No. 880,950. PATENTED MAR. 3, 1908.

W. R. WOODWARD.

MEANS FOR WRITING A PLURALITY OF SIGNATURES OR INSCRIPTIONS.

APPLICATION FILED JUNE 15, 1907.

4 SHEETS—SHEET 1

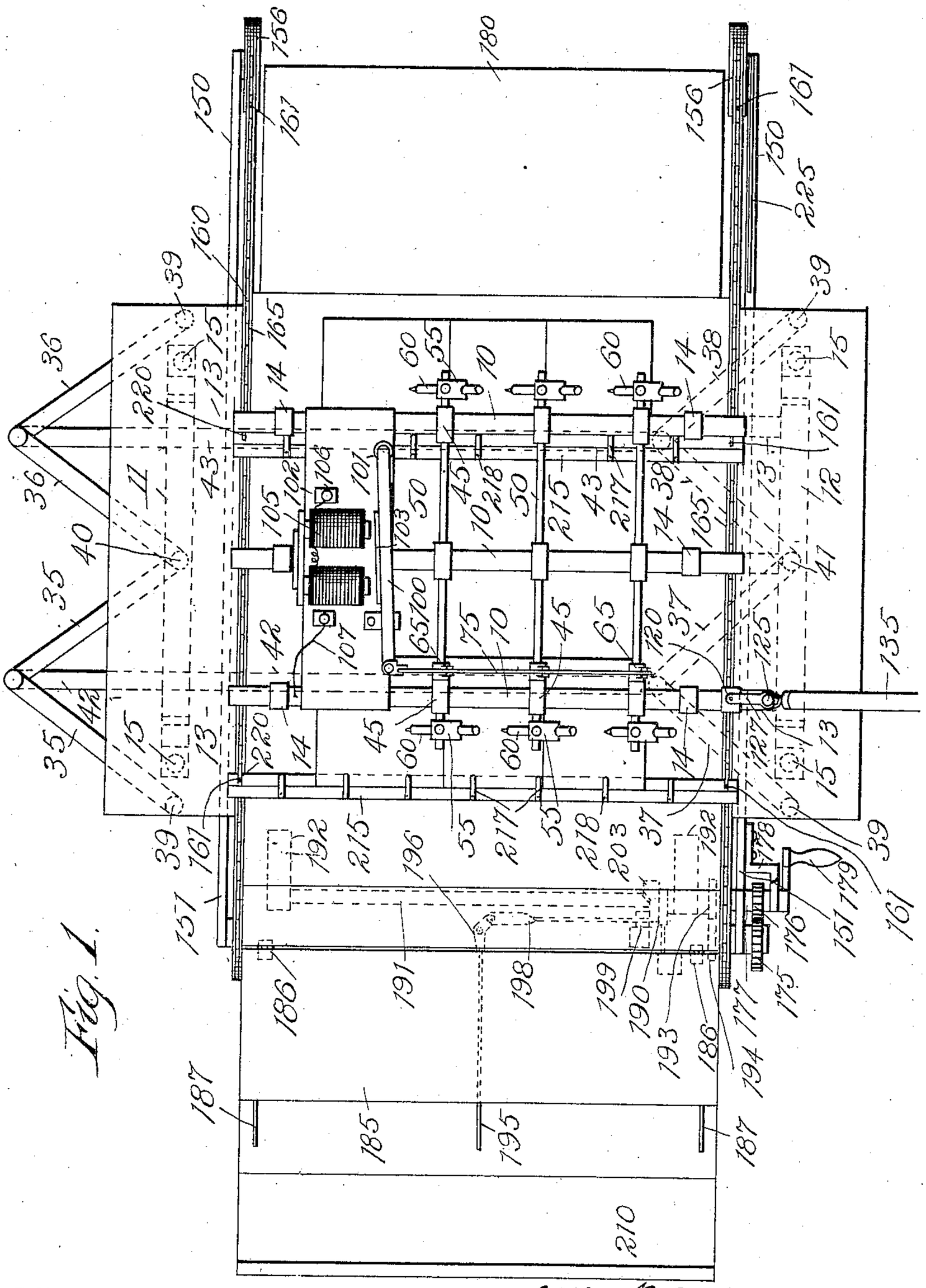

Fig. 1.

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4 SHEETS—SHEET 2

Fig. 2.

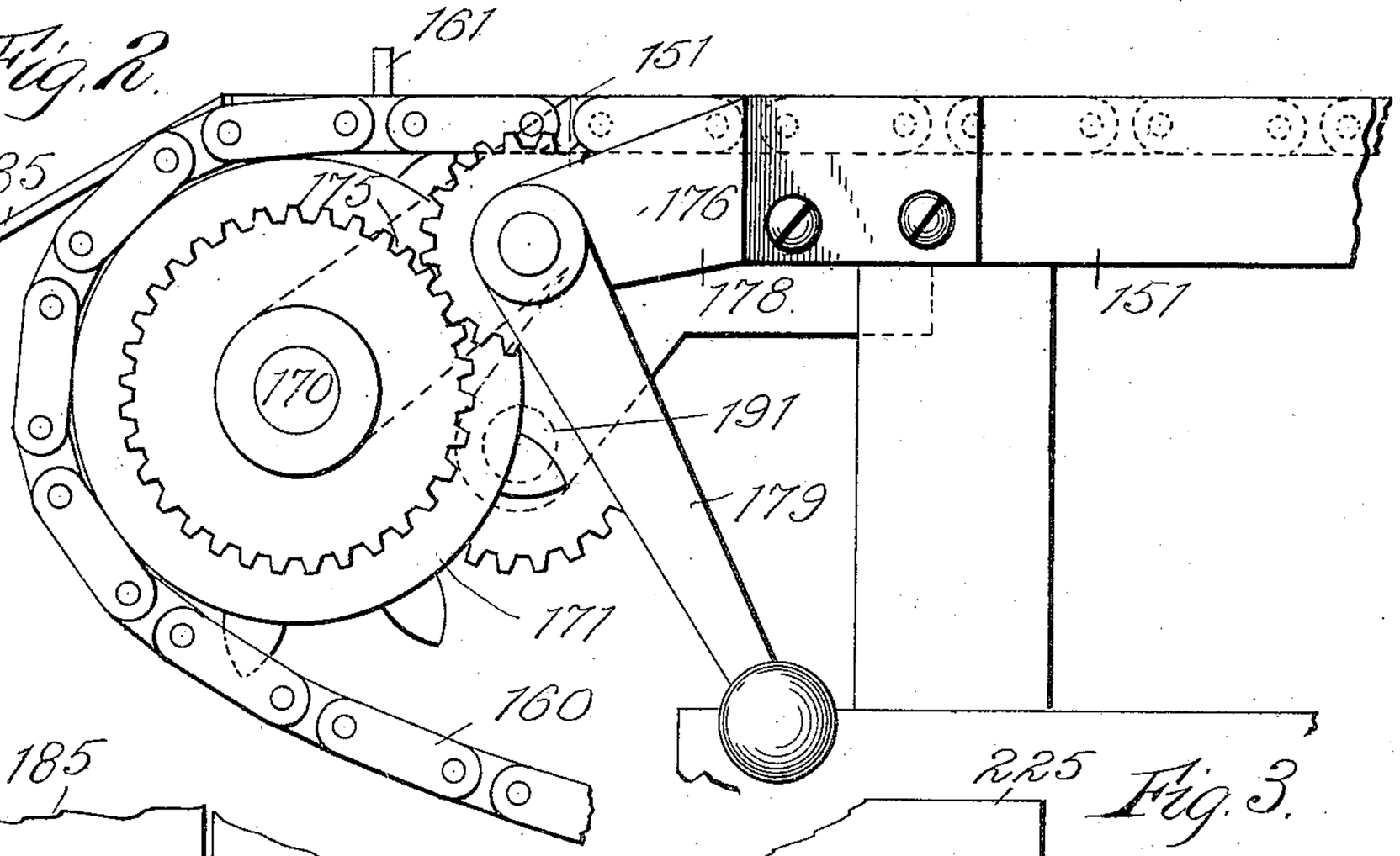


Fig. 3.

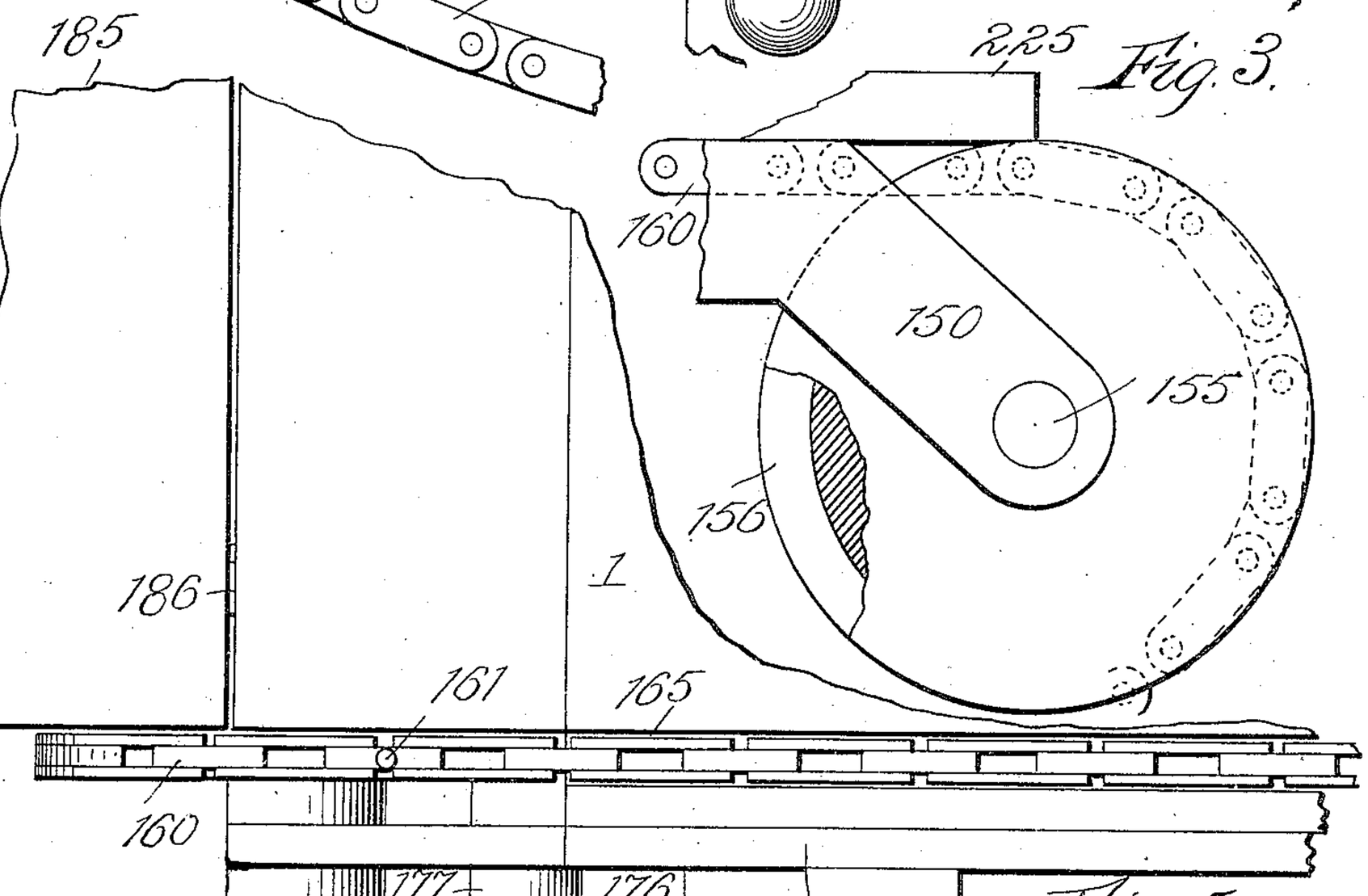


Fig. 4.

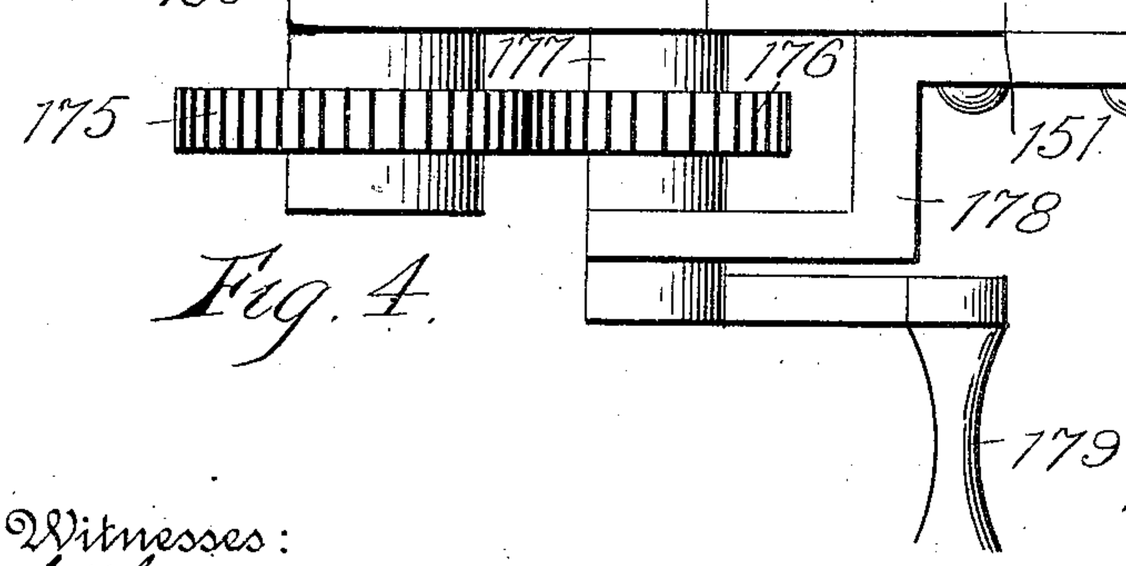
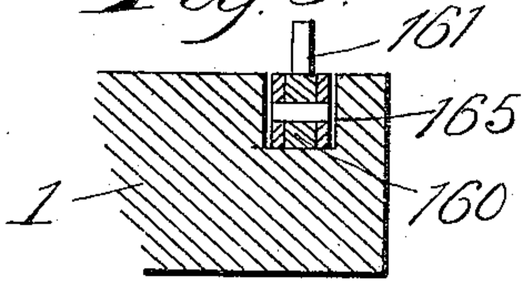


Fig. 5.



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No. 880,950. PATENTED MAR. 3, 1908.

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4 SHEETS—SHEET 3.

Fig. 6.

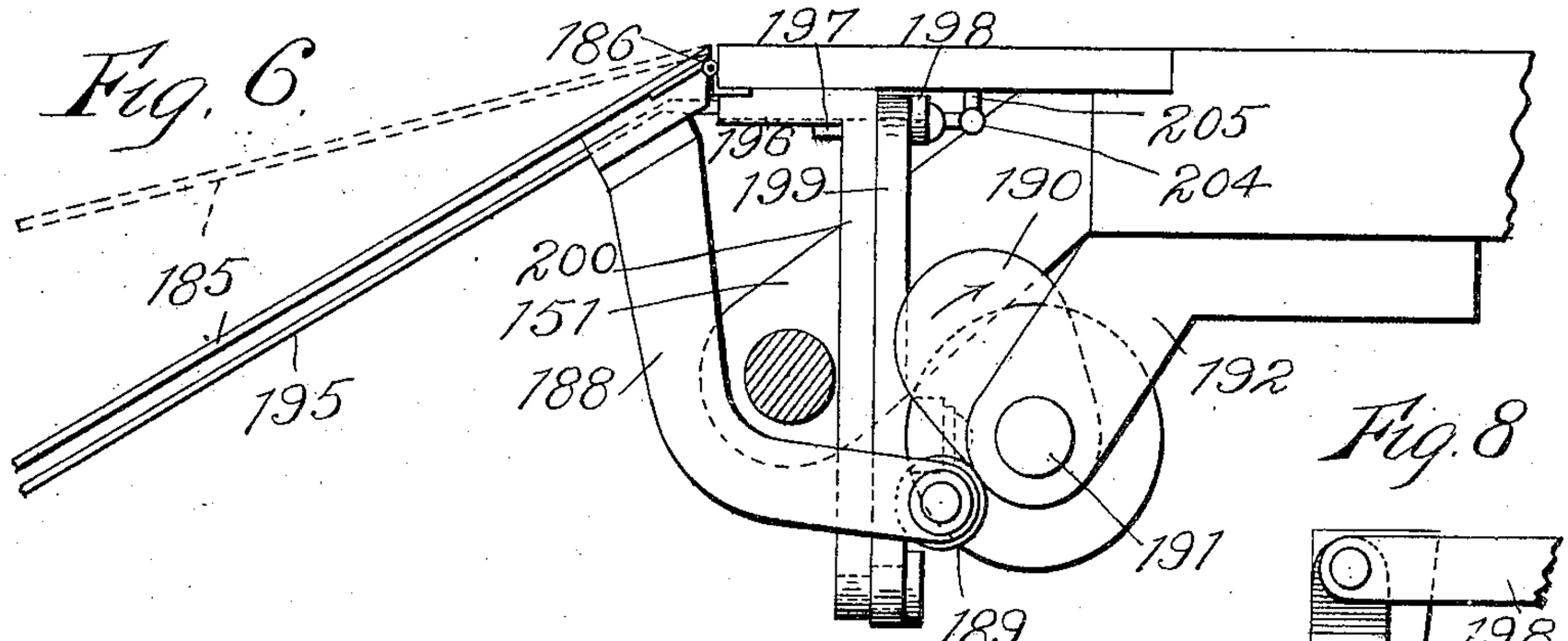

Fig. 8

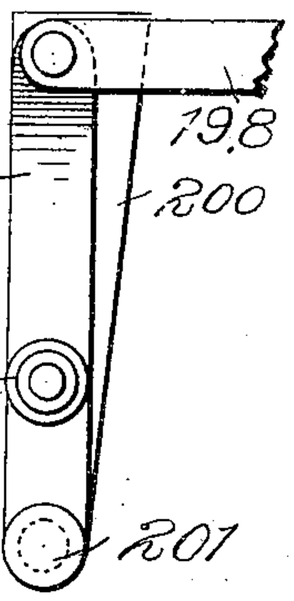

Fig. 7.

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No. 880,950. PATENTED MAR. 3, 1908.

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MEANS FOR WRITING A PLURALITY OF SIGNATURES OR INSCRIPTIONS.

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4 SHEETS—SHEET 4.

Fig. 9.

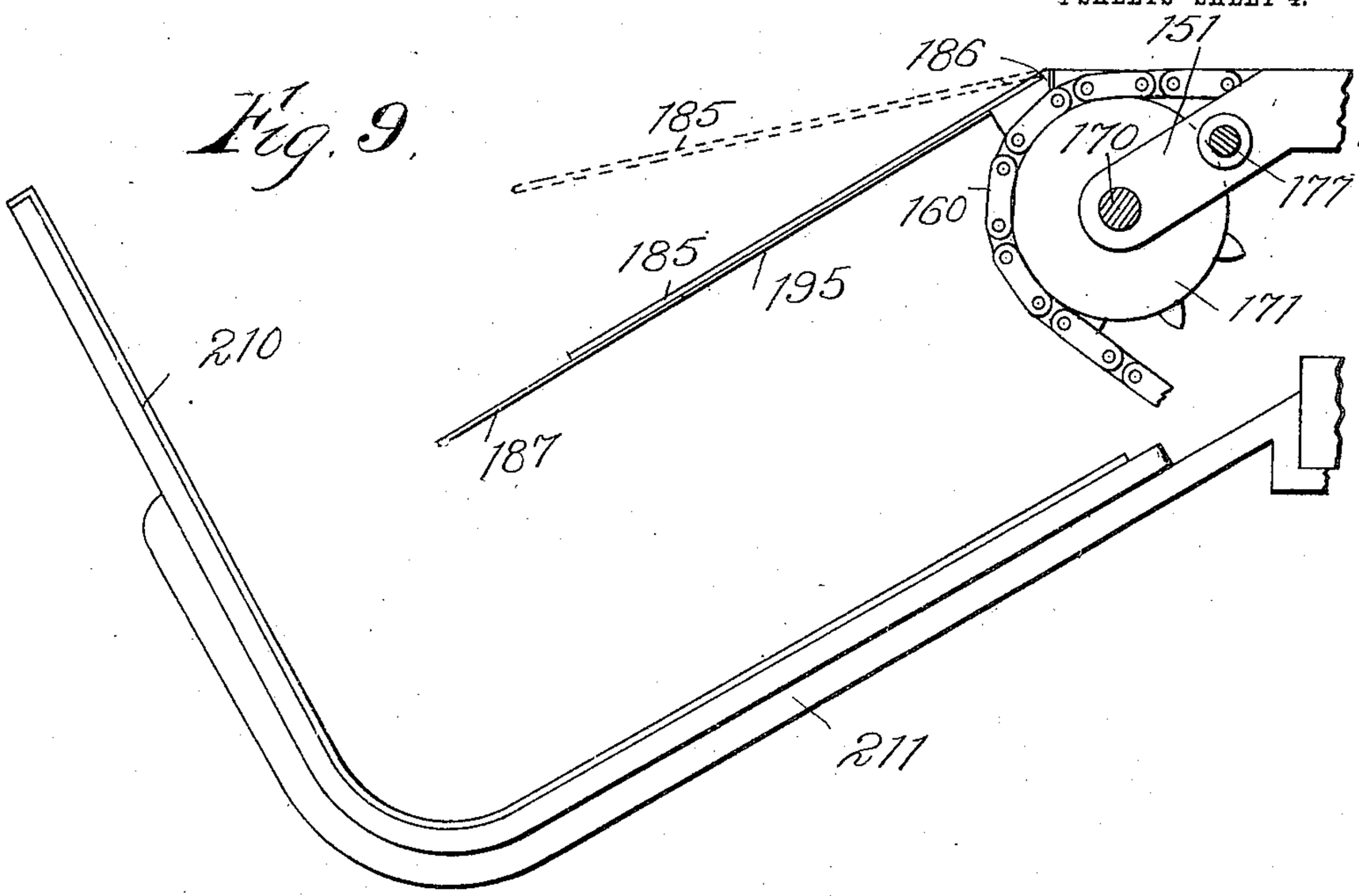


Fig. 10.

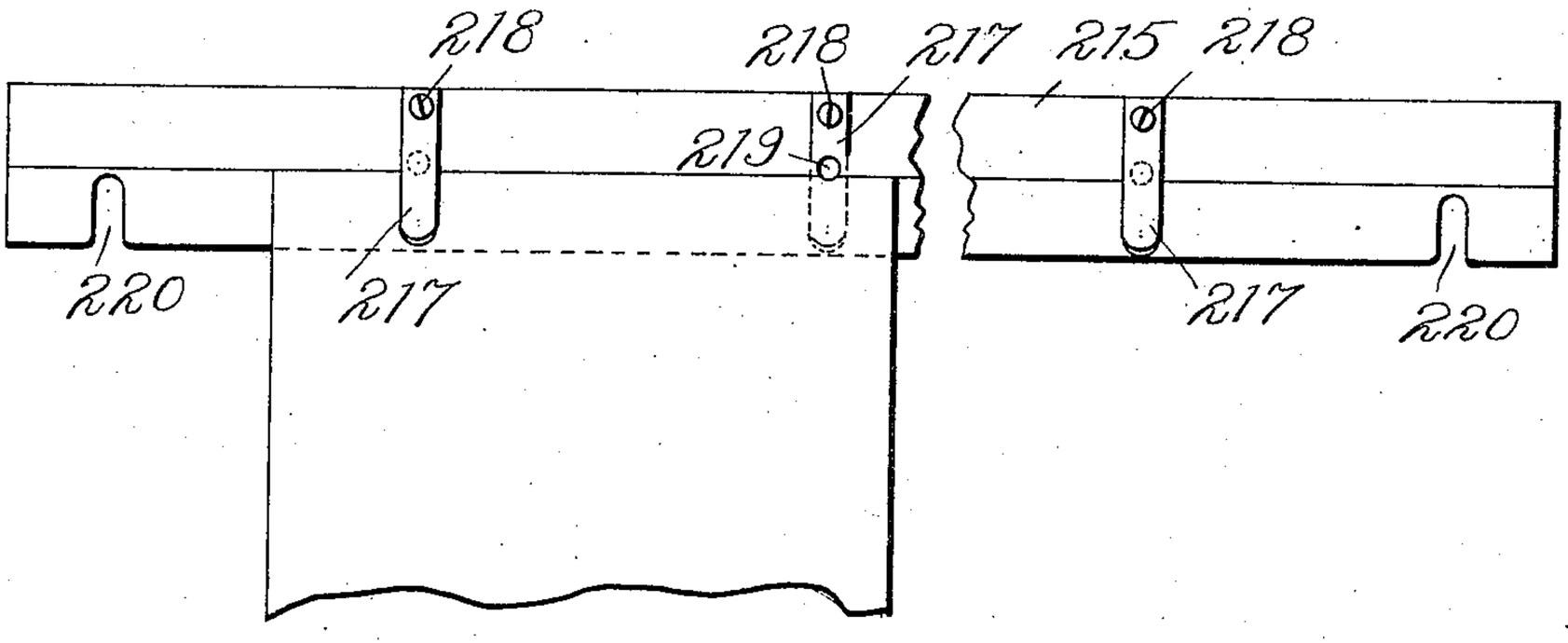
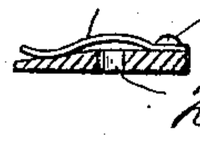


Fig. 11.



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UNITED STATES PATENT OFFICE.

WILLIAM R. WOODWARD, OF NEW YORK, N. Y.

MEANS FOR WRITING A PLURALITY OF SIGNATURES OR INSCRIPTIONS.

No. 880,950. Specification of Letters Patent. Patented March 3, 1908.

Application filed June 15, 1907. Serial No. 379,222.

To all whom it may concern:

Be it known that I, WILLIAM R. WOODWARD, a citizen of the United States, and resident of the borough of Brooklyn, city and State of New York, have invented certain new and useful Improvements in the Means for Writing a Plurality of Signatures or Inscriptions, of which the following is a specification.

In the development of the type of machines for simultaneously writing a plurality of signatures or inscriptions set forth in my Patents Nos. 861,417, dated July 30, 1907, and 863,351, dated August 13, 1907 (John S. Brand patentee) and an application for patent filed by me November 3, 1906, Ser. No. 341,927, I have found it important to provide a convenient system of handling stocks, bonds or other documents which are to be inscribed by the use of such machines. My present invention relates to means for carrying such a system into effect.

Plural writing machines of the type above referred to are arranged to simultaneously inscribe any desired number of signatures or inscriptions upon a number of documents which are suitably positioned in the machine with reference to the plural writing members. The plurality of documents may be properly positioned upon the bed plate of the machine and secured in such position by hand, but such a manual arrangement of the papers is not only tedious and troublesome, but consumes a great deal of valuable time, and would in a measure defeat the object of the plural writing machines. The present invention relates, therefore, to a simple and convenient means of arranging the papers upon the bed plate of the writing machine in proper relation to the writing members, so that this preparatory work may be performed by an employee whose time is of relatively small value.

In carrying out my invention I provide a series of binding and carrying strips or bars provided with some simple means, preferably consisting of spring clips, upon which the stocks, bonds or other documents may be arranged in convenient rows, one above another and partly overlapping each other. With these binding and carrying strips or bars, the documents to be inscribed are arranged in series the proper distances apart to present the spaces for the signatures or inscriptions beneath the series of writing members of the machine. If the writing machine is provided with writing members arranged in a single row or column, one of the binding and carrying strips or bars will present the documents in writing position for all of the writing members. If, however, the writing machine is provided with writing members arranged in a plurality of columns or rows, as is usually the case with machines constructed by me, I prefer to present the necessary documents in a plurality of binding and carrying strips or bars. These strips or bars with the attached documents to be inscribed, may be positioned in the writing machine in any suitable manner, but I have arranged a mechanism for conveniently passing the series of documents into and out of writing position upon the bed plate of the machine, which leads to the second feature of my invention.

The document carrying strips or bars are preferably formed with recesses or openings which are adapted to engage pins or lugs upon a pair of conveyer bands, ropes or chains, arranged to travel over suitable supporting wheels propelled by a hand operated mechanism. These conveyer bands, ropes or chains, are arranged to travel in channels at the opposite ends of the table or platform of the writing machine, the pins or lugs upon the conveyer bands, ropes or chains engaging the recesses or openings in the binding strips or bars to carry said strips or bars over the table or platform. I prefer to arrange the pins or lugs upon the conveyer bands, ropes or chains the same distance apart as the rows or writing members in the writing machine, and the documents in the binding strips or bars are arranged with their spaces to be inscribed at the same distances apart as the individual writing members in the several rows; so that when the conveyer presents one or more of the strips or bars with attached documents in position, all of the documents will be in proper position to be inscribed by the writing members.

I have found it most convenient to arrange the recesses or openings in the document carrying strips or bars in the form of open recesses adjacent to the ends of the strips or bars, forming in effect hooks, with which the pins or lugs upon the conveyer bands, ropes or chains can conveniently en-

gage; and to facilitate this engagement, I provide at one end of the bed plate or table of the machine, a guiding flange or strip into engagement with which the strips or bars are placed preparatory to the engagement of the pins or lugs upon the conveyer bands, ropes or chains.

The documents arranged in the strips or bars are fed into the machine at one side and delivered after the inscriptions are made at the opposite side of the machine, where they fall into a receiving hopper or box. At this delivery side of the machine I preferably provide an inclined plate or table extension which is hinged to the main bed plate of the machine, and is provided with mechanism to give it an intermittent upward movement to facilitate the proper delivery of the inscribed series of documents. This hinged plate or auxiliary table extension is moved upwardly at the moment of delivering each series of inscribed documents. In addition to the hinged plate I preferably employ a swinging arm which operates in the inclined plane in which the hinged plate normally rests, and serves the purpose of supporting the binding strips or bars between their ends to avoid the objectionable sagging or bending of the bars with the documents as they pass from the hinged plate or table extension. This swinging arm moves in an arc in the plane in which it is supported to periodically disengage it from the documents as they pass to the receptacle or box. There are also at opposite ends two stationary rods or bars over which the binding strips or bars pass as they leave the pivoted plate or table extension. This sagging or bending of the strips or bars is possible because of the lightness of the material from which they are made, it being desirable to reduce their weight as much as possible, not only on account of economy in manufacture, but because of greater convenience in operating the apparatus.

I prefer to arrange a simple crank operated mechanism for driving the conveying bands, ropes or chains and for operating the cams which actuate the pivoted plate or extension table and the swinging arm.

In order that the construction and operation of my invention may be fully understood, I will first describe the same with reference to the accompanying drawings, and afterwards point out the novelty more particularly in the annexed claims.

In said drawings Figure 1 is a plan view of a machine embodying my invention. Figs. 2 and 3 are enlarged detail elevations showing opposite ends of the conveyer mechanism. Fig. 4 is a plan view of part of the delivery end of the machine. Fig. 5 is a detail vertical transverse sectional view showing one of the chain receiving grooves in the table. Fig. 6 is a vertical longitudinal sectional view of part of the document delivering mechanism. Fig. 7 is a detail plan view of the same mechanism. Fig. 8 is a detail elevation of the operating lever for the swinging delivery arm. Fig. 9 is a vertical longitudinal sectional view of the delivery end of the machine showing the receptacle or box into which the inscribed documents are delivered. Fig. 10 is a detail plan view of one of the document binding and carrying strips or bars. Fig. 11 is a transverse sectional view of the same.

For the purpose of illustrating my invention, I have shown it in combination with a plural writing machine of the construction set forth in the patent of John S. Brand, No. 863,351 above referred to. It will be understood, however, that my present improvements may be employed in connection with any machine designed to simultaneously write a plurality of signatures or inscriptions, and I would have it understood at the outset that I do not intend to limit my invention to its application to the specific type of writing machine set forth.

1 represents the bed plate or table for supporting the certificates of stock, bonds, checks or other documents which are to be signed or inscribed. This table may be mounted in any suitable manner for the convenient insertion and removal of the documents in proper position for the operation of the writing members. The carriage consists preferably of a skeleton frame made up of a plurality of longitudinal hollow metal bars 10 (of which three are shown), which bars are rigidly connected together and braced at their ends by the transverse bars or plates 11 and 12, which latter are secured to the auxiliary bars 13 arranged below and parallel with the main bars 10 and connected with the main bars by the depending brackets or yokes 14. At each end of both of the transverse bars 11 and 12 (that is at each of the four corners of the carriage) I provide a suitable antifriction ball bearing 15, which bearings rest and operate upon the horizontal bearing plates (not shown) at the front and rear of the table or platform 1.

The carriage is connected with the main frame or bed plate by the coupled pantographic links 35, 36, 37 and 38, one of each pair of said links being pivotally connected at 39 to the bearing plates of the main frame, and to the central transverse bars 11 and 12 of the carriage through pivots 40 and 41. The pairs of links are further coupled by the long longitudinal links 42 and 43.

Each of the longitudinal bars 10 of the carriage has adjustably mounted upon it a plurality of journal boxes or brackets 45 in which are journaled a plurality of transverse rock shafts 50. Any desired number of these rock shafts 50 may be employed. By adjusting the brackets or journal boxes longitudinally upon the bars 10, the rock shafts

50 can be arranged in the desired longitudinal positions upon the carriage.

Each rock shaft 50 carries a plurality of pen grips 55, in which are mounted the fountain pens or other writing members 60. The pen grips are individually adjustable upon the rock shafts 50 so as to enable them to be adjusted to a position closer together or farther apart. Any desired number of writing members may be mounted upon each rock shaft, depending upon the number of inscriptions to be made at a single operation.

Projecting up from each transverse rock shaft 50 is an adjustable rock arm 65 operatively engaged by a longitudinally movable controlling bar 75.

At its rear end, the controlling bar is pivotally connected to the end of an armature lever 100 which is pivoted at 101 to a post projecting up from a bridge plate 102. This lever 100 carries an armature plate 103 supported in operative relation to an electromagnet 105 which is also mounted upon the bridge plate 102. The bridge plate 102 is suitably secured to the longitudinal bars 10 of the carriage. One terminal of the electromagnetic circuit is electrically connected at 106 with the bridge plate which is in electrical connection with the skeleton frame of the carriage. The other terminal 107 is suitably insulated from the frame of the carriage and passes through one of the longitudinal bars 10 of the carriage and terminates in a spring contact finger (not shown). A battery (not shown) is included in the circuit at some suitable point to supply the necessary current for electrifying the magnet 105.

Mounted upon the forward end of the longitudinal carriage bar 10 through which the circuit wire 107 is extended, is a yoke 120 carrying a vertically movable monitor pin 125, sustained by a leaf spring 127. A contact flange (not shown) is mounted on pin 125 in proper relation to the contact finger with which terminal wire 107 connects, so that by depressing pin 125, the circuit will be closed.

135 is the monitor handle which is pivoted upon the monitor pin 125, so as to move freely in a vertical direction upon the pin, the pin being freely journaled vertically to allow the monitor handle to also move freely in a horizontal direction.

The operation of the plural writing machine above described will be understood from the description given, particularly with reference to the Brand patent No. 863,351. The supporting framework of the bed or table 1 is extended beyond each end of the table parallel with the front and rear edges thereof to form bracket supporting arms 150 and 151. Journaled in the bracket arms 150 is a transverse shaft 155 supporting adjacent to its opposite ends the grooved wheels or pulleys 156 over which travel the conveyer bands, ropes or chains 160. In the drawings I have illustrated sprocket chains as the conveyer. These conveyer chains 160 are provided at suitable intervals with pins or lugs 161 for the purpose which will presently be described. The conveyer chains 160 pass from the grooved wheels or pulleys 156 through the longitudinal grooves or channels 165 formed in the upper face of the bed or table 1 adjacent to its front and rear edges. These grooves or channels 165 are of the same depth as the vertical thickness of the chains 160, as shown in the detail Fig. 5 of the drawings so as to support the outer face of the chains substantially flush with the surface of the table or platform.

Suitably journaled in the bracket arms 151 at the left hand end of the machine, is a transverse shaft 170, to which are keyed the sprocket wheels 171. The chains 160 pass from the grooves in the table 1 around the sprocket wheels 171, by which the chains are operated.

Keyed to the outer end of the shaft 170 is a gear wheel 175 meshing with and driven by a smaller gear 176 mounted upon the short operating shaft 177 journaled in the bracket arm 151 and in the auxiliary bracket 178 secured thereto. The operating shaft 177 is provided with an operating crank handle 179, which, it will be observed by reference to Fig. 1 is presented in convenient position for operation by the left hand of the person manipulating the machine. By rotating the crank 179, the sprocket wheels 171 are rotated to cause the conveyer chains 160 to travel in their grooves over the bed or table 1.

180 is an auxiliary plate or table extended from the right hand end of the main table 1 between the bracket arms 150 for the purpose of affording a support for the binder strips or bars and attached documents as they are put in position to be fed into the machine. This will be more fully explained hereinafter. At the left hand end of the table 1, I provide an inclined plate or table extension 185 which is hinged at 186 to the end of the table and rests normally in inclined position upon the stationary inclined rods or bars 187 projecting from the end of the table and supported in any suitable manner on the framework of the machine. This hinged plate or table exension 185 is provided adjacent to its hinged edge with a downwardly and rearwardly projecting arm 188 carrying in its end a freely journaled antifriction roller 189 which operates in peripheral contact with a cam 190 mounted upon a transverse shaft 191 journaled in the bracket arms 192 secured to the under face of the table or platform 1. This shaft 191 is provided at one end with a gear wheel 193 meshing with a smaller gear 194 secured to the shaft 170 just inside of the frame arm 151. By this means the shaft 191 is driven from the shaft 70 to intermittently raise and lower

the inclined auxiliary plate or table 185. This operation is performed for the purpose which will hereinafter be explained.

195 is an arm or rod projecting beneath the auxiliary hinged table 185 and a little beyond the free edge of said table, said arm being secured to a lever 196 pivoted beneath the table 1 at 197 and connected through a pitman 198 with a vertical lever 199 pivoted to a bracket arm 200 at 201. This vertical lever 199 carries an antifriction roller 202 which operates in contact with a face cam 203 keyed to the shaft 191 along side of the cam 190. A spring 204 is connected at one end 205 with a pin secured underneath the table 1 and at its opposite end to a pin or lug 206 projecting from the pitman 198. The purpose of spring 204 is to hold the arm 195 in normal position with the antifriction roller 202 in working contact with the cam 203. The rotation of the cam 203 causes the rod or arm 195 to be intermittently swung inwardly toward one side of the machine for the purpose hereinafter explained.

210 is the receiver or box at the delivery end of the machine arranged to receive the series of signed documents carried by the binder strips or bars. This box or trough 210 is suitably mounted upon rigid bracket arms 211 projecting from the main frame of the machine in any suitable manner. I have found it desirable to support the receiving box or trough 210 in an inclined position as shown since this affords the most convenient arrangement for properly receiving the binder strips or bars with the attached documents.

For the purpose of securing together a plurality of stocks, bonds, checks or other papers to be signed or inscribed in the plural writing machine, and for conveying them successively into position beneath the series of writing members of said machine, I prefer to employ the binding strips or bars 215 as shown in Figs. 1, 10 and 11 of the drawings. Each of these strips or bars 215 is formed preferably of metal with a longitudinal series of openings 219 and a series of spring clips 217. The rearwardly presented longitudinal half of the bar 215 (considering the bar in position upon the conveyer chains) is tapered or wedge-shaped in cross section. The longitudinal series of openings 219 is for the purpose of receiving a series of pins (not shown) with which the edge of the documents engage when they are inserted beneath the spring clips upon the binder bar. The bars 215 are shown with the spring clips 217 rigidly secured at their rear ends by rivets 218, and with the free ends of the spring clips slightly curved up to facilitate the insertion of the documents beneath the clips. A perforation 219 is formed through the bar 215 directly beneath each spring clip 217, for the reception of a pin tool (not shown) which engages the spring clip and raises it to permit the insertion of the document, and at the same time affords a gage pin for accurately positioning the document.

In practice I provide a convenient form of tool with a support for the bar 215 and a number of pins arranged at suitable distances apart to engage in all of the openings 219 of a bar 215, under the action of a suitable operating handle or lever to simultaneously raise all of the spring clips, and afford an alined series of gage pins, so that the documents may be easily arranged upon the binder bar. By reversing the operation of the tool all of the spring clips can be released simultaneously to bind all of the documents in place upon the bar.

Each binder strip or bar 215 is provided adjacent to its opposite ends with the rearwardly facing slots or recesses 220 in which the conveyer pins or lugs 161 engage for carrying the binder strips or bars and attached documents over the table or platform of the writing machine.

The operation of the machine will be clear from the following explanations: The proper number of stocks, bonds, certificates or other documents to be signed or inscribed are arranged in proper order with their inscription surfaces properly exposed one after another in series, and secured in this manner in the binder strips or bars 215. The number of documents that is placed in each binder strip or bar 215 will depend upon the number of writing members in each row in the writing machine. If the writing machine is provided with two rows of writing members each row containing ten pens it will be understood that each binder strip or bar is supplied with ten documents to be signed or inscribed. The binder strips or bars with the attached documents are placed in the machine at the right hand end of Fig. 1, care being taken to place the strips or bars with one end in engagement with the guide rib or flange 225 which insures the proper positioning of the binder strip or bar for the engagement of the pins or lugs 161 with the slots or recesses 220. The binder strips or bars are placed in position successively. The operator sitting in position to perform with the writing machine, turns the crank handle 179 causing the conveyer chains 160 to travel across the table 1 and carrying one or more binder strips or bars and attached documents into position beneath the writing members. If the writing machine has two rows of writing members, then the crank is turned until two series of documents to be signed are in position, when the rotation of the crank is arrested and the operator by operating the monitor handle 135 of the writing machine inscribes all of the documents which have been placed in position. Fig. 1 of the drawings shows two series of

documents in binder strips or bars in position for signatures or inscriptions. When completing the operation of signing the first set of documents positioned as explained, the operator again rotates the crank 179 to remove the signed documents and feed forward two additional series of documents which are to be signed, when the operation is repeated until all of the documents have been signed. The series of documents in binder strips or bars are supplied successively at the receiving end of the machine by the assistant who carefully places them upon the auxiliary table 180 with the gaging end of each bar in engagement with the rib or flange 225. As the signed documents attached to the binder strips or bars are passed away from the writing members, they are deposited upon the hinged auxiliary table 185, rods 187 and swinging rod or arm 195, where the binder strips or bars are disengaged from the sprocket pins and slide forwardly upon the inclined table 185 into the receiving box or trough 210. One of the binder strips or bars and series of attached documents is deposited in the receiving box or trough for each revolution of the shaft 191 so that every time such a delivery is made the auxiliary table 185 will be elevated by its cam 190 and the rod or arm 195 will be swung to one side, these operations assisting materially the delivery of the documents and serving particularly to deposit the documents in an even pile in the receiving trough. The main purpose of the swinging arm 195 is to support each binding strip or bar at the center to prevent its bending or sagging down before it slips off the ends of the stationary rods 187, the arm 195 swinging to one side as each binder with a group of documents is delivered, to facilitate the delivery by removing said arm out of engagement with the documents. Said strips or bars are apt to so sag, since they are preferably made of light material to keep down the expense of manufacture and the weight of the apparatus, which latter is important in considering the convenience of operation.

It will be understood that in preparing documents for signature under my improved system a great many binder strips or bars are provided, and all of the documents to be signed or inscribed are arranged in regular order in the binder strips or bars before the officer or other person who is to do the signing is required to attend to the operation. As soon as all of the documents have been properly placed in the binder strips or bars, and arranged in convenient position for subsequent handling, the assistant takes his position at the receiving end of the machine in readiness to place the binders with the documents successively upon the receiving end of the table or platform, and the person who is to do the signing, takes his position in front of the writing machine and successively signs the documents and operates the hand lever for feeding out the signed documents and feeding in new documents in position to be inscribed. By this system it is possible, with but little practice, for any person to quickly attend to the signing of a great quantity of certificates, bonds or other documents, giving to each document an original signature of the same authenticity as if each had been signed separately with an individual pen. The major part of the operation of arranging the documents in the binder strips or bars is performed by a minor clerk so that the actual attention required from the person signing the documents is reduced to a minimum.

I claim:

1. The combination of a plurality of writing members, and a monitor controlling device, with means for successively moving groups or series of documents into writing position.

2. The combination of a plurality of simultaneously operating writing members, with means for successively moving groups or series of documents into and out of writing position.

3. The combination in a writing machine of a table and a plurality of simultaneously operating writing members, with means for successively moving groups or series of documents into and out of writing position upon said table.

4. The combination of a table, a plurality of simultaneously operating writing members, with a conveyer adapted to convey groups of documents into and out of writing position upon said table.

5. The combination of a plurality of writing members, and a document supporting table or platform, with means for temporarily binding documents into groups or series, and a conveyer adapted to engage said binding means and convey the groups or series of documents over the table or platform.

6. The combination of a plurality of writing members, and a longitudinally channeled document supporting table or platform, means for temporarily binding documents into groups or series, and a conveyer operating in the channels of the table and adapted to engage said binding means and convey the groups or series of documents over the table or platform into and out of writing position.

7. The combination of a plurality of writing members, with a document supporting table or platform formed with parallel longitudinal grooves or channels, means for temporarily binding documents into groups or series, and a pair of conveyer chains operating in said table grooves or channels and having pins or lugs adapted to engage said

binding means and convey the groups or series of documents over the table or platform.

8. The combination of a plurality of writing members and a monitor controlling device, with a table or platform to support documents to be signed, a series of binding strips or bars having means for engaging and temporarily binding documents into groups or series, and a conveyer passing over said table or platform and having means for engaging said binding strips or bars.

9. The combination of a plurality of writing members, with a table or platform to support documents to be signed, a series of binding strips or bars having means for engaging and temporarily binding documents into groups or series, a conveyer passing over said table or platform and having means for engaging said binding strips or bars, and means for delivering successive groups or series of signed or inscribed documents.

10. The combination of a plurality of writing members, with a table or platform to support documents to be signed, a series of binding strips or bars having means for engaging and temporarily binding documents into groups or series, a conveyer passing over said table or platform and having means for engaging said binding strips or bars and an inclined auxiliary delivery table arranged to disengage the binder strips or bars from the conveyer and deliver successive groups or series of signed or inscribed documents.

11. The combination of a plurality of writing members, with a table or platform to support documents to be signed, a series of binding strips or bars having means for engaging and temporarily binding documents into groups or series, an endless conveyer passing over said table or platform and having means for engaging said binding strips or bars, wheels or pulleys supporting said conveyer, and means arranged adjacent to the delivery wheels or pulleys for disengaging said strips or bars from the conveyer and delivering successive groups or series of signed or inscribed documents.

12. In a machine of the character described, the combination of a table or platform adapted to support documents to be signed or inscribed, and a plurality of writing members, mounted in operative relation to said table or platform with a binding medium having a plurality of independent binding devices for engaging and temporarily securing together a series of documents, and means for moving said binding medium into and out of operative position upon said table or platform.

13. In a machine of the character described, the combination of a table or platform adapted to support documents to be signed or inscribed, and a plurality of writing members, mounted in operative relation to said table or platform with a binding strip or bar provided with a plurality of spring clips for engaging and temporarily securing together a series of documents, and means for moving said binding strip or bar into and out of operative position upon said table or platform.

14. In a machine of the character described, the combination of a table or platform, with a conveyer operating thereover, and a detachable binding medium having a plurality of independent binding devices adapted to engage documents for temporarily binding them into groups or series, and means of engagement between the conveyer and the binding means.

15. In a machine of the character described, the combination of a table or platform, with a conveyer operating thereover, wheels or pulleys supporting the conveyer, means for operating the conveyer, and a detachable binding medium having a plurality of independent binding devices adapted to engage documents for temporarily binding them into groups or series, and means of engagement between the conveyer and the binding means.

16. In a machine of the character described, the combination of a table or platform, with conveyer chains operating thereover, grooved wheels or pulleys supporting the conveyer chains, an operating crank, gearing between said crank and grooved wheels or pulleys, and a detachable binding medium having a plurality of independent binding devices adapted to engage documents for temporarily binding them into groups or series, and means of engagement between the conveyer chains and the binding means.

17. In a machine of the character described, the combination of a table or platform, with a conveyer operating thereover and having a series of binder engaging pins or lugs, with a series of detachable binding strips or bars formed with recesses adapted to engage said pins or lugs, and spring clips arranged upon the binding strips or bars to engage and temporarily hold documents.

18. In a machine of the character described, the combination of a longitudinally grooved table or platform, with a pair of conveyer chains operating in the grooves thereof and having a series of binder engaging pins or lugs projecting above the plane of the table, with a series of binding strips or bars formed with recesses adapted to engage said pins or lugs, and spring clips arranged upon the binding strips or bars to engage and temporarily hold documents.

19. In a machine of the character described, the combination of a table or platform, with a conveyer operating thereover and having a series of binder engaging pins or lugs, with a series of binding strips or bars

carrying document engaging spring clips and formed with recesses adapted to engage said pins or lugs, and a guide upon the table or platform for positioning the binder strips in position to be engaged by said pins or lugs.

20. In a machine of the character described, the combination of a table or platform, the conveyer chains or belts operating thereover, and having binder engaging pins or lugs, wheels or pulleys supporting said chains or belts, binder strips or bars, adapted to be engaged by said pins or lugs, and a guide rib or flange upon one edge of the table or platform against which said binder strips or bars are positioned.

21. In a machine of the character described, the combination of a table or platform, with a conveyer operating thereover, binder strips or bars detachably connecting groups or series of documents with said conveyer, a delivery box, a hinged delivery table leading to said delivery box, and means for intermittently raising and lowering said delivery table.

22. In a machine of the character described, the combination of a table or platform, with a conveyer operating thereover, means for detachably connecting groups or series of documents with said conveyer, a delivery box, a hinged delivery table leading to said delivery box, a rotary shaft, a cam upon said shaft engaging a part projecting from said delivery table, and means for operating said shaft.

23. In a machine of the character described, the combination of a table or platform, with a conveyer operating thereover, an operating shaft driving the conveyer, means for detachably connecting groups or series of documents with said conveyer, a delivery box, a hinged delivery table leading to said delivery box, inclined guide rods on which said hinged table normally rests, an arm projecting from said hinged table, a rotary cam engaging said arm, and gearing between said operating shaft and said cam.

24. In a machine of the character described, the combination of a table or platform, with a conveyer operating thereover, binder strips or bars detachably connecting groups or series of documents with said conveyer, a delivery box, and a pair of inclined rods leading from the table or platform to the delivery box.

25. In a machine of the character described, the combination of a table or platform, with a conveyer operating thereover, means for detachably connecting groups or series of documents with said conveyer, a delivery box, a pair of inclined rods leading from the table or platform to the deilvery box, a swinging arm or rod arranged between said inclined rods, and means for intermittently moving said swinging arm or rod for the purpose set forth.

26. In a machine of the character described, the combination of a table or platform, with a conveyer operating thereover, means for detachably connecting groups or series of documents with said conveyer, a delivery box, a pair of inclined rods leading from the table or platform to the delivery box, a swinging arm or rod arranged between said inclined rods, an operating cam, a lever operated by said cam, and a suitable connection between said lever and said swinging arm or rod.

27. In a machine of the character described, the combination of a table or platform, with a conveyer operating thereover, means for detachably connecting groups or series of documents with said conveyer, a delivery box, a hinged delivery table leading to said delivery box, a pair of inclined rods leading from the table or platform to the delivery box, a swinging arm or rod arranged between said rods beneath said hinged table, and means for intermittently raising said hinged table and for moving said swinging arm or rod.

WILLIAM R. WOODWARD.

Witnesses:
WM. E. KNIGHT,
P. FRANK SONNEK.