F. A. JOHNSON.

MULTIPLE WRITING MACHINE.

APPLICATION FILED DEC. 23, 1912.

1,080,347.

Patented Dec. 2, 1913.

5 SHEETS—SHEET 1.

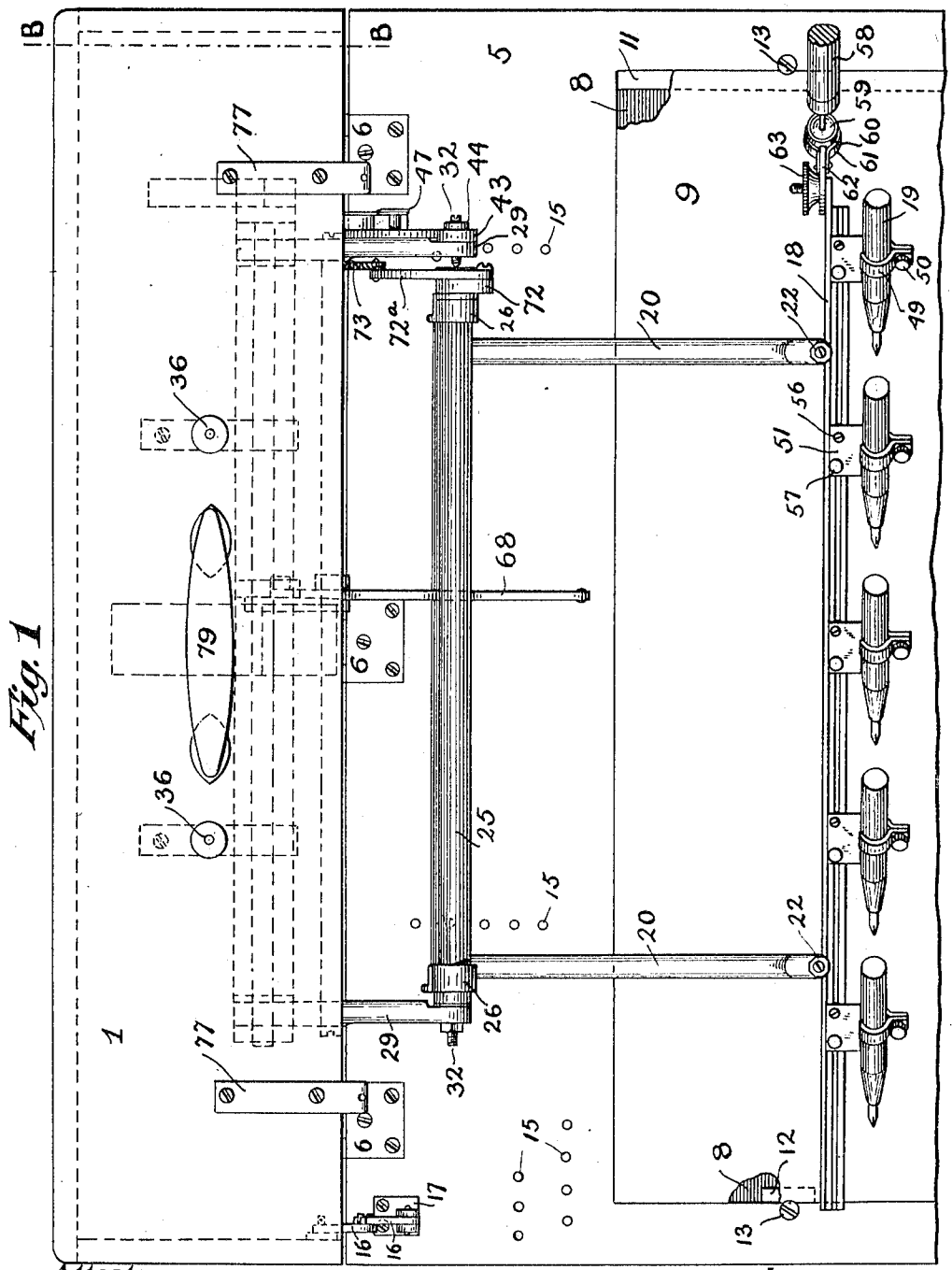

Fig. 1

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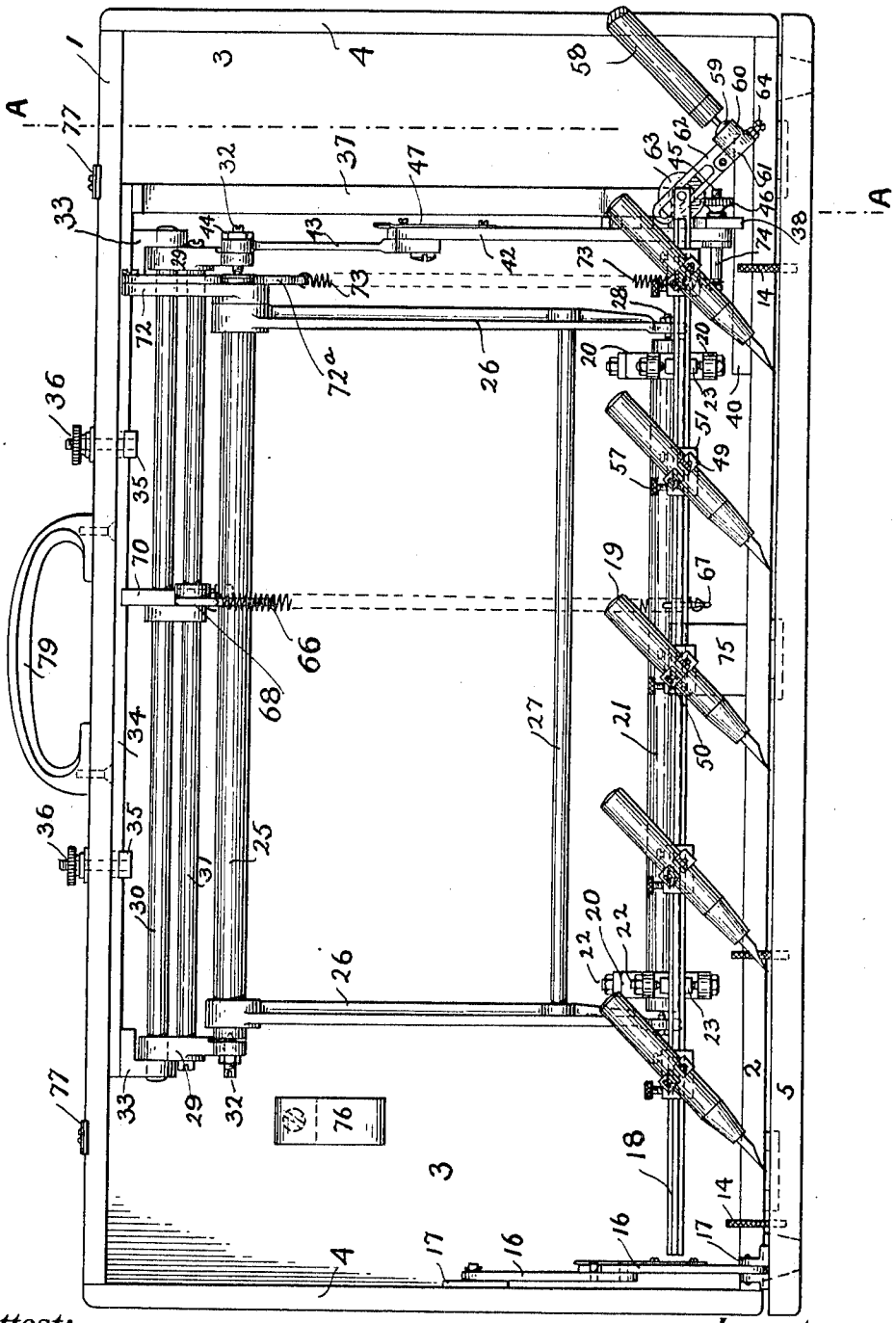

Fig. 2

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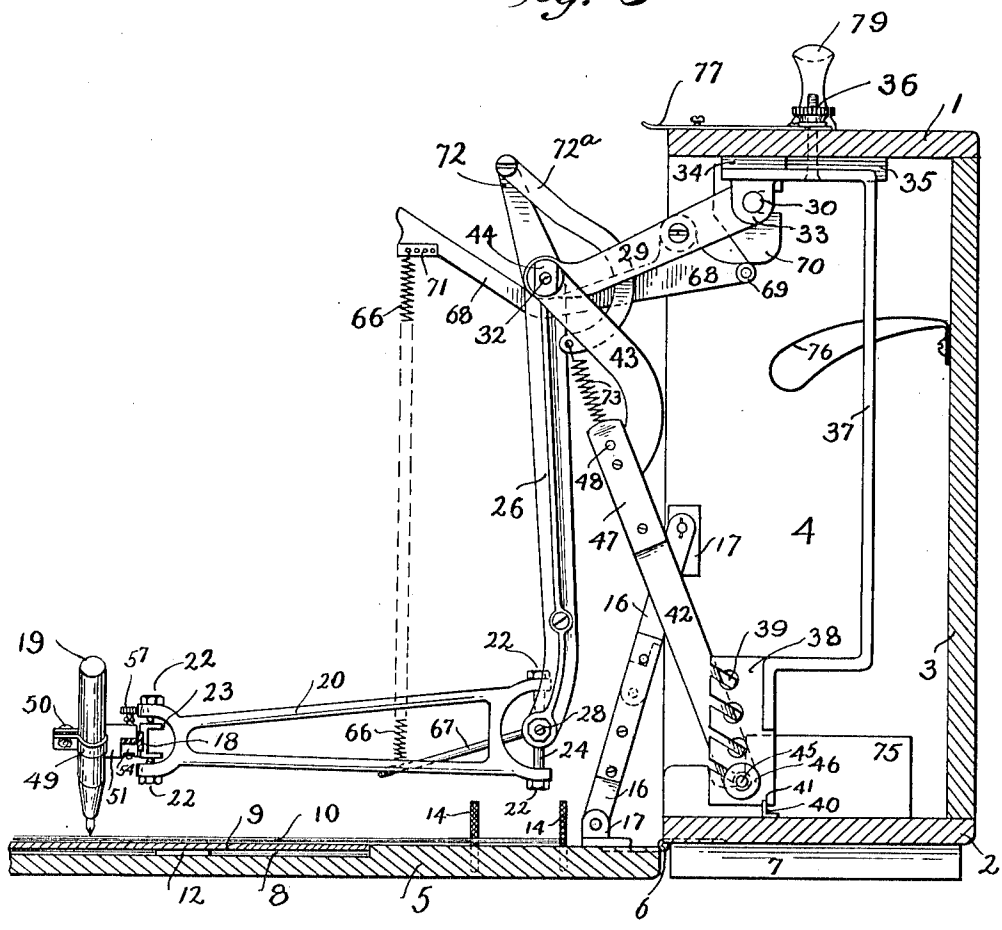
Fig. 3



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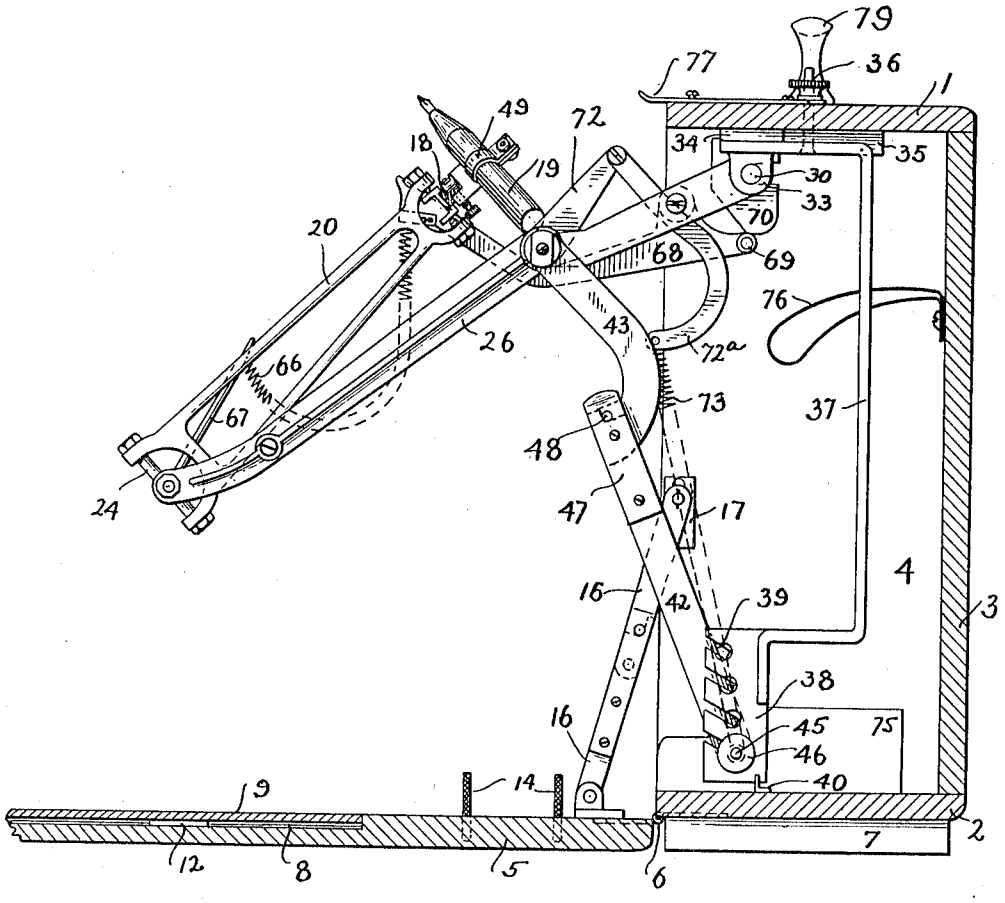
5 SHEETS—SHEET 4.

Fig. 4



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5 SHEETS—SHEET 5.

Fig. 6

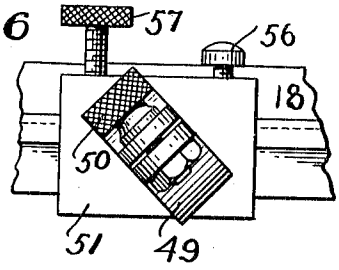


Fig. 7

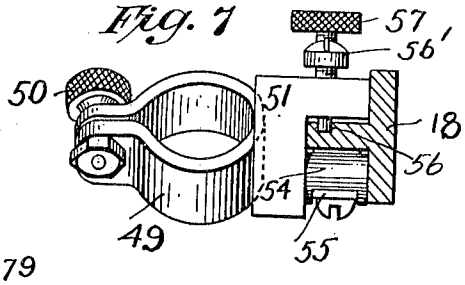


Fig. 5

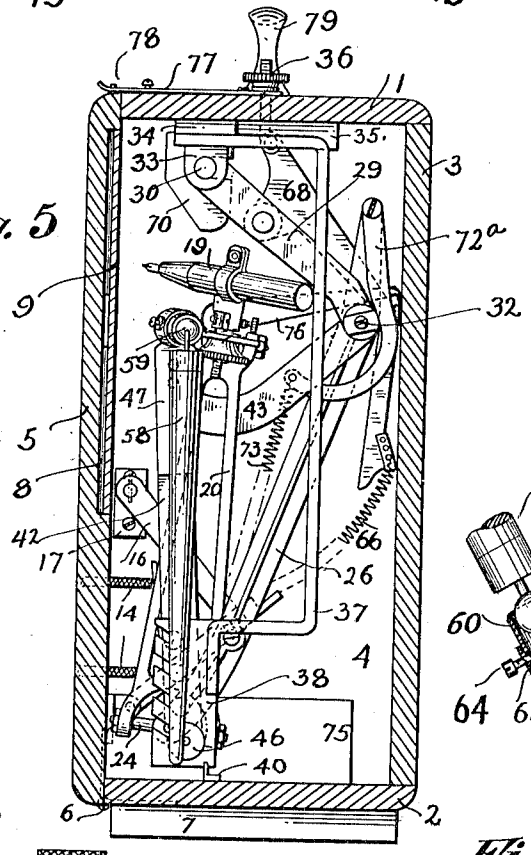


Fig. 10

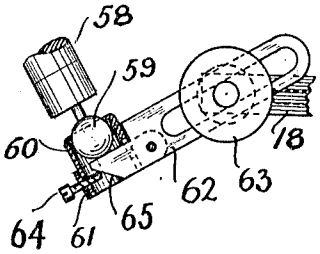


Fig. 8

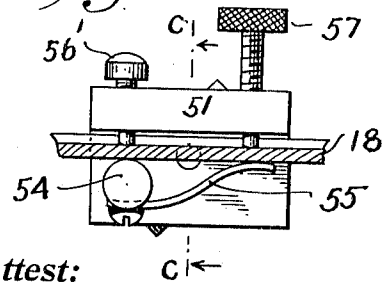
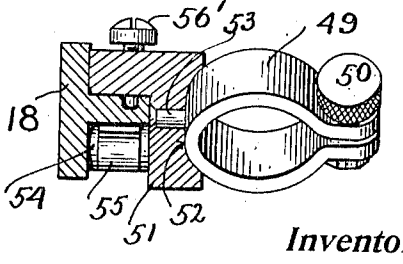


Fig. 9



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UNITED STATES PATENT OFFICE.

FRANK AMOS JOHNSON, OF DUNELLEN, NEW JERSEY, ASSIGNOR TO THE SIGNATURE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

MULTIPLE-WRITING MACHINE.

1,080,347. Specification of Letters Patent. Patented Dec. 2, 1913.

Application filed December 23, 1912. Serial No. 738,234.

To all whom it may concern:

Be it known that I, FRANK AMOS JOHNSON, a citizen of the United States, and a resident of Dunellen, in the county of Middlesex and State of New Jersey, have invented certain new and useful Improvements in Multiple-Writing Machines, of which the following is a specification.

My invention relates to machines for simultaneously writing a plurality of signatures and more particularly to that class of these machines which are designed for desk use in the signing of checks, warrants and similar instruments. In these machines from four to six pens are ordinarily secured to a common, rigid pen-bar and it is necessary to have a perfectly flat platen or writing surface in order to secure the best results. Where an ordinary table or desk is used to support the documents while the signatures are being affixed the surface is often so uneven that some of the pens will not write. I have devised a box-like housing which serves as a base on which to mount the writing machine itself and I utilize the cover of this box for a writing platen. This cover is made with special care to secure as near a perfectly flat surface as possible and it is attached to the box by strong hinges so that the cover and pen-bar are maintained in exactly the same relation at all times. Furthermore, that portion of the cover on which the writing is actually done, is made of a separate piece which is perfectly flat and this is secured to the cover in such a manner that it cannot be affected by the subsequent warping or twisting of the cover. The attachment of the machine proper to the housing is made in such form and the machine is so constructed that the pen-bar may be reversed and temporarily latched up with the pen points upward, far enough above the writing surface to permit of easy access to place and adjust the documents for signing. The whole writing machine is detachably secured to the housing, so that it may be readily removed for cleaning or repairs when necessary. The machine has a longitudinal adjustment on the housing so as to write at the extreme top or the extreme bottom of the documents and the pen-bar and its supporting arms have a vertical adjustment so that the pens may be set to write on a single sheet, a thin pile, or a thick pile, as in a book. When not in use the machine may be folded away in the box housing which, after the cover is closed, becomes a convenient carrying case. Improved means is also provided for attaching the pens to the pen-bar. These improvements and other novel features of construction will be fully pointed out in the description which follows and in the claims, reference being made to the accompanying drawings, in which:

Figure 1 is a plan, with the cover opened up and the pen-bar in position for writing; Fig. 2 is a left elevation of the machine, with all the parts in the same position as shown in Fig. 1; Fig. 3 is a front sectional elevation on the line A—A of Fig. 2; Fig. 4 is a front sectional elevation, the same as Fig. 3, but with the pen-bar temporarily latched up above the writing platen, the pilot handle being removed; Fig. 5 is a front sectional elevation on the line B—B of Fig. 1, showing the cover closed and the machine folded away for storage or carrying; Figs. 6 to 9 inclusive are all enlarged detail views of the pen-clamp, Fig. 6 being a left side elevation, Fig. 7 a front elevation; Fig. 8, a right elevation; Fig. 9 a cross section on the line C—C of Fig. 8—a portion or a section of the pen-bar being shown with each view. Fig. 10 shows the method of attaching the pilot handle to the pen-bar.

The housing, which serves as a base or support for the writing machine, the cover of which is used as a document support or writing platen, consists of top portion 1, bottom 2, right side 3, front and rear walls 4 and cover portion 5. This latter portion is attached by hinges 6 to the bottom 2, supported by two strips 7, which serve as feet to raise the box high enough to permit the cover being opened up to horizontal position.

The cover 5, has a recessed portion 8, in which is loosely fitted a flat plate 9, used to support the documents 10, under that portion at least, on which the signatures are to be affixed. Plate glass has been found to be admirably suitable for this purpose. The recess 8 is deeper than the thickness of the plate 9 and the plate rests on a front ledge 11 which extends the full width of the plate and on a rear ledge 12, which is short and which is central with the plate. These

ledges support the plate 9 so that its outer surface is flush with the cover. Front and rear screws, the heads of which overlap the glass, hold the plate in place. It will be seen from this construction that any warping or twisting of the cover will not affect the plate 9 and that a flat writing platen is always presented.

The documents to be signed are located in any desired position on the cover by marginal stops or gage pins 14 which are secured in holes 15 in the cover 5.

The cover is locked in its horizontal position by a pair of toggle links 16, which are pivotally connected by hinge pieces 17 to the cover 5 and the rear wall of the box.

The pen-bar 18, which carries the pens or writing members 19, is held to universal movement in a horizontal plane by parts which make up two parallelograms—one having pivoted or jointed sides and the other having rigid sides but swinging axially on one of those sides,—as follows: A pair of parallel links 20 pivotally connect the pen-bar to a swinging rock-shaft 21. These links are forked at each end and attachment is made to the pen-bar by pivot, center screws 22, which have bearings in blocks 23 secured to the pen-bar. Attachment is made at the opposite end to the swinging rock-shaft by center screws 22 which have bearings in posts 24 in the rock-shaft.

Above the swinging rock-shaft is a fixed rock-shaft 25 which is axially pivoted and mounted in any convenient manner rigid with and substantially parallel to the document support. This shaft has a pair of arms 26 which are connected by a tie rod 27 to give greater rigidity and strength. The swinging rock-shaft is axially pivoted between the lower ends of the arms 26, on center screws 28.

The pen-bar, with its pens, the rock-shaft 25 and the intermediate connecting parts which have already been pointed out, constitute the main or essential elements of a multiple writing machine as herein embodied. The mounting of the shaft 25 may be made in a great variety of ways, any of which would make the writing machine operative so long as the shaft was axially pivoted in the position described. I have shown a mounting or means of attaching the essential parts of the machine to the housing which holds these parts rigidly when in writing position, which is capable of both vertical and longitudinal adjustment and which, as already stated, permits of the parts being folded away in the box. This mounting comprises a pair of arms 29 which are rigidly secured to a shaft 30 and connected by a tie rod 31. The rock-shaft 25 is axially pivoted by center screws 32 between the outer or free ends of the arms 29. The shaft 30 is mounted in brackets 33 secured to a base bar 34 and the base bar is held on the under side of the top 1 of the housing by a pair of clamps 35 controlled by screw and thumb nuts 36.

The bar 34 has at its front end a depending, angular bracket 37, which carries at its bottom end a plate 38 provided with a series of adjusting notches 39. An angular guide rail 40 fastened to the bottom of the housing enters a notch 41 in the plate 38 to stiffen the structure and still permit the whole to be moved forward or backward.

The outer or free ends of the arms 29 of the mounting frame which carry the rock-shaft 25 are supported by a pair of toggle links 42 and 43. A specially made check nut 44 for the front pivot screw 32 serves as a pivot for the link 43 and the lower end of the link 42 is held by a screw 45 which has a thumb nut 46, by means of which the link 42 is pivotally connected to the plate 38 in one of the notches 39. When the machine is in writing position the toggle is held locked by a latch spring 47 which is attached to the link 42 and which engages near its upper end a pin 48 of the curved link 43. This link is curved to permit of the parts being more readily folded away in the box.

From the construction which has just been pointed out it is evident that by loosening the thumb nuts 36 that the mounting bar and its frame and all connecting parts may be readily adjusted front and rear to any desired position and that, by putting the screw 45 in the various notches 39, that the shaft 25 may be set in four different positions as regards its height.

Each of the pens is attached to the pen-bar by a pen-clamp. Each of these clamps has a band portion 49 which encircles the pen and is provided with a clamp screw 50. This pen band is riveted to the vertical portion of a right angled piece 51 which is provided with a recess 52 in which the band is fitted tightly and where it is firmly held by a rivet 53. On the opposite side of the vertical portion of the angle part 51 there is a stud or pin 54 to which is secured a spring 55. The horizontal part of the T-shaped pen-bar has a slot 56 cut on its upper side, its entire length and the horizontal portion of the angle 51 is provided with two screws 56′ and 57. Both screws are adapted to enter the slot 56 of the pen-bar. The screw 56′ may be set up quite tight or left so that there is just a running clearance between it and the stud 54; in which case the pen-clamp may be moved along to any position on the pen-bar—being held by the tension of the spring 55. The screw 57 is knurled and acts as an adjusting screw for the pens by rocking the clamps against the tension of the springs 55. These pen-clamps are made as light as possible and are formed

preferably of aluminum. In the improved construction which has just been described a maximum of strength is obtained with a minimum amount of weight and the pen bands, being formed from sheet aluminum, are flexible and they are capable of wide adjustment for unevenness in the size of the pen barrels without any danger of breaking.

The pen-bar is guided by a pilot handle 58 which has a ball 59 and socket 60—the latter being secured by a socket band 61 to a slotted link 62. This link is adjustably secured by a clamp nut 63 to the front end of the pen-bar. The socket 60 is provided with an adjusting screw 64 which is adapted to strike against an incline 65 of the link 62 and by means of which all lost motion can be taken up. Throughout the machine free motion is necessary, but all lost motion must be eliminated.

The whole or a large part of the weight of the pen-bar and pens is carried by a supporting spring 66, the lower end of which is attached near the end of an arm 67, which is secured to the rock-shaft 21. The attachment is near the end rather than at the end in order to prevent the spring getting caught in an unnatural position when the parts are in the position shown in Fig. 5. The upper end of the spring 66 is attached to a compensating lever 68. This lever is fulcrumed on the tie rod 31 of the mounting frame and it has a pin 69 which bears against a cam piece 70 which is secured to the base bar 34. The object of this construction is to make a compensating support for the spring, so that, as the shaft 25 and its connecting parts are raised by putting the screw 45 in the upper notches of the plate 38, the tension of the spring will not be changed. The parts are first adjusted so that the pen-bar will just clear the writing surface and so that the arms 26 will hang in a vertical position. This is done by getting the spring 66 the right tension and by hitching it in one of the series of holes 71 in the outer end of the compensating lever 68. This is the normal, central position and as the pen-bar is carried to the right or to the left the parts tend, by reason of their weight, to return to this position. To overcome this tendency and to produce a perfectly balanced pen-bar the fixed rock-shaft 25 is provided with an arm 72 to which is pivoted a curved link 72a. This link is connected by a spring 73 to an extension 74 of the height adjusting screw 45. The arm is positioned so that when the parts supported by the spring 66 are in the central position, the spring 73 will draw directly across the pivotal axis of the shaft 25 and there will be no tendency to turn the shaft; but as soon as the pen-bar is carried to the right or to the left, the spring 73 acts to hold the parts in the position to which they are moved. This construction provides a pen-bar which at all times literally "floats" and which is absolutely inert.

The parts may be thrown into the position shown in Fig. 4, to permit of the placing or adjusting of the documents to be signed, the compensating lever 68 acting as a support for the pen-bar.

When not in use the parts may be folded away as shown in Fig. 5, by releasing the spring 47 and breaking the supporting toggle. In this position the swinging rock-shaft 21 rests on a block 75 which is attached to the bottom 2 of the housing and an elastic loop 76, which is attached to the side 3 of the housing, may be slipped over the pen-bar to hold the parts in place. The cover may then be closed by releasing the toggle which secures it to the housing and when closed it is held by latch springs 77 which engage pins 78 in the cover.

A carrying handle 79 is provided and the box-like housing on which the operative parts are mounted and which affords a writing platen, becomes a convenient carrying case.

By loosening the nuts 36 the clamps 35 may be released far enough to free the base bar 34 and the entire machine may then be removed from the housing.

Having described my invention I now claim:

1. In a machine of the class described, the combination of the following elements: a pen-bar having a plurality of pens mounted thereon; a rock-shaft; intermediate connections between said pen-bar and said rock-shaft, by means of which said pen-bar is mounted for universal movement; a box-like housing having a cover portion—said cover being adapted for use as a document support or writing platen; locking means between said housing and its cover whereby said housing becomes rigidly fixed with relation to said document support; movable connections between said rock-shaft and said housing, whereby said rock-shaft and its connected parts may be maintained wholly inside or outside of said housing and locking means for said movable connections when said rock-shaft is outside of said housing—said locking means being adapted to secure said rock-shaft in a fixed position over said document support.

2. In a machine of the class described, a pen-bar having a plurality of pens mounted thereon; a rock-shaft; intermediate connections between said pen-bar and said rock-shaft, by means of which said pen-bar is mounted for universal movement; a box-like housing, having a cover portion—said cover portion being adapted for use as a document support or writing platen; locking means between said housing and its cover portion, whereby said document support

becomes rigidly fixed with relation to said housing; a pair of arms pivotally joining said rock-shaft to said housing, in combination with means for locking said arms and said rock-shaft in a fixed position.

3. In a machine of the class described, a pen-bar having a plurality of pens mounted thereon; a movable base in the form of a rectangular bar; intermediate connections between said pen-bar and said movable base, whereby said pen-bar is mounted for universal movement; a fixed base in the form of a box-like housing, in combination with a pair of clamps secured to said housing, which are adapted to clamp said movable base to said housing and to permit said movable base to be longitudinally adjusted on said housing.

4. In a machine of the class described, a pen-bar having a plurality of pens mounted thereon; a movable base; intermediate connections between said pen-bar and said movable base, whereby said pen-bar is mounted for universal movement; a fixed base in the form of a box-like housing, in combination with a pair of clamps for adjustably securing said movable base to and inside of said fixed base—said movable base and its connected parts being detachably secured to said fixed base.

5. In a machine of the class described, a pen-bar having a plurality of pens mounted thereon; a rock-shaft; intermediate connections between said pen-bar and said rock-shaft, whereby said pen-bar is mounted for universal movement; a fixed base in the form of a box-like housing; a movable base, adjustably secured inside of said housing; a shaft mounted on said movable base; a pair of arms secured to said shaft, between the outer or free ends of which said rock-shaft is axially pivoted—the parts being so mounted that said rock-shaft may be held entirely inside of or outside of said housing and locking means for said arms, by means of which said shaft may be held in a fixed position outside of said housing.

6. In a machine of the class described, the combination of the following elements: a pen-bar having a plurality of pens mounted thereon; a movable base; intermediate connections between said pen-bar and said movable base, whereby said pen-bar is mounted for universal movement; a fixed base in the form of a box-like housing, having a cover portion which is adapted to serve as a document support or writing platen; locking means between said cover portion and said housing; clamps for securing said movable base to said housing—said clamps permitting of a longitudinal adjustment of said movable base on said housing; vertically adjustable supporting means for said pen-bar and said intermediate connections—said supporting means being releasable to permit of the adjustment of said pen-bar from a position outside of said housing over said document support to a stored-away position inside of said housing.

7. A mounting for a multiple writing machine, said mounting comprising: a fixed base in the form of a box-like housing; a movable base longitudinally adjustable on said fixed base; a shaft mounted on said movable base; a pair of arms rigidly secured to said shaft—said multiple writing machine being supported in the outer or free ends of said arms; and an adjustable support for said arms.

8. In a mounting for a multiple writing machine, the combination of the following elements: a fixed base in the form of a box-like housing; a movable base adjustably secured to the inside of said fixed base; supporting connections between said movable base and said multiple writing machine; and means for vertically adjusting said supporting connections.

9. In a machine of the class described, the combination of the following elements: a document support; a pen-bar having a plurality of pens mounted thereon; a fixed base; intermediate connections between said pen-bar and said fixed base, whereby said pen-bar is mounted for universal movement over said document support and means for adjusting said pen-bar and said intermediate connections, vertically and longitudinally, with relation to said document support.

10. In a machine of the class described, the combination of the following elements: a pen-bar having a plurality of pens mounted thereon; a rock-shaft; intermediate connections between said pen-bar and said rock-shaft, whereby said pen-bar is mounted for universal movement; a fixed base in the form of a box-like housing—the cover portion of said housing being adapted to serve as a document support or writing platen; locking means between said platen and said housing; a second base, detachably secured inside of said housing; supporting connections between said second base and said rock-shaft for said rock-shaft; a depending bracket secured to said second base and supporting means between said bracket and said supporting connections.

11. In a machine of the class described, the combination of the following elements: a pen-bar having a plurality of pens mounted thereon; a rock-shaft; intermediate connections between said pen-bar and said rock-shaft, whereby said pen-bar is mounted for universal movement; a fixed base in the form of a box-like housing, having a cover portion adapted to serve as a document support or writing platen; locking means between said cover portion and said fixed base; a movable base longitudinally adjustable with relation to said fixed base; movable

connections between said movable base and said rock-shaft which are adapted to support said rock-shaft; a depending bracket secured to said movable base; a support between said bracket and said movable connections—said support being adapted to hold said rock-shaft outside of said housing and being releasable to permit said rock-shaft and said intermediate connections being folded away wholly inside of said housing.

12. A mounting for a multiple writing machine comprising: a fixed base; a movable base adjustable on said fixed base; a shaft secured to said movable base; a pair of arms rigidly secured to said shaft, which support said writing machine; a depending bracket upon said movable base; a guide for said bracket on said fixed base; and a support between said bracket and said arms.

13. A mounting for a multiple writing machine, comprising: a fixed base, in the form of a box-like housing; a movable base adjustably mounted on the inner or under side of the top portion of said fixed base; a shaft secured to said movable base; a pair of arms rigidly secured to said shaft, which support said writing machine; a depending bracket upon said movable base; a guide for said bracket on the lower or bottom portion of said fixed base—said bracket being provided with a series of recesses; a pair of hinged, toggle, supporting links—the outer end of one of said links being pivoted to one of the before mentioned arms and the outer end of the other link being securable in any of said recesses; and means for locking or rendering said toggle links rigid.

14. In a machine of the class described, the combination of the following elements: a pen-bar having a plurality of pens mounted thereon; a swinging rock-shaft; a pair of links pivotally connecting said pen-bar to said rock-shaft; a fixed rock-shaft; a pair of arms rigidly secured to said fixed rock-shaft between the outer or free ends of which said swinging rock-shaft is axially pivoted; an adjustable support for said fixed rock-shaft; a spring which is adapted to support the weight of said pen-bar and means for simultaneously adjusting said spring and said support for said fixed rock-shaft, in a vertical direction.

15. In a machine of the class described, the combination of the following elements: a pen-bar having a plurality of pens mounted thereon; a swinging rock-shaft; a pair of links pivotally connecting said pen-bar to said rock-shaft; a fixed rock-shaft; a pair of arms rigidly secured to said fixed rock-shaft between the outer or free ends of which said swinging rock-shaft is axially pivoted; an adjustable support for said fixed rock-shaft; an arm secured to said swinging rock-shaft; a spring attached to said arm and adapted to support the weight of said pen-bar; a support for said spring which is independent of said adjustable support for said rock-shaft and means for simultaneously adjusting said rock-shaft support and said spring support in a vertical direction.

16. In a machine of the class described, the combination of the following elements: a pen-bar having a plurality of pens mounted thereon; a swinging rock-shaft; a pair of links pivotally connecting said pen-bar to said rock-shaft; a fixed rock-shaft; a pair of arms rigidly secured to said fixed rock shaft, between the outer or free ends of which said swinging rock-shaft is axially pivoted; a fixed base in the form of a box-like housing—the cover portion of which is adapted to serve as a document support or writing platen; locking means between said cover and said housing; a movable base secured inside of said housing; a shaft mounted on said movable base; a pair of arms rigidly secured to said shaft, between the outer or free ends of which said fixed rock-shaft is axially pivoted and which is adapted to support said fixed rock-shaft either inside or outside of said housing; a tie-rod for the last mentioned pair of arms; a spring-supporting lever fulcrumed in said tie-rod; a cam bracket secured to said movable base, against which said lever rests; an arm secured to said swinging rock-shaft; a spring connecting said arm to said spring support; means for adjustably securing said fixed rock-shaft in a plurality of vertical positions—said cam bracket simultaneously securing a corresponding adjustment of said spring.

17. In a machine of the class described the combination of the following elements: a pen-bar having a plurality of pens mounted thereon; an adjustable mounting for said pen-bar; means for securing said mounting in a plurality of vertical positions; a spring support for said pen-bar and means for simultaneously adjusting said mounting and said spring support.

18. In a machine of the class described, the combination of the following elements: a pen-bar having a plurality of pens mounted thereon; a vertically adjustable mounting frame for said pen-bar; a spring adapted to sustain the weight of said pen-bar; a spring supporting lever mounted on said adjustable mounting frame and a cam for controlling said lever—whereby, as said mounting frame is adjusted, said spring is correspondingly adjusted.

19. In a machine of the class described, the combination of the following elements: a pen-bar, having a plurality of pens mounted thereon; a swinging rock-shaft; a pair of links pivotally connecting said pen-bar to said rock-shaft; a fixed rock-shaft; a pair of arms rigidly secured to said

fixed rock-shaft, between the outer or free ends of which said swinging rock-shaft is axially pivoted; a fixed base, in the form of a box-like housing, having a cover portion which is adapted to serve as a document support or writing platen; a movable base adjustably secured to said fixed base; a shaft mounted on said movable base; a pair of arms rigidly secured to said shaft, between which said fixed rock-shaft is axially pivoted; means for supporting said fixed rock-shaft in a fixed position over said document support—said parts being foldable into a stored-away position inside of said housing; a supporting block for said swinging rock-shaft when inside of said housing and a band or loop for securing said pen-bar in its stored-away position.

20. In a machine of the class described, a pen-bar adapted to carry a plurality of pens; pen clamps for said pens, by means of which said pens are attached to said bar—each of said pen-clamps being formed of a base portion which is adjustable on said pen-bar and a band portion, which is adapted to encircle a pen—said base portion being recessed to receive said band portion and said band portion being tightly secured to said base portion in said recess.

21. In a machine of the class described, a pen-bar adapted to carry a plurality of pens, in combination with a pen clamp which is adapted to hold said pens to said bar—each of said clamps comprising an angular portion and a band portion—said angular portion being secured to said pen-bar by a spring connection on one side and by a pair of guide and adjusting screws on the opposite side and said band portion being secured by a rivet in a recess of the angular portion.

22. A machine for simultaneously writing a plurality of signatures, comprising a horizontal pen-bar having a plurality of pens mounted thereon; a horizontal rock-shaft; a pair of links pivotally connecting said pen-bar to said rock-shaft; a second rock-shaft axially pivoted in suitable bearings above the first rock-shaft; a pair of normally vertical arms rigidly secured to said second rock-shaft, between the lower extremities of which said first rock-shaft is axially pivoted and means for latching said vertical arms in a substantially horizontal position and said links in a reversed horizontal position, whereby said pen-bar and pens are bottom side up.

23. In a machine of the class described, the combination of a base or support, a supporting frame pivotally mounted upon said base or support and adjustable thereon into and out of operative position, means connecting said supporting frame with said base or support for locking said supporting frame in operative position, a pen bar having a plurality of writing members thereon, and intermediate connections between said pen bar and said supporting frame, by means of which said pen bar is mounted for universal movement.

24. In a machine of the class described, the combination of a pen bar having a plurality of pens mounted thereon, a rock shaft, intermediate connections between said pen bar and said rock shaft by means of which said pen bar is mounted for universal movement, a base or support, a pair of arms pivotally mounted upon said base and adjustably supporting said rock shaft upon said base or support, and means for locking said arms in a fixed position.

25. In a machine of the class described, the combination of a pen bar having a plurality of pens mounted thereon, a rock shaft, intermediate connections between said pen bar and said rock shaft by means of which said pen bar is mounted for universal movement, a box-like housing, a pair of arms pivotally mounted in said housing and adjustably supporting said rock shaft in said housing, and means for locking said arms in a fixed position outside of said housing.

26. In a machine of the class described, the combination of a base or support, an adjustable supporting frame pivotally mounted upon said base or support, means connecting said supporting frame with said base or support, for locking said supporting frame in a fixed position, a swinging frame pivoted to and depending from said supporting frame, a pen bar carrying a plurality of writing members, and intermediate connections between said pen bar and said swinging frame having universal joint connection with said swinging frame.

27. In a machine of the class described, the combination of a base or support, a supporting frame pivotally mounted upon said base or support, and adjustable thereon into and out of operative position, toggle links connecting said supporting frame with said base or support, a swinging frame pivoted to and depending from said supporting frame, a pen bar carrying a plurality of writing members, and intermediate connections between said pen bar and said swinging frame.

28. In a machine of the class described, the combination of a base or support, an adjustable supporting frame pivotally mounted upon said base or support, means connecting said supporting frame with said base or support for locking said supporting frame in a fixed position, a pen bar carrying a plurality of writing members, intermediate connections between said pen bar and said supporting frame by means of which said pen bar is mounted thereon for universal movement, a spring supporting lever carried by said supporting frame, a spring connected with said

lever adapted to sustain the weight of said pen bar, and a cam fixed upon said base or support in position to engage said lever to adjust its position when the supporting frame is adjusted.

29. In a machine of the class described, the combination of a base or support, a supporting frame pivotally mounted upon said base or support and adjustable thereon into and out of operative position, means connecting said supporting frame with said base or support for locking said supporting frame in operative position, a swinging frame pivoted to and depending from said supporting frame, a rock shaft journaled in the lower end of said swinging frame, a pen bar carrying a plurality of writing members, intermediate connections between said pen bar and said rock shaft, a spring supporting lever carried by said supporting frame, an arm upon said rock shaft, a spring connecting said arm with said lever, and a cam fixed upon said base or support in position to engage said lever to adjust its position when the supporting frame is adjusted.

In testimony whereof I affix my signature in presence of two witnesses.

F. AMOS JOHNSON.

Witnesses:
M. C. CRANE,
JOHN E. MÜLLER.