

A. G. F. KUROWSKI.
TYPE WRITING MACHINE.
APPLICATION FILED JAN. 27, 1910.

1,063,887.

Patented June 3, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

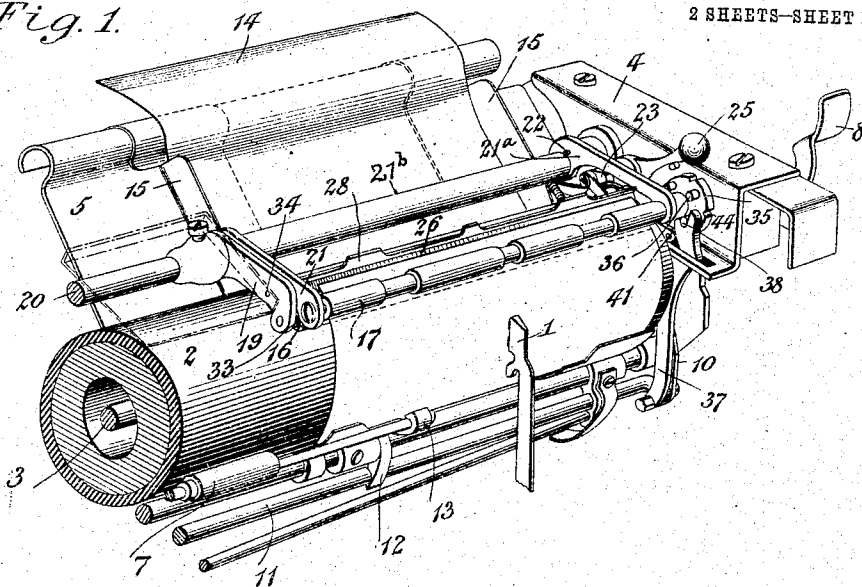


Fig. 2.

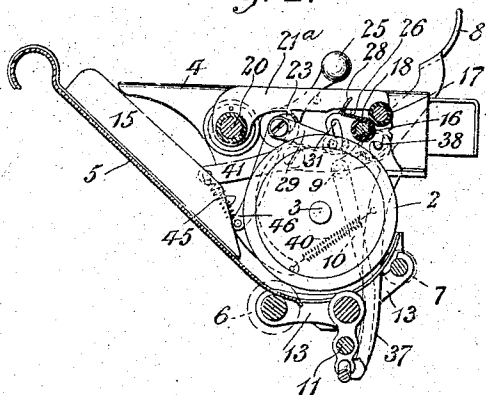


Fig. 3.

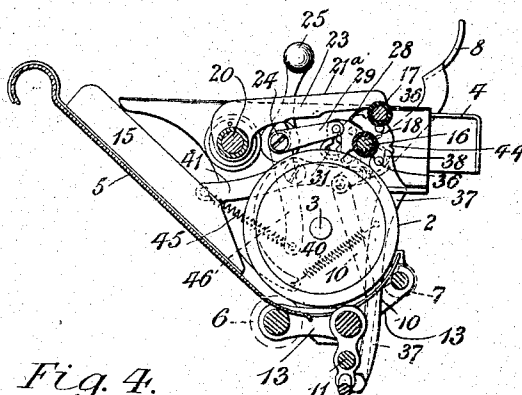


Fig. 4.

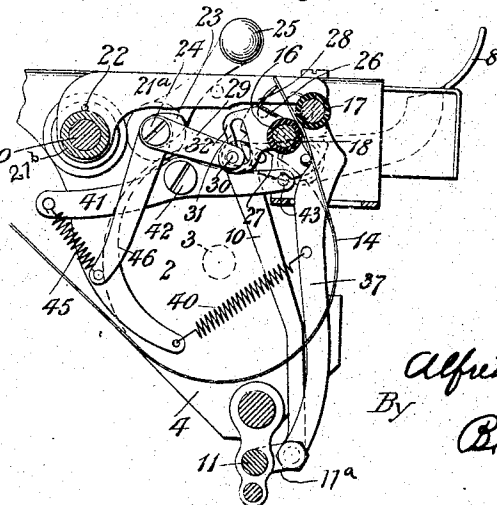
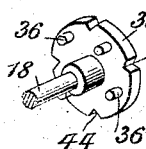


Fig. 5.



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2 SHEETS—SHEET 2.

Fig. 6.

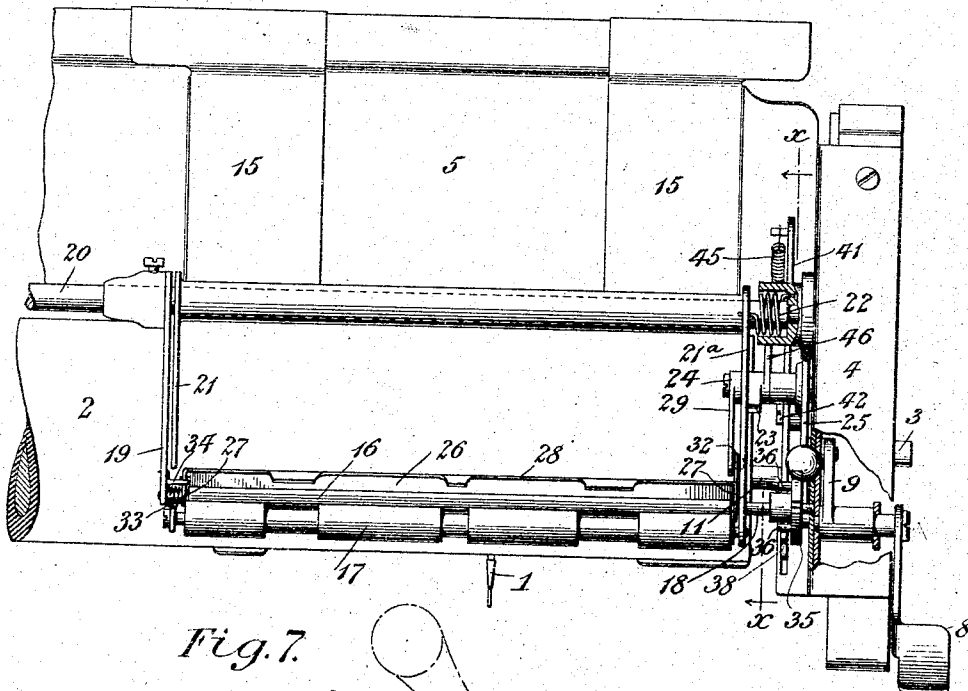


Fig. 7.

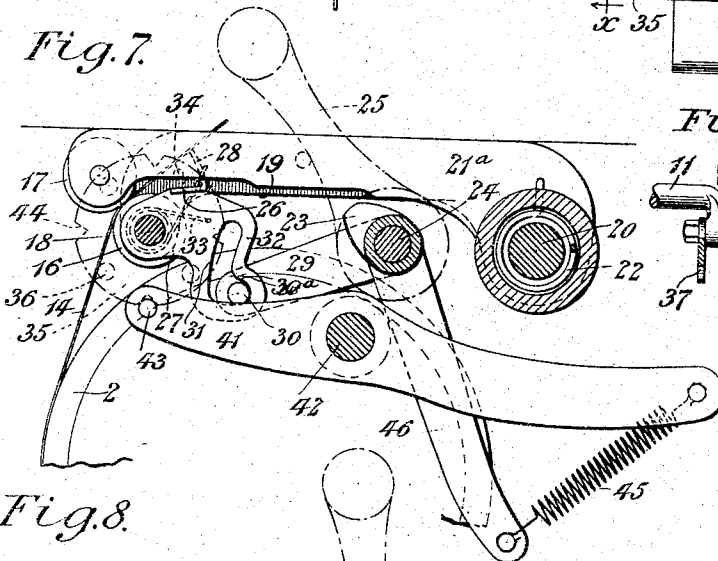


Fig. 9.

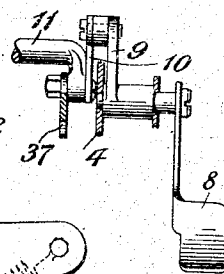
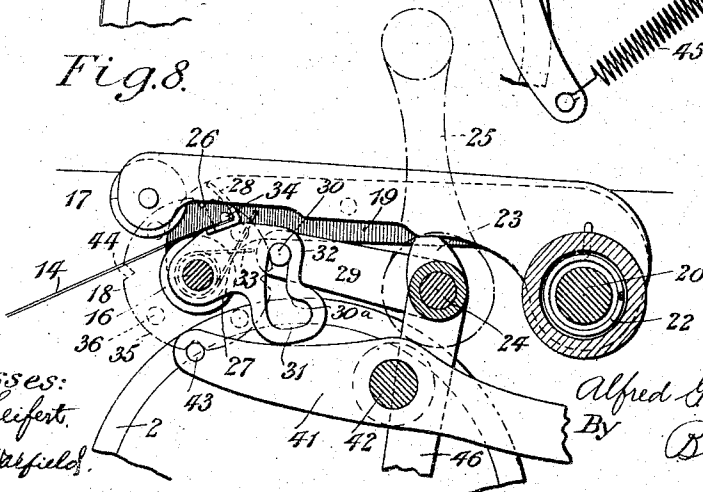


Fig. 8.



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UNITED STATES PATENT OFFICE.

ALFRED G. F. KUROWSKI, OF NEW YORK, N. Y., ASSIGNOR TO UNDERWOOD TYPE-WRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

TYPE-WRITING MACHINE.

1,063,887.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed January 27, 1910. Serial No. 540,315.

To all whom it may concern:

Be it known that I, ALFRED G. F. KUROWSKI, a citizen of the United States, residing in New York city, borough of Bronx, in the county of New York and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to tally sheet feeding mechanisms for typewriting machines employed for billing and analogous purposes, wherein the amounts of a succession of bills or the like which are written on the machine, are entered upon tally sheets fed intermittently around the platen.

One of the main objects is to provide an improved and simplified device associated with the usual sheet-feeding mechanism for mechanically feeding strips of paper (such as individual tally sheets) around the platen independently of the usual paper feeding mechanism, and one which is easily applied to existing machines. The usual cylindrical platen having feed rolls which are cast off and restored thereto at will, is provided with a tally-sheet feeding mechanism comprising a feeding couple of rolls located near one end of the platen, to feed the tally sheets around the platen independently of the platen-feed rolls. The feeding couple is operated through a line-space wheel and pawl actuated by the main feed-roll release mechanism, so as to advance the tally sheet as the main feed rolls are cast off. The feed couple is located just above the printing line and closely adjacent the platen, so that comparatively short strips may be accommodated. The rolls comprising the feed couple are separable to afford easy insertion of the leading edges of the sheets. When printed tally forms are used, it is desirable that the entries fall upon the ruled lines, to effect which the leading edge of the tally sheet is gaged or set to a predetermined point, so that the first line of writing will fall upon the desired ruled line. For this purpose a gage is moved into the path of the tally sheet as the feeding couple is opened; and after the couple is closed the gage is displaced to avoid obstructing the sheets.

Other objects and advantages will herein-after appear.

In the accompanying drawings, Figure 1 is a perspective view of the platen frame of an Underwood typewriting machine, show-

ing my invention applied thereto. Fig. 2 is a cross sectional view showing the parts in normal position. Fig. 3 is a similar view showing the rolls of the feeding couple separated for the introduction of the leading edge of the tally sheet, the gage or aliner being in effective position. Fig. 4 is an enlarged view similar to Fig. 2, parts being removed to better disclose the construction. Fig. 5 is a detail perspective view of the ratchet or line-space wheel for turning the feeding couple. Fig. 6 is a top plan view; parts being broken away to better disclose the device. Fig. 7 is a detail sectional view taken on line $x-x$ of Fig. 6 and looking in the direction of the arrow, the parts being in normal position. Fig. 8 is a similar view showing the rolls of the feeding couple separated. Fig. 9 is a detail view showing the connection between the release key and the cam shaft.

Types 1 strike upon the front of a platen 2 mounted on an axle 3 journaled in the ends 4 of a platen frame. The platen is turned by the usual line-space mechanism, not shown. A paper shelf 5 extends between the ends of the frame to guide the leading edge of the main sheet into the bite between the platen and a series of rear feed or pressure rolls 6. A series of forward feed or pressure rolls 7 assists the rear feed rolls in feeding the main sheet around the platen. The feed rolls are cast off from and restored to the platen by a release key 8 which operates a crank 9 and link 10 to turn a cam shaft 11, and rock lugs 12 connected with the roll-supporting arms 13. The link 10 is pivoted at its lower end to crank-arm 11^a on shaft 11. The series of main feed rolls 6, 7 does not extend entirely across the platen, and that end thereof which is unoccupied by the main feed rolls has a tally sheet feeding mechanism.

The tally sheet 14 is introduced into the machine by being dropped into the throat between the paper shelf 5 and the rear face of the platen 2. Side gages 15 adjustable on the paper shelf may be used to guide the tally sheet. The leading edge of the tally sheet passes freely around beneath the platen owing to the absence of the platen rolls 6, 7 at that end, and rises in front of the platen, and up past the printing line. The leading edge of the tally sheet is inserted between rolls 16, 17 forming a feeding couple lo-

cated just above the printing line. The base roll 16 of the feeding couple is mounted on a shaft 18, the left-hand end of which may be journaled in a stationary bracket 19 extending forwardly from the usual platen-frame rod 20, the opposite end of the shaft being conveniently journaled in the adjacent end 3 of the platen frame. The roll 17 is mounted to turn in arms 21. 21^a journaled by means of a hub or hollow shaft 21^b on the rod 20. A spring 22 normally holds the roll 17 against roll 16 to grip the sheet. A finger piece 25 turns a cam 23 journaled on a stud 24, to engage one of the arms 21^a supporting roll 17, to move the latter away from roll 16, Fig. 8. For this purpose the arms 21, 21^a are rigidly connected by hollow shaft 21^b.

It is desirable to aline or square the leading edge of the sheet prior to closing the feeding couple on the paper, so that the entries may be written on the ruled lines of a form, the distance between the printing line and the gage with which the leading edge is squared agreeing with the distance between the leading edge of the work sheet and the first ruled line thereon. For this purpose, a gage 26 may be journaled by a pair of ears 27 on the base roll shaft 18, and normally lies behind the feeding couple out of the path of the sheet (see Figs. 4, 6 and 7). The gage comprises a plate having a projecting ledge 28 with which the leading edge of the paper is squared. When said finger-piece 25 is rocked to release the rolls, it also swings an arm 29, which has a stud 30 to engage a shoulder 30^a forming one side of an angle slot in an extension 32 of one of the hinge ears or arms 27 upon which the gage turns. The gage is thus moved to operative position in the path of the leading edge of the tally strip, and is held by a spring 33 (Fig. 6) against a stop 34 on arm 19.

It will be seen that it is when the gage has reached its operative position that the cam 23 engages the roll controlling arm 21^a to raise the pressure roll 17, the stud 30 meanwhile idly traversing a dead portion 31 of the slot in the extension 32. The friction between the cam and the arm 21^a is sufficient to maintain the cam in effective position against the tension of a returning spring 45 connected with the cam by an arm 46. The operator can hence use both hands to adjust the tally sheet. The sheet is held by the operator against the gage, while the finger piece 25 is returned to restore the pressure roll 17. As the finger piece returns to normal position, the cam 23 first releases the roll-controlling arm 21^a, which is returned by its spring 22 and causes the pressure roll 17 to clamp the sheet. The stud 30 moves idly down the slot portion 31 while the pressure roll 17 is returning, after which said stud engages the end wall 31 of the slot to

return the gage to inoperative position. By thus clamping the tally sheet before returning the gage, the sheet is prevented from becoming displaced. The returning spring 45 overcomes the gage-operating spring 33 to normally hold the gage inoperative.

The tally sheet 14 is fed through regular intervals by a line-space mechanism connected preferably with the base roll 18. The shaft 16 of the base roll has a line-space wheel 35, the lateral teeth 36 of which (Fig. 5) are engaged by a pawl 37 recessed at its free end, as at 38, Fig. 1, to engage the teeth, and having a spring 40. The pawl 37 is pivoted to crank 11^a of rock-shaft 11. When the latter is rocked and the platen rolls 6, 7 are cast off to permit the removal of a completed bill and the insertion of a fresh one, the tally sheet is line-spaced for a new entry or line of writing. A detent 41, pivoted at 42, has a tooth 43 setting into recesses 44 in the periphery of the wheel 35. Conveniently the returning spring 45 may actuate the detent.

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:

1. In a typewriting machine, the combination with a platen, feed rolls pressed against the platen and cooperating with the platen to feed a sheet of paper, of a tally sheet feeding mechanism including a feeding couple of rolls located at one end of the platen just above the printing line for feeding tally sheets around the platen independently of the platen feed rolls, and lever-actuated mechanism to turn the feeding couple to feed the tally sheet and to simultaneously cast off the platen feed rolls.

2. In a typewriting machine, the combination with a platen and pressure rolls therefor, of a sheet feeding mechanism including a feeding couple of rolls by which the sheet is gripped and between which it passes, means for moving said rolls into and out of engagement with each other, a gage immediately beyond said rolls, means for projecting the gage into the path of movement of the sheet at the same time that the feeding couple is moved out of engagement, said gage serving to register the ruled lines of the sheet with the printing line, and line-space mechanism for feeding the sheet between the feeding couple.

3. In a typewriting machine, the combination with a platen and pressure rolls therefor, of a sheet feeding mechanism including a feeding couple of rolls by which the sheet is gripped, and between which it passes, means for moving said rolls into and out of gripping position, a gage normally idle immediately beyond said rolls, projectable by the roller moving means into the path

of the sheet to register its ruled lines with the printing line, and a finger piece effective to separate the rolls of the feeding couple and to throw the gage into and out of operative position.

4. In a typewriting machine, the combination with a platen and pressure rolls therefor, of a mechanism to feed tally sheets around the platen independently of the platen pressure rolls, and including a couple of rolls, one of which is pressed against the other, one of said rolls being yieldingly mounted, a normally idle gage with which the leading edge of the sheet is alined, and a lever-operated cam to release and restore the yieldingly mounted roll, and effective to move the gage into and out of the path of the sheet.

5. In a typewriting machine, the combination with a platen and pressure rolls therefor, of a tally sheet-feeding mechanism to feed tally sheets around the platen independently of the platen pressure rolls, and including a feeding couple of rolls, a gage immediately beyond said rolls with which the leading edge of the sheet is alined, and a finger piece for throwing the gage into and out of the path of the sheet.

6. In a typewriting machine, the combination with a platen and pressure rolls therefor, of a tally sheet-feeding mechanism to feed tally sheets around the platen independently of the platen pressure rolls, and including a feeding couple of rolls, a rocking gage with which the leading edge of the sheet is alined, a slotted extension on the gage, and a lever-controlled detaining arm having a stud traversing the slot and effective to throw the gage into and out of the path of the sheet.

7. In a typewriting machine, the combination with a platen, pressure rolls therefor, and release mechanism to cast off and restore the rolls, of a tally sheet feeding device including a feeding couple of rolls, one of which is movable relative to the other to grip and release the sheet, a sheet-feeding mechanism operated by the pressure roll release mechanism to turn the feeding couple mechanically when the pressure rolls are cast off, a gage to aline the leading edge of the sheet, and roll-releasing mechanism operated by a finger piece to release and restore the movable roll of the feed couple relative to its cooperating roll, and effective to throw the gage into and out of the path of the sheet.

8. In a typewriting machine, the combination with a platen and paper feeding mechanism therefor, of a tally sheet feeding device independent of the paper feeding mechanism and including a feeding couple of rolls, a controlling arm connected to one of the rolls, a gage tending to move to operative position, a spring-pressed detaining

arm normally maintaining the gage idle, a finger-piece to operate the detaining arm and having a cam to engage the roll-controlling arm to release the roll, and a returning spring for the roll-controlling arm effective to maintain the cam in operative position against the tendency of the spring-pressed detaining arm to return the cam and gage to idle position.

9. In a typewriting machine, the combination with a platen and platen rolls, of a tally sheet feeding mechanism including a feeding couple, one of the rolls of which is movable toward and from the other, a gage with which the leading edge of the sheet is alined, releasing and restoring mechanism for the movable roll of the feed couple, gage-detaining mechanism to hold the gage normally idle, and a finger piece controlling the operation of the roll-operating and gage-detaining mechanism and effective to close the rolls prior to displacing the gage.

10. In a typewriting machine, the combination with a platen and platen rolls, of a tally sheet feeding mechanism including a feeding couple of rolls one of which is movable toward and from the other, a gage for alining the leading edge of the sheet, gage operating mechanism for moving the gage into and out of operative position, releasing and restoring mechanism effective to close the feed couple prior to the movement of the gage to inoperative position.

11. In a typewriting machine, the combination with a revoluble platen, of a feeding roll couple separate from the platen, and a leading-edge gage immediately adjacent to the feeding roll couple for gaging the leading edges of work sheets to be fed by said couple and means for bringing the gage into operative position at the same time idling the feed rolls.

12. In a typewriting machine, the combination with a revoluble platen, of a feeding roll couple separate from the platen, and a gage adjacent to the feeding roll couple for gaging the leading edges of work sheets to be fed by said couple; said gage movable into and out of working position.

13. In a typewriting machine, the combination with a revoluble platen, of a feeding roll couple separate from the platen, a gage adjacent to the feeding roll couple for gaging the leading edges of work sheets to be fed by said couple, and means for separating the rolls in said couple and simultaneously setting said gage to working position.

14. In a front strike typewriting machine, the combination with a paper table behind the platen, of a side gage adjustable behind the platen, feeding rolls separate from the platen above the printing line, an end gage, and a finger piece for rendering said rolls effective or ineffective and for moving said end gage from effective to ineffective position.

tion after said rolls have been rendered effective.

15. In a typewriting machine, the combination with a feeding roll, of a device for turning said feeding roll, a detent for holding said feeding roll, a second feeding roll cooperating with said first feeding roll, a finger piece for separating said feeding rolls, and a single spring holding said detent and said finger piece in their normal positions.

16. In a front strike writing machine, the combination with a feeding roll journaled above the printing line in front of the machine, of a second feeding roll, an arm extending from the rear of the platen on which said second feeding roll is journaled to hold it adjacent said first feeding roll, a gage for a sheet between said rolls, a finger-piece for moving said gage to its effective position, and a cam on said finger piece underlying said arm to raise the roll journaled thereon to ineffective position as said gage is moved to effective position.

17. In a front strike typewriting machine, the combination with a platen, and rolls for holding a sheet in position around the platen, of a finger piece for causing said holding means to be effective or ineffective, a gage above the printing line accessible to the hand of the operator by which a work sheet may be positioned, and means for moving said gage to ineffective position after said rolls are moved from ineffective to effective position.

18. In a typewriting machine, the combination with a platen and a pressure roll

therefor, of feeding rolls separate from the platen, means for moving said pressure roll from the platen, and simultaneously turning said feeding rolls, an end gage, and means for rendering said feeding rolls effective or ineffective, and also for moving said end gage from effective to ineffective position when the rolls are moved correspondingly to the reversed condition.

19. In a typewriting machine, the combination with a platen and separate feeding rolls therefor, of an end gage, a finger piece for rendering said rolls effective or ineffective, and a lost-motion device between said gage and said finger piece.

20. In a typewriting machine, the combination with a platen and separate feeding rolls therefor, of a finger piece, a cam on an arm of said finger piece arranged to move one of said rolls away from the other to render said rolls ineffective, and a rock arm arranged to move an end gage to effective position.

21. In a typewriting machine, the combination with a platen and a pressure roll therefor, of feeding rolls separate from said platen, a finger piece for casting off said pressure roll and simultaneously feeding said feed rolls, a gage, and a finger piece for simultaneously moving said gage to effective position and said rolls to ineffective position.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."