March 28, 1944. J. A. SCHMIDT 2,345,008

WRITING MACHINE

Filed Nov. 27, 1941

Fig.1

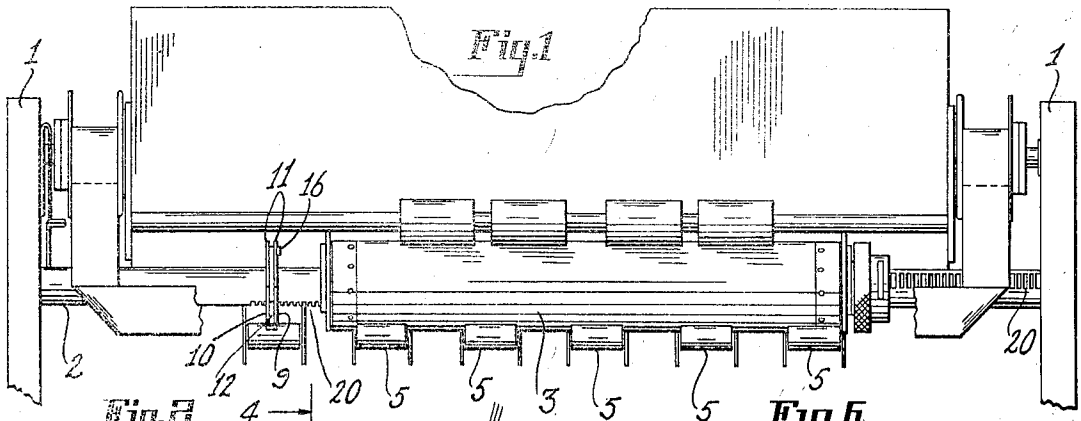


Fig.2

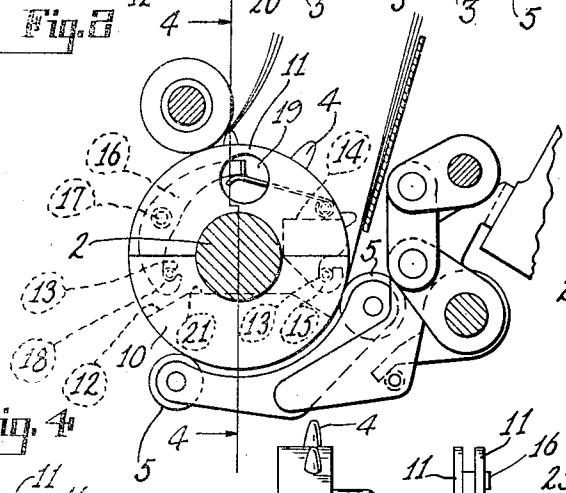


Fig.6

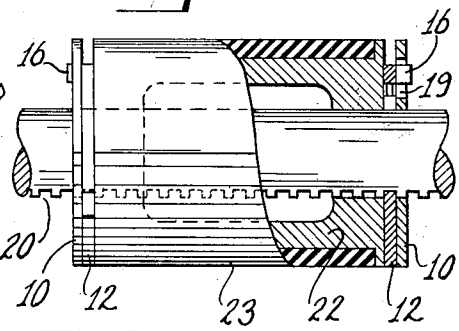


Fig.7

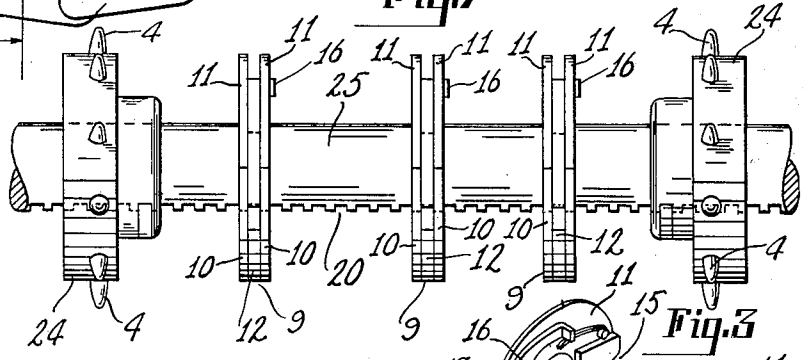


Fig.4

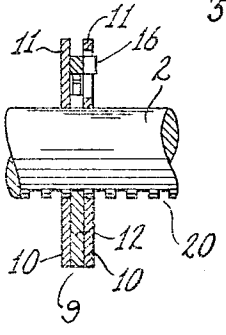


Fig.3

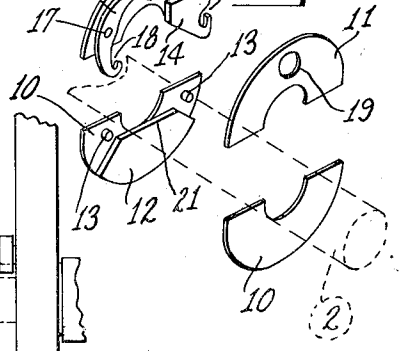
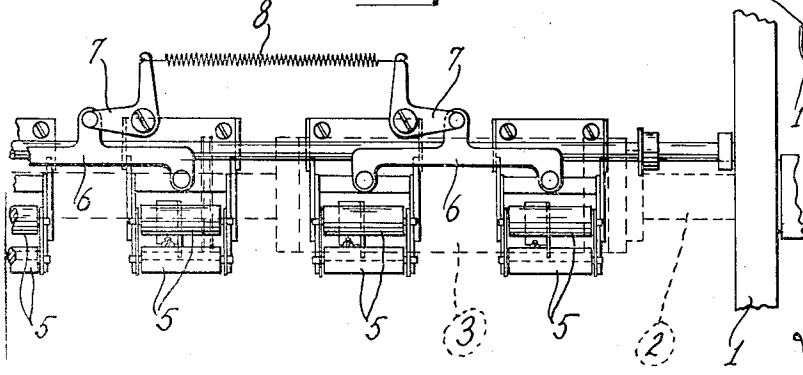


Fig.5



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WRITING MACHINE

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Application November 27, 1941, Serial No. 420,703

17 Claims. (Cl. 197—127)

This invention pertains to writing and imprinting machines, and more particularly to a detachable support supplemental to the usual record material feeding devices for supporting record material and especially for cooperation with a portion of the conventional frictional feeding devices.

In the operation of business transaction recording machines such as tabulating, billing, and computing machines and other typewriting and imprinting apparatus, it is common practice to employ interchangeable platen rolls which may be of different lengths, such, for example, as are described in Sherman Patent No. 2,067,210.

However, in some such apparatus, as in the Remington-Rand tabulating machine, the frictional feed devices are designed for cooperation with a platen roll of maximum length and the substitution of a shorter platen roll will incapacitate at least a portion of such frictional feeding devices. It is also desirable under certain conditions of use and for accommodation of record material of a width greater than the length of the platen roll, or which otherwise is made to project therebeyond, that an auxiliary support be provided concentric with the platen roll in axially spaced relation therewith.

To such end there is contemplated in the present instance a detachably mounted split disc which is engageable with a supporting shaft in any one of several positions. The mounting and engaging features of the disc are also applicable to interchangeable rollers for writing or imprinting machines as for example, the feeding rollers disclosed in pending application of Metzner, Serial No. 351,879, filed August 8, 1940.

The object of the invention is to improve the construction as well as the mode of operation of detachably mounted split rotary members, whereby they may not only be economically manufactured and be capable of easy and quick installation, but which will be efficient in operation, capable of being securely locked in adjusted position, of compact construction and unlikely to become loose or out of repair.

A further object of the invention is to provide a rotary element capable of being mounted and removed from a supporting shaft without dismounting the shaft.

A further object of the invention is to provide efficient locking means for a demountable split rotary element.

A further object of the invention is to provide a demountable rotary member ancillary to record material feeding devices of writing or imprinting machines possessing the advantageous structural features, and 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 of construction, the parts and combinations thereof, and the mode of operation, or their equivalents, as hereinafter described or illustrated in the accompanying drawing.

In the drawing, wherein is shown the preferred but obviously not necessarily the only form of embodiment of the invention,

Fig. 1 is a top plan view of the platen carriage of a typical writing or imprinting apparatus in which a rotary detachable element embodying the present invention is embodied.

Fig. 2 is an end view of a portion of the writing machine carriage including a side view of the detachable rotary element embodying the present invention.

Fig. 3 is a perspective view of the separable elements of the present device in disassembled relation.

Fig. 4 is a detail sectional view.

Fig. 5 is a plan view of a typical frictional roller pressure equalizing system, to which the present device is applicable.

Fig. 6 is a side elevation partly in section of a split roller embodying the present invention.

Fig. 7 is a side elevation of a pin feed assembly incorporating the present split discs.

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

While the present device may be applied to different structures, for illustrative purposes, but with no intent to limit the scope or application of the invention it is shown in Fig. 1 embodied in a well-known form of writing machine carriage wherein 1 is the frame in which is mounted a platen shaft 2. In the present instance the shaft 2 carries a dual feed platen roll 3, adapted for either positive pin type feeding of record material or frictional feed thereof. For positive feed operations the platen roll is equipped with reciprocatory radially disposed feeding pins 4 adjacent each end of the platen roll. Frictional pressure rollers 5 for cooperation with the platen roll are provided for frictionally feeding the record material. Such frictional pressure rollers 5 are arranged in pairs as shown in Fig. 5. The rollers of each pair are associated with an equalizing lever 6 and the equalizing levers of

succeeding pairs of rollers are interconnected through bell crank levers 7 and helical springs 8 for equalized unison pressure against the platen roll. The pressure roller system of existing machines is adapted to platen rolls of maximum length. When, as illustrated in Fig. 1 of the drawing, a platen roll 3 of less length has been substituted for the original platen roll, one or more frictional pressure rollers located beyond the end of the platen roll are unsupported thereby and become unaligned and the pressure equilibrium is destroyed.

To idly support such unused pressure rollers and so maintain the proper tension of those engaging against the platen roll a supporting disc 9 is applied to the shaft 2 beyond the end of the platen roll. The disc 9 is of a diameter equal to that of the platen roll, and is engageable in any one of a number of positions relatively spaced therefrom. The surplus or idle pressure roller 5 engages the periphery of the disc 9.

Inasmuch as it is desirable to mount and remove the supplemental disc 9 without dismounting or disturbing the adjustment of the platen roll shaft 2 the disc 9 is of split construction, the respective halves of which have detachable locking engagement with each other and with the shaft.

The supplemental rotary member 9 is in effect of laminated construction and comprises a pair of relatively spaced split collars each comprising separable semi-circular sections 10 and 11 and interposed spacers, which are integrally united, preferably by welding.

Interposed between the semi-circular half collars 10 is a segmental spacer 12 of less size, beyond which fixed studs 13 extend across the intervening space between the half collars 10. In the assembly the spacing of the half collars 10 by the interposed segmental spacer 12 affords oppositely disposed slots in the unit in the plane of the collar, and within which the studs 13 are located.

Interposed between the opposite half collars 11 at one end thereof and projecting beyond the terminals thereof is a hook shaped spacer 14 with which the half collars are united. The hook terminal 15 of the spacer is engageable with one of the studs 13 within the corresponding slot or recess of the other half disc assembly comprising the parts 10 and 12.

Also interposed between the half collars 11 is a pivotally mounted hook shaped latch arm 16, which is pivoted at 17. The hook extremity 18 of the latch 16 projects beyond the half collars 11 into the slot or recess of the opposite assembly of the half disc where it is detachably engageable with the other stud 13. The respective half disc assemblies are reversible one relative to the other, so that the hooks 15 and 18 may be engaged with either of the studs 13. One of the half collars 11 is provided with a hole 19 through which the end of the pivoted latch arm is accessible to disengage the hook 18 from the engaged stud 13.

The platen roll shaft 2 is serrated or transversely notched at longitudinally spaced intervals as at 20. Such serration or notching in the present instance is incident to the use of interchangeable platen rolls 3. However, such serrations are duo-functionally usable for locating the present revoluble split element 9. The interposed spacer 12 is of such size as to overlap the interior margins of the half collars 10 across which a straight margin 21 of the spacer extends as a chord. The projecting margin 21 of the spacer 12 is engageable in any one of the series of indentations 20 of the shaft and when the halves of the disc 9 are interlocked about the shaft by engagement of the hooks 15 and 18 with the studs 13, the rotary member 9 is securely held against both relative rotation and axial movement on the shaft 2.

While the device is shown and described as a split disc engageable upon and disengageable from the shaft, the construction may be embodied in a split roller of either short or long length, by interposing longitudinally separable segments of such roller between two spaced split discs 9 which would then comprise the terminals of the roller. However, instead of utilizing two like segments 10 and 11 at each end, one such segment of each pair thereof may be attached in spaced relation to the body of core 22 of the roll 23 with the spacer 12 and latch arm 16 therebetween. Such roller assembly is amply illustrated in Fig. 6.

In some instances the platen roll is omitted and the record material is advanced by a pair of axially spaced pin wheels 24 which are axially adjustable toward and from each other. In such event the record may sag between the pin wheels if unsupported. To afford the necessary support one or more discs 9 of the present type may be mounted on the pin wheel shaft 25 intermediate the pinwheels 24 as shown in Fig. 7.

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 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. A writing or imprinting machine adapted to contain an elongated rotary platen roll, including coacting frictional pressure rollers disposed for operative engagement throughout substantially the full extent of a roll of maximum length which may be accommodated in said machine, a platen roll shaft, a platen roll on said shaft of less length than that of the maximum length roll for which the machine is adapted and beyond the end of which a part of the frictional pressure rollers are located, and a sectional supplemental disc detachably mounted on the platen roll shaft in spaced relation with the end of the platen roll for unison rotation therewith and engaged by a portion of the frictional pressure rollers which are non-engageable with the platen roll.

2. A writing or imprinting machine including a plurality of spring actuated frictional pressure rollers which are disposed for operative engagement with a platen roll of maximum length for which the machine is adapted for feeding record material relative thereto and wherein failure to resist the thrust of a part of the frictional pres-

sure rollers affects the action of another roller of the plurality, a shaft, a platen roll of less than the maximum length for which the assembly of frictional pressure rollers is adapted mounted on said shaft, a rotary supplemental member detachably engageable with the shaft beyond the end of the platen roll for unison rotation with the roll, against which certain of the plurality of frictional pressure rollers not engageable with the platen roll engage to maintain operating condition of other of the pressure rollers of the plurality.

3. In a writing or imprinting machine wherein a plurality of spring actuated pressure rollers are disposed for operative engagement with a coacting roll common thereto for feeding record material relative to said rollers, a platen roll of less than the maximum length accommodated by the machine common to only a portion of the plurality of pressure rollers aforementioned, a rotary element independent of the common roll for coaction with a portion of the pressure rollers which lack engagement with the common roll, and a shaft common to said rotary element and the common roll upon which the rotary element and roll are mounted in concentric axially spaced relation for unison rotation.

4. In a writing or imprinting machine, a platen roll, a rotary disc mounted in concentric axially spaced relation with the end of the platen roll for unison rotation, and a plurality of aligned frictional rollers, a part of which have contact engagement with the platen roll and at least one of which has contact engagement with the periphery of the disc.

5. In a writing or imprinting machine, a platen roll, and an aligned series of contact pressure rollers of greater axial extent than the platen roll with which a portion of the pressure rollers engage a shaft for the platen roll and a split collar detachably mounted on the shaft beyond the end of the platen roll with which at least one of the series of pressure rollers also located beyond the end of the platen roll is engaged.

6. In a writing or imprinting machine of the type wherein a series of substantially aligned axially spaced frictional pressure rollers are disposed for cooperative engagement with a platen roll common thereto to advance record material past a recording position, a platen roll of less length than that of the platen roll with which the pressure rolls are adapted for engagement beyond the extremity of which a part of the series of frictional pressure rollers extend, and a support located beyond the extremity of the platen roll for unison rotation therewith with which the portion of the frictional rollers therebeyond engage to support the said portion of the frictional pressure rollers beyond the end of the platen roll independently thereof.

7. A writing or imprinting apparatus wherein record material is progressively advanced past a recording position including an elongated continuous platen roll of less length than the maximum length platen roll which may be accommodated in the apparatus and a shaft therefor, a series of frictional pressure rollers mounted for independent adjustment relative to the shaft independently of each other, a portion of which are engageable with the platen roll and the remainder of which are positioned beyond the end of the platen roll, a split auxiliary rotary element mounted on the shaft for unison rotation with the platen roll and interengaging means for detachably uniting separable portions of the split rotary element.

8. The combination with a rotary elongated continuous platen roll and a series of independently adjustable frictional pressure rollers extending beyond the end of the platen roll, a portion of which are engageable therewith and a shaft for the platen roll, of a sectional disc carried by the shaft of the platen roll in axially spaced relation with the latter and revoluble therewith for engagement of a part of the series of independently adjustable pressure rollers disposed beyond the end of the platen roll, and means for detachably engaging separable sections of said disc with each other and with the shaft.

9. A rotary element detachably engageable with a shaft, including two pairs of complementary opposed segmental members disposed in parallel spaced relation, spacers therebetween, studs carried by one pair of said members and complementary hook sections carried by the other pair of complementary members and releasably engageable with the said studs to detachably hold the members of said rotary element in assembled relation about a supporting shaft.

10. Two pairs of matching arcuate members, intermediate spacers therebetween interconnecting the respective pairs of members in spaced relation with terminal slots between the members of one pair, terminal projecting portions interposed between the members of the other pair and engageable in overlapping relation within the terminal slots of the first pair of members and means for detachably interlocking said pairs of members in such overlapping relation.

11. In a detachable shaft collar, a pair of complementary arcuate members which together completely surround a shaft a pair of laterally projecting studs on one of the members, a fixed hook and a movable latch hook on the other of said members engageable with the said studs to detachably interlock the members in assembled annular form.

12. As an article of manufacture, a split collar including complementary arcuate segments which together comprise a complete annular assembly, a detachable hinge connection interconnecting corresponding ends of the segments in opposing relation, and a latch member detachably interconnecting the opposite corresponding ends of the segments in assembled annular relation.

13. In a writing or imprinting machine the combination with a record material feeding device and a shaft therefor of a split collar therefor including opposite complementary arcuate segmental members which together form a complete annulus, and coupling means therefor carried by each of the segments and engageable with the other for detachably engaging the annulus about the feeding device shaft in axially spaced relation with the said record material feeding device.

14. In a writing or imprinting machine the combination with a single elongated continuous platen roll and a series of independently adjustable frictional pressure rollers extending beyond the end of the platen roll, a portion of which are operatively engageable therewith, and a shaft for the platen roll, of a split roller detachably mountable upon said shaft including opposing complementary segments of a cylinder which together form a complete cylinder and coupling device carried by each of the cylinder segments and detachably engageable with the other seg-

ment for uniting the roller segments in assembled relation about the shaft for support of a portion of the independently adjustable frictional pressure rollers beyond the end of the platen roll.

15. A writing or imprinting machine, including a plurality of spring actuated pressure rollers, a platen roll engaged by a portion of the pressure rollers and coacting therewith to feed record material relative thereto and beyond the extremity of which a portion of the pressure rollers are disposed, a shaft for the platen roll, a rotary element detachably mounted on the platen roll shaft in spaced relation with one end thereof and engaged by the portion of the spring actuated pressure rollers beyond the end of the platen, comprising two pairs of complementary opposed segmental members disposed in parallel spaced relation, spacers therebetween, studs carried by one pair of said members and complementary hook sections carried by the other pair of complementary members and releasably engageable with the said studs to detachably hold the members of said rotary element in assembled relation about the supporting shaft.

16. In a writing or imprinting machine, wherein a plurality of spring actuated frictional pressure rollers are disposed for unison engagement with a platen roll of maximum length usable in the machine for feeding records material relative thereto and wherein failure to resist the thrust of a part of the frictional pressure rollers affects the action of another roller of the plurality, a platen roll of less than the maximum length thereof usable in the machine, a rotary supplemental member engageable with the shaft of the platen roll beyond the end of the platen roll, comprising a pair of complementary arcuate members which together completely surround the shaft, a pair of laterally projecting studs on one of the members, a fixed hook and a movable latch hook on the other of said members engageable with the said studs to detachably interlock the members in assembled annular form.

17. In a writing or imprinting machine, a platen roll, and an aligned series of contact pressure rollers of greater axial extent than the platen roll with which a portion of the pressure rollers engage and a supporting member located beyond the end of the platen roll with which at least one of the series of pressure rollers also located beyond the end of the platen roll is engaged, including two pairs of matching arcuate members intermediate spacers therebetween interconnecting the respective pairs of members in spaced relation with terminal slots between the members of one pair, terminal projecting portions interposed between the members of the other pair and engageable in overlapping relation within the terminal slots of the first pair of members and means for detachably interlocking said pairs of members in such overlapping relation.

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