

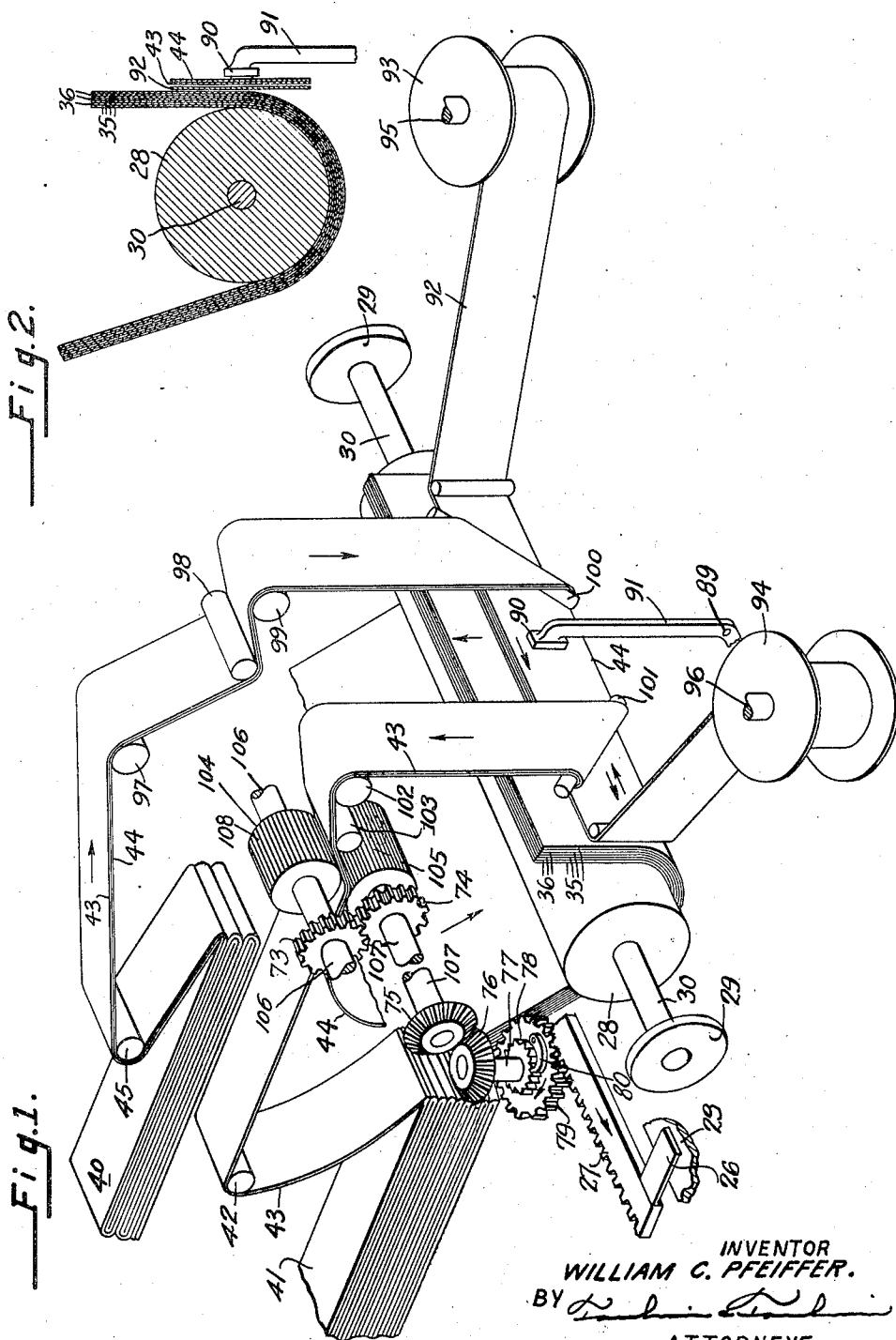
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APPARATUS FOR THE MAKING OF CROSS-FEED RECORDS

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APPARATUS FOR THE MAKING OF CROSS-FEED RECORDS

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6 Claims. (Cl. 197—132)

This invention relates to typing, manifold-
ing and similar machines, and in particular, to de-
vices for making additional copies of the record,
and at the same time that the regular copies are
made.

One object of this invention is to provide a
typing or similar printing machine, having means
for taking off additional copies of the records
at the same time that the regular copies are made.

Another object is to provide a typing or similar
printing machine with front-striking type bars,
in which a record strip moves transversely to the
sheets employed in making the regular copies,
this record strip being interposed between the
type bars and the regular copies.

Another object is to provide an attachment for
a typing machine having front-striking type bars
and means for making additional copies over
those regularly made by the machine, these copies
being made upon strips of copying material inter-
posed between the type bars and the regular cop-
ies.

Another object is to provide such an attach-
ment in which the mechanism is drivingly con-
nected and synchronized for operation with the
machine for making the regular copies.

Another object is to provide a typing and mani-
folding machine having front-striking type bars
engaging a platen around which move strips of
material for making the regular copies, and a
strip of material moving in a transverse direc-
tion relatively to the regular copies and inter-
posed between the type bars and the platen for
making an additional copy of certain of the rec-
ords made on the regular copies.

Another object of the invention is to provide an
attachment for a typing or manifolding machine
with front-striking type bars, wherein a paper
strip is fed transversely to the paper sheets con-
stituting the regular copies, this strip being pref-
erably pack-folded and having feeding means
driven by the typing machine in synchronism
therewith.

Another object is to provide mechanism of the
type previously described for making an addi-
tional copy of portions of records produced in
typing or manifolding machines, such apparatus
being capable of being employed in connection
with machines having type bars which engage
the record sheets in front of the platen.

This is a division of my application Serial No.
62,463, filed February 5, 1936.

In the drawing:

Figure 1 is a diagrammatic perspective view of
a typing or similar printing machine embodying

the present invention for use in connection with
the so-called "front strike" type of machine.

Figure 2 is a cross section through the platen
and record strips of the device shown in Figure 1,
at a point immediately adjacent the type bar.

General construction

In general, the apparatus of my invention con-
sists of a strip of material, either having a carbon
coating on the back thereof, or having a separate
carbon strip associated therewith, the assembly
being made to traverse the typing machine in a
direction transverse to the direction of motion of
the sheets of paper employed for making the regu-
lar copies. The supplemental copy strips are
adapted to make copies of a certain limited por-
tion of the entire record made on the regular
copies, this limited portion containing certain
key information which it is advisable to obtain
immediately, rather than to wait until the regular
copies are returned to the person desiring this
information. For example, it is often advisable
to obtain production or shipping records, such as
the name and address of the customer, the quan-
tity and nature of the goods ordered, the time of
delivery and such credit information as may be
necessary. These data are recorded in a small
area on the regular carbon sheets and simulta-
neously recorded upon the supplemental record
strip, which moves transversely thereto. The
supplemental record strips may be torn off from
time to time, and the information thereon trans-
ferred to the person requiring it without the ne-
cessity of sending that person complete copies of
the entire forms made by the machine as a whole.

The feeding mechanism for the supplemental
copy strips is operatively connected to the type-
writer mechanism in such a manner that the two
mechanisms are synchronized to work in uni-
son. In the preferred embodiment of the feeding
mechanism is operated by devices actuated by
the motion of the platen of the machine.

Typing machine used for production of records

In the drawing is shown a "front strike" type
of machine, wherein the type bar engages the
front of the record sheets. It will be seen that
the supplemental records taken off by the device
of this invention are made upon strips which
move transversely to the direction of motion of
the regular record sheets.

It will be understood that this principle and
method of making supplemental copies may be
employed with a typing machine of any kind,

with certain minor alterations to enable the apparatus to fit the particular machine.

The typing machine, which may be of any suitable front-striking type, is shown diagrammatically and consists of a frame (not shown) adapted to support type keys arranged in banks. The type keys are connected through the usual links and levers to the type levers 91. Each of the type levers 91 is pivotally mounted, as at 89, upon a portion of the frame. To one end of the type lever 91 is connected the usual link (not shown) leading through the usual mechanism to the typewriter keys, and upon the opposite end is mounted the type face 90. Each of the type levers 91, of course, contains a different letter or character, the whole in assembly constituting the entire alphabet and such additional letters, numerals or characters as may be desirable for the particular kind of work which the machine is intended to produce. The particular mechanism for actuating the type levers 91 forms no part of the present invention, except as generally included in the combination of the supplemental copying mechanism as a whole.

Associated with the type faces 90 and operated in synchronism therewith, are ribbon spools 93 and 94 mounted upon the shafts 95 and 96. The spools 93 and 94 serve to carry the copying ribbon 92, which moves from one spool to the other in a manner understood by those skilled in the art. The mechanism for feeding the ribbon 92 in synchronism with the action of the type faces 90 likewise, in its details, forms no part of the present invention.

Upon the typewriter frame is mounted the platen frame 23 which supports the platen 28. The platen frame 23 travels to and fro and is provided with frame brackets 26 to which is attached a rack 27, the purpose of which is to drive the supplemental record strip feeding apparatus in a manner subsequently to be described. Journalled in the platen frame (not shown) which travels to and fro along the typewriter frame is a platen 28, which may be turned manually by means of the knobs 29 connected thereto by the shafts 30 (Figure 1). Details of the platen and its associated parts likewise form no part of the present invention, it being understood that any suitable mechanism can be used for the purpose.

The paper sheets employed in the making of the regular copies are designated 35, and interposed therebetween are carbon strips 36. Accordingly, when the assembly is fed beneath the platen 28 and the type faces 90 applied thereto by means of the typewriter keys, an impression is transferred from the ribbon 92, which passes between the type faces 90 and the record sheets, to the upper sheet 35 and thence, by means of the interleaved carbon sheets 36, to the remaining paper sheets 35 therebeneath. As the typing continues it will be understood that the platen moves transversely in a conventional manner, this transverse motion spacing the typing properly in each line thereof. By other conventional mechanism the lines of type may be spaced from each other, such as by turning the knobs 29 to rotate the platen shaft 30.

The record sheets 35, however, contain the entire record of the particular transaction, and are bulky and unnecessarily comprehensive for many purposes. The apparatus provided by the present invention enables a supplemental record to be made, this supplemental record being condensed and also easily usable, as well as obtainable independently of the regular record sheets 35.

Supplemental copying attachment

The supplemental copying attachment of this invention includes a delivery pack 40 for supplying the untyped strip and a receiving pack 41 for receiving the typed strip, both being mounted on the platen frame. The delivery pack 40 contains a zigzag folded paper strip 43, which may be either a single strip having a carbon or other suitable copying composition upon one side thereof, or else may include an additional strip 44 having such a copying composition thereon. The copying strip 44 will be hereinafter referred to as the carbon strip, and the copy strip 43 the supplemental record strip.

After emerging from the delivery pack 40 the folded strips 43 and 44 are guided over the guide rollers 45, 97, 98 and 99 and downwardly around the oblique rollers 100 and 101, and in front of the ribbon 92, thence upwardly over the guide rollers 102 and 103, between the feed rollers 104 and 105 on the shafts 106 and 107, respectively. Consequently, when one of the typewriter keys is operated and the type face 90 caused to strike the ribbon 22, the latter transfers the impression to the supplemental record strip 43 and this in turn transfers a record from its carbon strip 44 to the outer paper record sheet 35. The additional copies are made by the transfer of this impression through the carbon sheets 36 to the various record sheets 35 behind the first record sheet 35.

The feed roller shafts 106 and 107 carry pinions 73 and 74, meshing with one another. The shaft 107 carries a bevel gear 75 which meshes with a bevel gear 76 upon a shaft 77 carrying a ratchet wheel 78. Loosely mounted upon the shaft 77 is an additional gear 79, carrying a pawl 80 engaging the teeth of the ratchet wheel 78. A spring (not shown) urges the pawl 80 into engagement with these teeth. The shaft 77 and associated gear mechanism is rigidly fastened to the typewriter frame, and gear 79 meshes with the rack 27 secured to the platen frame 23 which moves to and fro in the usual manner when typewriting.

Operation

In the operation of the attachment shown in Figures 1 and 2 the supplemental record strip 43 and carbon strips 44 are threaded over the various rollers, previously described, and in front of the foremost record sheet on the platen 28 and the ribbon 92, thence between the feed rollers 104 and 105. The latter are provided with corrugations 108, by which they are adapted to engage the paper more firmly and with less slippage (Figure 1).

After emerging from between the feed rollers 104 and 105 the strips 43 and 44 may be received in any suitable manner, such as by allowing the paper strips 43 to form a second zigzag pile or receiving pack 41. Ordinarily, however, the operator tears off the end of each strip as it projects from between the feed rollers 104 and 105, and transfers these to any suitable container, from which they may be withdrawn at intervals throughout the day.

As the regular record sheets are typed, by operating the typewriter keys, the platen 28 moves to the left in the usual manner, thereby causing the gear 79 meshing with the rack 27 likewise to move to the left. This rotates the gear 79, which in turn, operates the pawl 80 and ratchet 78 to rotate the feed rollers 104 and 105 by means of the bevel gears 75 and 76 and the pinions 73 and 74.

and 74. The feed roller 104 is caused to yieldingly engage the strips 43 and 44 on the opposite side from the roller 105 by means of its resilient mounting in the platen frame, and urged downwardly by coil springs (not shown). The corrugations 108 engage the strips 43 and 44 to prevent slippage, and the rotation of the feed rollers 104 and 105 causes the strips 43 and 44 to be fed to the left, as shown in Figure 1.

In this manner the operator obtains a supplemental record of certain data which may be desired, without waiting for the regular forms 35 to be returned through the usual channels. The record strips 43, for example, may be employed temporarily in the factory for purposes of cost accounting, for tracing pending orders or for coordinating production with sales. The large record sheets 35, however, are ordinarily sent to the accounting division of the company, where the comprehensive sales records are made use of. When the platen 28 reaches the extreme left-hand limit of its travel and is pushed backwardly to the right by the operator, the action of the ratchet 78 and pawl 80 prevents the backward feeding of the record strip 43.

It will be obvious that spools may be employed to carry the strips 43 and 44 in place of the zigzag pack form shown in the drawing.

Summarizing the operation of the invention as used in connection with a "front strike" model of typewriter, therefore, when the typewriter keys are struck by the operator, the type faces 90 and type levers 91 move vertically into engagement with the front of the ribbon 92, the latter being carried, as previously stated, upon spools 93 and 94 on the vertical shafts 95 and 96. The record strip 43 and carbon strip 44 are mounted at any suitable position on the machine, such as in the folded pack 40 shown in Figure 1, and pass forwardly over the guide rollers 97, 98 and 99 and downwardly around the oblique rollers 100 and 101, and in front of the ribbon 92. Beyond the oblique roller 101 the assembly moves upwardly over the guide rollers 102 and 103, between the feed rollers 104 and 105, and is deposited in a second pack 41, if desired, or else the individual lengths are torn off from time to time, in accordance with the wishes of the operator. The feed rollers 104 and 105 mounted on the shafts 106 and 107, respectively, are driven by the mechanism operated by the rack 27 and gear 79, in the manner previously described.

In the operation of the machine shown in Figures 1 and 2, the carbon strip 44 is outermost in the typing position and is therefore engaged directly by the type face 90 and transfers a portion of its coating to the supplemental strip 43 therebeneath (Figure 2). The force of the impact of the type face 90 is transferred through the ribbon 92 to the outermost record sheet 35, and thence inwardly to the other record sheets 35 by means of the carbon sheets 36 interleaved therebetween.

Optionally, the supplemental record may consist of a strip of thin cardboard, preferably perforated at intervals so that the strip may be separated into index cards and filed in any suitable manner. The main record sheets may be in continuous web form and provided with interleaved carbon sheets, with or without a conventional carbon sheet carrier for moving the carbon sheets back into position for another typing after one set of forms has been typed.

It will be understood that I desire to comprehend within my invention such modifications as

come within the scope of the claims and the invention.

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

1. In combination in a front-strike typing machine, a typing device having front-striking type associated therewith, a carriage movable relatively to said type, a platen on said carriage, means for supporting a main record on said platen in front of said type, means for holding a pack comprising a relatively narrow zigzag folded supplemental record strip having a width adapted for receiving a single line only of typed characters, means for supporting said record strip in position across said main record in front of said type, means for guiding and directing said record strip from its pack through a position for receiving the impressions from said forwardly-striking type, means for supplying a duplicating agent in association with said record strip, and means for feeding said record strip transversely across said main record and in front of said type.

2. In combination in a front-strike typing machine, a typing device having front-striking type associated therewith, a carriage movable relatively to said type, a platen on said carriage, means for supporting a main record on said platen in front of said type, means for holding a pack comprising a relatively narrow zigzag folded supplemental record strip having a width adapted for receiving a single line only of typed characters, means for supporting said record strip in position across said main record in front of said type, means for guiding and directing said record strip from its pack through a position for receiving the impressions from said forwardly-striking type, means for supplying a duplicating agent in association with said record strip, and means for feeding said record strip transversely across said main record and in front of said type, said duplicating agent comprising a strip of duplicating material folded in zigzag form.

3. In combination in a front-strike typing machine, a typing device having front-striking type associated therewith, a carriage movable relatively to said type, a platen on said carriage, means for supporting a main record on said platen in front of said type, means for holding a pack comprising a relatively narrow zigzag folded supplemental record strip having a width adapted for receiving a single line only of typed characters, means for supporting said record strip in position across said main record in front of said type, means for guiding and directing said record strip from its pack through a position for receiving the impressions from said forwardly-striking type, means for supplying a duplicating agent in association with said record strip, and means for feeding said record strip transversely across said main record and in front of said type, said duplicating agent comprising a strip of duplicating material folded in zigzag form, said zigzag folded duplicating strip and said zigzag folded record strip being folded together in close engagement with each other in a common pack.

4. In combination in a front-strike typing machine, a typing device having front striking type associated therewith, a carriage movable relatively to said type, a platen on said carriage, means for supporting a main record on said platen in front of said type, means for supplying a relatively narrow zigzag folded supplemental record

- strip to said platen for receiving impressions by said front striking type, said strip having a width adapted for receiving a single line only of typed characters, means for guiding said supplemental
 5 record strip in a path perpendicular to its path across said main record and lengthwise of said platen, means for supplying a duplicating agent in association with said record strip, and means for feeding said record strip transversely across
 10 said main record and in front of said type.
5. In combination in a front-strike typing machine, a typing device having front striking type associated therewith, a carriage movable relatively to said type, a platen on said carriage,
 15 means for supporting a main record on said platen in front of said type, means for supplying a relatively narrow zigzag folded supplemental record strip to said platen for receiving impressions by said front striking type, said strip
 20 having a width adapted for receiving a single line only of typed characters, means for guiding said supplemental record strip in a path perpendicular to its path across said main record and lengthwise of said platen, means for supplying a duplicating agent in association with said record strip,
 25 means responsive to the motion of said carriage in one direction for feeding said record strip transversely across said main record in front

of said type, and means responsive to the motion of said carriage in the opposite direction for maintaining said feeding means inactive during said opposite direction of motion.

6. In combination in a front-strike typing machine, a typing device having front striking type associated therewith, a carriage movable relatively to said type, a platen on said carriage, means for supporting a main record on said
 10 platen in front of said type, means for supplying a relatively narrow zigzag folded supplemental record strip to said platen for receiving impressions by said front striking type, said strip having a width adapted for receiving a single line
 15 only of typed characters, means for guiding said supplemental record strip in a path perpendicular to its path across said main record and lengthwise of said platen, means for supplying a duplicating agent in association with said record strip, and means for feeding said record strip
 20 transversely across said main record and in front of said type, said guiding means including devices adapted to guide said supplemental record strip downwardly from said supplying means perpendicularly thereto across said main record and
 25 upwardly to a delivery position.

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