No. 883,636. PATENTED MAR. 31, 1908.

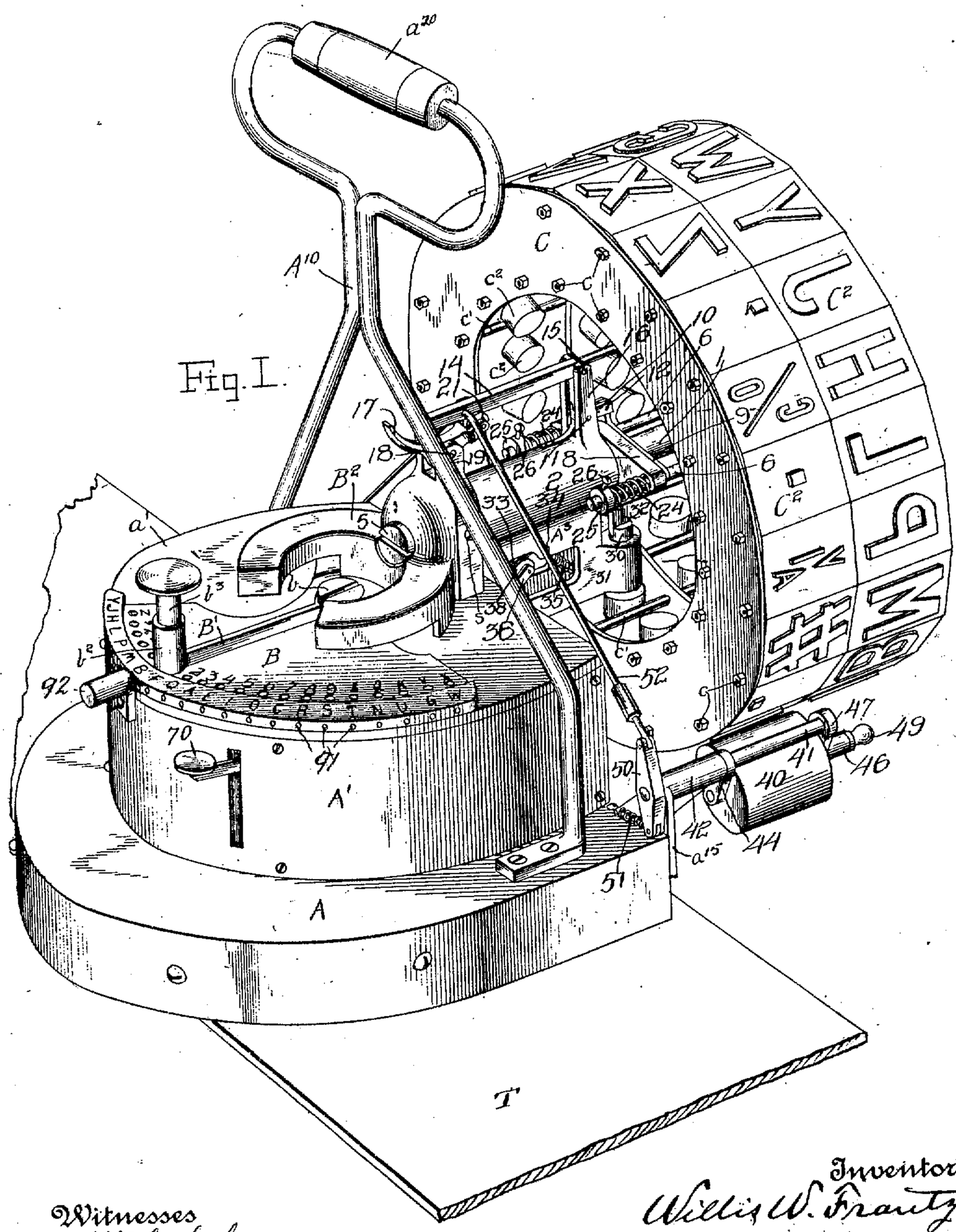
W. W. FRANTZ.

SHIPPER'S TYPE WRITER.

APPLICATION FILED OCT. 14, 1906.

6 SHEETS—SHEET 1.

Fig. I.



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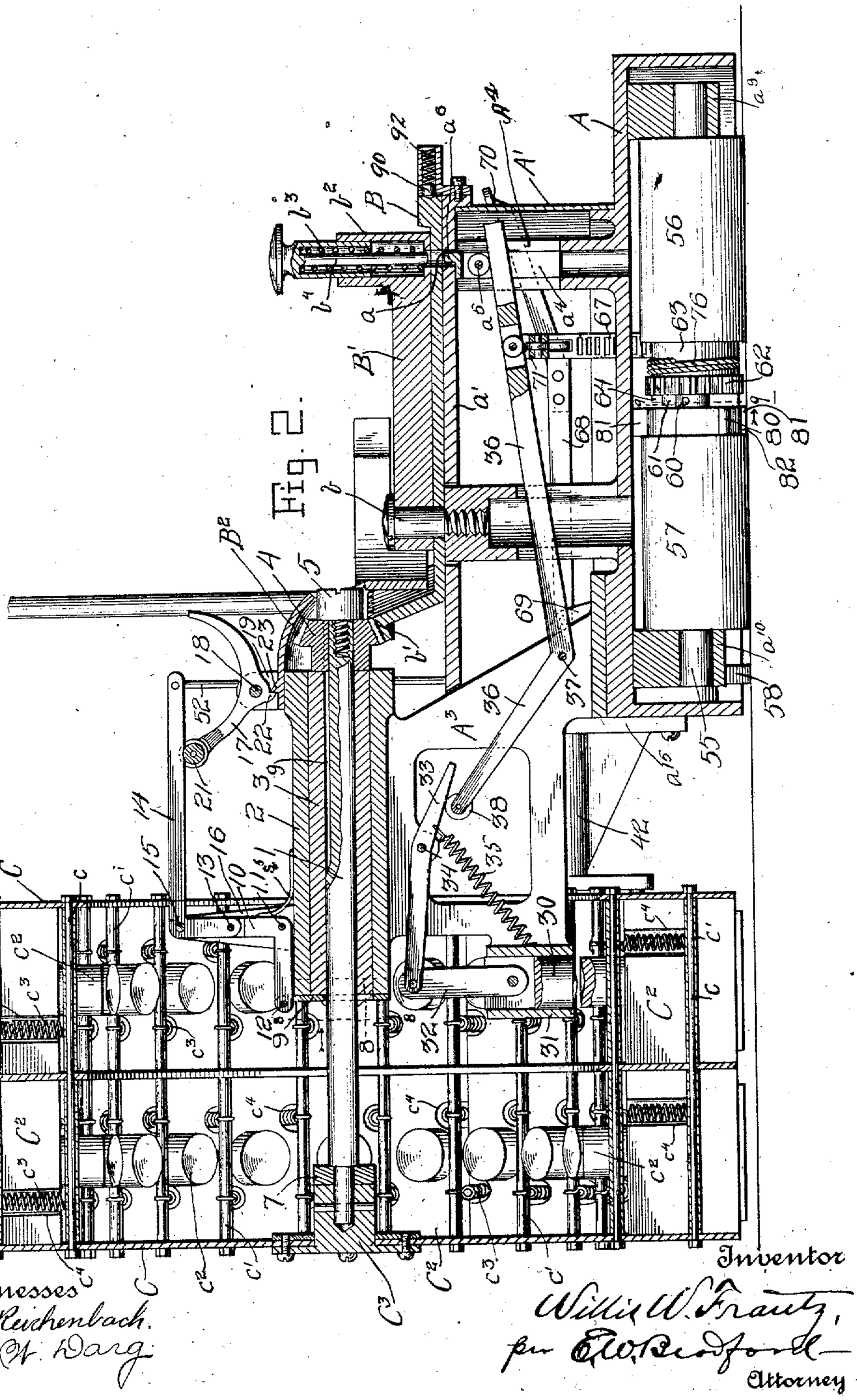
6 SHEETS—SHEET 2.

Fig. 2.



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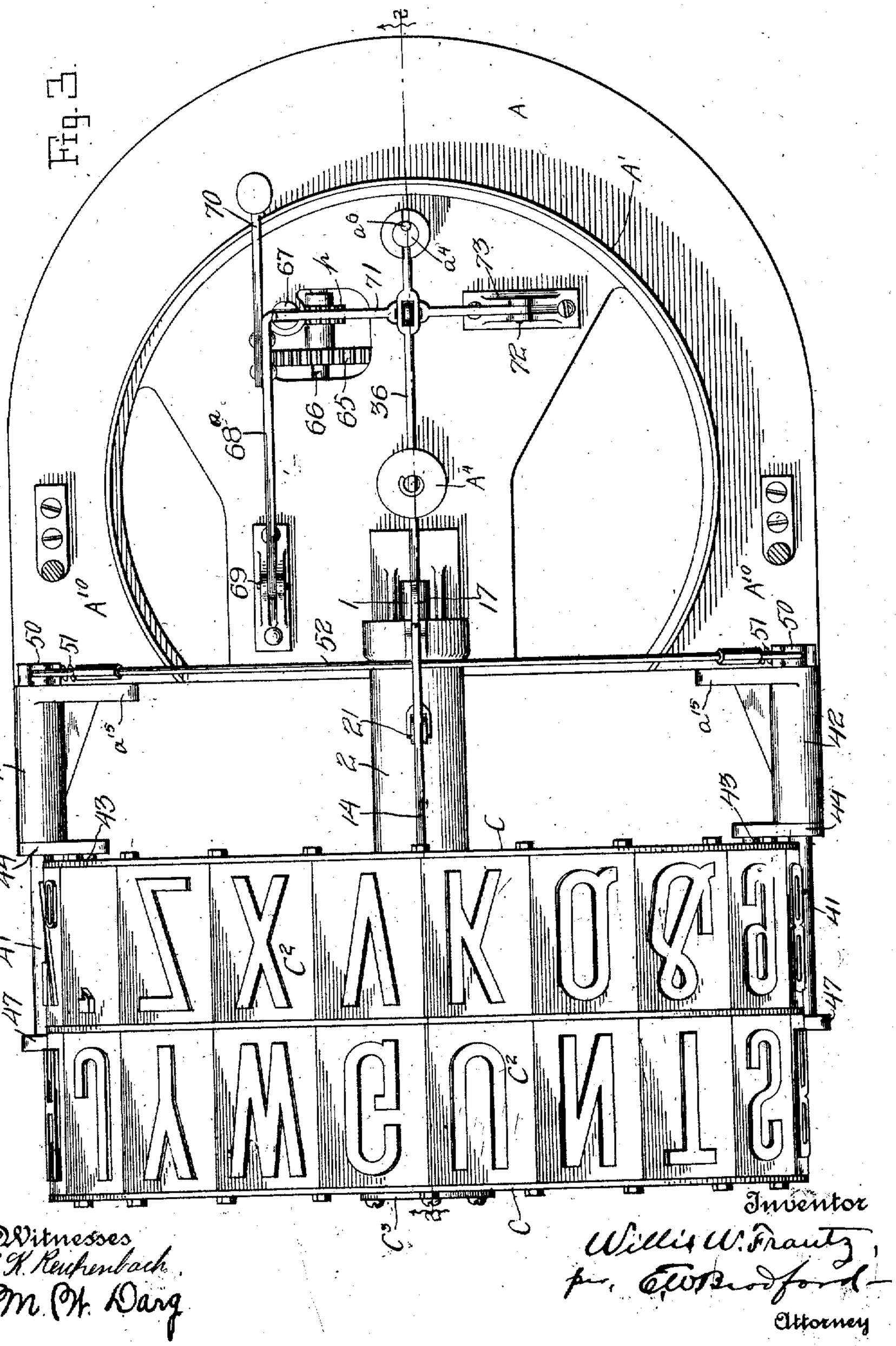
6 SHEETS—SHEET 3.

Fig. 5.



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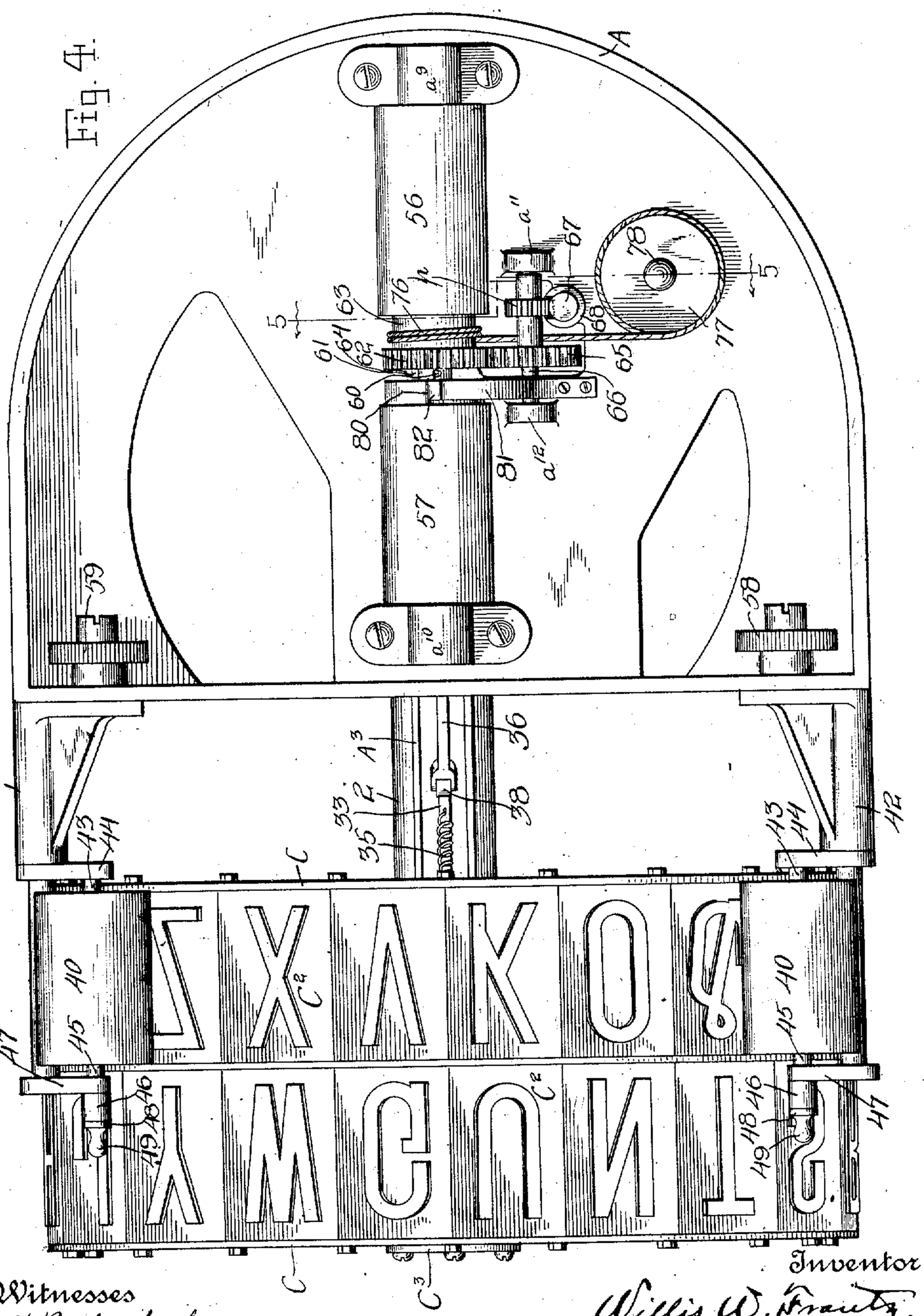
5 SHEETS—SHEET 4.

Fig. 4.



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5 SHEETS—SHEET 5.

Fig. 5.

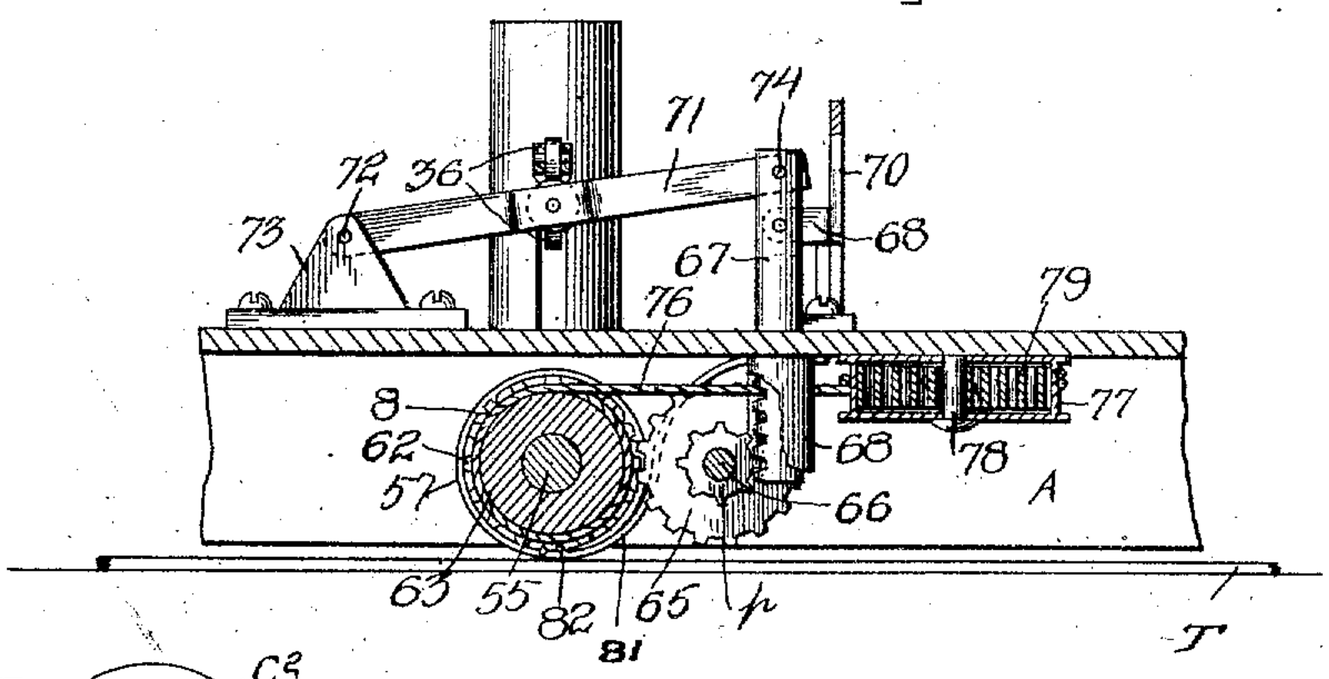


Fig. 6.

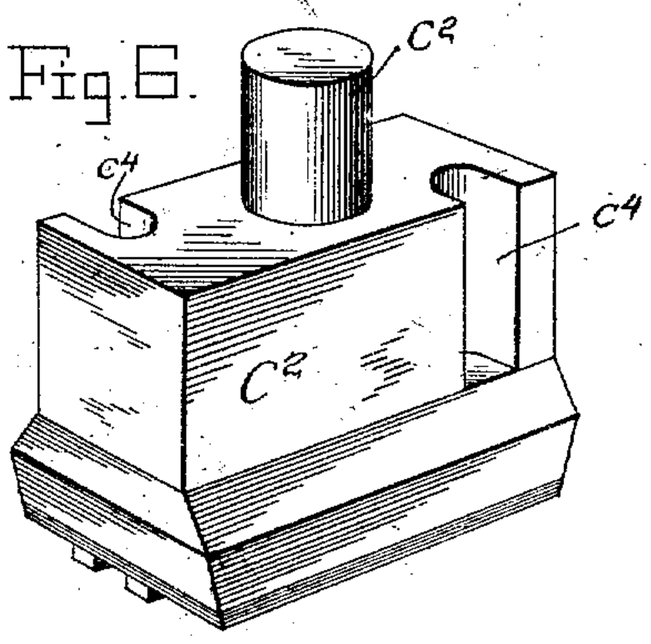


Fig. 7.

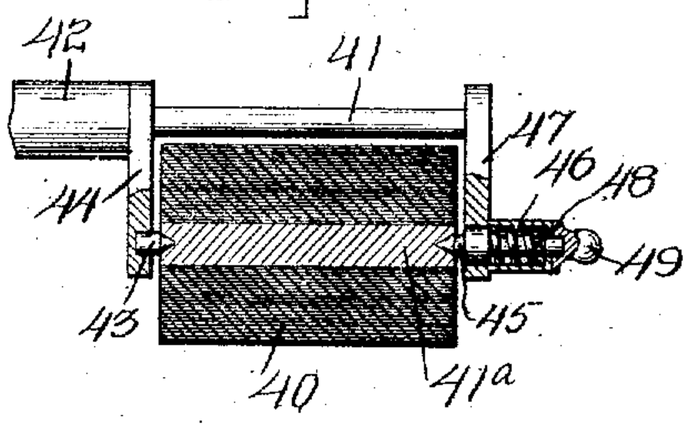


Fig. 8.

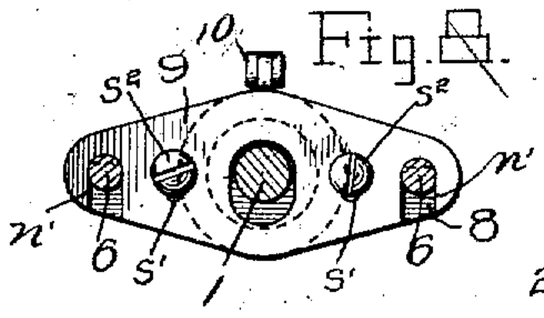


Fig. 9.

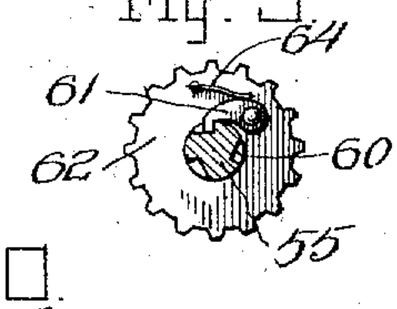
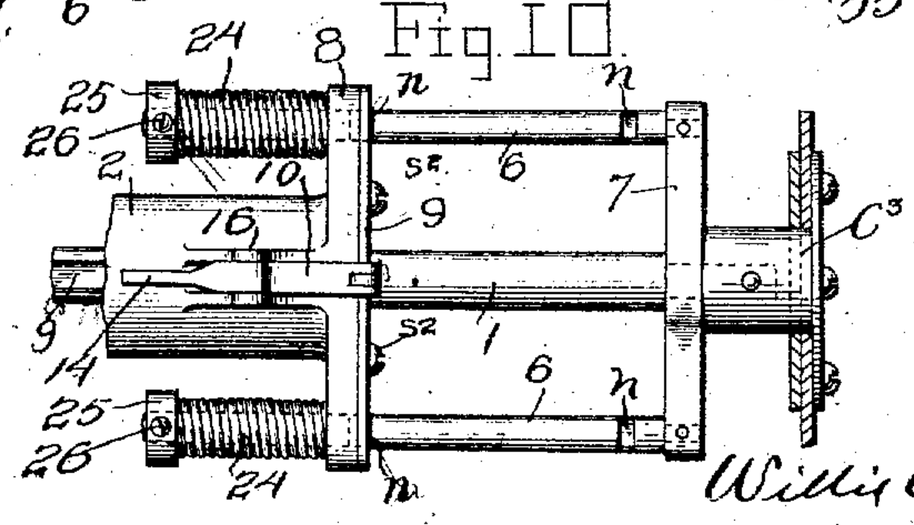


Fig. 10.



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UNITED STATES PATENT OFFICE.

WILLIS W. FRANTZ, OF WAYNESBORO, PENNSYLVANIA.

SHIPPER'S TYPE-WRITER.

No. 883,636. Specification of Letters Patent. Patented March 31, 1908.

Application filed October 14, 1905. Serial No. 282,778.

To all whom it may concern:

Be it known that I, WILLIS W. FRANTZ, a citizen of the United States, residing at Waynesboro, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Shippers' Type-Writers, of which the following is a specification.

My present invention consists in various improvements in the details of construction and arrangements of parts of type-writers of that class known as shippers' type-writers; of the general character shown in my Patent No. 723,855 of March 31, 1903, whereby the construction of the machine is simplified and its operation rendered more perfect and efficient, all as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings which are made a part hereof and on which similar reference characters indicate similar parts, Figure 1 is a perspective view of a type-writer of my improved construction, Fig. 2, a longitudinal section through the same as seen when looking in the direction indicated by the arrows from the dotted line 2—2 in Fig. 3, Fig. 3, a top or plan view of the machine with the top plate of the base removed, Fig. 4, an underside plan with the bottom plate of the base removed, Fig. 5, a detail cross-section as seen when looking in the direction indicated by the arrows from the dotted line 5—5 in Fig. 4, Fig. 6, a perspective view of one of the type blocks, Fig. 7, a detail longitudinal section through one of the ink rollers and its support, Fig. 8, a detail cross-section as seen when looking in the direction of the arrow from the dotted line 8—8 in Fig. 2, Fig. 9, a similar view on the dotted line 9—9 in Fig. 2, and Fig. 10, a detail top plan of the type-wheel supporting parts.

In said drawings the portions marked A represent the base of the machine, B the key-board and C the type-wheel.

The base A comprises a suitable casting for supporting the mechanism and has bearings and supports for the various parts mounted thereon, as will be presently described. It has a top portion A′ for inclosing a part of the operating mechanism and said part is provided with a top plate a'.

The key-board B is a segmental plate pivoted on the top of plate a' on a pivot b and it is formed with a segmental toothed rack b' on its rear end. Said toothed segment extends upwardly and its teeth engage with a spur gear 4 secured on the end of the type-wheel shaft 1. A housing B^2 formed to cover the segmental rack b' and the spur gear 4 is mounted over the gear being secured to the sides of bearing 2 by screws s. The key-bar B′ is also pivoted upon the pivot bolt b and has a vertical socket b^2 at its outer end in which is mounted a spring push-key b^3 having an extended central pin b^4 adapted to project through a perforation formed adjacent to each letter or character upon the key-board B, and when in the proper position to project through a single central perforation a in the top a' of the casing A′, and operate the mechanism beneath, as will be presently described.

The type-wheel C is composed of a rear disk and one or two annular plates parallel therewith, all secured together by means of rods c and held at the proper distance apart by means of sleeves c' mounted between said plates. Said bolts c and sleeves c' thereon form the sides of a series of radial ways in which the type-blocks C^2 are mounted. Each of said type-blocks C^2 is of a form most clearly shown in Fig. 6, being adapted to fit and slide in the ways between the adjacent rods c around the wheel. Their faces are adapted to be flush with the periphery of the disks composing the type-wheel frame. The faces of said type-blocks are preferably of rubber, or other suitable material, and have the letters and characters desired formed thereon, as indicated. On the back of each block and in the center thereof is a pin c^2, preferably formed with a concave outer end. Said type blocks are held in position by means of springs c^3 mounted in suitable recesses c^4 in diagonally opposite corners of each block, one end of each spring being secured in the bottom of said recesses and the other end around the adjacent sleeve c'. By this means each type block is normally held with its outer face even with the periphery of the type-wheel. In the center of the outside disk C is rigidly bolted a support C^3 in which is rigidly mounted the horizontal shaft 1, which is adapted to be journaled in the horizontal bearing 2 mounted on the top of suitable bracket-like supports A^3, which are firmly secured on the rear end of the base A. Said bearing 2 is provided with suitable lining 3, such as Babbitt-metal. Shaft 1 is mounted in said bearing and the pinion 4 is mounted thereon by means of an inwardly extending lip which slides within a longitu-

dinal groove *g* formed in one side of said shaft. A screw 5 with its head resting against the outer face of said pinion and within a suitable aperture in housing B^2, is inserted in a screw-threaded perforation in the end of said shaft and thus secures the parts together and permits of the longitudinal movement of said shaft 1 in its bearing. Rods 6 are mounted one on each side of shaft 1 being firmly secured at their rear ends in a transverse bar 7 mounted to turn upon the rear end of shaft 1. Said rods extend on each side of said shaft 1, parallel therewith, and project through perforations in the outer ends of transverse wings 8 formed on the rear end of bearing 2. Each of said rods is provided with two notches *n* in its top face, a distance apart equal to the distance between the centers of the two rows of type-blocks and a vertically sliding latch 9, mounted against the rear face of bearing 2, is adapted to engage with said notches and lock said rods and the type-wheel in the proper horizontal adjustment. Said latch 9 is mounted on the face of bearing 2 by means of vertical slots *s'* and screws s^2 inserted through said slots into suitable perforations in the face of said bearing. Said latch has notches *n'* which are adapted to receive said rods, as shown, and engage with the notches *n* therein. An angle lever 10 is pivoted at its elbow upon a suitable pivot 11 in a bracket 16 on the top of bearing 2 and is pivoted at its rear end on the pivot 12 to the top of said latch and is connected at its upper end by a pivot 13 with another angle lever 14 which is mounted at its elbow upon a pivot 15 in the top of said bracket 16. A lever 17 is mounted upon a pivot 18 in a bracket 19 on the top of housing B^2 at the front end of bearing 2 and has a grooved roller 21 at its rear end which is adapted to bear against the underside of the horizontal arm of lever 14, while the front end of said lever 17 projects to a convenient position to be operated by hand by the user of the machine. A lip 22 on the underside of lever 17 beneath the pivot 18 is adapted to engage with a stop 23 and limit the movement of the rear end of said lever downwardly as shown and a spring s^5 operates to return the parts to normal position after being operated. On the outer end of each of said rods 6 is mounted a coiled spring 24 which is adapted to be compressed between the front face of wing 8 and a collar 25 rigidly secured on the outer end of each of said rods. Each of said collars may be adjusted longitudinally by means of a set-screw 26 and the tension of said springs thus regulated as desired. The type-wheel C is arranged as in my former patent above referred to with the type blocks in two parallel rows and the wheel is mounted as above described to be adjusted horizontally to bring either row of type desired in line with the work.

The mechanism for operating the type-blocks consists of a plunger 30 mounted in a vertical cylindrical casing 31 on the rear end of bracket A^3, which is connected by a link 32 with a lever 33, which is mounted upon a pivot 34 at the upper part of said bracket A^3. A coiled spring 35 is connected at one end with the front end of said lever 33 and at its other end with the side of the casing 31 and operates to normally hold said plunger in an elevated position, as shown in Fig. 2. Another lever 36 is mounted on a pivot 37 near the lower front corner of bracket A^3 and has an anti-friction roller 38 on its rear end adapted to engage the underside of said lever 33. The forward end of said lever 36 extends through a vertical slot in a hollow cylindrical standard A^4, which projects upwardly from the forward end of base A. A plunger a^4 having an anti-friction roller a^5 is mounted in said hollow standard and is adapted to bear up on the upper edge of the forward end of said lever. The upper end of said plunger a^4 is formed with a projecting pin a^6 which is adapted to normally rest in the central perforation *a* in the top *a'* of the casing A'. Thus when the push-key b^3 with its pin b^4 is brought to register with said perforation *a* in the plate *a'* and is forced down upon said point a^6 it carries said plunger a^4 with it and throws the forward end of lever 36 downwardly and its rear end upwardly, which operates, through lever 33 and the connecting link 32, to force the plunger 30 downwardly to strike the rear face of the pin c^3 on the type-block which at the time is directly beneath said plunger, forcing said type-block downwardly upon the surface beneath and impressing upon said surface the character on said block.

An ink roller 40 is mounted on each side of the machine on a support consisting of a shaft 41 mounted in a horizontal bearing 42 formed on a bracket a^{15} secured rigidly to the rear end of base A. Said roller is preferably mounted on short studs with conical ends which are adapted to engage with similarly formed recesses in the opposite ends of a core 41^s. One of said studs 43 is rigid in the end of the arm 44 which is rigidly mounted upon said shaft 41 and the other of said studs 45 is mounted to slide longitudinally in a casing 46 on another arm 47 also rigidly mounted upon the outer end of said shaft 41. A spring 48 is mounted within said casing and adapted to normally hold said stud in engagement with said roller while a knob 49 on its outer end serves as a means whereby it may be readily withdrawn from engagement and permit said roller to fall out of said support. An arm 50 is secured on the front end of each of said shafts 41, which project through the bearings 42 to in front of bracket a^{15}, as shown. The

lower end of each of said arms is connected by a spring 51 with a fixed stud on the base A while its upper end is connected by rod 52 with the forward end of lever 14, so that when the said lever 14 is raised it will operate to rock the shafts 41 and swing said ink rollers slightly away from the face of the type-wheel as will be presently more fully described. Upon releasing lever 14 springs 51 will return said rollers to the normal position to bear lightly against the surface of the type. The mechanism for moving said machine forward to properly space the work is as follows:—A shaft 55 is mounted longitudinally and centrally of the base A, in suitable bearings a^9 and a^{10} at the front and rear ends respectively of said base. Rollers 56 and 57 are mounted rigidly on said shaft, or are formed therewith, and preferably extend the greater portion of the length of said shaft. They are formed with friction surfaces of suitable character, such as corrugated or roughened surfaces. Other wheels 58 and 59 are mounted upon short horizontal shafts at the rear outer corners of said base, being journaled so that their lower faces will be substantially in the same plane with the lower faces of the rollers 56 and 57, slightly beneath the lower face of base A, thus supporting the machine wholly upon said rollers 56, 57, with either 58 or 59. Ratchet teeth 60 are formed in (or mounted upon) said shaft 55 adjacent to the end of roller 57 and a pawl 61 is pivoted upon the side of pinion 62, which is secured to the end of a spool 63 and loosely mounted on said shaft adjacent to the end of roller 56. A spring 64 bears upon the back of said pawl and serves to normally hold it in engagement with said ratchet teeth. Another pinion 65 is mounted upon a shaft 66 and is adapted to mesh with said pinion 62. Said shaft 66 is mounted parallel to shaft 55 a short distance therefrom in bearings in the brackets a^{11} and a^{12}. Another and smaller pinion p is mounted upon said shaft 66 and a rack bar 67 is mounted in a vertical casing 68 and is adapted to slide up and down in said casing and engage with said pinion. The top of said rack bar 67 is pivotally connected to the front end of a lever 68^a which is mounted at its rear end upon a pivot 69 in a suitable bracket near the rear of the base. An extension 70 of said lever 68^a projects through a slot in the front of the casing A′ to a position convenient for use by the operator. A transverse lever 71 is mounted at one end upon a pivot 72 in a bracket 73 on the opposite side of the base and extends under lever 36 and is connected at its opposite end with the top of said sliding rack bar 67 by a pivot 74. See especially Fig. 5. Fast to the pinion 62 and adjacent to the end of roller 56 is the spool 63, around which is wound a cord 76, the opposite end of which is wound upon a spool-casing 77, which is mounted upon a pivot 78 inclosing a coiled spring 79. One end of said spring is fast to said casing 77 and the other end is fast to said pivot 78, the tension of said spring being such as to draw upon said cord 76 to wind it upon said casing 77 and unwind it from the spool 63.

In operation the forcing of the rack bar 67 downwardly operates through the pinion p to rotate shaft 66 and through it the pinion 65 and the pinion 62 to wind the cord 76 from the casing 77 and wind it upon said spool 63 and at the same time to wind or coil the spring 79 to increase its tension within the casing 77. The arrangement of the teeth of the ratchet 60 in shaft 55 are preferably such that one stroke of the lever 36 which operates the type operating mechanism will force the rack bar 67 downward a sufficient distance to turn said shaft one-third of a revolution, there being three teeth on said ratchet. The pawl 61 falls behind each tooth in succession being held in positive engagement by spring 64, and serves to lock the spool against forward motion independent of the shaft. Upon releasing the levers the spring 79 will operate through said cord 76 to rotate spool 63 and through it the shaft 55 with the rollers 56 and 57 thereon, moving the machine along over the surface upon which the printing is being done one space. The spacing is thus done automatically after each letter is printed. Notches 80, corresponding in arrangement to the ratchet teeth 60, are formed in the periphery of a smaller end portion of roller 57, and a spring 81 is mounted upon an adjacent part of the base and has a curved end 82 adapted and arranged to engage said notches and serve as a brake to limit each forward movement of the machine as desired. When it is desired to move the machine a space without operating the type-blocks, as between words, the rack bar 67 is forced downwardly by means of the lever 70, which will not operate the lever 36, as will be readily seen. In printing upon rough or uneven surfaces it may be desirable to have a track upon which the machine may move. I have indicated such a track, T, in Figs. 1 and 5, and it may be a strip of leather or any other material suitable for the machine to run upon.

The general operation of the machine is as follows: The parts being ready for use indicated in Fig. 1, the key-bar B′ is swung upon its pivot to bring the pin b^3 of the push-key b^3 to engage with the perforation in the key-board B adjacent to the letter or character which it is desired to print. Said key-board is then swung upon its pivot, with said bar B′, until the pin b^4 is in the center of the casing directly above the aperture a into which the upper end of the plunger a^4 ex-

tends. The operator then forces down said plunger b^3 and forces the plunger a^4 and the lever 36 downwardly and, through the mechanism before described, operates the type-block which corresponds with the letter on the key-board which is then in the center of the machine, the type-wheel having been rotated by means of the segment b' engaging with the spur pinion 4 on the end of the main type-wheel-shaft 1 by the swinging of said key-board B. The next letter is found in the same manner. It will be noticed that as soon as the pin b^4 enters the aperture a the type-wheel is locked in position and cannot be moved until the printing operation is completed and said pin released from said engagement, thus insuring a fixed position of said type-wheel during the printing operation. The swinging of the key-board B on its pivot to bring the plunger b^3 to the central aperture a in top a', turns the type-wheel to bring the type-block bearing the desired letter directly beneath the hammer 30 and in proper line with the work and the machine is moved forward a space after each operation of the plunger by the spring 79, which is wound up by said operation. When the type-block bearing the character desired is in the rear row of the type-wheel, the operator presses down the outer end of lever 17, which, through the levers 14 and 10, raises the latch 9, releasing the engagement of said latch with the notches n in the tops of the rods 6 at one end and permitting the springs 24 to expand and carry said type-wheel forward to the position which will bring the rear row of type-blocks directly beneath the hammer and in position where the latch will engage the notches n near the other ends of said rods. When the wheel is to be again shifted the latch is again raised and the wheel pushed outward by pushing with the hand against the side of said wheel, which slides it outward until the latch 9 again engages the other set of notches in the tops of said rods 6 and locks the wheel in the correct horizontal position.

A handle A^{10} consisting of suitably formed side bars and a top hand piece a^{20} is secured to the base A in position to balance the machine and serve as a convenient means for lifting said machine from position to position or carrying it from place to place.

On the front of the casing A' is preferably mounted a spring pawl 90 in a casing 92 adapted to engage with one of a series of conical depressions 91 in the edge of the key-board B, said depressions being formed on the same radial lines with the perforations adjacent to the characters on said key-board, and said pawl is located in line with the single perforation a in the top a' of the casing A'. By this means said key-board is more readily brought to the position required for push-key d^3 to register with said perforation a after it is engaged with the proper perforation in said key-board.

It will be understood, of course, that many of the minor details may be modified without departing from my invention.

By this arrangement of mechanism a shipper's type-writer is provided that is very efficient and convenient in use. All of the mechanisms being controlled by a single key, and the spacing done automatically, the work can be done rapidly and with great advantage. The machine while designed primarily for marking boxes, barrels, and packages for shipment, may be used for any character of sign writing and lettering for which it is or may be found to be adapted, as will be readily understood.

Having thus fully described my said invention what I claim as new and desire to secure by Letters Patent, is:—

1. In a shipper's typewriter, the combination, of the base, a type-wheel mounted upon a horizontal shaft journaled in a bearing carried by said base, said type-wheel being composed of a series of parallel plates secured together proper distances apart, and formed with radial ways containing spring-mounted type-blocks, and means for operating said type-wheel and type-blocks comprising a single push-key, substantially as set forth.

2. In a shipper's type-writer, the combination with the base, of the type-wheel mounted rigidly upon a shaft which extends parallel with the face of said wheel, said shaft journaled in a suitable bearing supported on said base and said type-wheel being composed of a series of parallel plates secured together by bolts and distance pieces between said plates, the sides of said securing devices forming radial ways for the type-blocks, said type-blocks mounted in said ways and held in normal position by means of springs, and mechanism for operating said type-blocks, substantially as set forth.

3. In a shipper's type-writer, the combination, of the base, the type-wheel supported on a horizontal shaft journaled in a suitable bearing on said base, said type-wheel being composed of a series of parallel plates secured together and having a plurality of rows of type-blocks mounted to slide in radial ways the sides of which are formed by the securing devices in said type-wheel, springs for holding said type-blocks in their normal position, and mechanism for operating said type-blocks, substantially as set forth.

4. In a shipper's type-writer, the combination, of the base, the type-wheel mounted upon a horizontal shaft, said shaft journaled in a suitable bearing supported by said base, said type-wheel being composed of a series of parallel plates bolted together by means of bolts and distance sleeves interposed between said plates, type-blocks mounted in radial ways formed between the sides of said

bolts and distance sleeves around the circumference of said wheel, springs for holding said type-blocks in their normal position, means for rotating said type-wheel to bring the character desired into position for printing, and mechanism for operating said type-blocks, substantially as set forth.

5. In a shipper's type-writer, the combination, of the base, a type-wheel mounted upon a horizontal shaft and journaled in a suitable bearing on said base, means for holding said shaft in a fixed horizontal adjustment, means for adjusting said shaft horizontally from one position to another, a type-wheel mounted on said shaft having spring-mounted type-blocks mounted in radial ways therein and arranged in parallel rows around its periphery, a pivoted key-board carrying a gear which engages with a gear on said shaft, whereby said type-wheel may be rotated to bring the type desired into operative position, and mechanism for operating said type-blocks, substantially as set forth.

6. In a shipper's type-writer, the combination, of the base, a type-wheel carrying the spring-mounted type-blocks mounted on a horizontal shaft, said shaft mounted in a suitable bearing on said base, means for operating said type-blocks comprising a push-key carried by a single pivoted key-bar adapted to be brought into position on the key-board to bring any letter or character of the type-wheel into operative position and then be forced downwardly to operate the mechanism for operating the type-blocks, substantially as set forth.

7. In a shipper's type-writer, the combination, of the base, a type-wheel carried by a horizontal shaft mounted in a suitable bearing on said base, spring-mounted type-blocks mounted in radial ways in said type-wheel, a pivoted key-board geared to the type-wheel-shaft and provided with a series of perforations adjacent to the letters and characters thereon, said key-board being mounted upon the top of the casing inclosing the operating mechanism, a single perforation being formed in said top in which the top of a plunger for imparting motion to said operating mechanism is mounted, and a single type-bar pivoted on top of said key-board and provided with a push-key adapted to engage with any of the perforations in said key-board and then swing said key-board with said type-bar until said push-key registers with the perforation in the top of said casing, when it may be forced through said perforation to operate the type-block operating mechanism beneath, substantially as set forth.

8. In a shipper's type-writer, the combination, of the rotary type-wheel mounted upon a shaft journaled in a suitable bearing on the frame of the machine, a pivoted key-board geared to said shaft for turning said type-wheel, a single key-bar carrying a push-key also pivoted on the pivot of said key-board and adapted to engage with a series of perforations in said key-board adjacent to the characters and letters thereof and then be brought into position to rotate said type-wheel to bring the letter desired into operative position and to operate the printing mechanism, substantially as set forth.

9. In a shipper's type-writer, the combination, of the base, a type-wheel with spring-mounted type-blocks therein, mechanism for operating said type-blocks, mechanism for operating said type-wheel and a single key for operating said several sets of mechanisms, substantially as set forth.

10. In a shipper's type-writer, the combination, of the base, a type-wheel having spring-mounted type-blocks mounted in radial ways therein, means for operating said type-blocks mechanism for rotating said wheel, mechanism for moving the machine along space by space and a single key for operating said several sets of mechanisms, substantially as set forth.

11. In a shipper's type-writer, the combination, of the base, traction rollers supporting said base, means for rotating said rollers to move the machine forward space by space, a type-wheel having radially movable spring-mounted type-blocks therein, mechanism for operating said type-blocks, mechanism for rotating said type-wheel to bring the type desired into operative position, a pivoted key-board geared to the shaft of said type-wheel and a single key for operating said key-board, type operating mechanism and the spacing mechanism, substantially as set forth.

12. In a shipper's type-writer, the combination, of the base, a type-wheel mounted on a horizontal shaft which shaft is journaled in a suitable bearing on said base, a gear mounted on the front end of said shaft by means of a spline and groove to enable said shaft to slide horizontally, rods mounted parallel with said shaft secured at their rear ends in a bar journaled on the rear end of said shaft and their front ends projecting through perforations in transversely extending wings on the sides of the bearing in which said shaft is mounted, notches formed in the top faces of said bars, a sliding latch adapted to engage with said notches, means for operating said latch, and springs interposed between collars on the front ends of said rods and the front faces of said wings adapted to normally slide said type-wheel to a forward position when said latch is released, and mechanism for operating said type-wheel, substantially as set forth.

13. In a shipper's type-writer, the combination, of the base, a type-wheel having radially movable spring-mounted type-blocks therein, mechanisms for operating said type-blocks, said type-blocks being arranged in

parallel rows in said wheel, the wheel shaft mounted in a bearing to be adjusted, means for holding said type-wheel in the proper adjusted position comprising rods mounted in a cross-bar on the rear end of said shaft and extending parallel therewith through perforations in transverse wings on the sides of the bearing, said rods being formed with notches on their top edges a distance apart to lock said type-wheel in the different positions desired, a pivoted latch for engaging said notches and secure said shaft in either of the adjusted positions, and means for operating said latch, substantially as set forth.

14. In a shipper's type-writer, the combination, of the base, a horizontal bearing supported thereon, a horizontal type-wheel-shaft mounted to be longitudinally movable therein, a type-wheel rigidly mounted on the rear end of said shaft, means for holding said shaft in the position desired, a gear on the front end of said shaft, a key-board pivotally mounted on the top of base and having a segmental gear engaging with the gear on said shaft, a single type-bar mounted on the same pivot with said key-board and having a single push-key adapted to engage with any one of a series of perforations in said key-board adjacent to the characters and letters indicated thereon and then swing to the position for operating the type-block operating mechanism, substantially as set forth.

15. In a shipper's type-writer, the combination, of the base, a type-wheel having spring-mounted radially movable type-blocks therein, mechanism for operating said type-blocks, traction rollers mounted upon a shaft in the base, the faces of said rollers extending slightly beneath said base to support the machine, mechanism for rotating said rollers, the mechanism for operating the type-bars being arranged to contact with the mechanism for operating said rollers, and a single push-key for operating the whole, substantially as set forth.

16. In a shipper's type-writer, the combination of the base, a type-wheel carrying radially movable spring-mounted type-blocks, mechanism for operating said type-blocks, a horizontally pivoted key-board formed with a toothed rear end adapted to engage with a gear on the end of the type-wheel-shaft, means for operating said key-board, said means being also arranged to operate the type-block operating mechanism, substantially as set forth.

17. In a shipper's type-writer, the combination, of the base, a bracket on the rear end of said base having a bearing on its top, the type-wheel-shaft mounted on said bearing, the type-wheel carried by said shaft, a gear wheel on the front end of said shaft, the key-board pivoted on a vertical pivot on the top of said base and having a gear on its rear end engaging with the gear wheel on said shaft, a key-board mounted on the same pivot with the said key-board and having a push-key on its forward end adapted to engage one of a series of perforations adjacent to the several characters and letters on said key-board, and a plunger for operating the type-blocks arranged beneath a single perforation on the top of the casing in line with the perforation in said key-board, whereby said push-key may be used to operate the entire mechanism, substantially as set forth.

18. In a shipper's type-writer, the combination, of the base, the type-wheel mounted on a shaft, said shaft mounted in a suitable bearing on said base, type-blocks mounted to move radially in said type-wheel, springs for holding them in normal position, mechanism for operating said type-blocks, traction rollers mounted upon a shaft in the bottom of said base, mechanism for moving said traction rollers forward space by space, said mechanism being arranged to engage with the type-block operating mechanism, whereby when the type-block mechanism is operated said traction mechanism will also be operated, a pivoted key-board on the top of the frame having a gear engaging with the gear on the type-wheel shaft, and a single key-bar having a push-key mounted upon its outer end arranged to engage one of a series of perforations adjacent to the characters on said key-board and at one point to project through the perforation *a* in the top of said casing and contact with the mechanism for operating the type-blocks, whereby said push-key serves as a means for operating all of the mechanisms of said machine, substantially as set forth.

19. In a shipper's type-writer, the combination, of a base, a type-wheel mounted upon a horizontal shaft in a suitable bearing on said base, means for rotating said type-wheel, means for operating the type-blocks therein, and a single key for controlling both sets of mechanisms, substantially as set forth.

20. In a shipper's type-writer, the combination, of the base, traction rollers, supporting said base, mechanism for operating said traction rollers comprising a spring connected with a spool loosely mounted on the shaft of said rollers and connected therewith by a pawl to rotate independently thereof in one direction, said spool being connected by a flexible part with a coiled spring adapted to be coiled to increase its tension as the cord is wound upon said spool, a means for rotating said spool to wind said cord and increase the tension of the spring at each operation of the type-block mechanism, the type-wheel, and said type-block operating mechanism, substantially as set forth.

21. In a shipper's type-writer, the combination, of the base, a type-wheel mounted thereon, the type-blocks in said type-wheel,

mechanism for operating said type-blocks, traction rollers mounted upon a shaft in the lower part of said base, mechanism for operating said traction rollers comprising a spool connected with the shaft of said rollers by a pawl and ratchet connection, said spool being connected with a spring, and means connected with the type operating mechanism for winding up the tension of said spring as said mechanism is operated, whereby upon the release of the type operating mechanism the machine will move forward automatically and space, substantially as set forth.

22. In a shipper's type-writer, the combination, with the base, the type-wheel mounted thereon adapted to be adjusted horizontally, ink rollers mounted on pivoted supports adjacent to the row of type in position for operating, and connections from said pivoted supports to the means for releasing the type-wheel previous to horizontal adjustments, whereby when said type-wheel is released said ink rollers are moved away from the surface of the type, substantially as set forth.

23. In a shipper's type-writer, the combination, of the base, the horizontal bearing on the top of said base, the type-wheel-shaft mounted in said bearing, the type-wheel, spring mounted type-blocks in said type-wheel, mechanism for operating said type-blocks, means for adjusting said type-wheel shaft horizontally in its bearing, means for locking said type-wheel in the desired horizontal adjustment, ink rollers mounted in pivoted supports on the base adjacent to said type-wheel, and connections running from said pivoted supports to the means for locking the type-wheel-shaft in horizontal adjustment, whereby when said means is released said ink rollers will be moved away from the face of said type-wheel, substantially as set forth.

24. In a shipper's type-writer, the combination, with a horizontally adjustable type-wheel and means for locking and releasing said type-wheel in horizontal adjustment, of the ink rollers mounted in pivoted supports adjacent to the said type-wheel and normally held to the face of the type, and connections running from said support to the locking and releasing mechanism, whereby when said mechanism is operated said ink rollers are moved away from the type-wheel, substantially as set forth.

25. In a shipper's type-writer, the combination, with the type-wheel of ink rollers mounted in suitable supports, one journal of said rollers being longitudinally adjustable, whereby said rollers may be readily removed and replaced as desired, substantially as set forth.

26. In a shipper's type-writer, the combination, of the base, the type-wheel, the operating mechanism carried thereby, traction rollers supporting said base, means for operating said traction rollers and a brake or stop arranged to engage properly spaced engaging points and halt the forward movement of said rollers at each successive space, substantially as set forth.

27. In a shipper's type-writer, the combination, of the base, the type-wheel, the operating mechanism supported on said base, traction rollers supporting said base, mechanism for operating said traction rollers including a ratchet and pawl and spring connected mechanism, notches arranged in the periphery of one end of one of said rollers, and a spring brake having a part adapted to engage with said notches and to arrest the movements of said rollers after having moved one space, substantially as set forth.

28. In a shipper's type-writer, the combination, of the base, the type-wheel and its operating mechanism carried by said base, traction rollers supporting said base, mechanisms for operating said traction rollers to move said base one space at a time, means for operating said mechanism arranged to be operated by the type-block operating mechanism, and a lever for operating said spacing mechanism independently of said type-block operating mechanism, substantially as set forth.

29. In a shipper's type-writer, the combination, of a base, the type-wheel shaft mounted in a horizontal bearing on said base, the type-wheel carried thereby, the type-blocks therein, mechanism for operating said type-blocks, a key-board having a segmental gear on its rear end engaging with a gear wheel on the front end of said type-shaft, a spring or pawl on the casing adapted to engage with one of a series of depressions around the outer edge of said key-board, said depressions being formed in line with the perforations in said key-board adjacent to the characters thereon, and a key-bar mounted upon the same pivot with said key-board and carrying a push-key for operating the several sets of mechanisms, substantially as set forth.

30. In a shipper's type-writer, the combination, of the base, the type-wheel containing the type-blocks, mechanism for operating the same, a key-board pivoted on the top of the base and geared to a shaft on said type-wheel, a key-bar pivoted on the same pivot with said key-board and having a push-key for operating the several sets of mechanisms, and a spring pawl adapted to engage with a depression on the outer edge of said key-board to hold it in proper alinement with the single aperture in the top of the casing, substantially as set forth.

31. In a shipper's typewriter, the combination, of the base, the rotary type-wheel containing the type-blocks, mechanism for operating the same, a pivoted key-bar pro-

vided with a push-key adapted to engage with a pivoted key-board which is geared to the mechanism for rotating said type-wheel, said push-key being adapted to be inserted through a perforatiou in a fixed part of the base to operate the mechanism for operatlng the type-blocks, whereby while such mechanism is being operated said type-wheel is locked in position and remains locked until the printing operation is completed and said push-key withdrawn from engagement with said perforation in the base, substantially as set forth.

32. In a shipper's type-writer, the combination, of the base, the rotary type-wheel containing the radially movable type-blocks, mechanism for rotating said type-wheel, mechanism for operating said type-blocks, said mechanisms being operated by a single push-key, which, when in position to operate said type-blocks, engages with a fixed part of the base and locks said type-wheel against further movement, substantially as set forth.

33. In a shipper's type-writer, the combination, of the base, a rotary type-wheel containing the type-blocks, means for rotating said type-wheel step by step, means for operating said type-blocks and means for automatically locking said type-wheel until said type-blocks are being operated, substantially as set forth.

In witness whereof, I, have hereunto set my hand and seal at Waynesboro, Pennsylvania this 15th day of September, A. D. nineteen hundred and five.

WILLIS W. FRANTZ. [L. S.]

Witnesses:
T. S. CUNNINGHAM,
D. L. MILLER.