Nov. 16, 1937. J. Q. SHERMAN 2,098,978

SPLIT PLATEN MOUNTING

Filed March 11, 1936

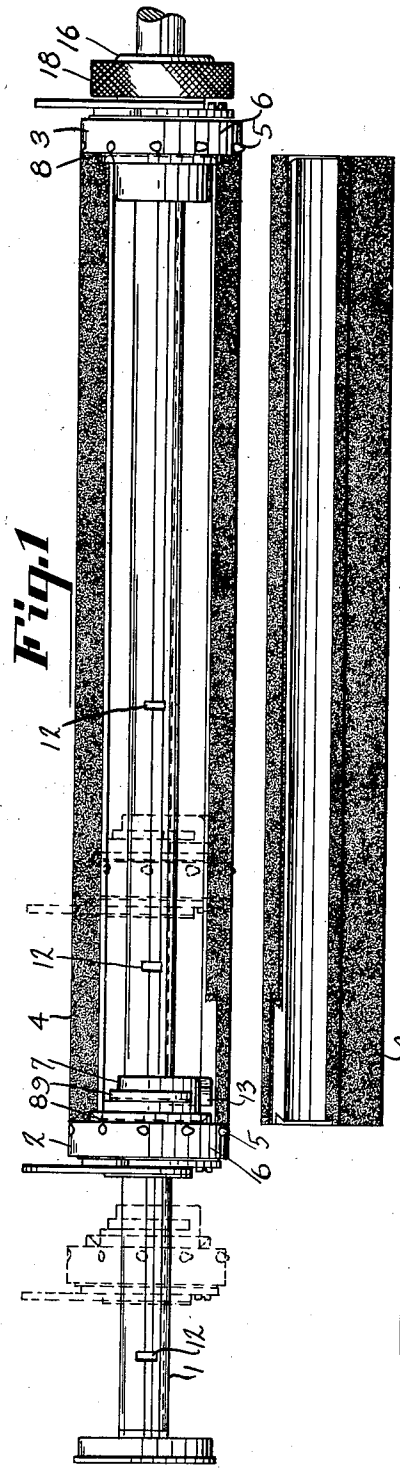


Fig. 1

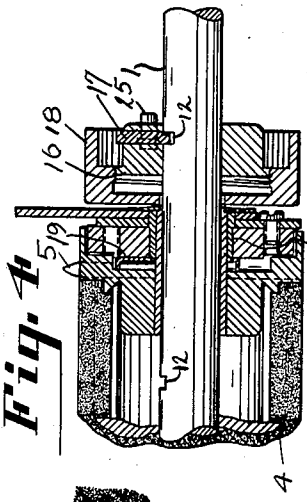


Fig. 4

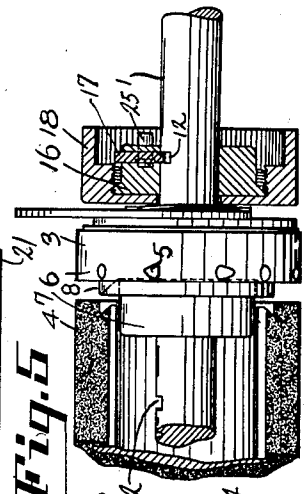


Fig. 5

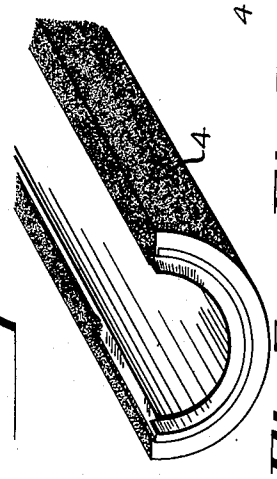


Fig. 5

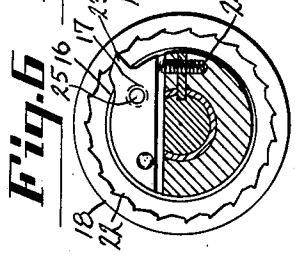


Fig. 6

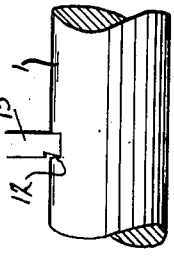


Fig. 7

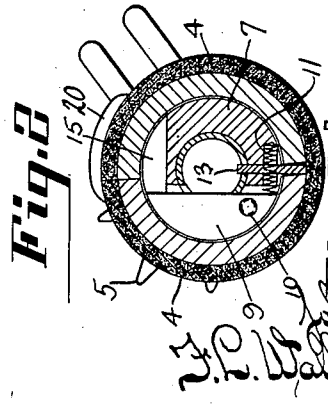


Fig. 8

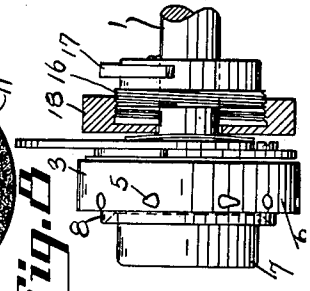


Fig. 8

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Patented Nov. 16, 1937 2,098,978

UNITED STATES PATENT OFFICE

2,098,978

SPLIT PLATEN MOUNTING

John Q. Sherman, Dayton, Ohio

Application March 11, 1936, Serial No. 68,219

22 Claims. (Cl. 197—145)

This invention relates to platen rolls for writing and imprinting machines and more particularly to adjustable mounting means for releasably holding interchangeable platen roll sections of different lengths.

For illustrative purposes the supporting structure forming the subject matter hereof is shown applied to a longitudinally split platen roll of the character shown and described in the patent of Sherman and Metzner No. 2,067,211, issued Jan. 12, 1937 and the application of John Q. Sherman, Serial No. 52,169, filed Nov. 29, 1935, of which the present application is a continuation in part.

As shown and described in said copending applications to which cross reference is made, the platen roll herein shown comprises multiple longitudinally separable segmental sections which are interchangeable with other groups of similar sections of different lengths, in order to accommodate record material of different widths. The group of segmental, separable sections are held in cylindrical assembly by relatively adjustable terminal heads having interlocking engagement with the several platen roll sections of the assembly to releasably hold them in their adjusted relation. In the present construction the relatively adjustable terminal mounting head also embodies pin type feeding devices progressively engageable in marginally punched holes in the record material. Such pin type devices per se are shown and described in United States Letters Patent Numbers 2,000,649 and 2,000,651.

The present invention pertains primarily to the construction, arrangement and operation, of the adjustable mounting heads in combination with the supporting and operating shaft to support different groups of platen roll sections. The mounting heads are axially adjustable upon the supporting shaft and are engageable therewith in different predetermined spaced position. One of the mounting heads is capable of a further final or vernier adjustment relative to the selected position to tighten the engagement of the heads and interposed platen roll sections and to compensate for wear and inaccuracies of manufacture. Means is provided for securely locking the mounting head in different positions of adjustment whereby they will resist any loosening tendency under influence of vibration, shock, or impact incident to the use of the writing machine.

The object of the invention is to simplify the construction as well as the means and mode of operation of sectional platen roll mounting means whereby it may not only be economically manufactured, but will be more efficient in use, automatic in action, uniform in operation, of minimum number of parts, and unlikely to get out of repair.

A further and primary object of the invention is to provide readily adjustable mounting means constructed and arranged to accommodate interchangeable platen roll members of different lengths.

A further and important object of the invention is to provide locking means for the mounting head which will not become loosened by vibration incident to the use of the machine.

A further object of the invention is to provide a vernier or auxiliary adjustment by which the platen roll sections may be tightened in their adjusted relation after the mounting heads have been adjusted to corresponding spaced relation.

A further object of the invention is to provide an effective interlocking engagement between the relatively adjustable mounting heads and the supporting shaft.

With the above primary and other incidental objects in view as will more fully appear in the specification, the invention consists of the features of construction, the parts and combinations thereof, and the mode of operation or their equivalents, as hereinafter described and set forth in the claims.

Referring to the accompanying drawing wherein is shown the preferred but obviously not necessarily the only form of embodiment of the invention, Fig. 1 is a side elevation of a platen roll construction embodying the present invention showing one of the sections removed to better illustrate the relation of the mounting heads.

Fig. 2 is a transverse sectional view.

Fig. 3 is a detail perspective view of a portion of one of the platen roll segments.

Fig. 4 is a detail sectional view of one of the mounting heads shown in its finally adjusted position by which the interposed platen sections are subjected to clamping pressure.

Fig. 5 is a similar view of the same mounting head with the parts retracted to release the platen roll sections.

Fig. 6 is a side elevation partly in section of the locking means employed in the head shown in Figs. 4 and 5.

Fig. 7 is a detail view of the latch engagement pertaining to the opposite or abutment head shown at the left of Fig. 1.

Fig. 8 is a detail view of a modification.

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

Referring to the drawing, 1 is the platen roll

shaft adapted to be revolubly mounted in suitable bearings in a writing or imprinting machine. Splined upon the shaft 1 for to and fro axial adjustment one relative to the other are two mounting heads 2 and 3 intermediate which are engageable longitudinally separable segmental platen roll sections 4. Complementary platen roll sections 4 of different lengths may be accommodated by the relative adjustment of the mounting heads 2 and 3. For illustrative purposes these mounting heads 2 and 3 have been shown as embodying pin wheel feeding devices, the pins 5 of which are reciprocated into and out of feeding engagement with the record material to advance said material past a writing or imprinting position as the platen roll rotates. In the event that the record material is to be frictionally advanced past the writing position such pin wheel positive feed feature is omitted.

Referring to the mounting head 2 at the left of Fig. 1 such head includes a disc-like body 6 having a diameter corresponding to that of the intermediate platen roll assembly. Projecting from one side of the body 6 is a hub 7. Also projecting from the same side of the disc-like body 6 in concentric spaced relation with the hub 7 is an angular flange 8, for engagement in a corresponding recess in the end of the platen roll assembly. The lateral hub 7 of the mounting head 2 is transversely slotted to receive therein a segmental latch 9 pivoted at 10 within the hub and subjected to the influence of a spring 11 by which the latch 9 is urged against the shaft 1. The shaft 1 is provided at spaced intervals with transverse notches 12 in any one of which the latch 9 is engageable to lock the head against axial movement upon the shaft. The mounting head is further provided with a key or spline 13 engageable in a longitudinal key way in the shaft 1 whereby the mounting head is connected therewith for unison rotation but is slidingly adjustable upon the shaft upon disengagement of the latch 9 from locking engagement in a notch 12.

To prevent accidental dislodgment of the latch member 9 from the keeper notch 12 the engaging portion of the latch is preferably though not necessarily somewhat beveled as shown in the enlarged view Fig. 7. The mounting head being subjected to pressure in an axial direction as will be later described the latch 12 is caused to bite into the side of the notch 12 sufficiently tight to resist any loosening effect due to vibration or shock.

The latch member 9 is accessible only when the platen roll assembly is removed. The latch member 9 is enclosed within the platen roll assembly which fits sufficiently closely thereabout as shown in Fig. 2 to prevent disengagement of the latch from the shaft 1 while the platen roll assembly is in position. Such latch is accessible only when at least one of the platen roll sections have been removed as shown in Fig. 1. The hub 7 is cut away at 15 to give access to the latch to enable its manual disengagement when the platen roll sections 4 have been removed.

The mounting head 3 at the opposite end of the platen roll is of the same general type. It includes the disc-like body portion 6 having the inwardly projecting hub 7 and the concentrically disposed spaced angular flange 8 for engagement in the corresponding recesses in the ends of the platen roll sections. Such mounting head like the head 2 is slidingly mounted upon the shaft 1 and is provided with a spline or key 13 engaging in the longitudinal groove or key way portion of the shaft to afford a rotative driving connection while permitting axial adjustment relative to the shaft. Mounted adjacent to the head 3 is an auxiliary member for exerting axial pressure upon the head 3 to clamp the platen roll sections 4 intermediate the mounting heads. This auxiliary pressure device comprises a peripherally screw-threaded collar 16 in a transverse slot of which is pivoted a latch member 17 corresponding to the latch 9 on the opposite head and likewise engageable in any one of the series of notches 12 in the shaft 1. Like the latch 9 the member 17 is also marginally beveled for bite engagement in the side of the notch 12 in which it may be engaged. This bevel of the latch 17 of the auxiliary pressure device is disposed in a direction of thrust pressure against the side of the shaft notch 12 and opposite to the direction of the bevel of the latch 9 of the opposite mounting head.

Screw-threaded upon the auxiliary collar 16 is a cup-shaped pressure member 18 exteriorly knurled for manual adjustment relative to the collar 16. By such adjustment screw pressure is applied axially to the movable head 3 against the resistance of the engagement of the latch 17 in the notch 12 of the shaft. The pressure device 18 may bear directly against the lateral face of the mounting head portion 6. However in the embodiment illustrated the feeding pins 5 are adjustable to operative and inoperative position by rotative movement of the control cam 19 to which is connected an operating lever 20 positioned intermediate the mounting head 3 and the auxiliary pressure device. The member 18 of the latter has direct engagement with a bushing or sleeve 21 secured within the head 3 and projecting beyond the plane of the operating lever 20.

The mounting head 2 and the abutment or thrust collar 16 being interlocked with the shaft 1 by the engagement of their respective latches 9 and 17 in spaced notches 12 corresponding to the length of a particular set of platen roll segments 4 and the cup-shaped pressure element 18 being retracted upon the collar 16 as shown in Fig. 5 the platen roll segments 4 are positioned in cylindrical assembly with the terminal angular grooves at one end of the assembly engaging the concentric angular flange 8 of the mounting head 2, the opposite mounting head is then slidingly adjusted upon the shaft from the position shown in Fig. 5 to that shown in Fig. 4 to likewise engage the concentric angular flange 8 of the last mentioned head in the corresponding terminal groove of the platen roll segments as is shown in Figs. 1 and 4. The pressure member is then manually rotated upon the thrust collar 16 to exert axial pressure upon the head 3 and firmly presses against the ends of the platen roll segments to clamp such sections between the respective mounting heads 2 and 3.

To prevent rotation of the pressure member 18 under influence of vibration or shock incident to the use of the writing or imprinting machine the interior of such pressure member 18 is provided with ratchet teeth 22 engaged by the pawl 23 projecting from the latch member 17 and movable therewith. The latch member 17 is provided with a retracting spring 24 which normally tends to elevate the latch out of engagement with the shaft 1 and urge the pawl 23 into engagement with some one of the ratchet teeth 22 of the pressure member. There is sufficient clearance, how-

ever, in the bottom of the notch 12 engaged by the latch 17 to enable the latch to be depressed against the tension of its spring 24 beyond its normal locking position to enable the disengagement of the pawl 23. The latch member 17 is depressed against the tension of the spring 24 to release the rotary pressure member 18 by means of a stud 25 projecting from the latch 17 which may be manually engaged. Upon such release of the detent pawl 23 by depression of the latch member 17 within the engaged notch 12 the member 18 may be rotated to apply ample pressure to the mounting head 3 in an axial direction to securely and tightly clamp the platen roll segments 4 between the respective mounting heads. Upon release of the latch member 17 the pressure member will be held securely in such adjusted relation by the return of the pawl 23 into engagement with the ratchet teeth 22 by the spring 24. When it is desired to change the relative spacing of the heads 2 and 3 to accommodate platen roll segments of a different length, the latch 17 is depressed and the pressure member 18 is retracted as shown in Fig. 5 to permit axial retraction of the mounting head 3 out of engagement with the ends of the platen roll segments which may then be removed. After removal of the platen roll segment 4 the mounting head 3 which is free for sliding adjustment upon the shaft is moved inwardly and the pressure applying member 18 is adjusted upon the thrust collar 16 beyond the position shown in Fig. 4 which may be done after the platen roll segments are removed, until the ratchet teeth 22 are moved beyond the plane of the latch 17. The latch 17 may then be disengaged from the shaft notch 12 from which it will be ejected by the spring 24 and the thrust collar 16 can be slidingly adjusted upon the shaft 1 to a newly selected position agreeing with the length of the particular platen roll segments to be installed. By holding the latch in depressed position in the shaft notch 12 the pressure member 18 can be again manually retracted by its screw-threaded adjustment upon the collar 16 into the position shown in Fig. 5 which enables the newly selected group of platen roll segments to be installed after which the pressure member 18 is adjusted in reverse direction to apply pressure to the mounting head 3 and therethrough to the platen roll sections as illustrated in Fig. 4.

By this means sufficient pressure can be applied in an axial direction to securely clamp the platen roll segments in adjusted position and the parts are securely locked in their positions of final adjustment to prevent accidental loosening or disengagement of the platen roll segments 4.

It is obvious that various forms of interlocking joints may be provided between the mounting heads and the respective platen roll segments and that the positive pin type feeding devices may be omitted and that other forms of locking device and the specific construction shown may be adopted.

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 the preferred form of several modes of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described my invention, I claim:

1. In a platen roll for a writing or imprinting apparatus, a shaft, a pair of spaced mounting heads carried thereby, at least one of which is axially adjustable toward and from the other, a plurality of longitudinally separable platen roll segments interchangeable with other segments of different length to be clamped between the relatively adjustable mounting heads and a pressure applying member for exerting axial pressure against at least one of said mounting heads.

2. In a platen roll for a writing or imprinting apparatus, a shaft, a pair of spaced mounting heads carried thereby at least one of which is axially adjustable relative to the other, longitudinally separable platen roll segments interchangeable with other platen roll segments of different lengths engageable between the spaced mounting heads, the shaft having therein a series of transverse notches, and a latch member associated with the adjustable mounting head engageable in any one of the shaft notches for retaining the mounting head in a predetermined relation with the shaft.

3. In a platen roll for a writing or imprinting apparatus a shaft, a pair of spaced mounting heads carried thereby at least one of which is axially adjustable relative to the other, longitudinally separable platen roll segments interchangeable with other platen roll segments of different lengths engageable between the spaced mounting heads, the shaft having therein a series of transverse notches and a latch member having a beveled face subject to thrust engagement in any one of the notches for limiting the movement of the head relative to the shaft.

4. In a platen roll for a writing or imprinting apparatus a shaft, a pair of spaced mounting heads carried thereby at least one of which is axially adjustable relative to the other, longitudinally separable platen roll segments interchangeable with other platen roll segments of different lengths engageable between the spaced mounting heads, locking means engaging at least one of the mounting heads with the shaft to resist axial thrust thereon, and auxiliary means for subjecting the head and platen roll segments to axial pressure against the resistance of said locking engagement with the shaft.

5. In a platen roll for a writing or imprinting apparatus, a pair of spaced mounting heads carried thereby at least one of which is axially adjustable relative to the other, longitudinally separable platen roll segments interchangeable with other segments of different lengths interposed between the mounting heads, a rib and groove detachable joint between the platen roll segments and the mounting heads and means for adjusting one of the mounting heads under pressure into clamping relation with the interposed platen roll segments.

6. In a platen roll for a writing or imprinting apparatus, a pair of spaced mounting heads carried thereby at least one of which is axially adjustable relative to the other, longitudinally separable platen roll segments interchangeable with other segments of different lengths interposed be-

tween the mounting heads, a member having thrust engagement with the shaft to resist axial movement of one of the heads and additional means for adjusting the corresponding head relative to such thrust engagement with the shaft for minutely varying the adjustment of the heads to clamp the interposed platen roll segments therebetween.

7. In a platen roll for a writing or imprinting apparatus, a pair of spaced mounting heads carried thereby at least one of which is axially adjustable relative to the other, longitudinally separable platen roll segments interchangeable with other segments of different lengths interposed between the mounting heads, means associated with the adjustable head for arresting the movement of the head in one of several spaced positions of adjustment relative to the shaft and additional means for adjusting the head relative to its initial position of arrest.

8. In a platen roll for a writing or imprinting apparatus, a shaft, a pair of spaced mounting heads carried thereby at least one of which is axially adjustable relative to the other, longitudinally separable platen roll segments interchangeable with other segments of different lengths interposed between the mounting heads, one of said heads being adjustable upon the shaft to one of several different spaced positions and further adjustable relative to the selected position and means for locking the head in its different adjusted positions.

9. In a platen roll construction for an imprinting machine or the like, a mounting shaft, a pair of mounting heads carried thereby and adjustable one relative to the other, a platen body comprising one of a plurality of different interchangeable platen bodies interposed between the heads and detachably engaged therewith, said shaft having therein a series of notches and a latch member carried by at least one of the heads and engageable in one or another of the notches to position the heads for accommodation of platen bodies of different lengths.

10. In a platen roll construction for an imprinting machine or the like, a mounting shaft, a pair of mounting heads carried thereby and adjustable one relative to the other, a platen body comprising one of a plurality of different interchangeable platen bodies interposed betwen the heads and detachably engaged therewith, said shaft having therein a series of notches, and a sharpened detent member, the edge of which has lateral thrust engagement with one side of a selected notch of the series to interlock the detent against accidental disengagement from the selected notch whereby the heads are relatively positioned to accommodate a selected body of the plurality.

11. Means for removably supporting one of a plurality of interchangeable platen roll bodies, including a mounting shaft, a pair of spaced mounting heads common to the plurality of interchangeable platen roll bodies and carried by the shaft, at least one of which is axially adjustable upon the shaft and between which one of the platen roll bodies may be interposed, a detent for temporarily engaging the head with the shaft in a selected position, and auxiliary adjusting means for effecting further adjustment of the head relative to such selected position.

12. Means for removably supporting one of a plurality of interchangeable platen roll bodies, including a mounting shaft, a pair of spaced mounting heads common to the plurality of interchangeable platen roll bodies and carried by the shaft, at least one of which is axially adjustable upon the shaft and between which one of the platen roll bodies may be interposed, said shaft having therein a series of spaced notches, and a latch member associated with one of the heads and engageable in a selected notch of the series, said latch being positioned interiorly of the platen roll body when in assembled relation with the head.

13. Means for removably supporting one of a plurality of interchangeable platen roll bodies, including a mounting shaft, a pair of spaced mounting heads common to the plurality of interchangeable platen roll bodies and carried by the shaft, at least one of which is axially adjustable upon the shaft and between which one of the platen roll bodies may be interposed, an abutment collar associated with the mounting head, a detent for securing the abutment collar to the shaft in a selected position of axial adjustment and a screw adjustment member for varying the relation of said head with the abutment collar to vary the pressure engagement of the platen roll body and mounting head.

14. Means for removably supporting one of a plurality of interchangeable platen roll bodies, including a mounting shaft, a pair of spaced mounting heads common to the plurality of interchangeable platen roll bodies and carried by the shaft, at least one of which is axially adjustable upon the shaft and between which one of the platen roll bodies may be interposed, detent means associated with the adjustable head and engageable with the shaft to secure the head in a selected position thereon, and means for preventing accidental disengagement of the detent from the shaft while the parts are in assembled relation.

15. Means for removably supporting one of a plurality of interchangeable platen roll bodies, including a mounting shaft, a pair of spaced mounting heads common to the plurality of interchangeable platen roll bodies and carried by the shaft, at least one of which is adjustable upon the shaft between which heads one of the platen roll bodies may be interposed, an abutment collar associated with said adjustable head, a detent for securing the abutment collar to the shaft in a selected position of adjustment, said collar being exteriorly screw-threaded, a recessed thrust member screw-threaded upon the collar and having a succession of interior ratchet teeth, said thrust member by its adjustment exerting axial thrust pressure upon the adjustable mounting head and a detent pawl carried by the collar and engaging with one or another of the ratchet teeth to secure the thrust member in its adjusted position.

16. Means for removably supporting one of a plurality of interchangeable platen roll bodies, including a mounting shaft, a pair of spaced mounting heads common to the plurality of interchangeable platen roll bodies and carried by the shaft, at least one of which is adjustable upon the shaft between which heads one of the platen roll bodies may be interposed, an abutment collar associated with said adjustable head, a thrust member adjustably associated with the abutment collar and by its adjustment relative thereto exerting axial pressure upon the adjustable mounting head, and a detent common to the abutment collar and thrust member for simultaneously locking the abutment collar in its adjusted relation with the shaft and the thrust

member in its adjusted relation with the abutment collar to retain the platen roll body in its assembled relation with the mounting head.

17. Means for removably supporting one of a plurality of interchangeable platen roll bodies, including a mounting shaft, a pair of spaced mounting heads common to the plurality of interchangeable platen roll bodies and carried by the shaft, at least one of which is adjustable upon the shaft between which heads one of the platen roll bodies may be interposed, an abutment collar associated with said adjustable head, a thrust member adjustably associated with the abutment collar and by its adjustment relative thereto exerting axial pressure upon the adjustable mounting head for urging the head into engagement with the interposed platen roll body, and detent means for holding the thrust member in adjusted relation with the collar, and for holding the collar in adjusted relation with the shaft.

18. A platen roll for a recording machine including a supporting shaft, a cylindrical platen body surrounding the shaft and interchangeable with other like bodies of different length to accommodate record material of different widths, a pair of mounting heads for said body carried by the shaft, at least one of which is axially adjustable thereon toward and from the other head to accommodate platen bodies of different lengths therebetween, means for interengaging the shaft and adjustable head at axially spaced intervals, and means for effecting a further adjustment of the mounting head relative to its point of interengagement with the shaft.

19. A platen roll for a recording machine including a supporting shaft, a cylindrical platen body surrounding the shaft and interchangeable with other like bodies of different length to accommodate record material of different widths, a pair of mounting heads for said body carried by the shaft, at least one of which is axially adjustable thereon toward and from the other head into and out of engagement with the platen body and to accommodate bodies of different lengths therebetween, said head being capable of relatively coarse and finer adjustments, and means for locking the head at the limit of its respective coarse and finer adjustments.

20. A platen roll for a writing machine including a supporting shaft, a pair of concentric heads relatively adjustable on the supporting shaft for accommodating platen bodies of different lengths, and means for prelocating the heads on the shaft in accordance with the length of the platen body to be accommodated.

21. A platen roll for a writing machine including a supporting shaft, a pair of concentric heads relatively adjustable on the supporting shaft for accommodating platen bodies of different lengths, means for prelocating the heads on the shaft in accordance with the length of the platen body to be accommodated, and means for effecting a further relative adjustment of the mounting heads to secure the platen body intermediate the heads.

22. A platen roll for a writing machine including a supporting shaft, a pair of concentric heads relatively adjustable on the supporting shaft for accommodating platen bodies of different lengths, means for prelocating the heads on the shaft in accordance with the length of the platen body to be accommodated, means for effecting a further relative adjustment of the mounting heads to secure the platen body intermediate the heads, and means for locking the heads in their position of final adjustment.

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