A. G. F. KUROWSKI.

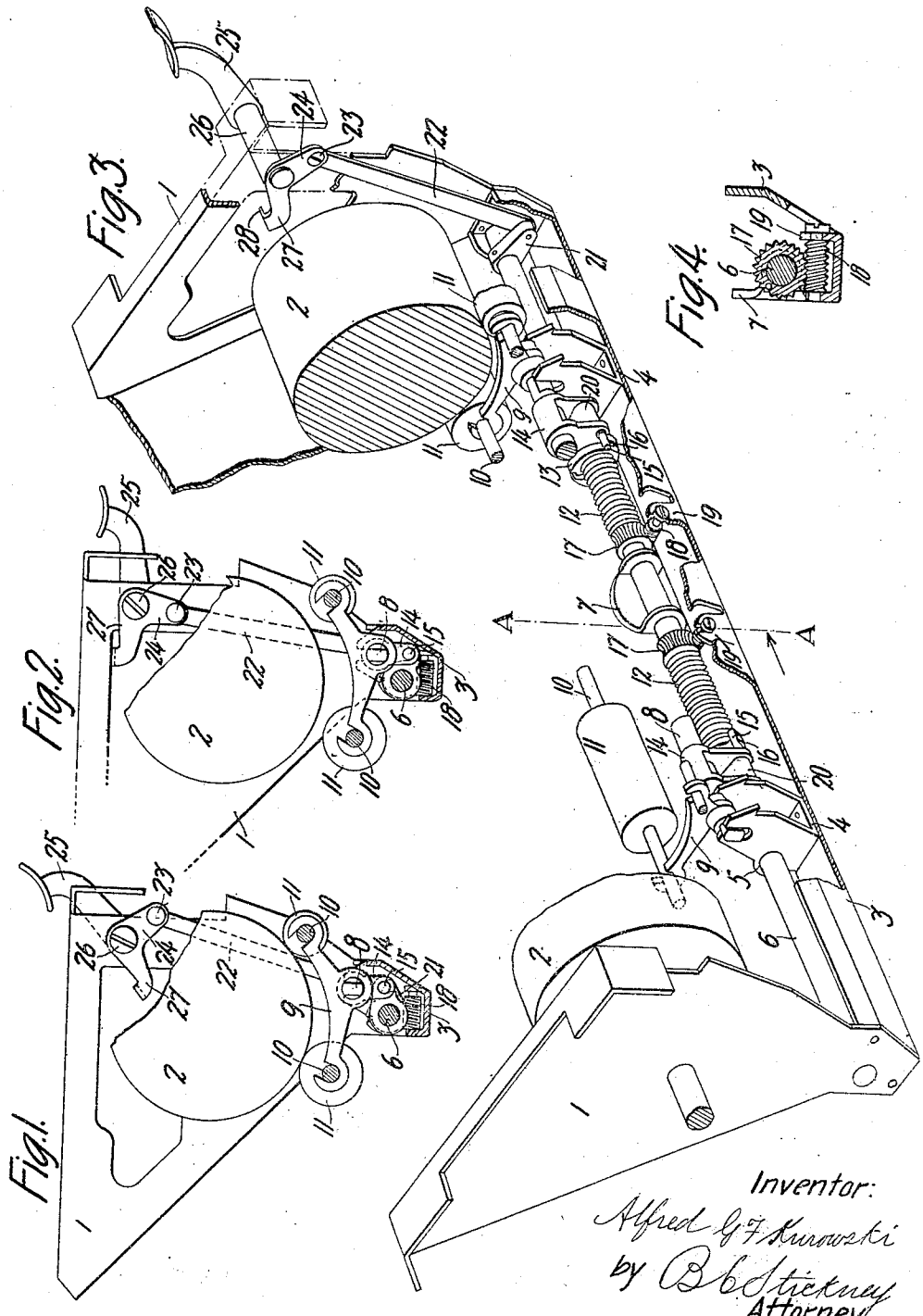
TYPEWRITING MACHINE.

APPLICATION FILED MAY 9, 1919.

1,371,909.

Patented Mar. 15, 1921.

2 SHEETS—SHEET 1.



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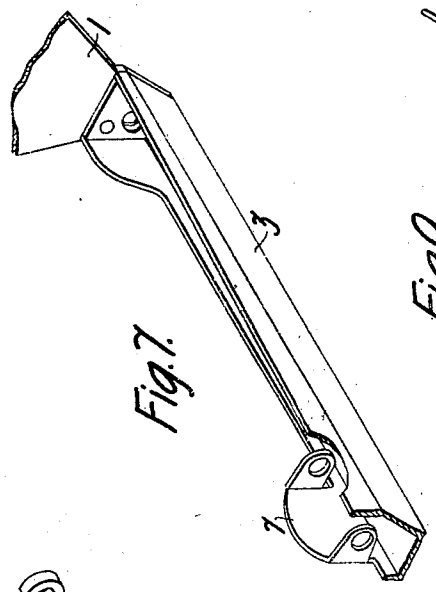


Fig. 7.

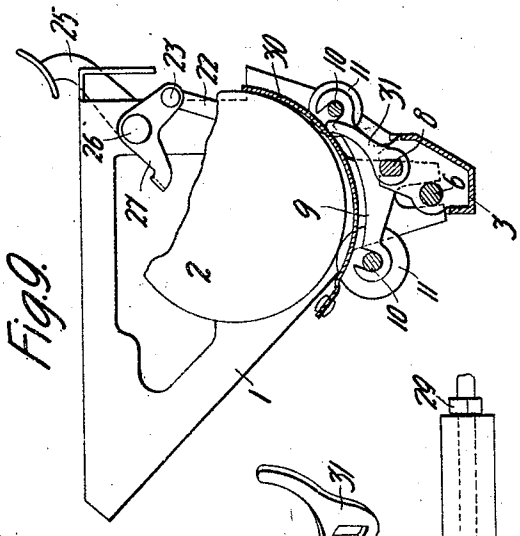


Fig. 9.

Fig. 10.



Fig. 11.

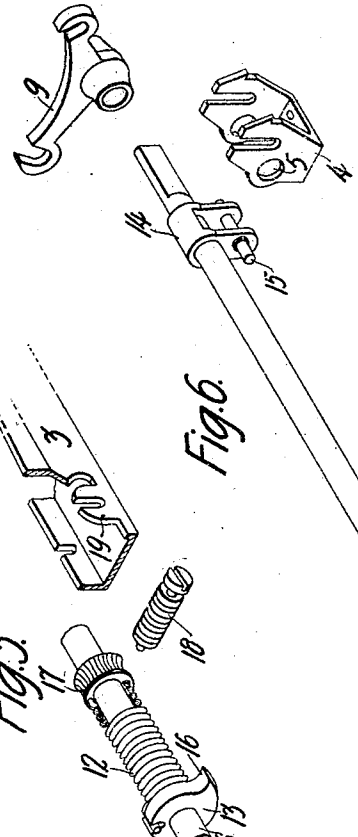


Fig. 6.

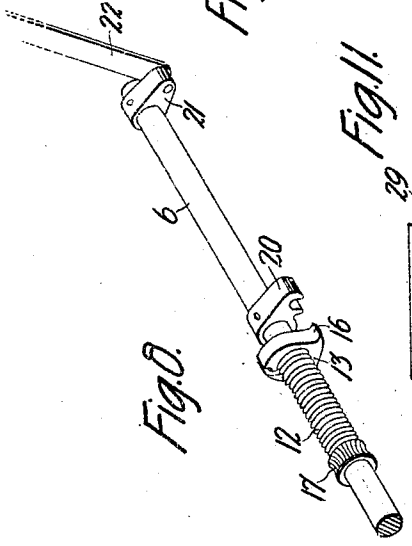


Fig. 8.

Fig. 5.

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UNITED STATES PATENT OFFICE.

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TYPEWRITING-MACHINE.

1,371,909. Specification of Letters Patent. **Patented Mar. 15, 1921.**

Application filed May 9, 1919. Serial No. 295,858.

To all whom it may concern:

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

This invention relates to typewriting machines, particularly to the platen frame and the parts immediately connected therewith, and among the objects of the invention are to improve and reduce the number of the parts constituting what may be considered broadly the platen mechanism, including the pressure rolls and their support, and the means for holding them against the platen and releasing them therefrom. With the structure employed, not only are the number of parts lessened, but the parts are easier to adjust and the whole structure is made stronger and at the same time is made lighter.

A feature of the invention relates to the tie-plate or member, which connects the end or side-members of the platen frame, said tie-plate being formed of sheet metal and being generally of channel shape and having bent-up or struck-up portions in which some of the parts connected with the platen mechanism are journaled.

Another feature of the invention relates to the means for adjusting the tension of the pressure rolls, preferably by providing coil springs loosely surrounding the release shaft, which springs have each a worm wheel connected to one end thereof. A worm engages each worm wheel, by the turning of which the springs are given the desired degree of tension. Preferably two springs are employed symmetrically arranged with respect to the release shaft, and to the ends of each spring opposite the worm wheel collars are rigidly connected collars which bear against pins projecting from hangers connected to a second shaft, which second shaft supports the pressure rolls. Also carried by the release shaft, and fixed thereto, are arms which engage the same pins as are engaged by the spring-urged collars, so that when the release shaft is rocked, the pressure roll shaft is moved bodily downwardly to release the pressure rolls.

Still another feature of my invention relates to the manner of supporting the release shaft and pressure roll shaft, the pressure roll shaft being supported entirely by brackets carried by the tie-member of the platen frame, while the release shaft is supported in part by said brackets and in part by the side or end plates of the platen frame. The release shaft is further supported at its center by a struck-up portion of the tie-member. This manner of supporting the shaft furnishes a very rigid structure, but at the same time one which is easy to assemble and one which is light compared with former structures.

Still another feature of my invention relates to the manner of adjustment of the pressure rolls longitudinally of their shafts. To this end, split steel spring collars are provided, which engage the shaft with sufficient pressure to hold the rolls in any desired adjustment longitudinally of the shaft, the rolls being loosely journaled thereon.

A further feature of my invention relates to the means for holding the paper-shield in contact with the platen, said means preferably comprising a finger which is fixed to the pressure roll shaft and moves up and down therewith to engage the paper-shield while the shaft is in its upward position and which releases the same when the shaft is lowered.

A still further feature of my invention relates to the manner of holding the release shaft in released position. For this purpose, a crank arm on the shaft engages a link, which link is connected at its upper end to a crank arm carried by a pivoted hand-operated release lever. Normally the pivot of the lever and the pivot of the upper end of the link are out of alinement, but when the hand lever is rocked, the two pivots are brought into alinement, and the toggle, formed by the crank arm connected with the hand lever and the link, is locked, thus holding the release shaft in position to hold the pressure rolls away from the platen, and the hand lever in operated position.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a sectional view of the platen frame, showing parts in elevation, and showing the release lever in normal position with the pressure rolls in contact with the platen.

Fig. 2 is a somewhat similar view, but with

the release lever in operated position, showing the toggle straightened and the pressure rolls released from contact with the platen surface.

Fig. 3 is a perspective view of the platen frame and platen; some of the other parts being broken away to better show the construction.

Fig. 4 is a section taken at about the line A—A of Fig. 3.

Fig. 5 is a composite detail view, showing one of the springs for holding the pressure rolls against the platen, together with a portion of the platen frame tie-member, and also means whereby the spring is supported by said tie-member and adjusted as to tension when in place.

Fig. 6 is a composite detail, showing the pressure roll-supporting shaft and parts immediately associated therewith; also one of the brackets for supporting this shaft.

Fig. 7 is a perspective view of the right-hand portion of the platen frame tie-member, showing the struck-up portion near its center for supporting the pressure roll release shaft.

Fig. 8 is a perspective detail of the right-hand of the release shaft, and showing one of the pressure springs mounted thereon, together with one of the release arms.

Fig. 9 is a sectional view of the platen frame, showing particularly the means for holding the paper-shield in contact with the platen.

Fig. 10 is a perspective detail of the arm for holding the paper-shield in contact with the platen.

Fig. 11 is a plan of one of the pressure roll-supporting shafts, showing the manner of holding the rolls in different positions of adjustment along said shaft by split spring collars.

Referring to the drawings, 1 indicates the side members of the platen frame in which the platen 2 is journaled. Connecting the side members 1 is a tie-member 3, this member being channel-shaped, as indicated in Figs. 1, 2, 7 and 9, and riveted or otherwise suitably fastened to the end or side members 1. Fastened to the bottom of this tie-member, and lying within it are preferably two brackets 4 of U shape, the opposite sides of each bracket having open slots cut into their tops, as shown most clearly in Fig. 6. These brackets also have alined holes 5 in their sides, through which loosely passes a shaft 6, having its ends journaled in the side frame members 1, said shaft constituting a pressure roll release shaft, as will hereinafter be more particularly pointed out. At about its central point, the tie-member 3 has a struck-up portion 7, having forwardly projecting ears which also form journal supports for the shaft 6 and prevent any undue flexure of said shaft at its center. Mounted for up-and-down movement in the slots in the brackets 4 is a pressure-roll carrying shaft 8, which is slightly flattened at those portions which engage the brackets 4, as indicated in Fig. 3, so that the shaft may move up and down but may not rotate within said brackets. This shaft carries at each end thereof a double arm 9, said arm having slotted ends for supporting shafts 10, on which the pressure rolls 11 are mounted.

From the construction thus far described, it will be apparent that movement of the shaft 8 to its uppermost position, shown in Fig. 1, will move the rolls 11 into contact with the platen surface, while lowering of the shaft will result in the rolls dropping away from the platen, as shown in Fig. 2. In order to hold the rolls against the platen with a yielding tendency, coiled springs 12 are mounted on the release shaft 6 and preferably on either side of the struck-up portion 7 of the tie-member 3. At one end, each of these springs is connected to a collar 13 fast on the shaft 6. Loosely journaled on the shaft 8 are hangers 14, see Figs. 3 and 6, which hangers are forked as shown, and through the forks of each hanger is driven a pin 15, which pins project beyond the inside forks of each hanger, as shown in Fig. 6. The hangers are so positioned on the shaft 8 that the pin 15 of each hanger projects over a lip 16 of each collar 13, so that when the springs 12 are tensioned, the spring-urged collars 13 will bear upwardly against the pins 15, and raise the shaft 8 to Fig. 1 position, thereby holding the pressure rolls against the platen with yielding pressure.

It is desirable that means be provided whereby the spring pressure of the rolls may be varied to suit different kinds of work, and for this purpose, worm-gears 17 are provided, one gear for each spring, each worm-gear fixed to the end of the spring 12 opposite the collar 13. A worm 18 for each worm-gear is also provided, these worms being constructed as shown in Fig. 5, and designed to fit into slots in ears 19 struck up from the tie-member 3 and bent inwardly from the adjacent channel portion of said member, as clearly shown in Figs. 4 and 5. In assembling the parts, the worms 18 are dropped into the slots in the ears and into slots in the opposite side of the channel member 3, and the shaft 6 is afterward inserted. Turning the worms 18 to the right or left by their screwdriver slotted heads will of course produce varying tension in the springs 12.

For the purpose of releasing the pressure rolls from the platen, the release shaft 6 has release arms 20 fixed thereto, one of said arms being shown in Fig. 8, said arms being so positioned with respect to each hanger

14 that they engage between the sides thereof and bear each upon the pins 15, so that when the shaft 6 is rocked, the shaft 8 is moved downwardly against the tension of the springs 12 to move the pressure rolls to the position shown in Fig. 2.

Rocking of the shaft 6 is accomplished through means of a crank arm 21, fastened adjacent one end of the shaft, as shown for instance in Fig. 3, said crank arm being connected to a link 22 at its upper end, which is pivotally connected at 23 to a crank arm 24, forming part of a pressure roll release key-lever 25, pivoted at 26 in the platen frame. Normally, the pivot points 23 and 26 are out of alinement with the pivot of the link 22 on the arm 21, as shown in Fig. 3, but when the release key lever 25 is moved from position shown in Fig. 1 to that shown in Fig. 2, the pivots 23 and 26 are brought into line with the pivot on the arm 21, the link 22 and crank arm 24 acting thus as a toggle, which, when in the straightened position shown in Fig. 2, holds the shaft 6 in rocked position and the key-lever 25 in operated position. To conveniently determine the straightened position of the toggle, the lever 25 carries an arm 27, having a bent-over portion 28 for engaging the under side of the platen frame member 1, to limit the movement of the release lever 25. In order to break the toggle, lever 25 is moved upwardly, as will be readily understood.

To provide for convenient means for adjusting the pressure rolls longitudinally of their shafts, as is sometimes desirable, especially when attachments, such as tally-strips and the like are attached, I mount the rolls loosely on the shafts and provide split spring collars 29 adjacent either end of the rolls to grip the shafts 10 and hold the rolls in proper position, these collars being clearly shown in Fig. 11.

In Fig. 9, I have shown a paper-shield 30, which shield, instead of being held by the usual small rubber rolls, rests upon and is held in place by a finger 31 at its front, Figs. 9 and 10, which finger is rigidly mounted on the shaft 8, so that, as said shaft is moved up and down, the finger will move the paper-shield against the surface of the platen or release it therefrom.

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, of a platen frame comprising side-members and a channel tie-member connecting said side-members, pressure rolls for said platen, tensioning means within the channel for holding said rolls against said platen, a release shaft within the channel for moving said rolls away from said platen against said tensioning means, and means for adjusting said tensioning means, comprising a part carried by said release shaft and a part carried by said tie-member and extending outside the channel to be accessible.

2. In a typewriting machine, the combination with a platen, of a platen frame comprising side-members and a tie-member connecting said side-members, said tie-member having ears struck-up therefrom, pressure rolls for said platen, springs for holding said rolls against said platen, a release shaft for moving said rolls away from said platen and against said springs, and means for adjusting said springs, each of said means comprising a worm-wheel connected to one end of a spring and loosely mounted on said release shaft and a worm for engaging said worm-wheel, the latter carried by the struck-up ears of said tie-member.

3. In a typewriting machine, the combination with a platen, of pressure rolls therefor, a shaft for supporting said pressure rolls, U-shaped hangers carried by said shaft, a pin passing through the sides of said hangers and projecting beyond one side of each hanger, a second shaft, spring-urged collars carried by said second shaft, each collar engaging the projecting end of an adjacent pin to urge said pressure rolls against said platen, and arms fixed to said second shaft for engaging each with a pin carried by one of said U-shaped members, said arms engaging said pins between the forks of said U-shaped member, to move the roll-supporting shaft and rolls carried thereby away from said platen.

4. In a typewriting machine, the combination with a platen, of pressure rolls therefor, a shaft for supporting said rolls and on which they are loosely journaled, and split steel collars frictionally engaging said shaft and arranged adjacent the ends of each roll to hold them in any desired position along said shaft.

5. The combination with a platen and a shaft beneath it, of pressure rolls, arms rigidly connected to said shaft carrying said rolls, said shaft movable bodily to move said rolls toward and from said platen, a paper-shield partly surrounding said platen, and a finger carried by said shaft and acting to hold said paper-shield against said platen when said shaft is raised, and to release said shield when said shaft is lowered.

6. In a typewriting machine, the combination with a platen, of pressure rolls therefor, a shaft for supporting said pressure rolls, U-shaped hangers carried by said shaft, a pin passing through the sides of said hangers and projecting beyond one side of each hanger, a second shaft, and spring urged collars carried by said second shaft, each collar engaging the projecting end of

an adjacent pin to urge said pressure rolls against said platen.

7. In a typewriting machine, the combination with a platen, of pressure rolls therefor, a shaft comprising rigid brackets for said pressure rolls, a paper-shield above said brackets and adjacent said platen, a release shaft for raising and lowering the bracket shaft, and means carried by said bracket shaft for holding the front of said shield in contact with the platen.

8. In a typewriting machine, the combination with a platen, of pressure rolls therefor, a shaft comprising rigid brackets for said pressure rolls, a paper-shield above said brackets and adjacent said platen, a release shaft for raising and lowering the bracket shaft, and a finger carried by said bracket shaft for engaging said paper-shield at the front to hold the same in contact with said platen.

9. In a typewriting machine, the combination with a platen, of pressure rolls therefor, means for holding said pressure rolls against said platen, means for releasing said pressure rolls, comprising a shaft movable bodily to release said rolls, a paper-shield mounted adjacent said platen, and a finger carried by said shaft and adapted when said shaft is in its upper position to lie against the front of said paper-shield, to thereby hold said shield against the platen surface.

10. In a typewriting machine, in combination, a carriage comprising a platen, a frame in which said platen is journaled, pressure-rolls for said platen, a shaft for actuating said pressure-rolls toward and away from said platen, said platen-frame structure comprising end walls and a struck-up sheet-metal channel-shaped girder connecting said end walls, said girder being U-shaped in cross-section, said pressure-roll-actuating shaft being journaled in said end walls, and additional supports for said shaft intermediate the end walls, comprising sheet-metal U-shaped brackets lodged within said channel-shaped girder.

11. In a typewriting machine, in combination, a carriage comprising a platen, a frame in which said platen is journaled, pressure-rolls for said platen, a shaft for actuating said pressure-rolls toward and away from said platen, said platen-frame structure comprising end walls and a struck-up sheet-metal channel-shaped girder connecting said end walls, said girder being U-shaped in cross-section, said pressure-roll-actuating shaft being journaled in said end walls, and additional supports for said shaft intermediate the end walls, comprising sheet-metal U-shaped brackets lodged within said channel-shaped girder, and ears pressed from a side of the channel-shaped girder to provide bearings for said shaft at any desired point intermediate its ends.

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Witnesses:

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JENNIE P. THORNE.