Sept. 24, 1940. J. Q. SHERMAN 2,215,481

CARBON SHIFTER

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Fig. 5

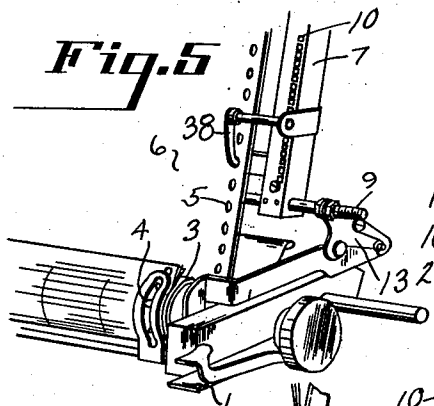


Fig. 1

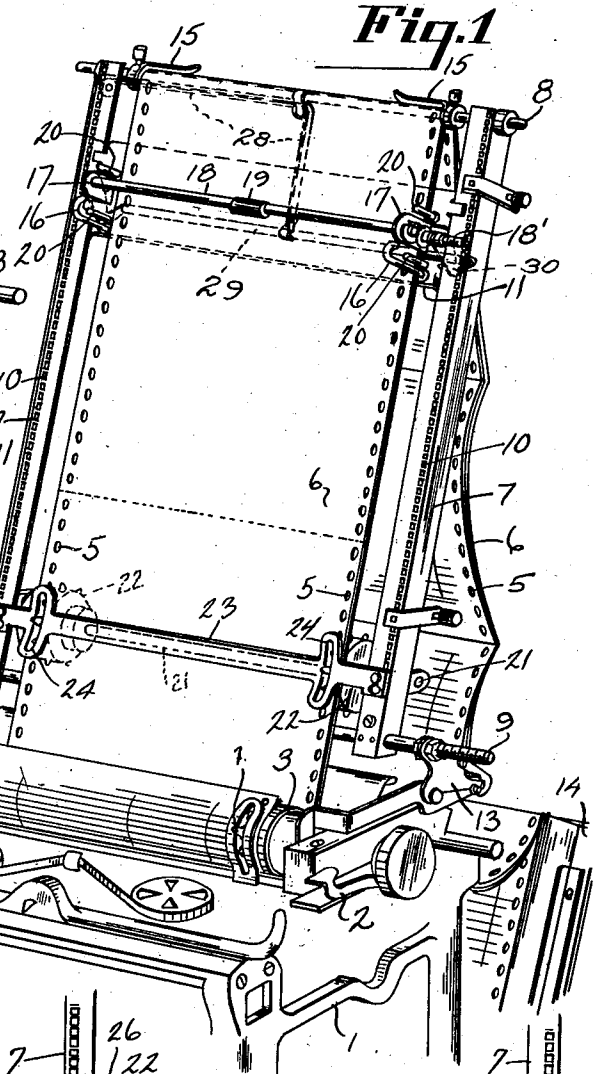


Fig. 8

Fig. 4

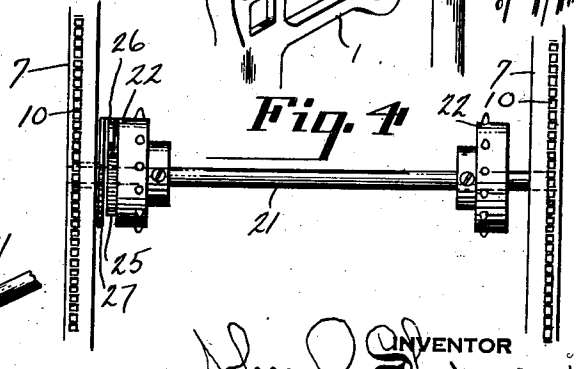
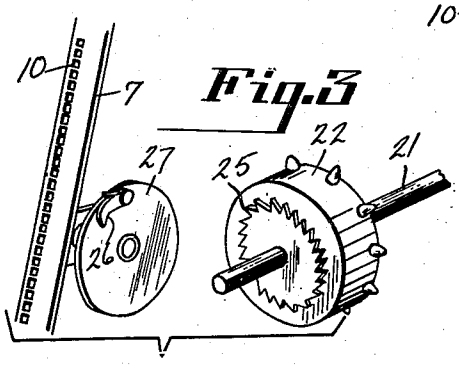


Fig. 3



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2,215,481

UNITED STATES PATENT OFFICE

2,215,481

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Application November 15, 1935, Serial No. 49,977

36 Claims. (Cl. 197—126)

This invention relates to writing machines and more particularly to a manifolding attachment for typewriters wherein the interleaved transfer material is periodically retracted into registry with succeeding portions of the record material.

In the present embodiment of the invention, supply portions of continuous superposed strips of record material are progressively fed over a guide frame extending upwardly and rearwardly from the platen roll of the machine. Upon the guide frame is a reciprocatory carrier for transfer material to which the supply portions of the record strips are temporarily secured during the advance feeding operation, whereby the interleaved transfer material and record strips are advanced in unison. At the limit of the advance movement, when a set of forms of predetermined lengths of the superposed record strips have been inscribed the record strips are marginally engaged and held independently of the transfer material in their advanced position, and at the same time such strips are released from the traveling transfer material carrier while the latter is being retracted. At the limit of the return movement of the transfer material carrier the record strips are again engaged therewith for unison advance movement. The marginal strip engaging means is preferably of such character as to permit the strips to freely advance toward the platen of the writing machine but which will automatically arrest retrograde movement. Such arresting means is automatic in its action but, if desired, may be manually controlled.

The registry of the superposed strips of record material, as they pass the writing position, is maintained by pin wheel units associated with the platen roll having engagement in marginally punched holes in the record material whereby the strips are positively fed but loosely held upon the platen roll.

The object of the invention is to improve the construction as well as the means and mode of operation of strip feeding and carbon shifting apparatus for manifolding attachments whereby they will not only be of simplified construction but will be more efficient in use, uniform in operation, automatic in action, easily controlled and unlikely to get out of repair.

A further object of the invention is to provide improved strip detent means for preventing retrograde movement thereof while permitting free advance feeding motion.

A further object of the invention is to provide automatic record strip control means.

A further object of the invention is to provide a manifolding attachment for writing machines possessing the meritorious features of construction and advantageous characteristics hereinafter described.

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.

In the drawing wherein is shown the preferred, but obviously not necessarily the only form of embodiment of the invention, Fig. 1 is a perspective view of the assembled manifolding attachment forming the subject matter hereof illustrated in its relation to a writing machine.

Fig. 2 is a detail side view of a portion of the apparatus.

Fig. 3 is a detail perspective view of the separated parts of a ratchet and pawl control.

Fig. 4 is a front elevation of the strip control means.

Fig. 5 is a detail view of a modification wherein a detent pawl engages directly in the marginal feeding holes of the strip instead of engaging a ratchet wheel to prevent retrograde movement.

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

The present manifolding apparatus is applicable to any standard typewriter, billing machine, computing machine or other writing apparatus adapted to utilize continuous stationery or series-connected forms and is a further development of the manifolding apparatus disclosed in pending applications, Serial Nos. 687,304, since matured into Letters Patent No. 2,063,959, 703,694, since matured into Letters Patent No. 2,116,545, and 798,790.

Referring to the drawing, 1 indicates a conventional writing machine in which is mounted the rotary platen roll 3 to be operated in the usual manner by suitable line spacing mechanism to intermittently advance the record material about the platen roll and past a writing position.

In the present instance the platen roll 3 is shown provided with radial feeding pins 4 progressively engageable in marginally punched holes in superposed record strips 6 to be fed about the platen roll and past the writing position.

As shown in Fig. 1 the manifolding apparatus forming the subject matter hereof, is mounted directly upon the frame of the writing machine contiguous to the platen roll 3. Obviously, if so

desired, this manifolding apparatus may be supported independently of the writing machine. When associated with present commercial typewriting machines the manifolding apparatus is mounted for to and fro travel motion in unison with the reciprocatory platen carriage 2 of such machine. However when associated with an ultra-modern typewriting machine, wherein the type bar basket or carrier reciprocates relative to the platen, the present apparatus will be stationarily mounted.

The manifolding apparatus includes a main frame having parallel side bars 7—7 which are preferably although not necessarily of angle bar formation, the opposite ends of which are transversely interconnected by rods 8 and 9 into a rigid rectangular frame. The frame bars 7 are embossed or perforated, if desired, at regularly spaced intervals as indicated at 10 to provide a series of rack teeth for engagement of a gear pinion at each end of a traveling carrier 11 for transfer material. These gear pinions engaged the rack teeth 10 at the underside of the frame bar 7 as shown particularly in copending application, Serial No. 703,694, since matured into Letters Patent No. 2,116,545, referred to above, and hence do not appear in the present drawing.

The frame is supported in upwardly and rearwardly inclined relation with the writing machine 1 by brackets 12 cooperating with spaced studs 13 projecting from the supporting platen carriage 2 with which the brackets are detachably engageable.

Superposed strips of marginally punched record material are advanced from a packet holder 14 in the rear of the machine upwardly over the top frame rod 8 where they pass beneath overhanging retaining fingers 15 adjustably mounted upon the rod 8 and then downwardly over the traveling transfer material carrier 11 to the platen roll 3 of the writing machine. Interleaved between the superposed strips of record material in alternating relation therewith is a series of sheets of transfer material which advance about the platen roll 3 in unison with the record strips and at the completion of each writing operation are retracted into transfer relation with the succeeding sets of forms or portions of the record strips. Such interleaved transfer material is suspended from the traveling carrier 11 upon which the transfer sheets are supported in alternating relation with the record strips by means of suspension bars engaged with hook-shaped fingers 16 projecting from the carrier 11. Mounted in upstanding ears or brackets 17 upon the carrier 11 is a rock shaft 18 carrying an eccentric knurled roller 19. Upon rotation of the shaft 18 under influence of a spring 18', the roller 19 coacts with an underlying eccentric roller interconnected for unison rotation to securely clamp the record strips in fixed relation therebetween. Thus as the record strips and interleaved sheets of transfer material are progressively advanced by rotation of the writing machine platen 3 the traveling carrier 11 is drawn downwardly upon the frame in unison therewith against the yielding tension of suitable retracting means, not shown in the drawing, or against the resistance of suitable frictional brake means. In addition to the suspension fingers 16 the traveling carrier 11 is provided with spaced guide pins 20 which define the path of travel of the record material and prevent lateral displacement thereof relative to the transfer material. At the completion of the writing operation the carrier is retracted by manual operation of a pull handle 27 at one side of the frame. This pull 27 is connected by a cable 28 with a bail comprising a transverse rod 29 and terminal arms 30 carried by one of the eccentric gripper shafts. The initial pulling effort upon the reciprocatory handle 27 elevates the bail to rock the coacting eccentric gripper rollers to release the record strips clamped therebetween. Continued pulling effort upon the handle 27 and cable 28 serves to retract the traveling carriage and transfer material carried thereby relative to the record strips.

As thus far described the construction is quite analogous to that shown and described in the copending applications before referred to.

When at the end of a writing operation it becomes necessary to retract the transfer material carrier 11 and the interleaved sheets of transfer material suspended therefrom, it is important that the record strip 6 be retained in an advanced position against retrograde movement in unison with the retraction of the transfer material. To this end there is provided in the lower portion of the supporting frame a transverse shaft 21 carrying a pair of spaced pin wheels 22 engaging in the marginal perforations of the record strips 6 as the latter advance to the platen 3 of the writing machine. Overlying the record strips 6 is a transverse bar 23 having slotted paper guides 24 positioned coincident with the rolls of marginally punched feed holes 5. These slotted guides 24 hold the paper strips 6 loosely in engagement with the idler pin wheels 22 during the advancement of the strips and prevent their accidental disengagement from the pins of such idler pin wheels 22.

While the pin wheels 22 are mounted for free, idle rotation during the advance movement of the record strips 6, means is provided for locking such pin wheels against reverse rotation thereby holding the strips in their advanced positions during retraction of the transfer sheets and their carrier 11. As a simple but effective method of holding the idler pin wheels 22 against reverse rotation, one of such pin wheels as shown in Fig. 3 is provided with a ratchet wheel 25 secured thereto with which engages a detent pawl 26 mounted upon a disc 27 stationarily carried by the side frame members 7. In this construction the pin wheel 22 is free to rotate idly in an advanced direction but the engagement of the pawl 26 in successive teeth of the ratchet wheel 25 effectively prevents reverse rotation and so enables the pin wheel 22 to hold the strips in their advanced position.

As an alternative construction there is shown in Fig. 5 a very simple form of detent pawl 38 mounted on one of the side members 7 of the frame and spring pressed directly into engagement with the record strips 6. Instead of engaging with a ratchet wheel, this pawl 38 is positioned coincident with the path of travel of the holes 5 of the record strips 6. The strips pass freely under the detent pawl 38 in advance movement towards the platen roll 3. However, upon retrograde movement of the strips the pawl 38 engages in one or another of the marginal feed holes 5 and so prevents retraction of the record strips 6 as the transfer material carrier 11 is retracted. Such detent pawl construction is quite simple but very effective. It is automatic in its action and adds but little to the structure.

It will be understood that when the writing

machine platen roll 3 is provided with feeding pins 4 engageable in the punched margins of the strips the customary friction rollers of the writing machine are not employed. The paper being held loosely upon the feeding pins 4 and the interleaved transfer sheets being of less width than the record strips and disposed between the punched margins, such interleaved sheets of transfer material may be freely withdrawn about the writing machine platen upon retractive movement of the carrier 11.

In the event that the writing machine 1 is not equipped with a pin type platen and that the record strips 6 are fed past the writing machine by conventional frictional feed rolls, it is of course necessary that the latter be retracted to inoperative position to release the pressure upon the strips prior to retraction of the transfer material. However the record strip being held in the advanced position by the locking of the idler pin wheels, or by the detent pawl or otherwise, the record material may be successfully retracted between the superposed record strips 6.

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 manifolding apparatus for use with typewriters wherein interleaved transfer sheets are retractible between superposed record strips from between inscribed portions thereof to positions between portions to be inscribed, detent means for marginally engaging the superposed strips past which the strips are freely movable in an advance direction, said means being effective upon reverse pulling tension upon the strips to resist retrograde movement thereof during retraction of the transfer material.

2. In a manifolding apparatus for use with typewriters wherein interleaved transfer sheets are retractible between superposed record strips from between inscribed portions thereof to positions between portions to be inscribed, unidirectional control means for the record strips having constant engagement therewith, said control means being effective to prevent retrograde movement of the strips during retraction of the transfer material.

3. In a manifolding apparatus for use with a writing machine wherein interleaved transfer sheets are intermittently retractible between superposed marginally punched record strips from transfer relation with inscribed portions thereof into such relation with portions thereof to be inscribed, an idler pin wheel engageable in the marginally punched holes of the strips and freely revoluble in unison with the advance movement of the strips and locking means for preventing reverse rotation thereof during retraction of the transfer material.

4. In a manifolding apparatus for use with a writing machine wherein interleaved transfer sheets are intermittently retractible between superposed marginally punched record strips from transfer relation with inscribed portions thereof into such relation with portions thereof to be inscribed, an idler pin wheel engageable in the marginally punched holes of the strips and freely revoluble in unison with the advance movement of the strips and means for automatically preventing reverse rotation of the idler pin wheel during retractive movement of the transfer material.

5. In a manifolding apparatus for use with a writing machine, wherein interleaved transfer sheets are intermittently retractible between superposed marginally punched record strips from transfer relation with inscribed portions thereof into such relation with portions thereof to be inscribed, an idler pin wheel engageable in the marginally punched holes of the strips and freely revoluble in unison with the advance movement of the strips and pawl and ratchet means permitting free rotation of the pin wheel during advance movement of the record strips and operative to automatically prevent reverse rotation of the pin wheel during retraction of the transfer material, thereby holding the strips in their advanced position.

6. In a manifolding apparatus wherein interleaved transfer sheets are intermittently retractible intermediate superposed marginally punched record strips from transfer relation with inscribed portions thereof into such relation with portions to be inscribed, strip control means progressively engageable in the marginally punched holes of the strips for preventing retrograde movement of the strips during retraction of the transfer material but permitting free advance movement thereof.

7. In a manifolding apparatus wherein interleaved transfer sheets are intermittently retractible intermediate superposed marginally punched record strips from transfer relation with inscribed portions thereof into such relation with portions to be inscribed, a unidirectional pin wheel progressively engageable in the marginally punched holes in the strips permitting free advancement thereof but operative to prevent retrograde motion of the strips during retraction of the transfer sheets.

8. In a manifolding apparatus wherein interleaved transfer sheets are intermittently retractible intermediate superposed marginally punched record strips from transfer relation with inscribed portions thereof into such relation with portions to be inscribed, detent means progressively engageable in the marginally punched holes in the strips permitting free advancement thereof but operative by engagement in marginally punched holes to prevent retrograde motion of the strips during retraction of the transfer sheets.

9. In a manifolding apparatus wherein interleaved transfer sheets are intermittently retractible intermediate superposed marginally punched record strips from transfer relation with inscribed portions thereof into such relation with portions to be inscribed, detent means with which the strips are marginally engageable automatically resisting retrograde motion of the strips during retraction of the transfer sheets but permitting free advance movement thereof.

10. In a manifolding apparatus wherein inter-

leaved sheets of transfer material are intermittently retractible from transfer relation with inscribed portions of marginally punched record strips into such relation with portions thereof to be inscribed, a pin wheel unit progressively engageable in the marginally punched holes of the strips and rotating in unison with the advance movement thereof and means for preventing reverse rotation thereof whereby retrograde movement of the strips will be prevented during retraction of the transfer material.

11. In a manifolding apparatus wherein interleaved sheets of transfer material are intermittently retractible from transfer relation with inscribed portions of marginally punched record strips into such relation with portions thereof to be inscribed, a pin wheel unit progressively engageable in the marginally punched holes of the strips and rotating in unison with the advance movement thereof, and manually adjustable means for locking the pin wheel unit against reverse rotation thereof during retraction of the transfer material whereby retrograde movement of the strips will be prevented.

12. In a manifolding apparatus wherein interleaved sheets of transfer material are intermittently retractible from transfer relation with inscribed portions of marginally punched record strips into such relation with portions thereof to be inscribed, a pin wheel unit progressively engageable in the marginally punched holes of the strips and rotating in unison with the advance movement thereof, and automatically operable means for preventing reverse rotation thereof during retraction of the transfer material whereby retrograde movement of the strips will be prevented.

13. In a manifolding apparatus wherein interleaved sheets of transfer material are intermittently retractible from transfer relation with inscribed portions of marginally punched record strips into such relation with portions thereof to be inscribed, detent means progressively engageable in the marginally punched holes in the strips and operative idly during advance movement thereof to permit free advancement of the strips, but operative by engagement in the marginally punched holes to prevent retrograde movement thereof during retraction of the transfer sheets.

14. The combination with a writing machine for inscribing marginally punched record strips including feeding means for advancing the strips past a writing position, of an idler pin wheel in offset relation with the feeding means progressively engageable in marginal holes in the record strips and freely actuated by the advance movement of the strips, and means for locking the idler pin wheel against reverse rotation to thereby prevent retrograde movement of the record strips.

15. The combination with a writing machine including feeding means for feeding alternating plies of record and transfer material past a writing position, the record material having relatively spaced holes therein located laterally beyond the lateral margin of the transfer material, of a detent member having continuous engagement with the record material, and progressively engageable in the spaced holes thereof, said detent operating idly during advance movement of the record material past writing position but operatively engageable in a hole thereof to prevent retrograde motion of the record material while the transfer material is shifted relative thereto.

16. The combination with a writing machine including feeding means for advancing alternating superposed plies of record and transfer material past writing position, the record material having therein relatively spaced holes in laterally offset relation with the transfer material, of control means for insuring unidirectional movement of the record material including detent means idly engageable successively in the spaced holes of the record material independently of the transfer material during advance movement thereof but effective to arrest retrograde motion of the record material while permitting free movement of the transfer material relative thereto.

17. The combination with a writing machine including feeding means for advancing past writing position a record strip having therein relatively spaced holes, of a unidirectional rotative pin wheel, in offset relation with the feeding means, idly engageable in the spaced holes of the strip and actuated by the advancement thereof, adapted to prevent retrograde motion thereof.

18. The combination with a writing machine including feeding means for advancing past writing position a record strip having therein relatively spaced holes, of a pin wheel progressively engageable in the spaced holes of the strip and idly actuated by the advance movement thereof and means for locking the pin wheel against reverse rotation.

19. The combination with a writing machine including feeding means for advancing a record strip and associated transfer material past a writing position, of detent means independent of the feeding means, having continuous engagement with the record strip independently of the transfer material during the feeding operation and automatically operable to prevent retrograde motion of the strip while permitting free relative adjustment of the transfer material.

20. The combination with a writing machine including feeding means for advancing a record strip and associated transfer material past a writing position, of detent means independent of the feeding means having continuing engagement with the record strip independently of the transfer material during unison advancement of the record strip and transfer material to prevent retrograde motion of the record strip while permitting free advance motion thereof by the feeding means past the writing position under influence of the feeding means.

21. The combination with a writing machine including feeding means for advancing a record strip past a writing position, of a rotary pin wheel additional to the feeding means engageable in relatively spaced holes in the strip and idly operated by the advancement of the strip and means for locking the pin wheel against rotation to prevent movement of the strip in a return direction.

22. In a manifolding apparatus wherein interleaved series of sheets of record and transfer material are intermittently relatively shifted to move the transfer material from transfer relation with inscribed portions of the record sheets into transfer relation with portions of the record sheets to be inscribed, marginal perforations in one series of the interleaved sheets, a pin wheel unit progressively engageable in the marginal perforations in such series of sheets and rotatable in unison with movement of the interleaved series of sheets into writing position, and means for locking the pin wheel unit against movement whereby the interleaved sheets may be shifted relatively to each other by movement of the other series of sheets.

23. In a manifolding apparatus wherein interleaved series of sheets of record and transfer material are intermittently relatively shifted to move the transfer material from transfer relation with inscribed portions of the record sheets into transfer relation with portions of the record sheets to be inscribed, marginal perforations in one series of the interleaved sheets, a pin wheel unit progressively engageable in the marginal perforations in such series of sheets and rotatable in unison with movement of the interleaved series of sheets into writing position, and automatically operable means for locking the pin wheel unit against movement whereby the interleaved sheets may be shifted relatively to each other by movement of the other series of sheets.

24. In a manifolding apparatus wherein interleaved series of sheets of record and transfer material are intermittently relatively shifted to move transfer material from transfer relation with inscribed portions of the record sheets into transfer relation with portions of the record sheets to be inscribed, marginal perforations in one series of the interleaved sheets, and detent means progressively engageable in the marginal perforations in the one series of sheets and operative idly during movement of the interleaved sheets in one direction, but operative by engagement with such marginal perforations to prevent movement of the marginally perforated series of sheets in the opposite direction whereby the interleaved sheets may be shifted relatively to each other by movement of the other series of sheets.

25. The combination with a writing machine wherein superposed sheets of record material and interleaved sheets of transfer material of less width than the record material are progressively advanced past a writing position, retracting means for the transfer material for shifting the transfer material relative to the record material from transfer relation with one portion thereof into such relation with another portion thereof, and control means having progressive idle engagement with a marginal portion of the record material beyond that of the transfer material during advance movement thereof and positively engaging the record material beyond the limit of the transfer material to restrain the record material against retrograde movement during retraction of the transfer material.

26. A writing machine wherein alternating superposed portions of record and transfer material are progressively advanced in unison past a writing position and the transfer material subsequently retracted independently of the record material into transfer relation with a succeeding portion thereof, including feeding means for advancing the record and transfer material and retracting means for shifting the transfer material relative to the record material, characterized by holding means having progressive idle engagement with the record material during unison advancement of the record and transfer material and automatically engageable positively with the record material independently of the transfer material for holding the record material against retrograde movement during retractive movement of the transfer material.

27. A writing machine wherein alternating superposed portions of record and transfer material are progressively advanced in unison past a writing position and the transfer material subsequently retracted independently of the record material into transfer relation with a succeeding portion thereof, including feeding means for advancing the record and transfer material and retracting means for shifting the transfer material relative to the record material, characterized by a detent having progressive idle engagement in relatively spaced holes in the record material during unison advancement of the record and transfer material and adapted to hold the record material against retrograde movement during retraction of the transfer material.

28. A writing machine wherein alternating superposed portions of record and transfer material are progressively advanced in unison past a writing position and the transfer material subsequently retracted independently of the record material into transfer relation with a succeeding portion thereof, including feeding means for advancing the record and transfer material and retracting means for shifting the transfer material relative to the record material, characterized by a unidirectional pin type arresting means having progressive idle engagement in relatively spaced holes in the record material during unison advancement of the record and transfer material and adapted to hold the record material against retrograde movement during retraction of the transfer material.

29. A writing machine wherein alternating superposed portions of record and transfer material are progressively advanced in unison past a writing position and the transfer material subsequently retracted independently of the record material into transfer relation with a succeeding portion thereof, including feeding means for advancing the record and transfer material and retracting means for shifting the transfer material relative to the record material, characterized by a pawl having to and fro movement into and out of progressive idle engagement in relatively spaced holes in the record material beyond the limit of the transfer material during unison advancement of the record and transfer material and adapted to hold the record material against retrograde movement during retraction of the transfer material.

30. A writing machine wherein superposed portions of record material and interleaved portions of transfer material are advanced in unison past a writing position and the transfer material subsequently retracted into transfer relation with a succeeding portion of the record material including feeding means for advancing the record and transfer material in unison past a writing position and retracting means for subsequently retracting the transfer material independently of the record material, characterized by retarding means for the record material idle during unison advancement of the record and transfer material and automatically operative to positively restrain the record material against retrograde movement during retraction of the transfer material.

31. In a writing machine arranged for operation on superimposed work sheets, partially through the medium of a transfer sheet, means for movably supporting a transfer sheet in such manner that the same may be repositioned between adjacent work sheets, and means coacting with the work sheets independently of the transfer sheet rendered active by attempted movement of one of the work sheets by the transfer sheet during its repositioning, to prevent dislocation of the work sheets.

32. In combination with a typewriter, having means simultaneously to guide superimposed work sheets and an interposed transfer sheet to writing position, means to move the transfer

sheet in a direction reverse of that in which the work sheets are normally fed through the typewriter, and means on the guiding means, coacting with the work sheets independently of the transfer sheet operated by attempted reverse movement of one of the work sheets to prevent such movement thereof by the transfer sheet.

33. In combination with a typewriter, having means simultaneously to guide superimposed work sheets and an interposed transfer sheet to writing position, means to move the transfer sheet in a direction reverse of that in which the work sheets are normally fed through the typewriter, and detent means engaging one of the work sheets independently of the transfer sheet in a manner to prevent movement thereof in said reverse direction while permitting substantially free movement thereof in said normal direction.

34. In combination, a supporting guide on which interconnected sets of superposed forms are adapted to be advanced to a writing machine on which the forms may be filled in, means to support a transfer sheet between the forms of the foremost set in a manner to permit the sheet to be withdrawn to the next set to be filled in, and means operative upon retractive movement of the forms adapted and arranged to engage one of the forms of the foremost set at a margin thereof which is offset from the operating zone of the transfer sheet, in a manner to prevent retractive movement of the forms of said foremost set when the transfer sheet is retracted.

35. In combination, a supporting guide on which interconnected sets of superposed forms are adapted to be advanced to a writing machine on which the forms may be filled in, means to support a transfer sheet between the forms in such manner that the sheet may be drawn between the form sheets from one set to another, a paper holding device operative upon retractive movement of the transfer sheet to move into engaging relation with one of the forms at a region thereof offset from the path of movement of the transfer sheet to prevent retractive movement of the forms by the transfer sheet during said operation.

36. In combination, a supporting guide on which interconnected sets of superposed forms are adapted to be advanced to a writing machine upon which the forms may be filled in, means to support a transfer sheet between the forms of a set for movement from one set to another, a shaft extending transversely of the guide, and a detent mounted on the shaft and automatically engageable with the forms to resist unison retractive movement thereof with the transfer sheet during attempted movement thereof in one direction only on said guide.

JOHN Q. SHERMAN.

CERTIFICATE OF CORRECTION.

Patent No. 2,215,481. September 24, 1940.

JOHN Q. SHERMAN.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 1, second column, line 39, for "798,790" read --708,790--; line 50, for "holes" read --holes 5--; page 6, second column, line 12, claim 35, strike out "to move"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 19th day of November, A. D. 1940.

Henry Van Arsdale,
Acting Commissioner of Patents.

(Seal)