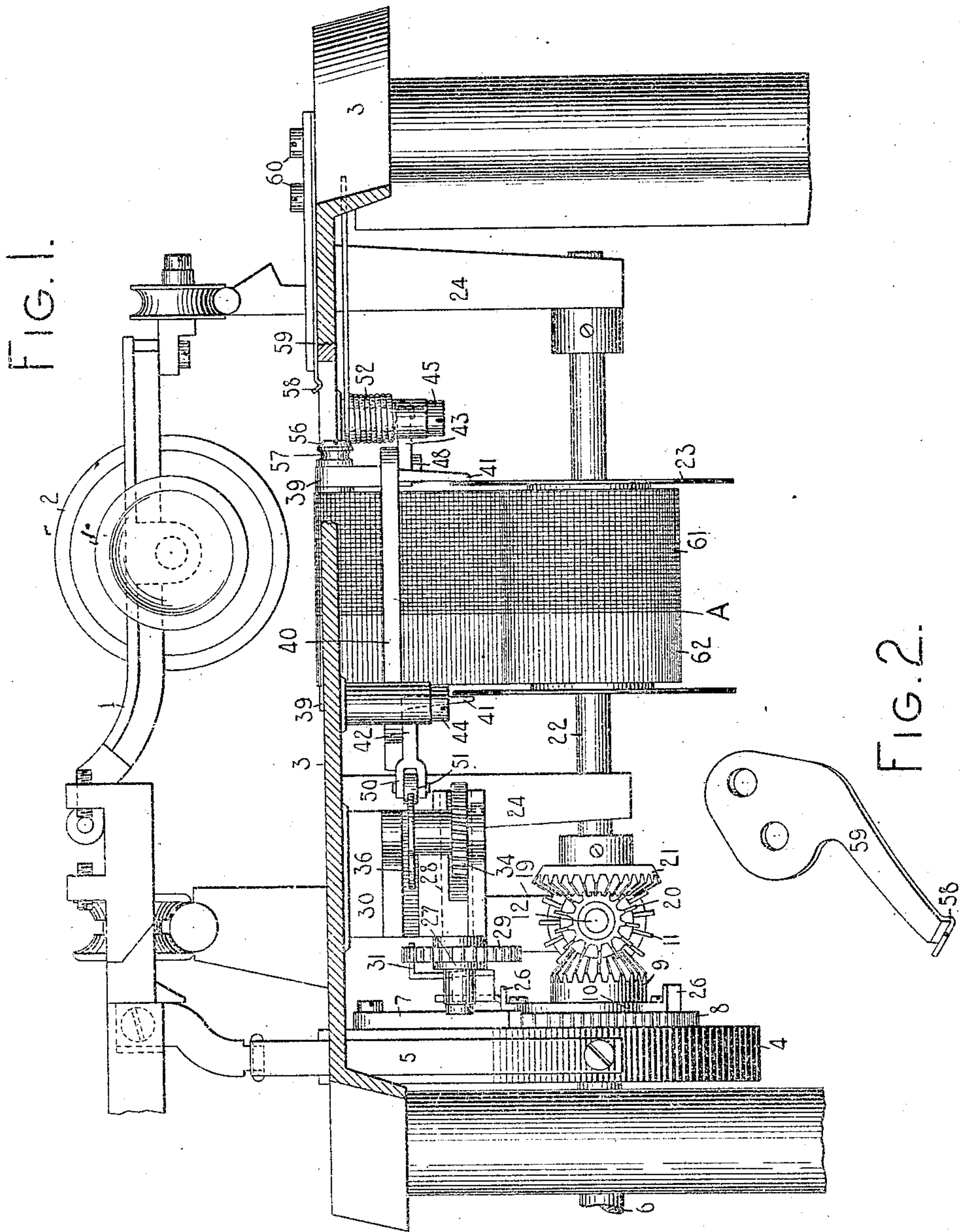


No. 869,826.

PATENTED OCT. 29, 1907.

D. BRIGGS.  
TYPE WRITING MACHINE.  
APPLICATION FILED JUNE 7, 1908.

3 SHEETS—SHEET 1.



WITNESSES.

*J. B. Reeves*  
*Charles E. Smith*

INVENTOR.

*Daniel Briggs*  
*By Jacob Felsch*

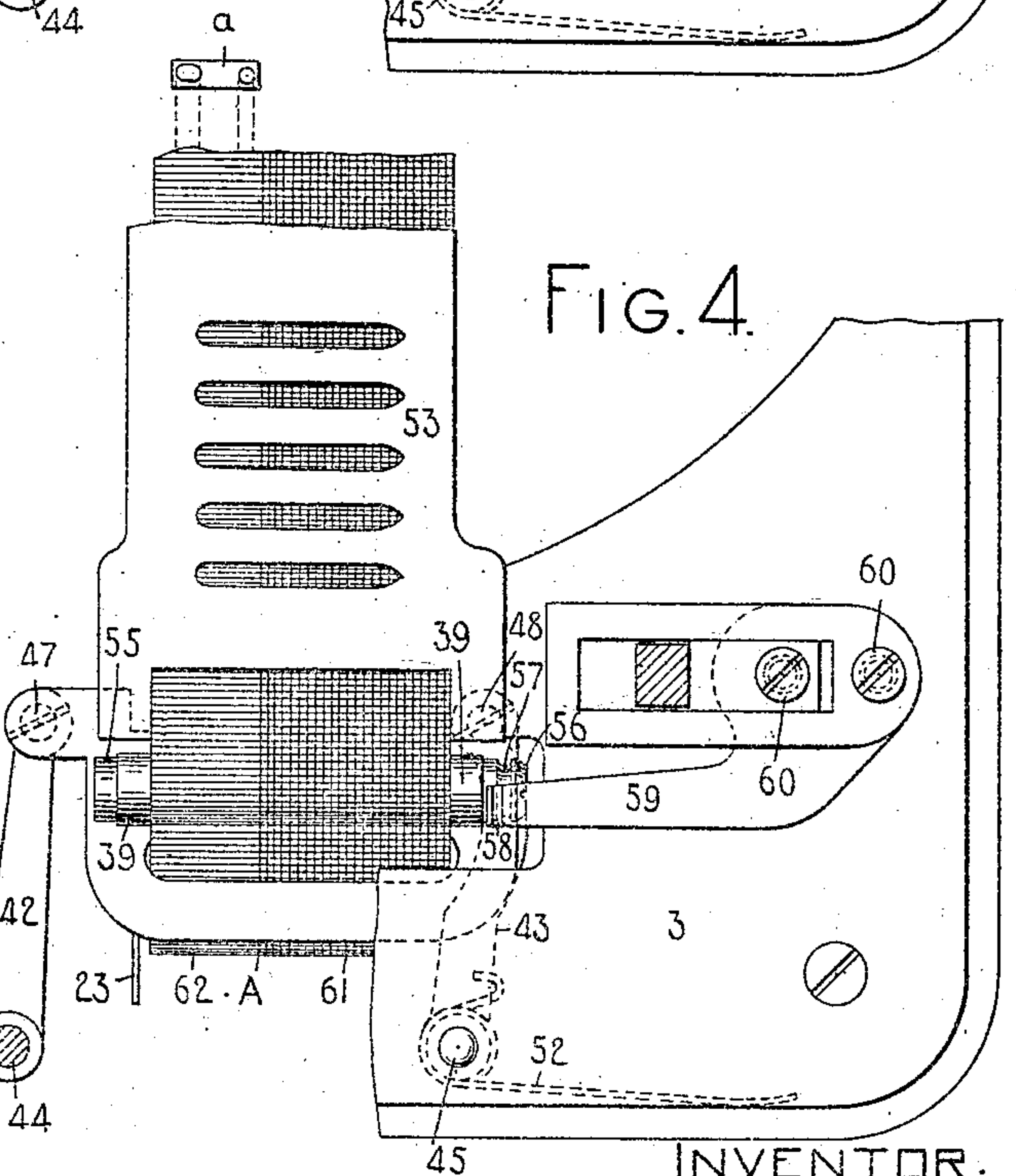
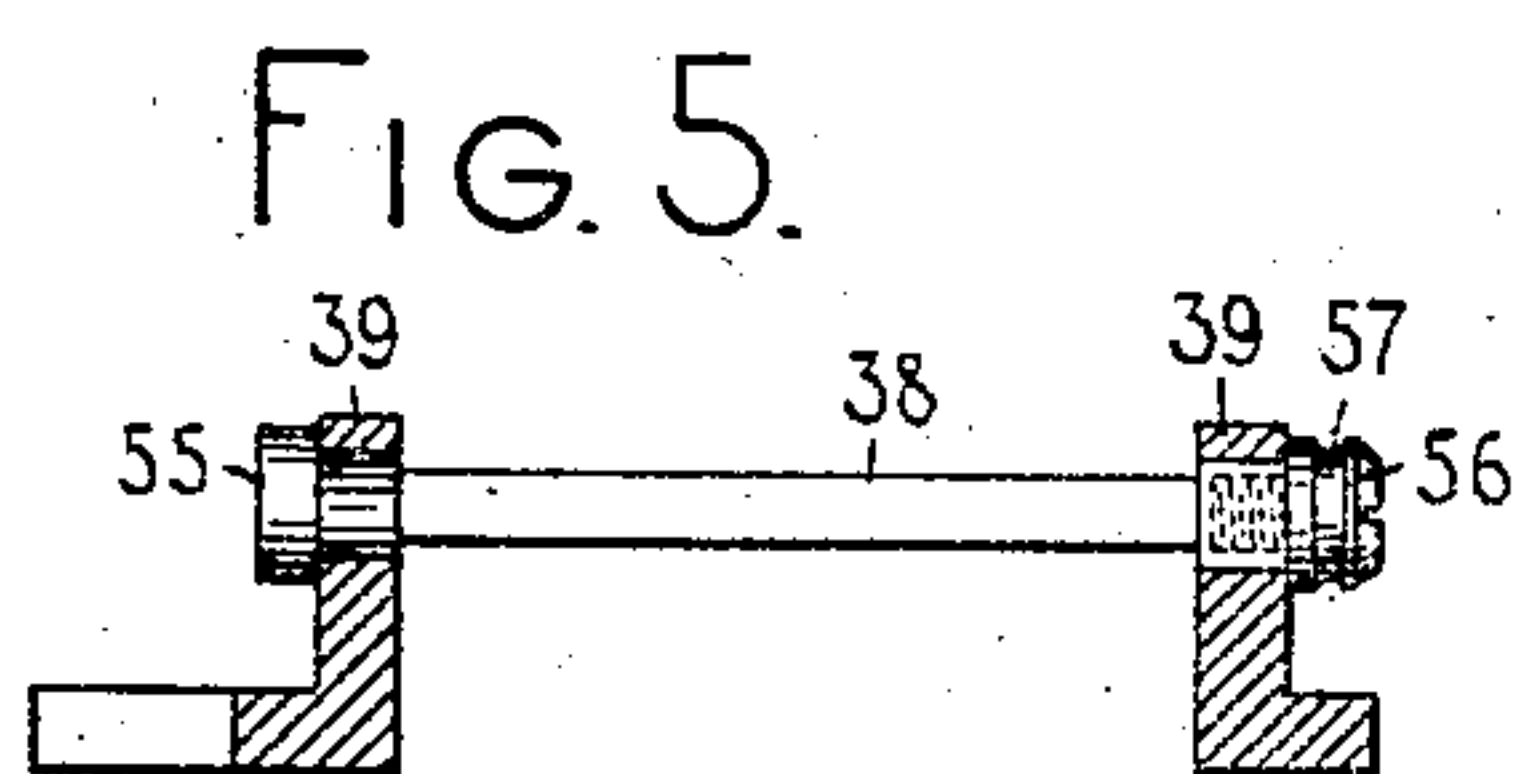
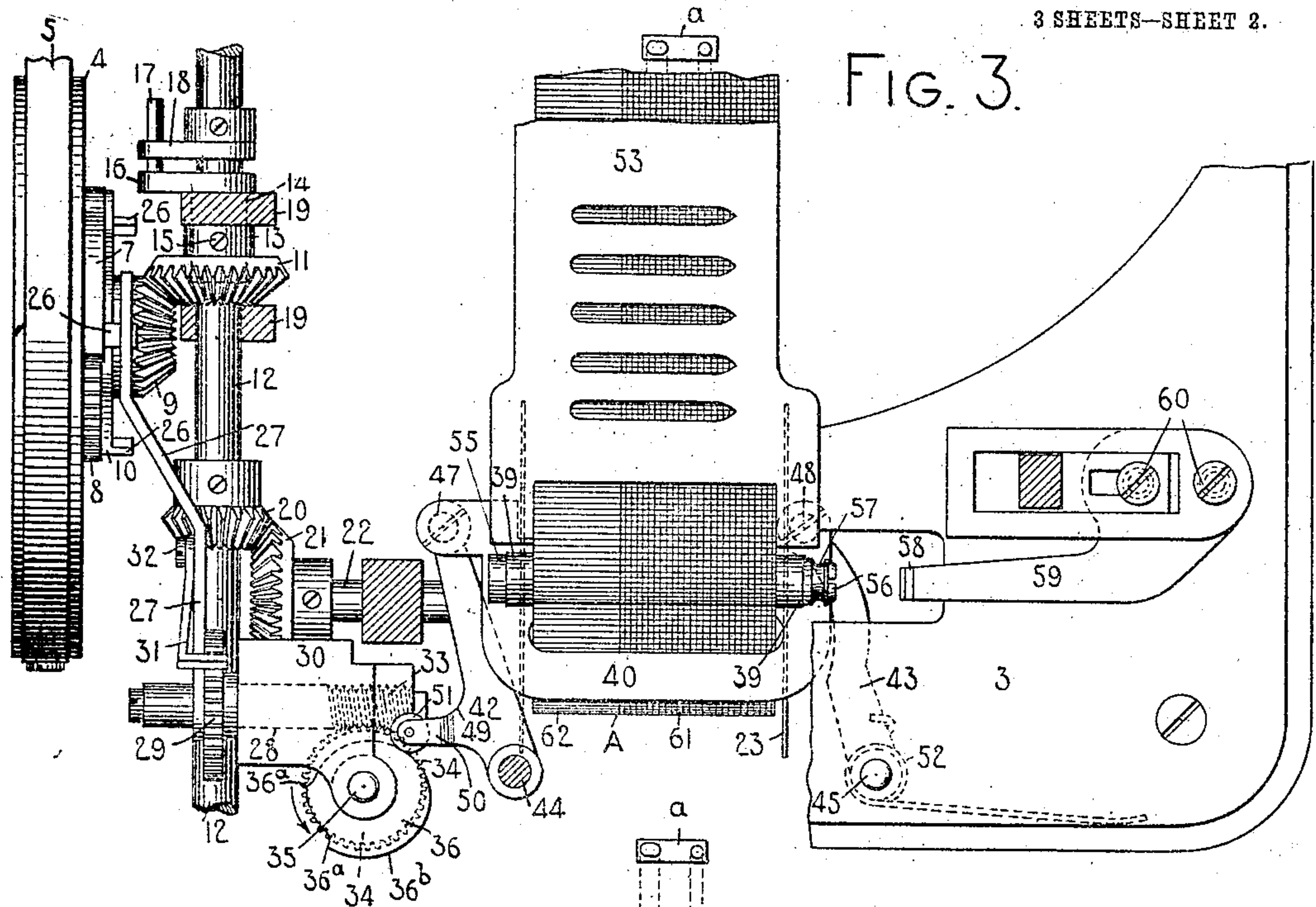
HIS ATTORNEY

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3 SHEETS—SHEET 2.



WITNESSES:

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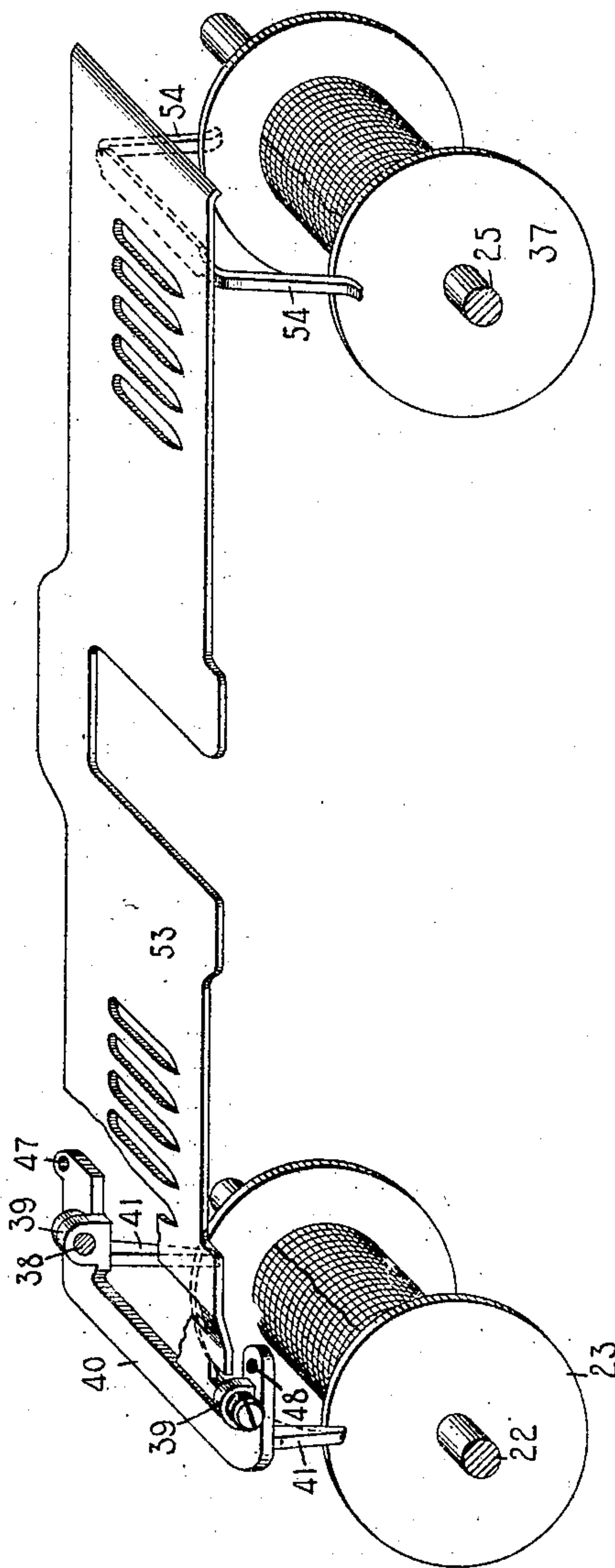
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3 SHEETS—SHEET 3.

FIG. 6



WITNESSES.

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*Charles E. Smith*

INVENTOR.

*Daniel Briggs*  
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# UNITED STATES PATENT OFFICE.

DANIEL BRIGGS, OF NEW YORK, N. Y., ASSIGNOR TO WYCKOFF, SEAMANS & BENEDICT, OF  
ILION, NEW YORK, A CORPORATION OF NEW YORK.

## TYPE-WRITING MACHINE.

No. 869,826.

Specification of Letters Patent.

Patented Oct. 29, 1907.

Original application filed October 31, 1902. Serial No. 129,549. Divided and this application filed June 7, 1906.  
Serial No. 320,613.

*To all whom it may concern:*

Be it known that I, DANIEL BRIGGS, a citizen of the United States, and a resident of Richmond Hill, city of New York, in the county and borough of Queens and  
5 State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to certain improvements in ribbon mechanism for typewriting machines and the main  
10 object of the invention is to provide simple and efficient means whereby any of a plurality of inking surfaces having different colors or characteristics may be readily brought to the operative position where it will cooperate with the types.

15 A further object of the invention is to provide means for automatically feeding the inking surfaces during the operation of the machine so as to efficiently use different portions of an inking surface and so, nevertheless, that the particular inking surface which has been moved  
20 to the operative position will alone be brought into use.

To the above and other ends which will hereinafter appear my invention consists of the features of construction, arrangements of parts and combinations of devices to be hereinafter described and claimed.

25 In the drawings illustrating these improvements, Figure 1 represents the upper part of the left-hand end of a typewriting machine with part of the frame broken away to more clearly illustrate my invention. Fig. 2 is a detail perspective view of a locking spring used in  
30 the structure to hold the shifting frame in place for the use of one of the colors. Fig. 3 is a plan view of certain of the parts illustrated in Fig. 1 and showing the mechanism arranged for automatically producing the lateral feed within one color or section of the ribbon. Fig. 4 is  
35 a similar view of the same with most of the mechanism omitted and showing the ribbon shifted for the use of the other color and the shifting frame held by the locking spring. Fig. 5 is a detail side view partly in section of the left-hand ribbon guide pin and its support. Fig.  
40 6 is a detail perspective view of the ribbon spools and guide or carrier.

I have illustrated my invention applied to a No. 6 Remington machine, though it should be understood that it may be applied to other characters of writing machines.  
45

The present case is a division of my application, Serial No. 129,549, filed October 31st, 1902.

50 The typewriting machine shown in the drawings is of that class which has a carriage 1 in which is mounted a platen 2, the carriage being arranged to travel along the top plate 3 from side to side of the machine and being propelled by the carriage driving drum 4 through the agency of a strap or band 5 and a spring within the drum.

The carriage driving drum 4 revolves freely on a supporting shaft 6 and is provided on its front side with a  
55 pawl 7 which engages the teeth of a ratchet wheel 8 also loosely mounted on the shaft 6. With the movement of the carriage 1, in the direction of its feed or from right to left, the revolving drum and its pawl 7 turn the ratchet wheel 8, but when the carriage is returned to its starting  
60 point, the drum revolves in the opposite direction and the pawl 7 failing to act upon the ratchet wheel 8 leaves it at rest. The automatic actuation of the ribbon mechanism being effected from the ratchet wheel 8, it will be understood that during the return movement of the carriage from left to right no movement is transmitted to  
65 the ribbon, which is desirable in order to afford impact of the types *a* throughout every portion of the ribbon with a consequent production of uniform impressions in the writing. The ratchet wheel 8 carries on its hub a  
70 bevel gear 9 and a spider 10. The object of the latter will be described hereafter, but it will be seen that the gear 9 engages a similar bevel gear 11 mounted on the shaft 12, the object of this shaft 12 in this class of type writing machines being well-known as the means by  
75 which the ribbon spools are alternately wound to change the direction of longitudinal feed of the ribbon. I do not deem it necessary to more fully illustrate this feature of the construction, it being understood that the direction of longitudinal feed of the ribbon depends on  
80 which bevel gear on the shaft 12 meshes with its associated gear on a ribbon spool shaft and this is determined by the longitudinal disposition of the shaft which is changed automatically, and by hand when desired, and that these devices constitute parts of the auto-  
85 matic reversing mechanism employed in the No. 6 Remington machine and which is disclosed in the patent to Webb, No. 599,428, dated Feb. 22, 1898.

In Fig. 3 the bevel gear wheel 11 will be seen attached to a sleeve 13 that receives a sleeve 14 which is  
90 connected thereto by a set screw 15. The sleeve 14 loosely surrounds the shaft 12 and has a crank arm 16 projecting therefrom and from which projects a pin 17, the pin extending parallel with the shaft 12 and passing  
95 loosely through a slot or opening in the end of a crank arm 18 secured to the shaft 12. This construction permits of the longitudinal movement of the shaft 12, whether effected automatically or by hand, independently of the sleeves 13 and 14, the bevel gear 11, and the crank arm 16, which parts are held against longitudinal  
100 movement by two depending brackets 19 through one of which the sleeve 14 extends. The crank arms 16 and 18, through the medium of the pin 17, rotate together so that a rotation of the gear 11 will be transmitted to the shaft 12 irrespective of the longitudinal position of the  
105 latter.



The shaft 12 extends from side to side of the machine and is provided at the left-hand end portion thereof with a bevel gear wheel 20 secured thereto and meshing with a similar wheel 21 on the shaft 22, which latter carries the ribbon spool 23 and is mounted to turn in depending bracket arms 24. It will be understood that another gear like the gear 20 is carried near the opposite end of the shaft 12 for cooperation with the gear of the other ribbon spool shaft 25 (Fig. 6).

The spider 10 is provided with several, say, three lugs 26 which project forwardly therefrom, and as the ratchet wheel 8 and the spider 10 revolve, the lugs strike the outer end of a lever 27 fulcrumed on a shaft 28 of a ratchet wheel 29 carried by a bracket 30 secured to the lower side of the top plate 3. The lever 27 has a pawl 31 pivoted thereto at 32, said pawl engaging the teeth of ratchet wheel 29 and as the lugs 26 strike the inner free end portion of the lever they cause it to rise and fall and the pawl vibrating back and forth on the teeth of the ratchet wheel 29 cause it to slowly revolve and turn its shaft 28 and a worm 33 thereon. The worm 33 engages a worm wheel 34 on a vertical shaft 35 carried by the bracket 30, and the shaft 35 at its other or upper end carries a cam or driving device 36. The spools 23 and 37 slide freely along the shafts 22 and 25 but each spool is caused to revolve with its shaft by means of a spline on the shaft or any well-known or desired means which I have not considered necessary to show. The ribbon A passes from the left-hand ribbon spool up and over a pin 38 and then over the type-well and around a similar guide pin at the other side of the machine to the other ribbon spool. The pin 38 is carried by two ears 39 of a shifting frame 40, and the latter has depending from its lower side two fingers 41 which span the associated spool and control its movement along the shaft 22. The frame 40 is carried by two supporting links 42, 43 which turn on vertical posts 44, 45 secured to the underside of the top plate 3. These links 42 and 43 are provided at their pivotal ends with sleeves surrounding the posts 44 and 45 respectively which afford an easy swinging movement of the links while their outer ends are pivoted at 47 and 48 to opposite sides of the shifting frame 40 and cause it to move fore and aft of the machine during the swinging movement of the links. This movement is imparted to the links and shifting frame 40 by means of the small arm 49 having a forked end 50 which carries a roller 51 designed to ride over the face of cam 36. A spring 52 is wound about the pivot post 45 above the sleeve of the supporting link 43 and one end of the spring bears against the depending rim of top plate 3, the other end bearing against the link 43 and tending to force it and the shifting frame 40 with link or lever 42 in the opposite direction, causing the roller 51 to ride on the face of cam 36. The top plate supports one end of a ribbon guide plate 53 of the usual or any suitable construction, the other end of said plate being turned around the rod 38, thereby pivotally connecting the guide plate to the shifting frame 40 and causing said plate to travel fore and aft of the machine with the shifting frame. The guide plate 53 carries two depending fingers 54 which engage the spool 37 outside of the flanges thereof, so that a back and forth movement of the frame 40 and the guide plate 53 causes both ribbon spools to be moved back and forth axially along their shafts and effects a transverse feed of the ribbon. The

pin 38 has a head 55 at one end, whereas the pin is threaded at the other end to receive a nut 56 provided with an annular groove 57 for the reception of the wedge-shaped end 58 of a flat spring locking device or detent 59 secured to the top plate of the machine by screws 60. This construction, therefore, provides engaging means on a part that moves with the ribbon spools and cooperative engaging means on a fixed part of the machine to hold the spools against axial movement.

The inking surfaces or ribbon A are shown as two fields 61 and 62. These fields may be inking surfaces of two different colors such, for instance, as black and red or they may have different characteristics; thus the field 61 may be copying ribbon, whereas the field or section 62 may be record ribbon, though for convenience the sections will be referred to as of two different colors black and red, the black section being indicated at 61 and the red section at 62.

The operation of the mechanism above described will now be explained: The revolutions of the ratchet wheel 8 through the letter space movement of the carriage in the direction of the feed causes the lugs 26 of the spider 10 to strike the free end of the lever 27 and the pawl 31 turns the ratchet wheel 29 and worm 33. The worm wheel 34 is turned by the rotation of the worm 33 carrying with it the cam 36 whose cam face causes the lever 42 and link 43 to swing about the posts 44 and 45 respectively, moving the frame 40 laterally and shifting the spool 23 along the revolving shaft 22. The frame 40, through the ribbon guide plate 53, also shifts the ribbon spool 37 at the other end of the machine by the depending fingers 54 carried by the plate 53.

In the present form of this invention the automatic transverse shifting device is effective for but one of the colored sections 61 of the ribbon and this particular section preferably occupies about two-thirds of the width of the ribbon. As seen in Fig. 3 the end of the spring 59 is disengaged from the groove 57 and the spring 52, bearing against the link 43, forces it with the frame and the other link towards the cam 36 and causes the roller 51 to bear upon the face thereof. The cam 36 has two steps 36<sup>a</sup> and a larger parabolic face 36<sup>b</sup>. Under these conditions the action of the cam shifts the black section of the ribbon laterally over the printing center during the longitudinal feed thereof and utilizes every portion of it. In Fig. 4 the spool shifting frame will be seen to have been pushed manually to the right and towards the front of the machine, and the wedge-shaped end 58 of the spring detent, or locking device 59 engages the annular groove 57 in the nut 56. The roller 51 no longer rides on the face of cam 36 and the red section of the ribbon now passes over to operative position where it may cooperate with the type *a*. In other words, the cam or driving device 36 becomes ineffective to actuate the parts and an automatic transverse shifting action of the ribbon is dispensed with when the red field of the ribbon is at the printing center, although the longitudinal feed of the ribbon continues. Thus, means are provided which may be rendered operable at will to effect a transverse feed of the ribbon as well as a longitudinal feed thereof and which are operable at will to give merely a longitudinal feed of the ribbon. The operation of the cam driving mechanism continues but the roller 51 is moved from the pitch of the face of the cam. When the operator again



has occasion to use the black field 61 it is merely necessary to release the catch or holding device 59 when the spring 52 will force the shifting frame 40, the ribbon guide and spools towards the rear of the machine until they are arrested by the roller 51 contacting with the cam 36 and the black field will thus be brought to the operative position.

The invention is particularly available in cases where the red ink or inking field 62 is used but little, or when its limited use does not require the employment of means for effecting an automatic transverse feed of the ribbon as well as a longitudinal feed, as for instance, when ink of a distinctive color or characteristic is to be occasionally employed. During the operation of these devices, it will be observed that the lengthwise motion of the ribbon in either direction is in no way interfered with and the change of color or character of the printing surface is readily effected without touching the ribbon. While a single ribbon or inking surface is here shown and described, it is obvious that I may employ two or more ribbons or other inking surfaces, each of a single but different color or character.

From the foregoing description it will be observed that I have provided simple and efficient means for affording an automatic feed of the ribbon or inking surface in two directions at substantially right angles to each other and that the feed is nevertheless such that only the field which is in the operative position will be presented to the types for cooperation therewith; that the guide plate 53 and the associated parts constitute a ribbon carrier which is operatively connected to and is actuated by the means for automatically moving the ribbon in a direction transverse to its length.

Various changes may be made without departing from the spirit of my invention and certain features may be employed without the others.

What I claim as new and desire to secure by Letters Patent, is:—

1. In a typewriting machine, the combination of inking surfaces having different characteristics, means whereby any surface or field may be moved to operative position, means operative to automatically move said inking surfaces in two directions at substantially right angles to each other and to effect an automatic movement of the inking surfaces in at least one direction when any field is in the printing position, and means for preventing an automatic widthwise movement of the inking surfaces when one of said inking fields is in the operative position.

2. In a typewriting machine, the combination of inking surfaces having different characteristics, means for affording a movement of the inking surfaces so as to bring any particular surface or field to operative position, and means operative to automatically effect a feed of the inking surfaces in two directions when one of said fields is in the operative position and to automatically feed the inking surfaces in but one direction when another field is in the operative position.

3. In a typewriting machine, the combination of inking surfaces having different characteristics, means for affording a movement of said inking surfaces so as to bring any field thereof to operative position, means operative to automatically effect a feed of the inking surfaces in two directions when one of said fields is in the operative position and to automatically feed the inking surfaces in but one direction when another field is in the operative position, and a lock for locking certain of the parts in position to effect the last mentioned result.

4. In a typewriting machine, the combination of an inking ribbon having longitudinally extending inking fields of different characteristics, means whereby any inking field

may be moved to operative position, and means operative to automatically feed said inking ribbon both longitudinally and crosswise when one of the inking fields is in the operative position and to feed the ribbon in but one direction when another inking field is in the operative position.

5. In a typewriting machine, the combination of an inking ribbon having longitudinally extending inking fields of different characteristics, means for affording the movement by hand of any inking field to operative position, and means operative to automatically move said ribbon both longitudinally and crosswise when one of the inking fields is in the operative position and to feed the ribbon longitudinally when another inking field is in the operative position.

6. In a typewriting machine, the combination of a ribbon having inking fields of different characteristics, means for automatically feeding said ribbon longitudinally, means for automatically effecting a transverse feed of the ribbon, and means for holding the ribbon against transverse feed without affecting the longitudinal feed of the ribbon.

7. In a typewriting machine, the combination of a ribbon having inking fields of different characteristics, means for automatically feeding said ribbon longitudinally, means for automatically effecting a transverse feed of the ribbon, and means for affording a movement of the ribbon widthwise by hand to bring different fields into operative position, the construction and arrangement being such when one field is in the operative position the ribbon will receive both a longitudinal and a widthwise feed and when another field is in the operative position a longitudinal feed alone will be effected.

8. In a typewriting machine, the combination of a ribbon having inking fields of different characteristics, means for automatically feeding said ribbon longitudinally, and automatically actuated driving devices for effecting a widthwise feed of the ribbon when one field is in the operative position, and means for affording a movement of the ribbon to bring another field to the operative position and to render said driving device ineffective to move the ribbon and without affecting the means for feeding it longitudinally.

9. In a typewriting machine, the combination of a ribbon having inking fields of different characteristics, a guide for said ribbon, means for automatically feeding the ribbon longitudinally, an automatically actuated driving device cooperating with said ribbon guide for effecting a widthwise feed of the ribbon when one field is in the operative position, and means for affording a movement of the ribbon guide to bring another field of the ribbon to the operative position and to render said driving device ineffective to move the ribbon guide and without affecting the means for feeding the ribbon longitudinally.

10. In a typewriting machine, the combination of a carriage, a ribbon having inking fields of different characteristics, a guide for said ribbon, means controlled by the movement of the carriage for automatically feeding said ribbon longitudinally, means controlled by the movement of the carriage and cooperating operatively with said ribbon guide to automatically effect a transverse feed of the ribbon when one field of the ribbon is in the operative position, and means for affording a movement of said guide to bring another field of the ribbon to the operative position and to render said transverse feeding means ineffective to move the guide and without affecting the means for feeding the ribbon longitudinally.

11. In a typewriting machine, the combination of a carriage, a ribbon having inking fields of different characteristics, a guide for said ribbon, means controlled by the movement of the carriage for automatically feeding said ribbon longitudinally, means controlled by the movement of the carriage and cooperating operatively with said ribbon guide to automatically effect a transverse feed of the ribbon when one field of the ribbon is in the operative position, means for affording a movement of said guide to bring another field of the ribbon to the operative position and to render said transverse feeding means ineffective to move the guide and without affecting the means for feeding the ribbon longitudinally, and means for locking the ribbon guide in said last mentioned position.

12. In a typewriting machine, the combination of a car-



riage; a ribbon having inking fields of different characteristics, means always operable during the feed movement of the carriage for automatically effecting a longitudinal feed of the ribbon, and means which may be brought into operation at will for effecting an automatic transverse feed movement as well as a longitudinal feed movement of the ribbon.

13. In a typewriting machine, the combination of a carriage, a ribbon having fields of different characteristics, means always operable during the feed movement of the carriage for automatically effecting a longitudinal feed of the ribbon, and means which may be brought into operation at will for effecting an automatic transverse feed movement as well as a longitudinal feed movement of the ribbon, one field of the ribbon being in the operative position when the ribbon is receiving both a transverse and longitudinal feed and another field of the ribbon being in the operative position when the ribbon is receiving merely a longitudinal feed.

14. In a typewriting machine, the combination of a ribbon having inking fields of different characteristics, means for automatically feeding said ribbon longitudinally, a ribbon guide, means for automatically moving said ribbon guide to effect a transverse movement of the ribbon, and means for rendering said last mentioned means inoperative at will and without affecting the longitudinal feed of the ribbon.

15. In a typewriting machine, the combination of a ribbon having different longitudinally extending fields of different characteristics, ribbon spools, means for automatically turning said ribbon spools, means for affording an axial movement of said spools to bring different fields of the ribbon to operative position, means operatively connected to said ribbon spools for automatically effecting an axial movement of the ribbon spools to effect a crosswise as well as a longitudinal feed of the ribbon within a given field, and means for effecting a disconnection between said ribbon spools and the means for effecting an automatic axial movement thereof and without affecting the means for feeding the ribbon longitudinally.

16. In a typewriting machine, the combination of a ribbon having different longitudinally extending fields of different characteristics, ribbon spools, means for automatically turning said ribbon spools, means for affording an axial movement of said spools to bring different fields of the ribbon to operative position, an automatically actuated cam for automatically effecting an axial movement of the ribbon spools to effect a crosswise feed of the ribbon within a given field during the longitudinal feed thereof, and means for affording a movement of said ribbon spools to a position where they are unaffected by said cam and without affecting the means for feeding the ribbon longitudinally.

17. In a typewriting machine, the combination of a ribbon having different longitudinally extending fields of different characteristics, ribbon spools, means for automatically turning said ribbon spools, means for affording an axial movement of said spools to bring different fields of the ribbon to operative position, a spring for effecting an axial movement of the spools in one direction, a cam for automatically effecting an axial movement of the ribbon spools in the opposite direction, to effect a crosswise feed of the ribbon during the longitudinal feed thereof and within a given field, and means for affording an axial movement of said ribbon spools to a position where they are unaffected by said cam and without affecting the means for feeding the ribbon longitudinally.

18. In a typewriting machine, the combination of a ribbon having different longitudinally extending fields of different characteristics, ribbon spools, means for automatically turning said ribbon spools to effect a longitudinal feed of the ribbon, means for affording an axial movement of said spools to bring different fields of the ribbon to operative position, a spring for effecting an axial movement of the spools in one direction, a cam for automatically effecting an axial movement of the ribbon spools in the opposite direction, to effect a crosswise as well as a longitudinal feed of the ribbon within a given field, means for affording an axial movement of said ribbon spools to a position

where they are unaffected by said cam and without affecting the means for feeding the ribbon longitudinally, and a locking device for locking the ribbon spools in said last mentioned position.

19. In a typewriting machine, the combination of a ribbon having longitudinally extending fields of different characteristics, ribbon spool shafts, ribbon spools adapted to turn with and to move axially along said shafts, automatic means for effecting an axial movement of the spools on said shafts, and means for affording an axial movement of the spools away from said automatic means and out of cooperation therewith without affecting the rotation of the spools.

20. In a typewriting machine, the combination of a ribbon having longitudinally extending fields of different characteristics, ribbon spool shafts, ribbon spools adapted to turn with and to move axially along said shafts, automatic means for effecting an axial movement of the spools on said shafts, means for affording an axial movement of the spools away from said automatic means and out of cooperation therewith without affecting the rotation of the spools, and a detent for holding the spools in said last mentioned position.

21. In a typewriting machine, the combination of a ribbon having longitudinally extending fields of different characteristics, ribbon spool shafts, ribbon spools adapted to turn with and to move axially along said shafts, automatic means for effecting an axial movement of the spools on said shafts, means for affording an axial movement of the spools away from said automatic means and out of cooperation therewith and without affecting the rotation of the spools, a part that moves with the ribbon spools during the axial movement of the latter, engaging means on said part, and cooperative engaging means on a fixed part of the machine to hold the spools against axial movement on their shafts.

22. In a typewriting machine, the combination of a carriage, a spring drum therefor, a cam, pawl and ratchet mechanism between said spring drum and cam, ribbon controlling means actuated by said cam, and means for affording a movement of the controlling means away from said cam.

23. In a typewriting machine, the combination of a carriage, a spring drum therefor, a cam, pawl and ratchet mechanism between said spring drum and cam, ribbon controlling means actuated by said cam, means for affording a movement of the controlling means away from said cam, and a spring detent for holding the controlling means in said last mentioned position.

24. In a typewriting machine and in a mechanism for moving a multi-colored ribbon laterally, the combination of a carriage driving drum, a ratchet wheel carrying a spider with lugs or projections, a lever carrying a pawl, a worm carrying a ratchet wheel adapted to be turned by said pawl, a worm wheel in engagement with the said worm, and a cam having one part of its face a regular rise and the other part formed with a series of steps.

25. In a typewriting machine and in a mechanism for moving a multi-colored inking ribbon laterally in both directions, the combination of a pair of ribbon spools connected together to move laterally in unison, a ribbon spool shifting frame, a spring for moving said shifting frame and the ribbon laterally in one direction, a pair of pivoted links supporting the shifting frame, and means for moving the ribbon laterally in the opposite direction and confining the feed to a given field, said means comprising a cam, a worm wheel, a worm, and pawl and ratchet mechanism.

26. In a typewriting machine, the combination of a carriage, a carriage driving drum, a multi-colored ribbon, a cam driven by the carriage driving drum, supporting links, a spool shifting frame actuated by said cam, a pin carried by the shifting frame and provided with a nut having an annular groove, a flat spring with a wedge-shaped end to engage the annular groove, a pair of ribbon spools, and ribbon spool shafts.

27. In a typewriting machine, the combination of a multi-colored ribbon, ribbon spools, ribbon spool shafts, a spool shifting frame, a pin having a nut with an annular groove therein, a ribbon guide plate hinged thereon, a



spring with wedge-shaped extremity adapted to fit the groove in the nut of the guide pin, pivoted supporting links, a cam, and means for operating the supporting links through said cam, whereby the shifting frame is moved.

5 28. In a typewriting machine, the combination of a carriage, a driving drum therefor, a cam operated by said drum, a multi-colored ribbon, ribbon spools, supporting links adapted to be shifted by said cam, a spool shifting frame provided with a pin having a nut with an annular

groove, and a spring adapted to cooperate with said annu- 10  
lar groove and to prevent lateral movement of the spools.

Signed at the borough of Manhattan, city of New York,  
in the county of New York, and State of New York, this  
6th day of June A. D. 1906.

DANIEL BRIGGS.

Witnesses:

E. M. WELLS,

M. F. HANNWEBER.