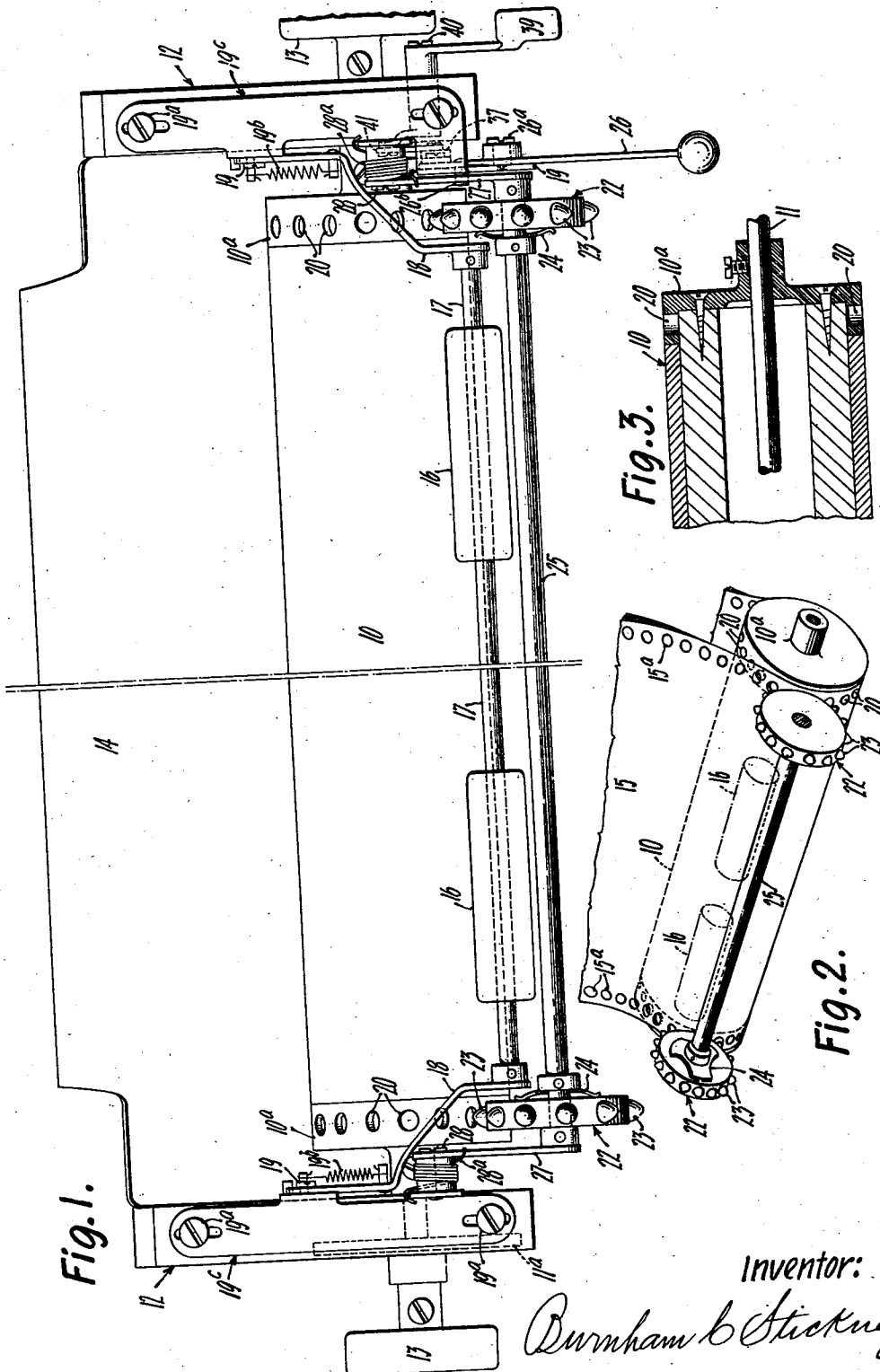


Sept. 27, 1938.

B. C. STICKNEY
TYPEWRITING MACHINE
Filed May 14, 1935

2,131,152

2 Sheets-Sheet 1



Inventor:

Burnham C. Stickney

Sept. 27, 1938.

B. C. STICKNEY

TYPEWRITING MACHINE

Filed May 14, 1935

2 Sheets-Sheet 2

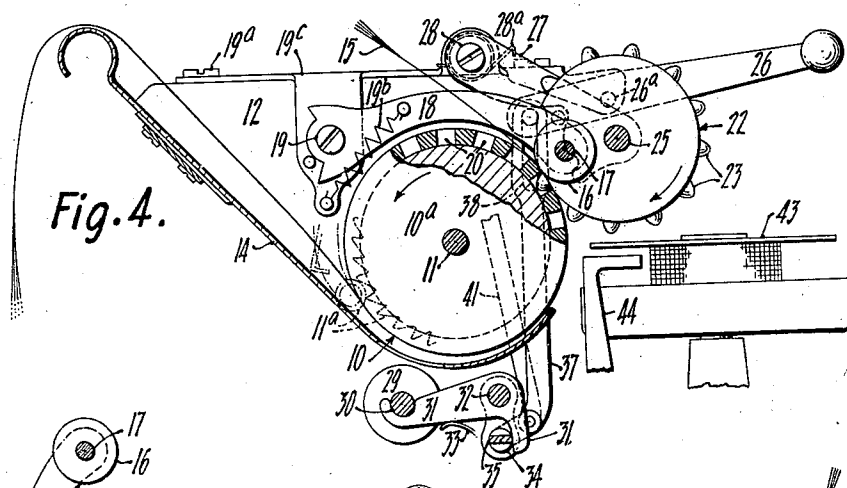


Fig. 4.

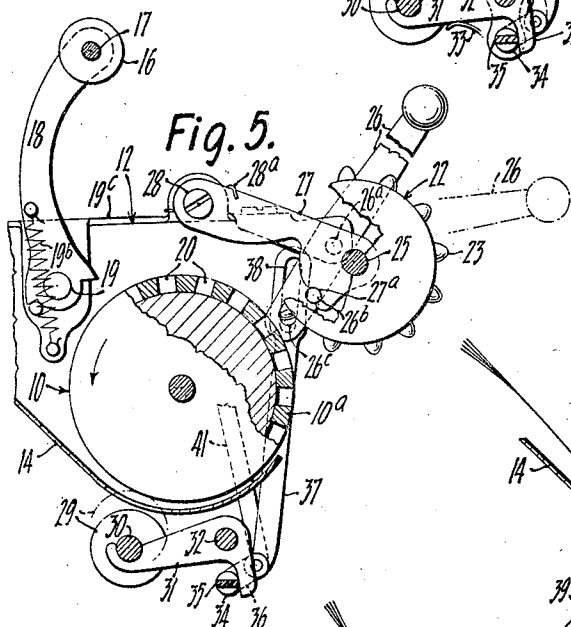


Fig. 5.

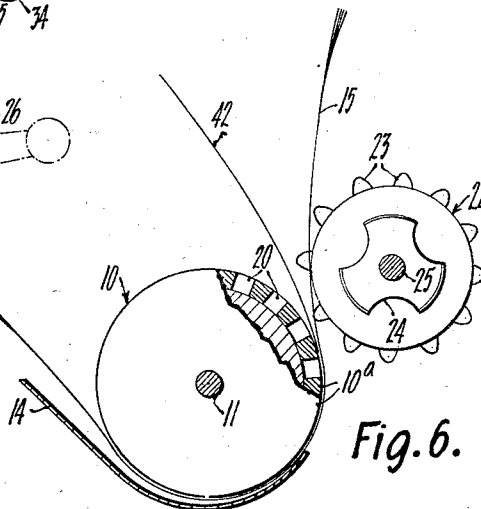


Fig. 6.

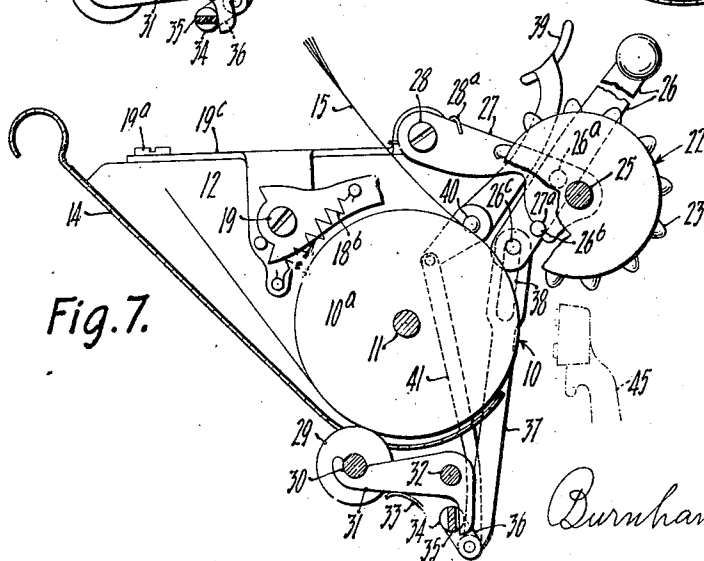


Fig. 7.

Inventor:

Burnham & Stickney

UNITED STATES PATENT OFFICE

2,131,152

TYPEWRITING MACHINE

Burnham C. Stickney, Hillside, N. J., assignor to
Underwood Elliott Fisher Company, New York,
N. Y., a corporation of Delaware

Application May 14, 1935, Serial No. 21,360

10 Claims. (Cl. 197—133)

This invention relates to improvements in paper-controlling devices of typewriting machines, especially to enable manifolded webs or extra-length work-sheets, to be fed around the platen without creeping or skewing of the paper.

The invention presents a new type of feeder to advance either a single work-sheet or web or a plurality of work-sheets of any length, with accurate alignment.

By means of a shaft having an impaling-pin wheel at each end, rows of regular perforations in the side edges of a work-sheet are engaged. The platen has holes or notches to mesh with the pin-wheel teeth and position the work-sheet with accuracy.

A control-lever throws the pin-wheels into and out of engagement with the rows of holes in the platen, and a compulsory paper-feeder can be transformed to a smooth friction-type device.

When the machine is to be used in the regular way for writing upon unperforated sheets, the pin-wheels are cast off and pressure-rolls are restored to the platen, so that the full width of the platen is available.

This device is made in the form of an attachment, and fits conveniently to the carriage-ends. Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a plan of the paper-impaling wheels. Figure 2 is a perspective showing the invention in effective position.

Figure 3 is a fragmentary section taken through the end of the platen.

Figure 4 is a vertical section showing impaling wheels and the feed-rolls in normal positions. This figure shows ribbon-spool 43 and type-guide 44 below the wheels.

Figure 5 shows the Figure 4 parts released.

Figure 6 is a section showing pin-wheels released, and the insertion of extra work-sheets, which are narrow and unprovided with holes.

Figure 7 is a section showing the impaling wheels cast off and the parts in position for typing on ordinary work-sheets, with frictional feeding of the sheets.

As seen at Figures 1, 4, 5 and 7, a platen 10 is journaled at 11 upon a carriage 12 and provided with the usual line-spacing mechanism 11^a and knob 13. A paper-table 14 guides work-sheets 15.

Upper front pressure-rolls 16 are loosely carried upon shaft 17, which is fixed to bail-arms 18. This bail is hinged at 19 upon seats 19^a which are adjustably fastened by screws 19^b upon the platen frame or carriage. Double-acting

springs 19^b at the ends of the bail-arms 18 hold said pressure-rolls either against the platen or away therefrom, Figures 4 and 5. These rolls may be used when typing upon unperforated sheets. They may also aid in holding perforated sheets firmly against the platen, especially wide sheets.

Upon the platen-ends are mounted disks 10^a flush with the platen-surface. Radial holes 20 are evenly spaced around the disks. The holes in one disk are preferably in lateral alignment with those in the other.

The work-sheets 15 have holes 15^a along their sides to align with platen-holes 20. Paper-feeding pinions or wheels 22 have sheet-impaling pins or teeth 23, to match and fit the holes 20, thereby maintaining the work-sheets or the webs in perfect alignment, without skewing or disheveling. Each row of pins extends around the entire circumference of the wheel.

Independent rotation of each impaling wheel 22, for adjustment, may be permitted by friction washers 24. These are mounted on shaft 25 upon which the wheels turn, and press against them. Either wheel may be turned independently of the other so as to fall into proper mesh with the platen-wheel holes 20.

The pin-wheels can be moved into and out of operative position by control-lever 26, pivoted at 26^a to seat 19^c. The wheels engage the platen alike, as the shaft 25 forms a rigid member of a bail, being fixed upon bail-arms 27 that are hinged at 28 to the seats 19^c. Springs 28^a hold the pin-wheels against the platen-disks 10^a.

The control-lever 26 has a pin 26^b to hold the pin-wheels cast off, Figure 5. Said pin 26^b fits in a notch 27^a on bail 27, seen in Figures 5 and 7. Downward pressure on control-lever 26 will turn it about its pivot 26^a and withdraw pin 26^b from notch 27^a and permit bail 25, 27 to be swung down by coil-springs 28^a, to restore the paper-fed pin-wheels to effective position, Figure 4. It will be seen that pulling the control-lever forward horizontally engages the pin-wheel teeth, work-sheet and platen; and automatically disengages the bottom feed-rollers; and the bail 17 with its auxiliary feed-rollers 16 may be pressed down on the platen, thereby co-operating with the pin-wheels in holding the paper firmly to the platen, especially wide sheets, which tend to belly out from the platen near the top edge.

When the impaling wheels are thrown off from the platen, the original work-sheet can be left impaled (Figure 6) on the pin-wheel teeth; and the feed-rolls 16, 29 being also released, extra

5 sheets 42 can be front-inserted behind the sheet which is impaled upon the released pin-wheel. When the pin-wheels are inoperative, they are held frictionally by the spring washers 24 in proper rotative relation with the hole 20 in the platen; so that the pins 23 will readily fall into mesh with the paper and platen, when restored to operative relationship.

10 Figure 6 shows the impaling wheels 22 cast off, to give room for extra copies 42 to be inserted in front of the platen, without changing the position of the perforated work-sheets 15; the latter still being impaled upon the pins 23 of cast-off wheels 22, which are retained by the 15 washers 24.

Under the platen the usual feed-rolls 29 may be carried by shaft 30, journaled in rock-arms 31, pivoted upon shaft 32. Springs 33 hold the feed-rolls 29 against the platen. These rolls 20 29 are seen cast off in Figure 4, where the sheets are being fed by the impaling couple. A connection between the control-lever 26 and the bottom roll-arm 31 is obtained by a cam-shaft 34, having cams 35 and a crank 36.

25 The control-lever at its end is pivoted in a slotted link 37, which connects the lever to the usual bottom feed-roll-release train. When the impaling wheel is brought into use by the lever, the bottom platen-rolls are cast off.

30 A release-key 39, pivoted at 40 to the platen-carriage, operates a link 41 extending to crank 36 on the cam-shaft 34, so as to cast off the bottom feed-rolls at will.

The link 37 lifts the crank 36 and turns the 35 cams 35 to roll-releasing position.

Link 37 reaches from the crank 36 to a pin 26^c on the inner end of the control-lever 26, to complete its connection to rolls 29.

40 When it is desired to use the machine for regular typing upon small ordinary work-sheets, the pin-wheels may be cast off by pushing the control-lever 26 backward. The bottom rolls still run against the platen, Figure 7, but they may be released at will by the key 39 when introducing common work-sheets. A slot 38 in the upper 45 end of the rod 37 is provided for the purpose of giving pivot 26^c (located on control-lever 26) the necessary freedom.

50 When the pin-wheels are in their released position, the feed-rolls can be thrown on and off independently of the pin-wheel lever, by the feed-roll-release lever; by reason of the lost-motion slot, between the feed-roll and pin-wheel mechanisms.

55 Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

60 1. In a front-strike typewriting machine, a sheet-feeding couple having, in combination, a revoluble platen having at its ends circumferential rows of perforations, and a pair of wheels having impaling pins to fit in marginal holes 65 formed in the work-sheet that is fed between the pin-wheels and the platen, the pins on the wheels meshing with the holes in the platen.

70 2. In a front-strike typewriting machine, a sheet-feeding couple having, in combination, a revoluble platen having at its ends circumferential rows of perforations, a pair of wheels having impaling pins to fit in marginal holes formed in the work-sheet that is fed between the pin-wheels and the platen, the pins on the wheels 75 meshing with the holes in the platen, and a shaft

extending along the front of the platen and carrying said pin-wheels.

3. In a front-strike typewriting machine, a sheet-feeding couple having, in combination, a revoluble platen having at its ends circumferential rows of perforations, a pair of wheels having impaling pins to fit in marginal holes formed in the work-sheet that is fed between the pin-wheels and the platen, the pins on the wheels meshing with the holes in the platen, and a control lever having means to carry said pin-wheels away from the platen at will.

4. In a front-strike typewriting machine, a sheet-feeding couple having, in combination, a revoluble platen having at its ends circumferential rows of perforations, a pair of wheels having impaling pins to fit in marginal holes formed in the work-sheet that is fed between the pin-wheels and the platen, the pins on the wheels meshing with the holes in the platen, a shaft extending along the front of the platen and carrying said pin-wheels, a control lever connected to move said shaft and wheels away from the platen at will, the work-sheet being adapted to be retained by the pins when they are released from 25 the platen, and the wheels being relatively rotatable on said shaft, and friction devices to preserve the rotative alignment of the wheels when they are cast off from the platen.

5. In a front-strike typewriting machine, a sheet-feeding couple having, in combination, a revoluble platen having at its ends circumferential rows of perforations, a pair of wheels to engage the platen at its front side and having impaling pins to fit in marginal holes formed in the work-sheet that is fed between the pin-wheels and the platen, the pins on the wheels meshing with the holes in the platen, a shaft extending along the front of the platen and carrying said pin-wheels, a control lever connected to move said shaft and wheels away from the platen at will, releasable feed-rolls to press a work-sheet against the platen, when the pin-wheels are cast off with the work-sheet impaled upon the pin-wheels, and a spring-pressed releasable feed-roll, settable at will, to press sheets against the platen above the printing line, and prevent the sheets from bellying away from the platen.

6. In a front-strike typewriting machine, a sheet-feeding couple having, in combination, a revoluble platen having at its ends circumferential rows of perforations, a pair of wheels having impaling pins to fit in marginal holes formed in the work-sheet that is fed between the pin-wheels and the platen, the pins on the wheels meshing with the holes in the platen, and springs to hold the wheels against the paper to press it against the platen.

7. In a front-strike typewriting machine, a sheet-feeding couple having, in combination, a revoluble platen having at its ends circumferential rows of perforations, a pair of wheels having impaling pins to fit in marginal holes formed in the work-sheet that is fed between the pin-wheels and the platen, the pins on the wheels meshing with the holes in the platen, a control lever having means to carry said pin-wheels away from the platen at will, and means to latch said wheels away from the platen.

8. In a front-strike typewriting machine, a sheet-feeding couple having, in combination, a revoluble platen having at its ends circumferential rows of perforations, a pair of wheels having impaling pins to fit in marginal holes formed in the work-sheet that is fed between the pin-

wheels and the platen, the pins on the wheels meshing with the holes in the platen, a control lever having means to carry said pin-wheels away from the platen at will, a releasable set of feed-rolls to run upon the bottom of the platen, springs to press said rolls against the platen, and means to enable said control lever to restore said feed-rolls when releasing said pin-wheels from the platen.

9. In a front-strike typewriting machine, a sheet-feeding couple having, in combination, a revoluble platen having at its ends circumferential rows of perforations, a pair of wheels having impaling pins to fit in marginal holes formed in the work-sheet that is fed between the pin-wheels and the platen; the pins on the wheels meshing with the holes in the platen, a control lever having means to carry said pin-wheels away from the platen at will, a releasable set of feed-rolls to run upon the bottom of the platen, springs to press said rolls against the platen, means to enable said control lever to restore said feed-rolls when releasing said pin-wheels from

the platen, and a releasable feed-roll to run upon the platen above the printing line and controlled by said control lever, to be either released or restored concomitantly with said set of bottom feed-rolls.

10. In a front-strike typewriting machine, a sheet-feeding couple having, in combination, a revoluble platen having at its ends circumferential rows of perforations, a pair of wheels having impaling pins to fit in marginal holes formed in the work-sheet that is fed between the pin-wheels and the platen, the pins on the wheels meshing with the holes in the platen, a control lever having means to carry said pin-wheels away from the platen at will, a releasable set of feed-rolls to run upon the bottom of the platen, springs to press said rolls against the platen, and means to enable said control lever to restore said feed-rolls when releasing said pin-wheels from the platen, said bottom feed-rolls having a release key whereby to be cast off or restored independently of said pin-wheels.

BURNHAM C. STICKNEY.