March 2, 1954 A. W. METZNER 2,670,833

STRIP FEEDING MECHANISM

Filed June 2, 1951

2 Sheets-Sheet 1

Fig. 1

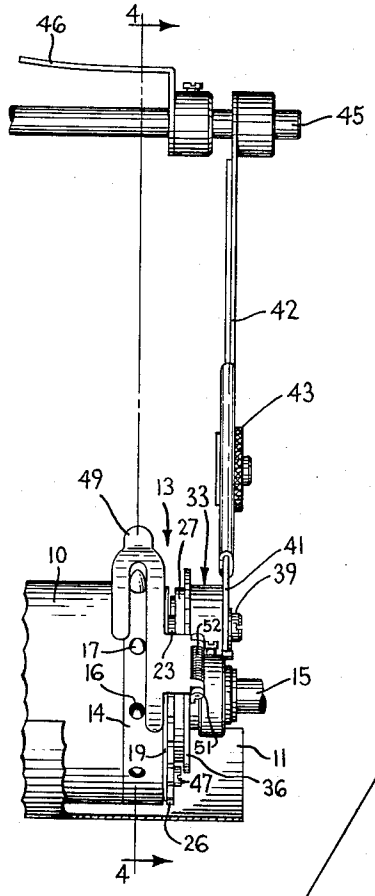
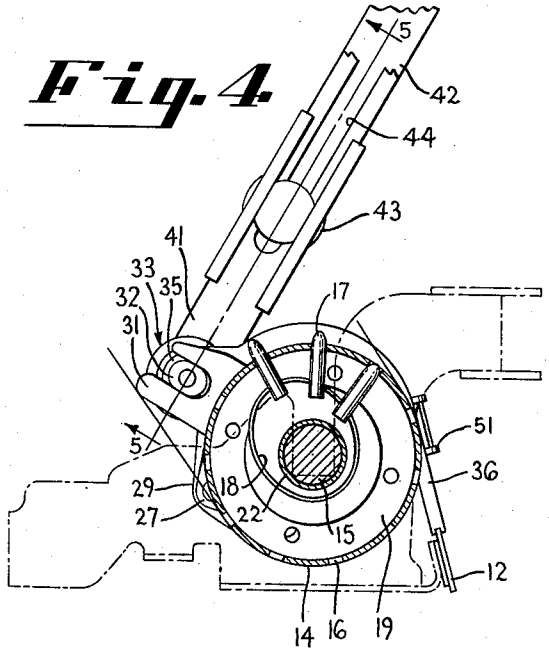


Fig. 4



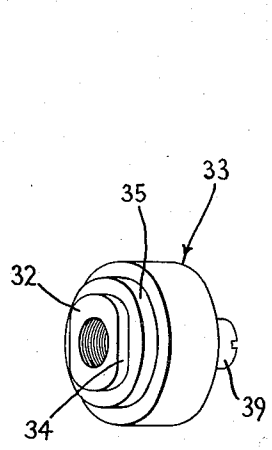


Fig. 2

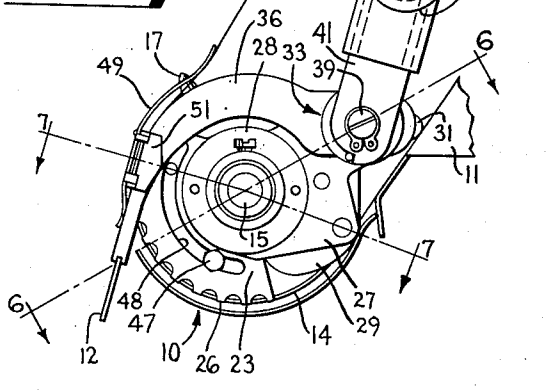


Fig. 8

INVENTOR
ALBERT W. METZNER
BY Tom Walker
ATTORNEY

March 2, 1954 A. W. METZNER 2,670,833

STRIP FEEDING MECHANISM

Filed June 2, 1951 2 Sheets-Sheet 2

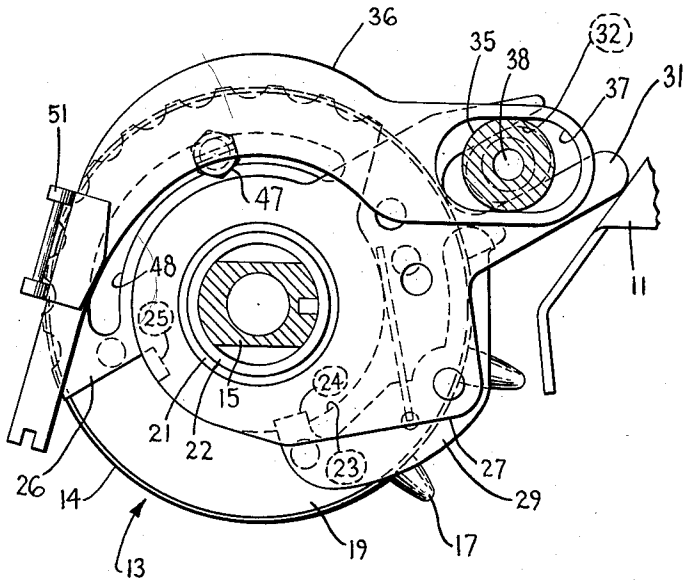


Fig. 3

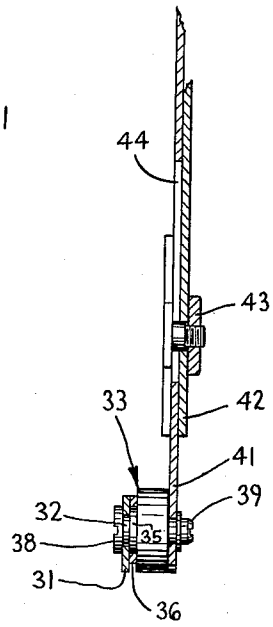


Fig. 5

Fig. 7

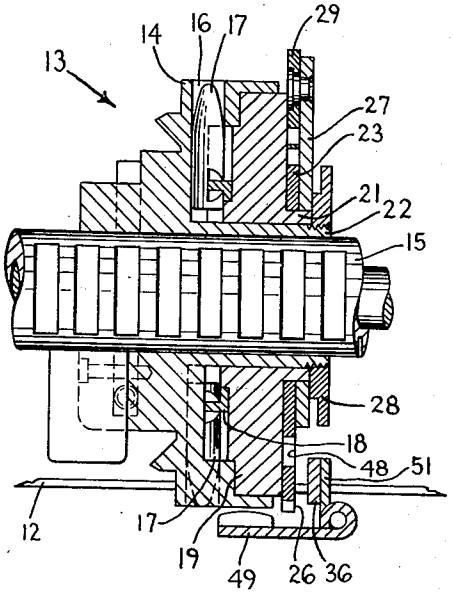
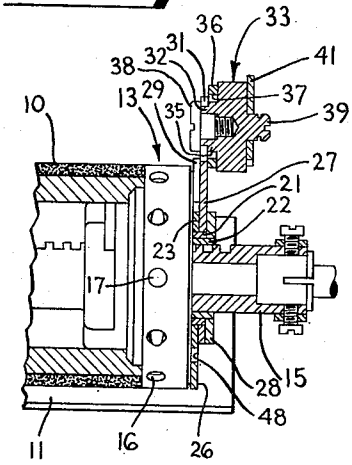


Fig. 6



INVENTOR
ALBERT W. METZNER
BY Tom Walker
ATTORNEY

Patented Mar. 2, 1954

2,670,833

UNITED STATES PATENT OFFICE

2,670,833

STRIP FEEDING MECHANISM

Albert W. Metzner, Dayton, Ohio, assignor to The Standard Register Company, Dayton, Ohio, a corporation of Ohio

Application June 2, 1951, Serial No. 229,641

11 Claims. (Cl. 197—133)

1

This invention relates to typewriting and like machines, and more particularly to platen roll assemblies as used therein embodying pin type record material feeding units.

Platen roll assemblies so characterized are frequently installed in existing machines as a unitary replacement for the conventional friction feed platen. Inasmuch as the feeding units comprise a relatively stationary adjustment cam and a reactant member therefor it is necessary to provide an anchor for the reactant member in or upon the machine. In the past this anchor has been provided by a cross rod lying to the rear and slightly above the platen.

The location of this cross rod is not always the same in every machine, however, and is not found at all in some makes of machines. Accordingly, the installation of a pin type platen in existing machines has in the past required a custom designing of the feeding unit, or modification in the platen assembly or in the machine, or both, to suit the individual requirements of the specific installation.

The instant invention proposes and has for its object a universal attachment or anchor means enabling a standard platen assembly to be installed in any typewriting machine without the need of special skill, tools or modification in either the platen roll or the machine.

Thus the object of the invention is to simplify the construction as well as the means and mode of operation of strip feeding mechanism, whereby such mechanisms may not only be economically manufactured, but will be more efficient and satisfactory in use, adaptable to a wide variety of installations, having relatively few parts and be unlikely to get out of repair.

A further object of the invention is to avoid the need for fastening the reactant member to any part of the machine.

A further object of the invention is to support on the feeding units a paper guide extension or bail which is accordingly movable laterally with the platen roll assembly.

A still further object of the invention is to make the paper guide extension vertically adjustable.

A further object of the invention is to provide a strip feeding mechanism possessing the advantageous structural features, the inherent meritorious characteristics and the mode of operation herein mentioned.

With the above primary and other incidental objects in view as will more fully appear in the specification, the invention intended to be protected by Letters Patent consists of the features

2

of construction, the parts and combinations thereof, and the mode of operation, as hereinafter described or illustrated in the accompanying drawings, or their equivalents.

Referring to the accompanying drawings, wherein is found the preferred but obviously not necessarily the only form of embodiment of the invention,

Fig. 1 is a view in front elevation of a platen roll assembly in accordance with an illustrative embodiment of the invention, one end only of the assembly being shown;

Fig. 2 is a view in side elevation of the assembly of Fig. 1, showing the paper pan and scale plate of a typical typewriting machine, these elements serving as reference points in the installation of the platen roll;

Fig. 3 is a detail view, in side elevation, of elements of the feeding unit and anchoring means;

Fig. 4 is a view in cross section, taken substantially along the line 4—4 of Fig. 1;

Fig. 5 is a view of the paper bail extension taken substantially along the line 5—5 of Fig. 4;

Figs. 6 and 7 are views in longitudinal section taken substantially along the respective lines 6—6 and 7—7 of Fig. 2.

Fig. 8 is a detail perspective view of the interconnecting nut.

Like parts are indicated by similar characters of reference throughout the several views.

Referring to the drawings, a platen roll 10 is indicated in Fig. 2, somewhat diagrammatically, as disposed intermediate a paper pan or guide 11 and a scale plate 12, this being the conventional arrangement in typewriters. At each end of the platen roll is a pin type record material feeding unit 13 (one shown). Each such unit includes a body 14 mounted on the platen shaft 15 for rotation therewith and having a circumferential series of radial openings 16 mounting relatively sliding pins 17. As seen in Figs. 4 and 7, the pins 17 are connected at their inner ends to the turned over flange of a cam 18 rotatably mounted on the shaft 15. As indicated in Fig. 4, a relative revolving motion of the pins 17, as will result from rotation of the platen 10 while the cam 18 is held stationary, serves to effect a progressive extension and retraction of the pins 17 relatively to the body 14. The position of the single high lobe on the cam 18 determines the circumferential area of projection of the pins and it will be understood that this area may be changed by rotative adjustment of the cam relatively to the platen and the platen shaft.

The cam 18 is fastened to one side of a disc

19, the hub 21 of which is rotatable on a sleeve 22 integral with the body 14. Rotatably mounted on the hub 21, but adjustably secured to the disc 19 for rotation therewith, is a locating plate 23 (Fig. 3). The plate 23 is of relatively smaller diameter than the disc 19 and has in its periphery a pair of spaced apart notches 24 and 25. A projecting sector shaped part 26 of the plate has a serrated periphery which is presented to the finger of the operator in order that the assembly comprising the plate 23, disc 19 and cam 18 may be moved between extreme positions of oscillation as defined by the notches 24 and 25.

The locating plate 23 is positioned alongside an anchor or reactant member 27 also rotatably mounted on the hub 21 and held thereon by a lock nut 28 screwed onto the sleeve 22. Pivotally mounted on the side of the reactant member 27 is a pawl 29 positioned to overlie the locating plate 23 and selectively engageable with the notches 24 and 25 to interlock the reactant member and the locating plate in alternative relative positions of adjustment. The reactant member 27 has a bifurcated portion 31 embracing a stepped down shoulder 32 on an interconnecting nut 33 (Fig. 8). The shoulder 32 has opposed peripheral flats 34 which are parallel to and in contact with the side walls of the bifurcation in member 27 whereby to preclude relative rotary motion between the reactant member and nut 33.

On an intermediate shoulder 35 of the nut 33 is mounted an abutment arm 36, the arm being connected to the nut at its base end where it has an oversize slot 37 which receives the shoulder 35 with freedom of relative adjustable movements. The arm 36 extends from the nut 33 over the platen roll 16 to the front thereof where its outer end is notched to engage the edge of the scale plate 12. The bifurcated portion 31, or the nut 33, or both, are arranged to contact the paper guide 11, the construction and arrangement being such as to wedge the member 27 between the paper guide and the scale plate where it serves as an anchor for holding the cam 18 against rotation with the platen roll 16 and body 14. A locking stud 38 is received in a tapped bore in the nut 33, and, when tightened, holds the nut 33 in adjusted position with respect to the member 27 and holds the abutment arm 36 in adjusted position with respect to the nut.

On the side opposite the shoulders 32 and 35, the nut 33 is formed with another tapped opening in which is installed a stud 39. The stud 39 provides a pivotal mounting for a lower leg 41 of an adjustable paper guide extension further including an upper leg 42 and a lock nut 43 carried by the leg 42 and extending into a slot 44 in the leg 41. At its upper end the leg 42 provides a mounting for one end of a bail 45 upon which is mounted a guide element 46. It will be understood, as suggested in Fig. 1, that the assembly as there illustrated is a part of a paper bail or extension unit, there being a duplicate set of legs corresponding to the legs 41 and 42 at the opposite end of the bail 45 and mounted on a companion unit 13. Such paper bail accordingly becomes in effect a part of the platen roll and is shifted laterally with it whereby always to be in registry with the paper. The adjustable or extensible feature of the bail assembly enables the height of the bail 45 to be changed or to be held constant in oscillatory positions of adjustment of the bail assembly.

With further regard to the reactant member 27, in the installation of the platen roll the screw

stud 38 is loosened and the reactant member and nut 33 allowed to drop back into contact with the paper pan 11. The abutment arm 36 then is extended and rocked the necessary distances to engage the outer end thereof with the scale plate 12. Upon tightening of the screw stud 38 the parts then are held in their adjusted position and the reactant member 27 is stabilized. Through the pawl 29, the member 27 anchors the plate 23 and the cam 18. When it is desired to shift the cam 18 and thereby vary the circumferential area of projection of the pins 17, the pawl 29 is released from the notch 24 or 25 and the cam appropriately adjusted by manipulation of part 26 of the locating plate 23. According to conventional practice, the notches 24 and 25 are arranged so that manipulation of the cam and locating plate to align the notches with the pawl 29 has the effect of rendering the feeding unit effective and ineffective, the circumferential area of projection of the pins 17 being shifted thereby alternatively into and out of the writing area on the platen.

A semi-permanent connection between the locating plate 23 and the disc 19 is represented by a screw 47 (Fig. 2) carried by the disc 19 and projecting through an arcuate slot 48 in plate 23. By loosening the screw 47 the disc 19 and plate 23 can be turned relatively to one another to any selected position of adjustment, tightening of the screw serving to hold the parts in the position selected. This adjustment normally is required only at the installation of the platen roll when the area of projection of the pins 17 need be made to agree with the slope and spacing of the paper pan and scale plate of the particular machine upon which the installation is being made.

The abutment arm 36 is utilized as a mounting for the conventional "feed finger" 49 which embraces the pins 17 at or adjacent to the writing line and holds the paper upon the platen in engagement with the feeding pins. As seen in Fig. 1, the finger 49 is supported on the arm 36 by a hinged connection 51 and is urged to a pressural contact with the platen by a spring 52.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise but one of several modes of putting the invention into effect.

Having thus described my invention, I claim:

1. In a typewriting or like machine, a pin type record material feeding unit including a drive shaft, a rotatable pin wheel secured to said shaft, radially movable feeding pins carried by said wheel, a cam rotatably mounted on said shaft and cooperative with said feeding pins to control the extension and retraction thereof during rotation of said pin wheel, a locating plate made fast to said cam, an anchor member loosely mounted on said shaft in side by side relation to said locating plate, relatively adjustable means engageable with spaced stationary parts of the machine to preclude rotary movement of said anchor mem-

ber, and releasable latching means between said locating plate and said anchor member.

2. In a typewriting or like machine, a platen assembly including a platen shaft and a reciprocating pin type record material feeding unit mounted on said shaft, a cam enclosed in said unit and rotatably adjustable on said shaft to vary the circumferential area of projection of the pins in said unit, an adjustment member made fast to said cam, an anchor device detachably connected to said adjustment member, and reference points on the machine on opposite sides of said platen assembly engageable by said anchor device to preclude rotary movement thereof.

3. In a typewriting or like machine, a pin type record material feeding unit including a drive shaft, a rotatable pin wheel mounted on said shaft for rotation therewith, radially movable feeding pins carried by said wheel, a cam rotatably mounted on said shaft and cooperative with said feeding pins to control the extension and retraction thereof during rotation of said pin wheel, a locating plate made fast to said cam, an anchor member having a rotatable bearing on said shaft in side by side relation to said locating member, an adjustable interconnection between said locating plate and said anchor member providing for the latching of said locating plate to said anchor member in selected rotative positions of adjustment of said locating plate, means on said anchor member engageable with a stationary part of the machine to preclude rotation of said anchor member in one direction, and an arm adjustably connected at its one end to said means and extending at its other end to engagement with another stationary part of the machine to preclude rotation of said anchor member in the opposite direction.

4. In a typewriting or like machine, having a platen assembly and a paper guide and a scale plate respectively to the rear of and to the front of the platen assembly, a pin type record material feeding unit comprised in said platen assembly and including a pin carrier rotatable with the platen assembly and mounting radially extensible and retractable pins, a relatively stationary cam controlling the movements of said pins and rotatively adjustable to vary the circumferential area of extension thereof, an anchor member for holding said cam in adjusted position, said member abutting said paper guide to limit motion in one direction and an abutment arm connected to said anchor member and extending into cooperative relation with said scale plate to limit motion of said anchor member in the opposite direction.

5. A typewriting or like machine according to claim 4, characterized in that said abutment arm is adjustable with respect to said anchor member to allow differences in distance between the paper guide and the scale plate to be compensated for.

6. In a typewriting or like machine having a platen roll, a paper guide in back of said platen roll and a scale plate in front thereof; the combination of a plurality of pin type record material feeding units interposed in said platen roll in longitudinally spaced apart relation, each of said units including a pin control cam and a reactant member therefor, means effecting a common wedging engagement of said reactant member with said paper guide and said scale plate to preclude rotary motion of the reactant member with the platen roll, and a paper guide extension supported on the reactant members of companion feeding units.

7. In a typewriting or like machine having a platen roll supported for lateral shifting and rotary motion, the combination of a plurality of pin type record material feeding units interposed in said platen roll in spaced apart relation along the length thereof, each of said units including a reactant member laterally shiftable with said platen roll but movable relatively thereto in a rotative sense; and a paper guide mounted on and carried by said reactant members of companion feeding units.

8. A typewriting or like machine according to claim 7, characterized in that said paper guide includes parallel legs adjustable as to length and pivotally connected to respective reactant members.

9. In a typewriting or like machine having a platen roll, a paper guide in back of said platen roll and a scale plate in front thereof, a pin type record material feeding unit interposed in said platen roll and including feeding pins and an adjustable cam for controlling the circumferential area of projection of the pins, a reactant member for said cam rotatably mounted on the platen roll, and means for fixing said reactant member against rotary movement utilizing said paper guide and said scale plate as reference points between which the reactant member is held against rotation with the platen roll.

10. A platen roll and paper guide assembly, including a platen shaft, a plurality of pin type record material feeding units on said shaft each including a pin wheel in driven relation to said shaft and a cam adjustable in a rotative sense on said shaft to control the circumferential area of projection of the pins carried by said pin wheel, a reactant member for each of said cams rotatably mounted on said shaft, a connection part carried by each of said reactant members and engageable with a fixed reference point to limit rotary motion of the reactant member in one direction, an abutment arm adjustably connected to said connection part and extending toward engagement with another fixed reference point to limit rotary motion of the reactant member in the opposite direction; and paper guide arms connected at their base ends to the connection parts of companion feeding units and supporting at their opposite ends bail means to define a paper guide supported by and movable with the feeding units.

11. In a typewriting machine having a fixed scale plate, and further having a platen assembly including a pin type record material feeding unit, a relatively stationary pin control cam in said unit, a reactant member for said cam fixed with respect to a stationary reference point in the machine, and an abutment arm adjustably connected to said reactant member and detachably connected to said scale plate, said scale plate thus defining another reference point with respect to which said reactant member is fixed.

ALBERT W. METZNER.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,431,266	Sherman	Oct. 10, 1922