTRACT OF THE DISCLOSURE

On the paper carriage of a known billing, or accounting, machine having (1) a front feed chute, (2) split controls for the feed rolls to facilitate use of two forms, and (3) two manual levers for controlling the chute and the feed rolls, there is provided an operator-accessible clutch between one manual lever and the control of the feed rolls, to permit alternatively (1) feeding of forms on one side of the platen by tractor feed alone and on the other side by platen feed and (2) platen feed on both sides.

Background

The present invention relates to the control of the work sheets in billing and accounting machines.

It is known to separately grip and control work sheets on two parts of the platen of a billing, or accounting, machine so that one part of the platen may carry, for example, a continuous invoice form and the other a ledger and journal, and to provide a front feed chute for the ledger sheet.

It is known to split a platen in two parts, one for the invoice and one for the ledger and journal to permit different line-spacings for the two forms. It is known to provide a feed control lever at each end of the platen carriage, each actuating a stub shaft for applying and releasing a feed roll for its adjacent part of the platen, and each arranged, as it releases said feed roll, to also open the front feed chute, and to provide a releasable connection between said stub shafts.

Summary

It is an object of the present invention to permit manual selection by the operator between alternative modes of operation in a billing machine wherein the feed of forms on both parts of a platen may be controlled by the platen as heretofore, or alternatively one form may be controlled by the platen and the other left free for control by other feeding means.

Drawing

These and other objects and advantages will be apparent from the following description of a specific embodiment of the invention, taken in connection with the accompanying drawing wherein the single figure is a perspective view, partially exploded, of parts of the paper carriage and paper control mechanism of an accounting, or billing machine embodying the present invention.

Description

The drawing shows a part of the platen and form-controlling structures of the paper carriage of an accounting, or billing, machine. The cylindrical platen **8** consists of two sections, a right section **10** controlled by a manual knob **12**, and a left section **14** controlled by a manual knob **16**. A clutch, not shown, that is manually controllable by the operator, connects the two sections **10** and **14** for rotation in unison. A front feed chute **19** extends across the full length of the platen **8**, and includes a transparent plastic shield **20** and a frame **22** which is controlled and partly supported by a lever **24**, and which slides on a pin **23** carried by a stationary arm **21**. A similar frame member, controlling lever, and pin (not shown) are provided at the right hand end of the carriage. Control lever **24** is fixed to a rotatable control shaft **26**. Forward rotation of shaft **26**, clockwise in the drawing, swings the lever **24**, and with it the frame **22** and shield **20**, forward to a so-called "open" position for permitting the easy insertion of a ledger sheet in a known manner. Front feed chute **19** is biased to its closed position by a coil spring **28** acting on lever **24**.

A pair of manually operable levers **30** and **32**, at the two ends of the platen carriage, control, among other things, the opening and closing of the front feed chute **19**. Manual lever **30** has its bearing at **34**. A slot **36**, forward of the bearing **34**, engages a link **38** which is connected to a lever **40** on the shaft **26**, which controls the front feed chute **19**. The lever **32** is similar and is similarly connected by a link **39** to a lever **41** on the shaft **26**. The forward motion of either of the levers **30** or **32**, through the corresponding link **38** or **39**, rotates the shaft **26** forward for opening the chute **19**. Slots, such as **36** or **37**, permit either lever **30** or **32** to remain in its normal position as shown, when the chute **19** is opened by operation of the other lever **30** or **32**.

The left section **14** of the platen **8** is equipped with a set of feed rolls **44** which are arranged to be held firmly against the platen section **14** so that rotation of the platen section **14** will feed a form, such as a ledger sheet, in a known manner. Specifically, the feed rolls **44** are part of a structure that includes the sheet-metal, paper table **46** and also cam-following rollers **48** that ride on cams **50** on a shaft **52**. Rearward rotation of the shaft **52**, counter-clockwise in the drawing, in a manner to be described, rotates the cams **50** to permit the lowering of the paper table structure **46** for thereby moving the feed rolls **44** away from the platen section **14** to release the paper.

Similar feed rolls **54**, cams **60**, and cam-carrying shaft **62** are provided for the right portion **10** of the platen **8**. A dog clutch **66** controlled by a handle **68** is arranged to connect the two shafts **52** and **62** so that they operate together to engage and release the feed rolls **44** and **54** in unison.

Shaft **62**, at its right end, carries a lever **69** connected by a link **70** to the lower front portion **71** of the manual lever **30**. Forward motion of the lever **30**, in addition to opening the front feed chute **19**, will also rotate the shaft **62** rearward (counter-clockwise in the drawing) for releasing the feed rolls **54**, for facilitating the insertion of a sheet of paper in position on the right sec-

tion 10 of the platen 8. If the clutch 66 is engaged, the forward motion of the lever 30, as just described, also releases the feed rolls 44 so that the motion of the single lever 30 opens the machine for insertion of paper on both sections 10 and 14 of the platen 8. Although such operation of the shaft 26 by the lever 30 for opening the chute 19 also moves the lever 41 and the link 39, the lower end of the link 39 simply slides in the slot 37 and does not cause any motion of the manual lever 32.

A tractor feed 90 is provided for feeding continuous forms, such as invoices, that have marginal perforations. This mechanism is driven from the platen in a known manner by mechanism not shown here.

The mechanism thus far described is known. According to the known structure, the shaft 52 was connected to the lever 32 and operated thereby similarly to the connection of the shaft 62 to lever 30. With such an arrangement, whenever the clutch 66 was engaged, not only did the two shafts 52 and 62 operate in unison, but the control levers 30 and 32 necessarily operated in unison with them. Furthermore, with such prior construction, even when clutch 66 was disengaged, the closing of the front feed chute 19 compelled the engagement of both sets of feed rolls 44 and 54 because the chute 19 could be closed only if both levers 30 and 32 were in their normal position, shown, and with levers 30 and 32 in their normal positions the feed rolls 44 and 54 were necessarily in firm contact with the platen 8.

In accordance with the present invention, a releasable clutch, or connection 72, is provided between the lever 32 and the control shaft 52 for the feed rolls 44 on the left section 14 of the platen 8. A rocker 74 lies alongside the lower end of the manual control lever 32 and is journalled on the same shaft 33. This rocker 74 is connected by a link 75 to a lever 76 on the shaft 52 that controls the feed rolls 44 and paper table 46. A claw 78, which is a part of a clutch knob 80, but here shown separate, has two fingers 79 that extend through holes 82 in the plate 74 and into a pair of matching holes 84 in the lever 32, to clutch the two members 74 and 32 together for operation in unison. When these two members 74 and 32 are connected in this manner, the lever 32 controls the feed rolls 44 and paper table 46 just as in the known device, so that with the lever 32 in its normal position, shown, the cams 50 hold the feed rolls 44 in firm engagement with the left platen section 14 and the platen section 14 drives the paper, and so that when the lever 32 is pulled forward, clockwise in the drawing, the shaft 52 is rotated counter-clockwise and the rolls 44 move away from the platen section 14 to leave the paper loose for manual insertion and removal.

The manual clutch knob 80, including its integral claw 78, is movable both axially and rotatably on the shaft 33. A spring 86 urges the knob 80 to the right so that, for example, the claw 78 is held firmly in the holes 82 and 84 for clutching the two members 74 and 32 together. The knob 80 may be pulled to the left to disengage the fingers 79 of the claw 78 from the holes 82, and may then be turned to let the points of the fingers 79 of the claw 78 rest in smaller holes 88 where they are held by the spring 86. In this last position the fingers 79 of the claw 78 do not extend through the plate 74 and so do not engage the lever 32 or clutch the lever 32 to the rocker 74.

One important result of disengaging the rocker 74 from the lever 32 is that the feed rolls 44 are not required to be engaged with the platen section 14 when the front feed chute 19 is closed, that is, in operating position. It will be recalled that, in the prior construction described above, the closing of the front feed chute 19 required that both levers 30 and 32 be in their normal positions, shown in the drawing, and that these normal positions of the control levers 30 and 32 required

that both sets of feed rolls 44 and 54 be engaged with the platen sections 10 and 14.

The present invention adds to the conveniences and ease of using invoice forms that have perforated edges and that are driven by a separate mechanism engaging those perforations, such as a so-called "tractor feed" 90. It is difficult to synchronize the drive of the paper by the tractor feed 90 with the line spacing mechanism of the platen 8, and according to the present invention, we rely on the tractor feed alone.

For example, a continuous, multicopy invoice form may be tractor fed to the left section 14 of the platen 8. For operation of the invention in this manner, the clutch 66 is disengaged so that the two shafts 62 and 52 may operate independently. The claw 78 is positioned to connect rocker 74 to the lever 32 which is then pulled forward to disengage the drive rolls 44 from the platen section 14. With the rolls 44 in this disengaged position, the claw 78 is withdrawn to the left to disengage rocker 74 from lever 32 and turned to rest the fingers 79 of the claw 78 in the small holes 88. With the machine in this condition the invoice form on the left section 14 of the platen 8 is not affected by the rotation of the platen 8 but rather is fed solely by the tractor feed 90 applied to the perforated margins of the form. The right-hand section 10 of the platen 8 may carry a "wrap-around" journal sheet and also a ledger sheet that is inserted from the front for the posting of accounts receivable. The lever 30 may be pulled forward to disengage the feed rolls 54 and open the front feed chute 19 to permit the insertion or removal of the ledger sheet. Alternatively, the lever 32 at the left end of the carriage may be pulled forward to open the front feed chute 19 without affecting either the feed rolls 44 or the feed rolls 54.

When a different kind of work is to be performed that requires the feed rolls 44 to be opened and closed with the lever 32, as in prior devices, the knob 80 is simply rotated to place the fingers 79 of the claw 78 in the large holes 82 of the rocker 74. A forward motion of the lever 32 then brings the holes 84 into alignment with those fingers 79 and permits the spring 86 to force the claw 78 into engagement with the lever 32 so that the lever 32 is again connected to the feed rolls 44 for controlling them.

With this setting the machine may, for example, be used for preparing a payroll. A wrap-around journal sheet may extend the full width of the platen 8, and the employee's earnings-record, or ledger, and also the check, may be inserted from the front.

The present invention provides a new construction having an improved mode of operation, and provides a new and novel mechanism for enabling the operator of a billing, or accounting, machine to quickly and conveniently change the mode of operation for different kinds of work. It is to be noted that, although a machine with a split platen is shown, the present invention may be used with or without a split platen, and for many tasks, such as the invoicing operation, described above, eliminates the need for a split platen.

We claim:

1. In a billing machine having a rotatable platen and having:

(a) a feed release lever at each end of the platen,

(b) a front-feed-chute carrier biased to closed position and rockable to open position by movement of either lever,

(c) form-holding pressure rollers at a first end of said platen,

(d) first means for releasing said first rollers by the chute-opening movement of a first of said levers,

(e) second form-holding pressure rollers at a second end of said platen,

(f) second means for releasing said second rollers by

a chute-opening movement of the second of said levers,

(g) means for releasably holding said second pressure rollers in released position,

(h) a releasable connection between said first and second means, connectible for causing the release and application of said first and second pressure rollers in unison,

the improvement wherein there is included,

(i) a releasable connection in said second means for disconnecting it from said second lever,

whereby said second rollers may be set to released position and both said releasable connections set to released position to permit a form on the first part of said platen

to be controlled by said platen and a form on said second part to be controlled independently of said platen.

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