

W. E. CHOATE.
STENCIL CUTTING MACHINE.
APPLICATION FILED SEPT. 10, 1906.

983,537.

Patented Feb. 7, 1911.

3 SHEETS—SHEET 1.

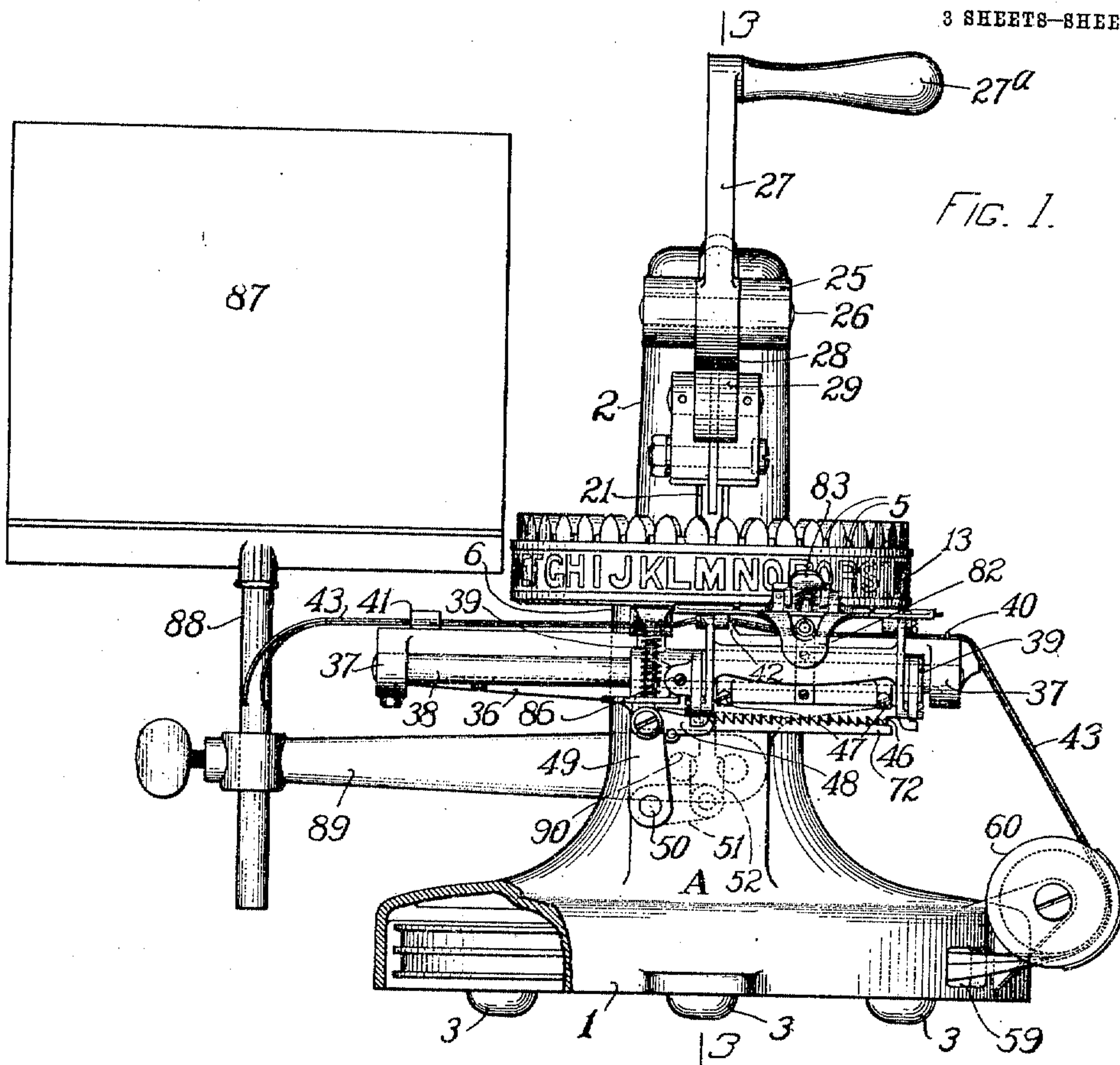
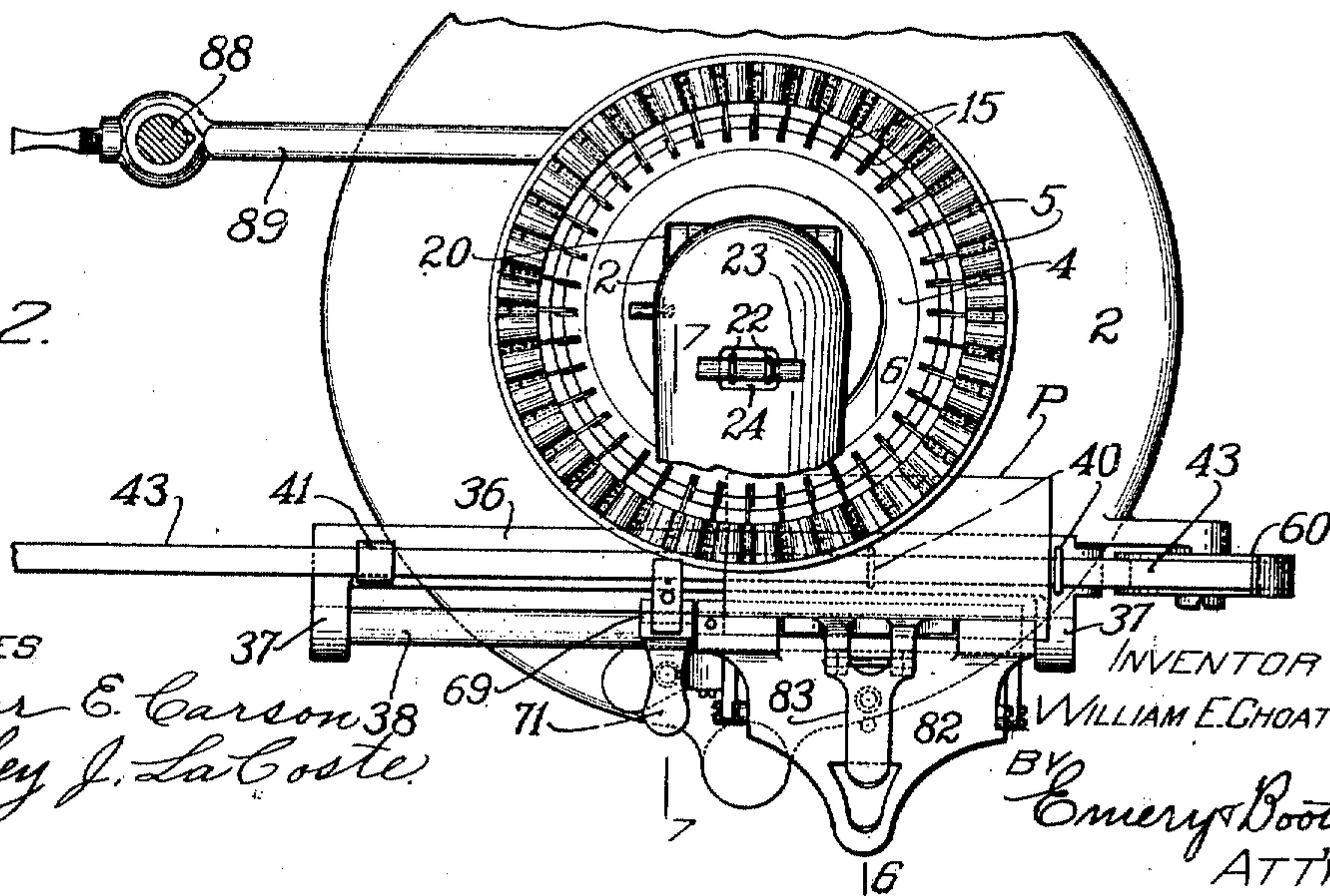


FIG. 2.



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3 SHEETS—SHEET 2.

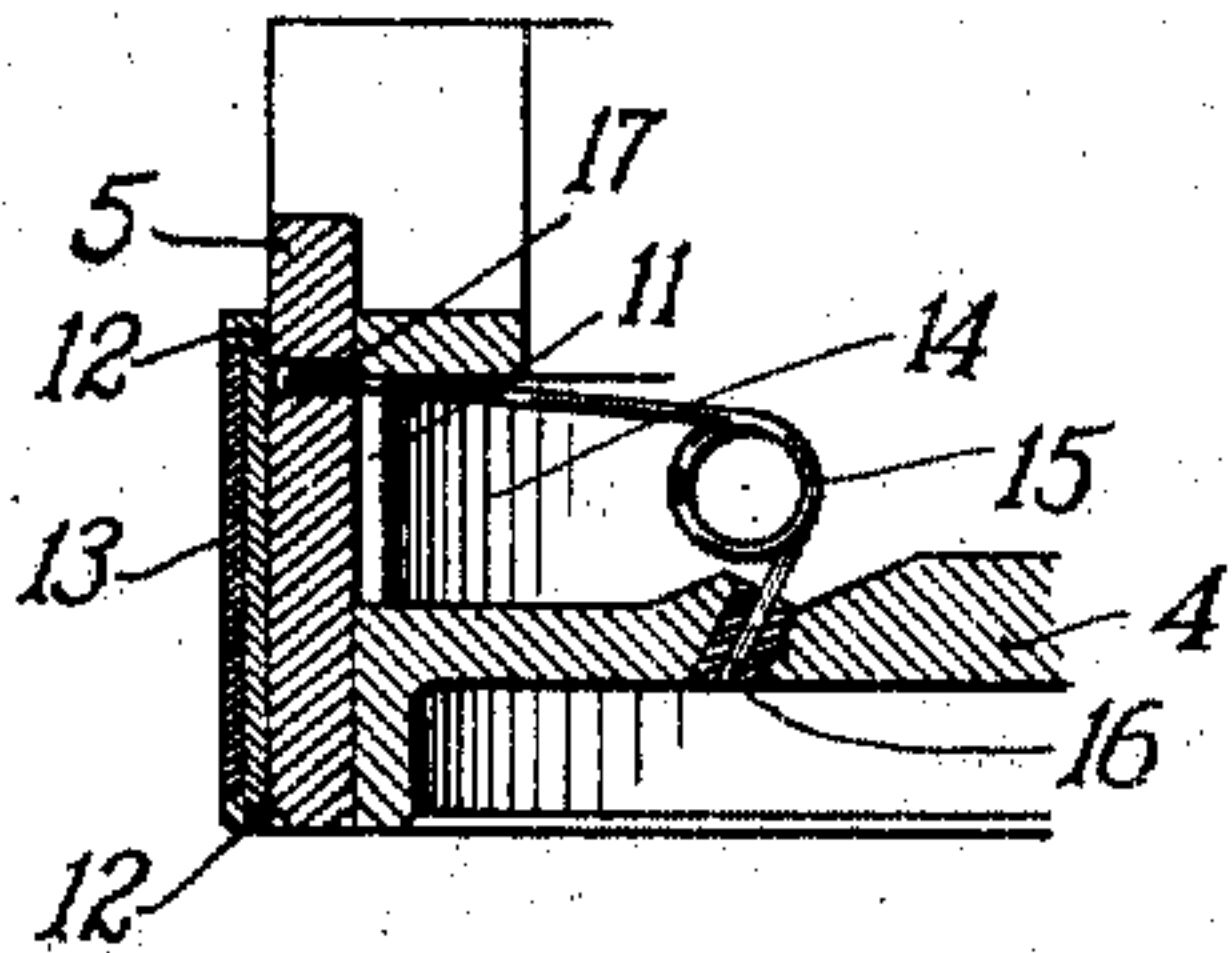
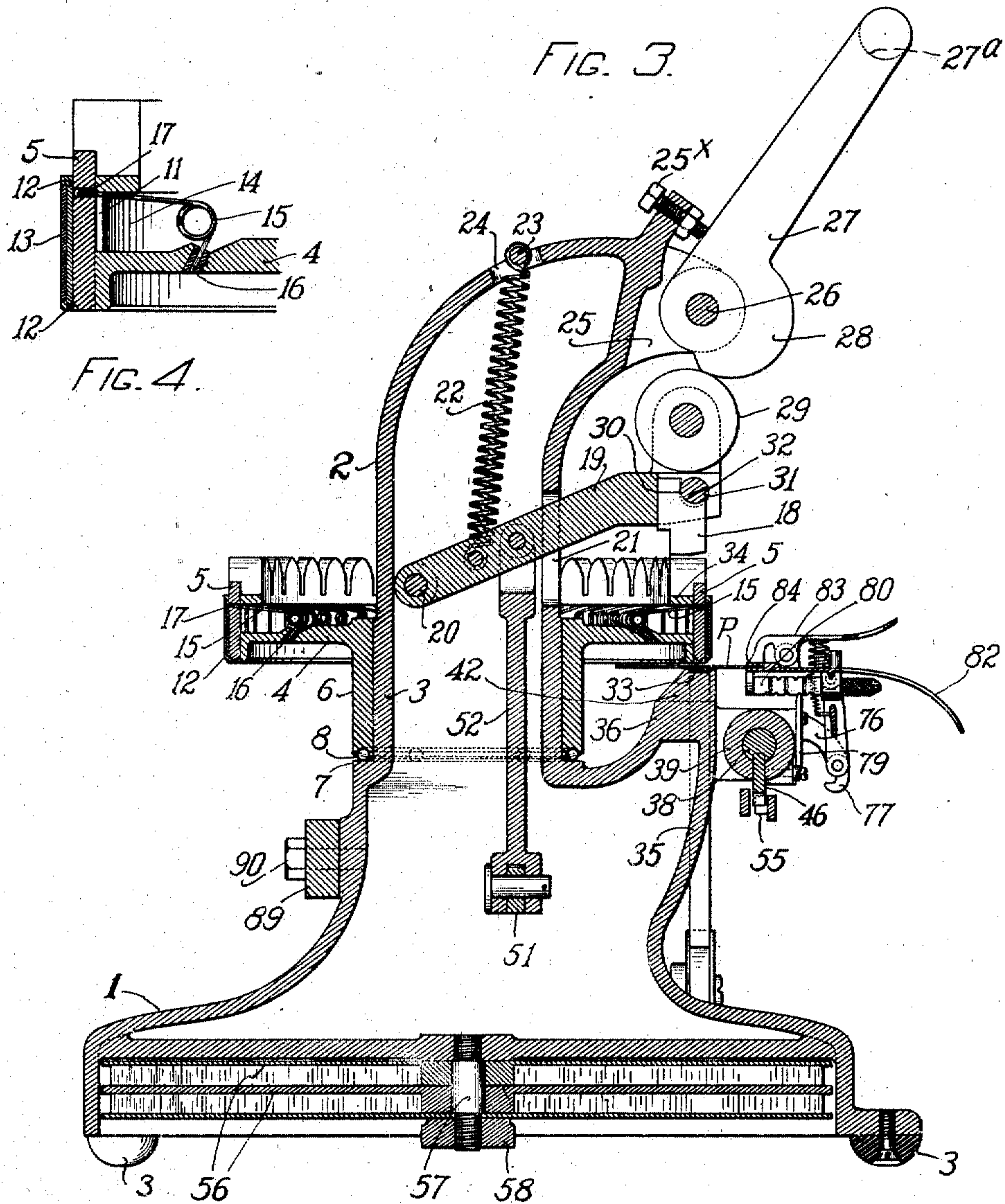


FIG. 4.

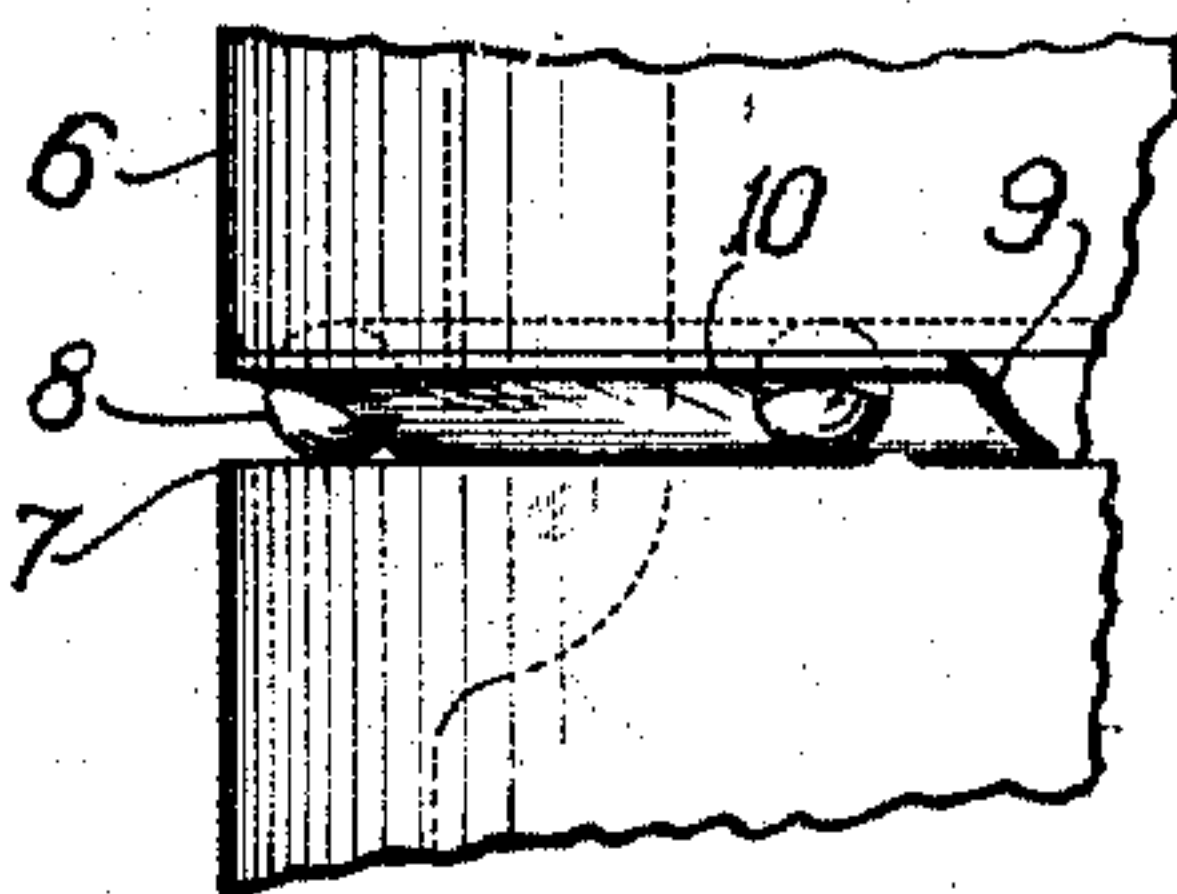


FIG. 5.

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3 SHEETS—SHEET 3.

FIG. 6.

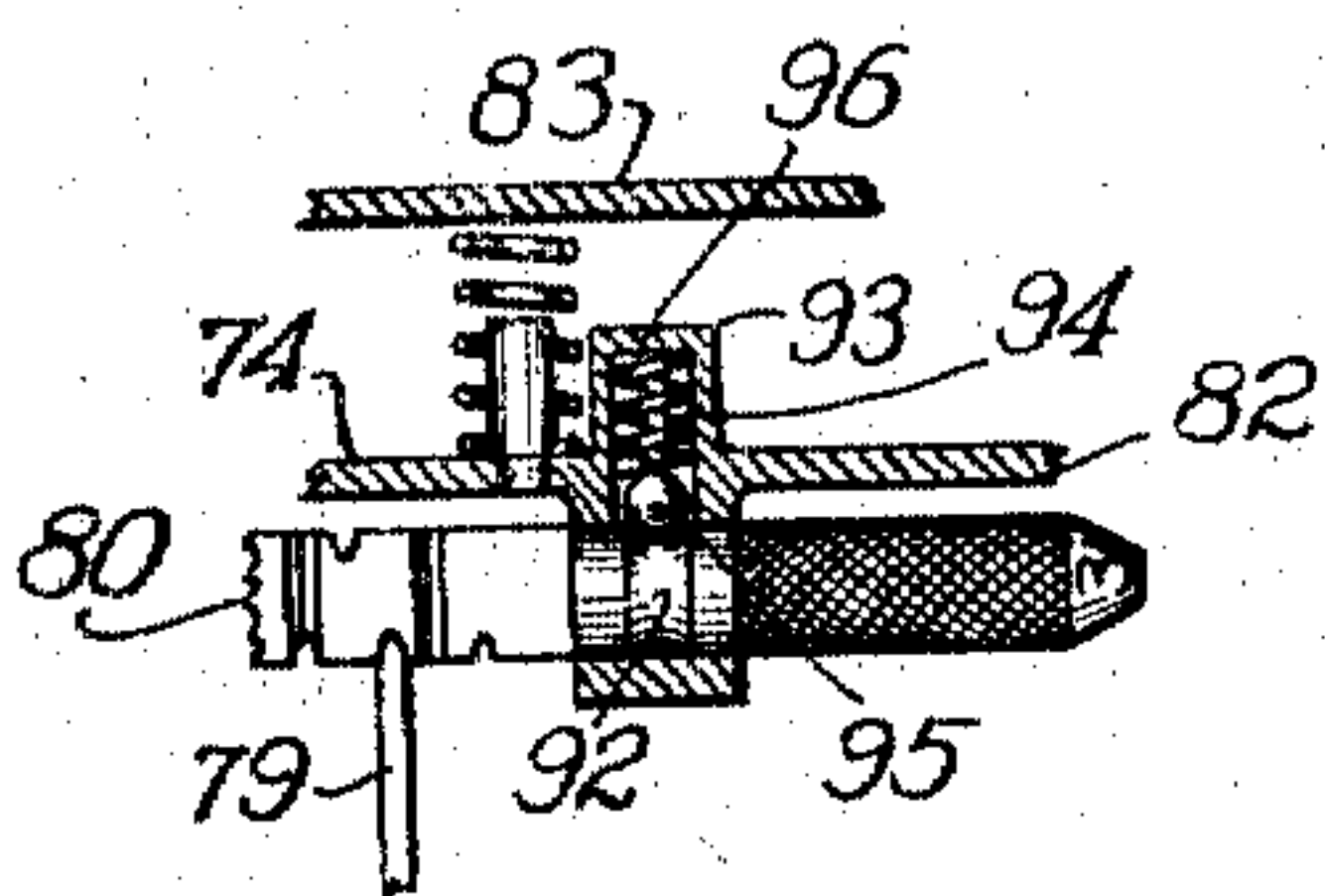
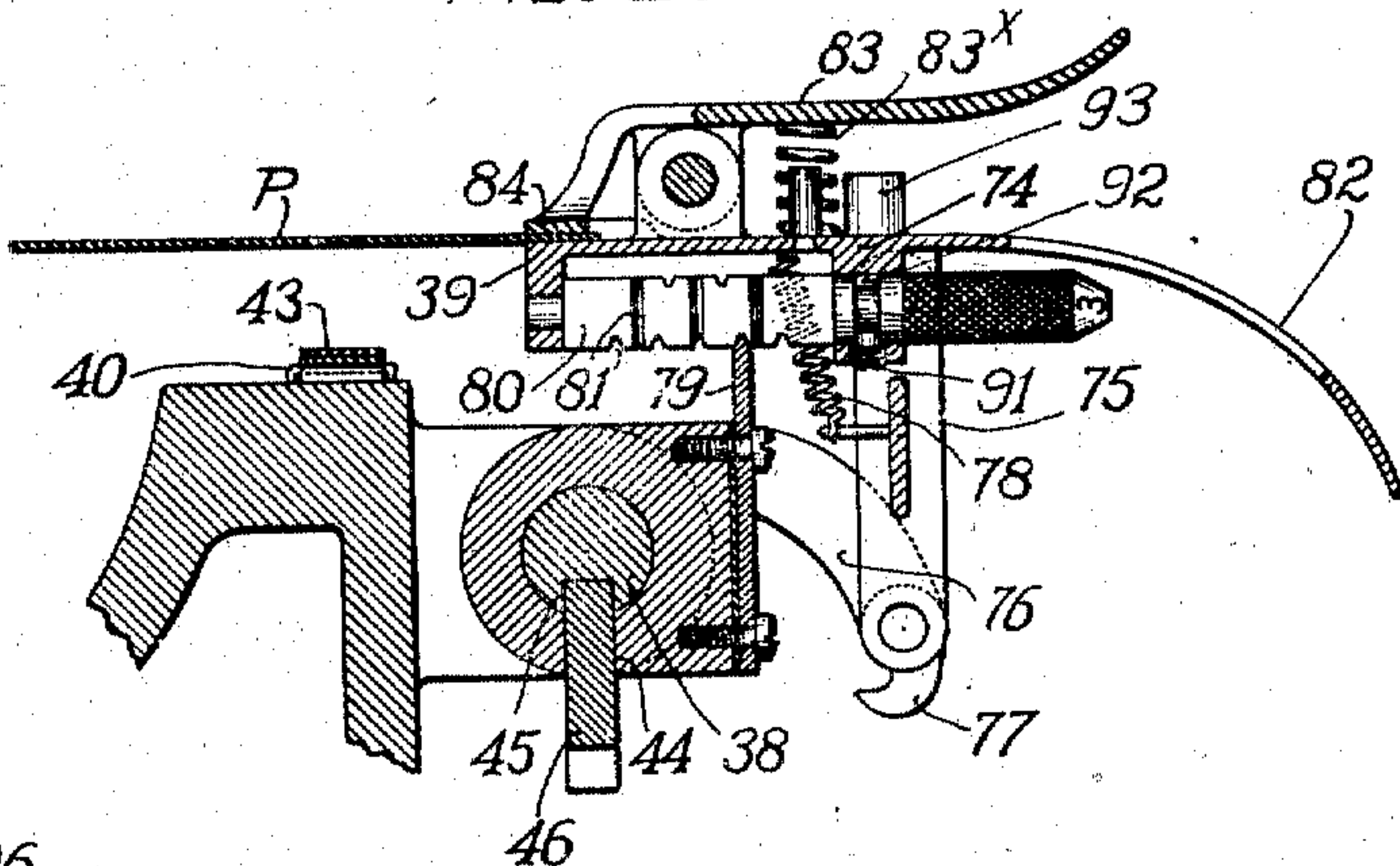


FIG. 9.

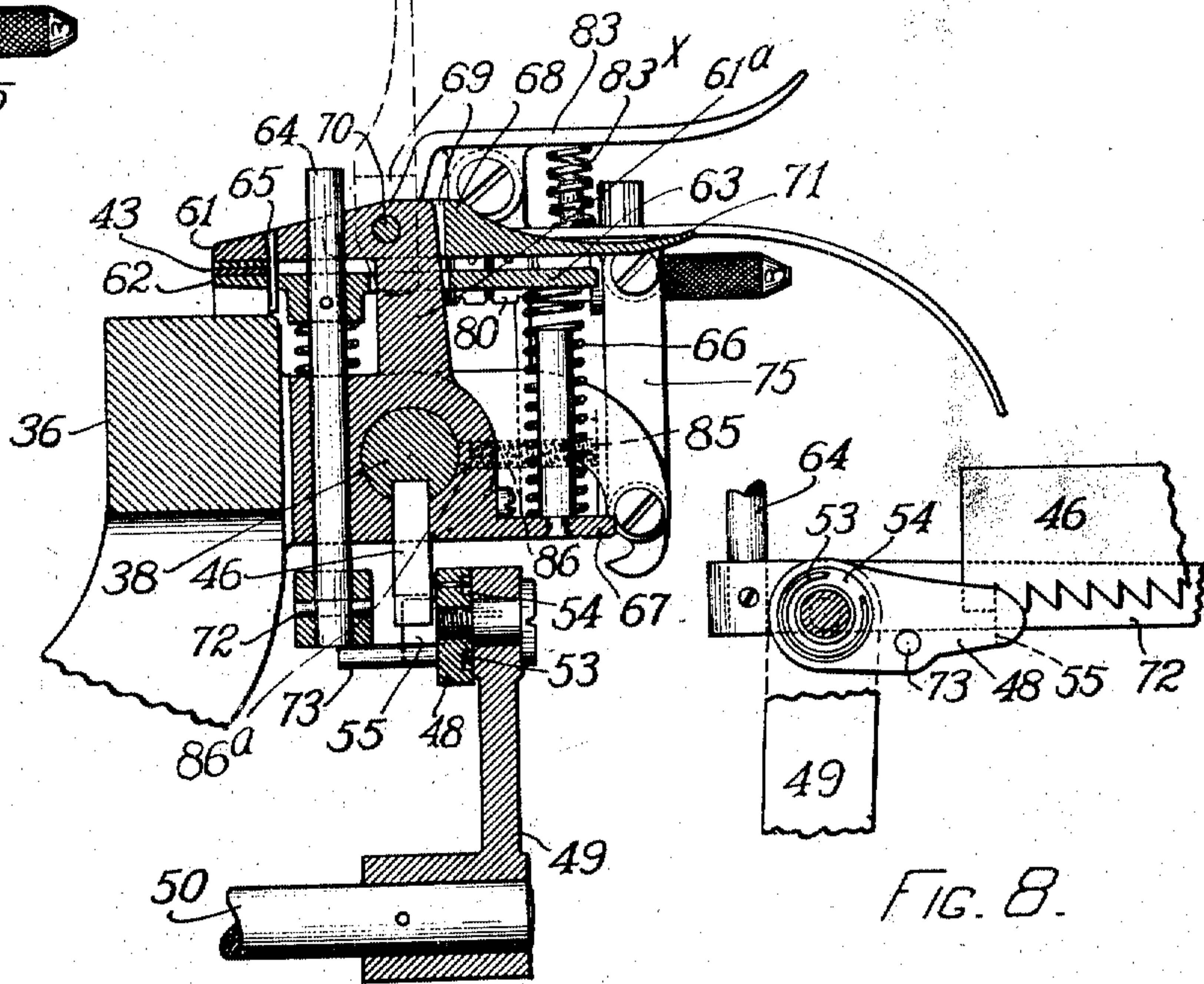


FIG. 8.

FIG. 7.

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STENCIL-CUTTING MACHINE.

983,537.

Specification of Letters Patent.

Patented Feb. 7, 1911.

Application filed September 10, 1906. Serial No. 333,892.

To all whom it may concern:

Be it known that I, WILLIAM E. CHOATE, a citizen of the United States, residing at Melrose, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Stencil-Cutting Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention relates to machines for forming letters or other characters upon blanks of suitable material; more particularly to stencil cutting machines, wherein a series of tools each adapted to punch or cut out a separate letter or character are mounted in a head or carrier moved to bring the tools into operative position as desired.

My invention aims to provide a compact machine or apparatus of novel and simple construction and operation, and which may be easily, rapidly and accurately operated by hand. The invention, however, will be best understood and appreciated by reference to the following description when taken in connection with the accompanying drawings of a machine illustrating one embodiment of my invention and selected for purpose of illustration, its scope being more particularly pointed out in the appended claims.

Referring to the drawings:—Figure 1 is a front elevation with parts broken out of a stencil cutting machine embodying one form of my invention and selected for illustration herein; Fig. 2, a plan thereof with parts broken away; Fig. 3, a vertical section taken on the line 3—3, Fig. 1; Fig. 4, an enlarged vertical sectional detail of the peripheral portion of the carrier to show the arrangement of the die punches therein; Fig. 5, a detail to show the ball bearings for the punch carrier and the novel ball retaining plate therefor; Figs. 6 and 7 are enlarged vertical sectional details taken on the line 6—6 and 7—7, Fig. 2, respectively; Fig. 8, an enlarged detail of the carriage rack and its actuating pawl to be referred to; and Fig. 9, a modified construction of the means for mounting the line spacing pin.

In the present embodiment of my invention, referring first to Fig. 1, the machine is provided with a suitable hollow stand A, upon which the operating parts are suitably supported, and comprising in the present in-

stance, a circular base, 1 (Fig. 1) and a vertical upright head or column, 2, said base having depending rubber feet, 3, (Fig. 1), upon which the stand rests. This column forms the support for a movable carrier, 4, in which the character forming tools, 5, are mounted, said tools in the present instance, being shown as stencil punches, though obviously any other type of tool may be employed. The carrier is movably mounted on said column, 2, so that each tool or stencil punch, 5, may be brought into a desired operative position. As here shown (Fig. 3), said carrier, 4, is formed as a rotary disk or wheel, the hub, 6, of which surrounds and is suitably journaled on said column 2, the latter, in the present instance, being provided with a shoulder, 7, on which the lower end of said hub rests and is vertically supported, suitable ball bearings being interposed to facilitate rotating said carrier, 4, thereon. In the present instance, (see Figs. 3 and 5) the balls of said bearings are retained in place by a novel retaining device comprising a frusto conical ring, 9, ogee in section (Fig. 5) provided with a series of circular openings or apertures, 10, for said balls, and by which they are suitably spaced apart and retained in place while permitting them to roll freely between said hub and its supporting shoulder, 7.

Any suitable means may be provided for holding the punches, 5, in position, but in the present embodiment of my invention (see Figs. 3 and 4) the rim of said wheel or disk preferably has a series of vertical recesses, 11, constituting guides for said stencil punches, 5, and permitting them to be reciprocated vertically therein. This punch wheel carrier is substantially similar in construction to what is known to the trade as a hunting-tooth wheel, the punch recesses being formed at the periphery of said wheel between the upwardly projecting tapered hunting teeth thereof, said punches, 5, being retained therein by an exterior circumferential flat ring or band, 12, suitably secured to the rim of said wheel 5, by any suitable means, as, in the present instance, by shrinking. In order to indicate to the operative the particular punch mounted in the space between two adjacent teeth of said wheel, said band, 12, is provided at its outer face with the usual characters employed in

printing or correspondence, each of said characters being placed or centered opposite the corresponding punch, or, to express it differently, the punches being removably carried in their carrier are placed opposite to the corresponding characters on said band. Preferably, however, said band is provided with a peripheral recess removably to receive a ribbon, 13, of any suitable material as metal, celluloid or the like, on which said characters are formed or secured. This arrangement permits the employment of ribbons having a different arrangement of characters or different characters avoiding the expense of stamping or otherwise marking the band, 12, when changing the characters or providing a plurality of bands or carriers. That the punches may be normally maintained in elevated position, said wheel is provided beneath its teeth with an inner peripheral groove, 14 (Fig. 4), communicating with the recesses in which the punches are mounted and receiving a series of torsionally acting lifting springs, 15. Each of these springs has its inner end, 16, seated at a desired angle in said wheel, and its outer end, 17, apertured into one of the punches, 5. These springs normally act to elevate their punches until said ends, 17, engage the upper face of said groove when further vertical movement is prevented. To depress each tool or die, 5, when the carrier, 4, is rotated to bring said punch singly into its forward or operative position (see Figs. 1 and 3), a suitable actuator or presser, 18, is preferably provided, the lower end of which is adapted to enter the space between adjacent hunting teeth of said carrier and bear upon and depress the punch mounted between them to cause it to operate upon a blank or sheet of stencil material positioned beneath it by suitable blank holding and feeding mechanism, presently to be described. This presser, 18, in the present instance, is clamped between the forked ends of an actuator lever, 19, (Fig. 3), pivoted interiorly at its inner end upon a pivot pin, 20, extending between and secured to the sides of said column, 2, said column being provided at its front with a suitable vertical slot, 21, to permit the oscillations of said actuator lever, 19. This lever is normally held elevated by a coil spring, 22, connecting it with a pin, 23, on the head of said column, which is provided with a slot, 24, for the upper end of said spring and to facilitate its removal when desired. To produce suitable depression of the punch by means of the actuator, 18, and said lever, 19, the head of the column, 2, extends forwardly and is provided with overhanging vertical ears, 25, between which is pivoted upon a horizontal pivot pin, 26, a cam lever, 27, the lower end of which, beneath said pivot pin, 26, is provided with a cam, 28, which rests upon a roller or other stud, 29, suitably journaled between upwardly projecting ears formed upon the front forked end of said lever, 19. In the elevated position of said cam lever, 27 (see Fig. 3), the low part of the cam, 28, engages said roller, 29, maintaining the actuator lever and said roller in elevated position by the action of said springs, 22, with the actuator, 18, above the upwardly projecting teeth of said carrier, 4, preventing interference therewith, so that the latter can be rotated to the right or left (Fig. 1) to bring any desired letter of the ribbon and the corresponding punch into position beneath said actuator. In depressing said lever, 27, however, the cam causes a depression of said cam roller, 29, and the actuator lever 19, which carries it, depressing said actuator, 18, between the upwardly projecting and adjacent tapering hunting teeth of the carrier and by its further movement depressing and operating the punch to cut the character corresponding to the letter in front of it. In case the carrier has not been turned sufficiently to place the desired punch directly beneath the actuator, the latter upon being depressed will engage one or the other of the tapered hunting teeth between which the punch is mounted and by its action on the inclined face of said tooth rotate the carrier to exactly center the punch below the actuator, which also brings said punch into proper position relative to the blank and the letters previously cut therein. To cooperate with the punches in cutting the stencils, I have, in the present instance, provided a yielding bed, 43, preferably composed of a plurality of strips of thick paper superposed one on the other and more fully described later.

Any suitable means may be employed for operating the cam lever, 27, but as here shown (Fig. 3) its outer end is preferably provided with a suitable handle, 27a, to facilitate operating it. Immediately in the rear of the inner end of said lever and immediately above its cam, the forked head of the column has an upwardly extending lug in which is suitably mounted a stop screw, 25', to limit the upward movement of said lever. In normal adjustment, the tension of the lifting or elevating spring, 22, is such as to cause the roller, 29, to bear upon the cam, 28, with sufficient force to swing the lever, 27, into the normal elevated position shown in Figs. 1 and 3.

As the sheets or blanks of material employed and from which stencils are formed, are of different thicknesses and as they also vary somewhat in uniformity, and as the cutting bed presently described occupies a fixed vertical position beneath the punches, means are advantageously provided to adjust the presser, 18, vertically, so that when operated it may cause the desired depression

of the punches to cause them to cut through the stencil plate into and against said cutting bed and also to limit the motion of the presser to prevent a greater movement than is sufficient for cutting or punching the characters. To this end (see Fig. 3) said presser, 18, is removably and adjustably secured to said actuator lever, 19, the latter having a forked head between the arms of which the upper end of said presser is received and clamped in position, and is provided with a cut-away circular portion, 30. A horizontal clamping bolt, 31 (see Figs. 1 and 3) extending between and clamping the forked ends of said lever, 19, together has an intermediate eccentric portion, 32, against which said cut-away portion is placed. To adjust said presser, 18, vertically, the clamping bolt, 31, is turned so as to cause the eccentric portion, 32, to rise or fall somewhat and the portion, 30, being held against it permits such vertical adjustment of said presser as may be desired, when the bolt, 31, may be again clamped in adjusted position.

To prevent the face of the punch being depressed into contact with the metal of the central bed strip guide or anvil, 33 (Fig. 3), to be described, the vertical depression of the presser, 18, is limited by the throw of the cam, 28, thereby also preventing it from striking the inwardly extending flange or rim, 34, of said wheel or carrier, 4. This arrangement permits any desired adjustment of the punch within fixed upper and lower limits, and prevents any injury to the cutting face of the punch itself. The depression of each punch brings its cutting face into contact with the sheet of stencil material placed beneath it through which it cuts the particular character represented by the corresponding character on the rim of said carrier, 4.

In order to hold the blank of stencil material in suitable position and to feed or space it accurately in cutting out the characters suitable holding and feeding means are provided. To this end, the front of said column, 2, is provided, in the present instance, with a forwardly extending lug, 35 (Fig. 3), upon which is formed a horizontal support, 36 (Figs. 1 and 2), extending across the front of the machine and forming a yoke, its forwardly extending arms, 37, supporting a guide rod, 38 (Fig. 2), for a stencil plate holding and feeding carriage, 39 (Figs. 2 and 6), which is slidable thereon from left to right and vice versa. The upper face of this support, 36, is provided with right and left guides, 40, 41, respectively, and with an intermediate upwardly projecting lug, 42, recessed at its upper face to constitute the guide and anvil, 33, referred to, for the movable bed strips, 43, and against which said punches cut. The

body of the carriage, 39, referred to, is tubular in form constituting a sleeve slidably mounted on said guide rod, 38, and that said carriage may be prevented from turning on said guide rod, it is provided at its under side with a longitudinal vertical recess, 44, and (see Figs. 6 and 7), the under side of said guide rod, 38, with a cooperating or aligned groove, 45, to receive a vertical rack, 46 (Figs. 1, 6 and 7), removably secured to the carriage by any suitable means, as by clamping or retaining screws, 47 (see Fig. 1).

The teeth at the under side of the rack are actuated by a spring pressed pawl, 48, pivoted at the upper end of a vertical arm, 49 (Figs. 1 and 7), of a horizontal rock shaft, 50, journaled intermediate its ends in said column, 2, the rocking or oscillations of said shaft causing the spring pressed pawl, 48, to engage the teeth of said rack and automatically slide the same and consequently said carriage, 39, to the left (Fig. 1) step by step as each punch is returned to its normal elevated position. To oscillate this rock shaft arm, 50, any suitable means may be employed, but in the present embodiment of my invention, its inner end is preferably provided interiorly of the column, 2, with a horizontal arm, 51 (Figs. 1 and 3), connected at its outer end by a link, 52, to said actuator lever, 19, so that upon depression of the latter, through the operation of said cam lever, 27, said link, 52, is also depressed. This movement of the link depresses said horizontal arm, 51 (Fig. 1) rocking said shaft, 50, and swinging its exterior vertical arm to the right, carrying the pawl with it and causing it to slide freely over a tooth of said rack. The reverse movement of said link and shaft, 50, caused by the contraction of said spring, 22, when the handle is elevated or released, swings said arm, 49, and its pawl in the opposite direction, causing the latter to engage the rack tooth, referred to, and slide the latter to the left, so that the carriage will be moved one step also to the left, thereby to space the blank or sheet of stencil material to a position to be operated upon by the next punch. In the present instance, the spring, 53 (Figs. 7 and 8), which normally retains the said pawl, 48, in engagement with said rack, is inserted in a circular groove, 54, formed in the front face of said pawl and concentric with the pivot pin on which the latter is mounted, its ends being turned in opposite directions, one of which is seated in an aperture formed in the pawl, and the other in an aperture in the rear face of the arm, 49, said spring normally acting to elevate the outer or right end of said pawl into engagement with the teeth of said rack. As here shown, said pawl slides upon the front face of said rack and that it may positively actuate the same, it is provided with a rearwardly extending or off

set horizontal tooth, 55, adapted to enter the space between the teeth of said rack, so that the latter is actuated positively by a force exerted in the line of its travel and normal to the face of the rack teeth, thus preventing slip and avoiding the binding usually produced by a force exerted in any other direction and interfering with the free sliding movement of the carriage along its guide rod, 38.

As has previously been stated, the punches cut against a suitable bed, 43, of yielding or fibrous material preferably comprising two superposed strips of thick paper adapted to travel to the left (Fig. 1) upon the upper face of said horizontal support, 36, the guides, 40 and 41, directing said movement thereon. These strips receive the portions of material or scrap cut out from the stencil sheet by the action of said punch and remove the same. These strips are supplied in rolls carried by suitable horizontal reels, 56, rotatably mounted within a circular recess in the bottom of said base, 1, upon a vertical pivot shaft, 57 (Fig. 3), which is secured to said base, 1, and provided with a retaining nut, 58, to hold the reels in place while permitting them to rotate freely. The free ends of these strips are carried out through a slot, 59 (Fig. 1), at the right side of said base, superposed one upon the other, and carried over an idler, 60, to the right end of said support, 36, and thence through said guides, 40, 33, 41 respectively, the latter guide, 41, being cut away at its front to form an overhanging end to facilitate inserting the superposed strips beneath it. That these superposed bed strips may be moved by and with said carriage to present fresh or uncut portions to the cutting action of the punch, the carriage, 39, is respectively provided at its left end (Figs. 3 and 7) with upper and lower clamping jaws, 61, 62, between which the ends of said strips are inserted and by which they are clamped to the carriage. The upper jaw, 61, as here shown, extends rearwardly from an upright arm or lug, 61^a, at the right end of said carriage, 39. The lower jaw, 62, is formed upon a plate, 63, having a central aperture or slot by which it is slidably mounted on said arm, 61^a. This plate is provided immediately in front of said arm, 61^a, with a movable vertical rod, 64, its lower end extending through and guided in a vertical channel formed in said carriage, 39, a coil spring surrounding said rod and interposed between said carriage and said plate, 63, normally acting to elevate the rod, said plate and its jaw to bring it into clamping contact with the upper jaw, 61. For the proper positioning of the strips between said jaws and to prevent lateral movement of said plate, 63, and its jaw, 62, the jaw, 61, is provided with a depending stop pin, 65, extending through a circular aperture formed

in said plate, 63, immediately in the rear of its jaw, 62, and constituting a guide for said pin to cooperate in guiding said plate, 63, in its vertical movements.

To maintain the rear end of this plate, 63, in horizontal position when elevated to clamp the bed strips between said jaws or when depressed to release the same, a coil spring, 66 (Fig. 7), is interposed between the rear end of said carriage, 39. To depress said jaw plate, 63, against the action of its springs, the arm, 62, is provided at its upper end with a cam lever, 68, while its front end is provided with forks, 69, embracing said upper end, which are pivotally connected therewith by means of a horizontal pivot pin, 70. The inner and lower ends of these forks are provided with rounded corners or cam faces to bear upon said plate, 63, and the lever has a rearwardly extending arm, 71, constituting a finger and thumb piece by which the lever may be turned to a vertical position to cause its forked end to bear upon and depress said jaw plate thereby to release the bed strips, or which may be depressed or turned down to permit said jaw to be elevated by its spring for clamping the same. By this arrangement the bed strips are firmly grasped by said jaws and are forced to move with the carriage as the latter is moved step by step through the operation of its pawl and rack described. With said arm, 71, elevated and the strips unclamped the carriage may be freely moved by the hand which operates said arm and brought into any desired relation to the punches. That the carriage may be prevented from moving automatically when the strips are not clamped by said jaws, the depending pin, 64, is provided at its lower end with an inwardly extending horizontal arm, 72, (Figs. 7 and 8), which rests upon a rearwardly extending pin, 73, secured to said pawl, and operating to swing the pawl downwardly to disengage its tooth from said rack when the finger piece, 71, is thrown up to release said bed strips. When in this position the actuation of the cam lever, 27, with the consequent rocking of the pawl arm, 49, will have no effect upon said rack, 46, and consequently not upon the carriage, 39, so that the latter remains stationary and is not fed by the depression of said lever, 27. The connections between the cam lever, 27, said actuator lever, 19, and said pawl, 48, are such that the latter will feed said carriage when the operating lever, 27, is depressed about half way and again elevated and before the punch is depressed sufficiently to bear upon or cut the blank, so that the stencil plate carriage may be stepped along or spaced similar to the manner employed in typewriters or instruments of similar character.

Referring now more particularly to Figs. 130

3 and 6, the carriage, 39, is provided with suitable means for holding the stencil plate in position to be operated upon and while the carriage is fed or reciprocated on said guide rod 38. In the present instance, said means comprise a normally horizontal plate holder, 74, pivotally connected at its front end with a normally vertical swinging frame, 75, in turn pivotally connected at its lower end between forwardly and downwardly curved arms, 76, of said carriage, 39, and provided with laterally extending stop arms, 77 (Fig. 6). Said arms, 76, are adapted to engage the rear and lower edges of said arms, 77, and limit the outward movement thereof, thus preventing said frame, 75, and the holder, 74, from swinging outward or forward more than sufficient to facilitate inserting the stencil plate in position. For normally depressing the rear or blank receiving portion of said holder, 74, a coil spring, 78, is connected with said plate in the rear of its pivotal pins and with said frame, 75, thereby causing the blank to overlie and rest upon the bed strips. To prevent depressing the holder below a horizontal or operating position, the carriage, 39, is provided with a vertical supporting bar or plate, 79 (Fig. 6), removably and adjustably secured thereon, so that it may be moved in or out and the bottom of said holder, 74, intermediate its ends, has a horizontal notched line spacer here shown as a pin, 80, suitably journaled in depending ears or lugs on said holder, 74. In the present instance, this pin is provided with a plurality of flat faces, having notches, 81, formed therein and adapted to be singly engaged by the upper edge of said vertical bar, 79, for positioning the holder inwardly or outwardly as desired. While any suitable number of notched faces may be provided, in the present instance but four are employed, which are respectively provided with two, three, four and five notches, each of said faces being adapted to be brought into the lower position by turning said pin, so that its notches may be engaged by said supporting plate, 79. To prevent this pin from sliding in its bearings, the outer pin bearing, in the present instance, is provided with a vertical stop here shown as a screw, 91, the inner end of which is received in a circumferential groove, 92, of said pin. This construction permits the pin to be turned or rotated freely in its bearings for adjusting it, but prevents any longitudinal movement, so that as the holder and the blank held thereby are moved to bring the next notch of the pin upon the supporting bar, 79, there will be no variation in the interval or space between the lines and corresponding to the space between the notches of the pin.

65 In the modified construction shown by

Fig. 9, the lug, 93, which may act as a stop to limit the depression of the thumb piece for operating the clamping lever, is provided at its under side with a vertical socket, 94, communicating with the groove, 92, of said pin, 80. Its open end has a spring pressed ball, 95, of the same diameter as the socket and which prevents lateral movement thereof, the lower portion of said ball entering said groove, 92, and maintained in frictional contact therewith by a coil spring, 96, seated in said socket, 94, and acting to depress the ball. In turning the pin to bring a desired notched face to line spacing position, the ball rotates freely in its socket but prevents the pin from moving either inwardly or outwardly, thereby maintaining the holder in the proper line position, as described. The holder is moved to cause each of said notches in succession to rest upon said support, by tilting the carriage by means of the rearwardly extending finger piece, 82, and sliding the pin over said plate support until the next notch is brought into engagement with its edge. By this arrangement, any desired number of lines, from one to five, may be cut upon the stencil sheet or blank, preserving the required or desired space between the characters cut in said lines and arranging the lines symmetrically upon the blank.

That a stencil blank may be suitably clamped upon the holder, the latter, in the present instance, is provided with a spring pressed lever, 83, best shown in Figs. 3 and 6, the rear end of which has a horizontal clamping plate or jaw, 84, to engage the upper rear face of said holder or to clamp the rear edge of the stencil blank between them. The opposite end of this lever has a forwardly projecting thumb piece to facilitate elevating the said clamping jaw, 84, to permit inserting or removing the stencil blank. That the stencil blank may be suitably positioned in said holder between said jaw and the face of the plate beneath it, the latter is provided at its right and left ends with suitable horizontal slits or recesses to receive the front edge of said plate and which are of uniform depth, so that the edges of the stencil plate may be maintained parallel with the line of travel of said carriage or with the line of characters cut therein by the punches.

To prevent loose motion of the carriage, 39, on its guide rod, 38, the left end of said carriage sleeve (see Figs. 1 and 7) is provided with a horizontal screw, 85, tapped into a horizontal recess in the sleeve portion of said carriage. The bottom of this recess receives a friction disk, 86^a, bearing upon said guide rod, 38, and preferably of brass, between which and said adjusting screw a coil spring, 86, is interposed, the tension of which may be adjusted by turn-

ing said screw, thereby to vary the pressure of the disk against the guide rod and obviously preventing loose motion. By providing a friction bearing of this type the necessity and use of oil is avoided.

As herein shown, my machine is also provided with a copy holder, 87, having a vertical arm, 88, which is slidably and removably secured in a horizontal arm, 89, in turn removably secured at the back of the column, 2, by suitable clamping bolts, 90. This holder provides a very convenient support for the copy and to present it in any desired position relative to the operator.

In operation, the stencil plate holder is grasped by its finger and thumb piece and depressed sufficiently to disengage the support, 79, when it may be drawn to an outer position to facilitate inserting the front edge of the stencil blank in the slits of said holder and beneath the jaw, 84. This is effected by raising the jaw, 84, by depressing the thumb piece, inserting the blank and then releasing said thumb piece, the spring 83^x then operating to close the jaw down to clamp and retain said stencil blank (shown at P. Fig. 6) in fixed position. The space regulating pin, 80, is then turned to bring the desired notched face into operative relation to said bar, 79, according to the number of lines to be cut upon the stencil blank. The carriage is next again tilted and swung inwardly to bring the first notch of the space regulating pin, 80, upon its support, 79, when the arm, 71 of said lever, 68, is elevated to release the bed strips, 43, and to permit sliding the carriage conveniently by one hand to bring the blank into desired position relative to the punch presser, 18. The carrier, 4, is next rotated to bring the desired character shown upon the ribbon directly beneath the presser, 18, or to bring the space between the adjacent teeth directly beneath the same, when the handle of the operating lever, 27, is depressed to force the punch down through the stencil blank into and against the flexible bed strips beneath it, by which movement the desired character is cut in the stencil blank. Simultaneously with this movement the link, 52, is depressed to rock said shaft, 50, and cause its outer or front arm, 49, to swing to the right (Fig. 1) to bring its pawl into engagement with the next tooth of the rack into a position to produce the desired feeding movement upon reverse movement of the pawl. The subsequent elevation of the handle produced either by the spring, 72, or more conveniently perhaps by elevating the same directly by hand, permits elevation of the punch out of contact with the bed and stencil blank, immediately following which the rock shaft, 50, its outer arm, 49, and said pawl oscillate or move to the left (Fig. 1) thus sliding the carriage and blank holder

one space in position to present the blank to receive the next letter of a word to be cut therein and leaving the handle in upper elevated position. The mechanism is timed to produce the feeding movement of the carriage as soon as the punch is elevated out of contact with the blank. Simultaneously with this spacing movement of the carriage, the bed strips, through the clamping action of the jaws, 61 and 62, are caused to move therewith so as to present a fresh or uncut portion of said strips to the cutting action of the next punch, said movement also removing the punched out material from under the punch. The punch carrier, 4, is then again turned to bring the next letter of the word to be cut beneath the actuator when the operation is repeated. When, however, the end of the word is reached or it is desired to produce more than a single space between the words to be cut, the operating lever is depressed half way and again elevated, said partial depression and subsequent elevation moving the carriage and stencil holder one space to the left. When one line has been cut the holder is tipped upwardly and slid over the support, 79, to bring the next line spacing notch in position to rest upon it and the holder is released and maintained in desired position through the operation of its spring, 78, as described.

While in the embodiment of my invention herein selected for illustration, I have described a machine provided with a rotary carrier, my invention obviously is not limited thereto as any movable carrier may be employed, such for example, as a reciprocating or oscillating carrier moved back and forth upon the stand so as to bring a desired letter or character forming tool into position beneath the actuator. My invention furthermore is not limited to the letters or characters used in correspondence as any other characters may be formed upon the punches or suitably impressed, embossed or printed upon the band of the carrier. Furthermore, the tools, 5, which have been described as provided at their lower ends with cutting faces to cut out stencils, may be provided with suitable embossing or printing faces to emboss or print characters upon a plate, card or strip rather than to cut or punch out the characters therefrom.

I desire it to be understood that my invention is not limited to the specific details of construction nor to the arrangement of parts herein shown for illustrative purposes only, as the same may be modified and varied without departing from the spirit and scope of my invention.

Claims.

1. A machine of the type described comprising in combination a one piece frame or stand having a central vertical tubular column having a shoulder formed exteriorly

thereon, a movable carrier journaled on said column and supported by said shoulder, a series of character forming tools mounted to slide vertically on said carrier, a single actuating device arranged to operate said tools singly, a hand operated lever to operate said device, means to present a blank to the action of said tools, means operating automatically to return said device and tool to normal position, and means operated thereby and mounted within said column to move said blank presenting means for spacing.

2. A machine of the type described comprising in combination a support, a carrier movably mounted thereon having a series of character forming tools and adapted to be moved by hand to bring each tool in operative position, one or more bed strips movably mounted on said support, a carriage for positioning a blank between said tool and said strip or strips, means for operating the tool presented by said carrier and for thereafter moving said strip or strips and said carriage, and a device for controlling the movement of said strip or strips by the movement of said carriage.

3. A machine of the type described, comprising in combination a one piece stand having a tubular vertical column provided with an exteriorly shouldered portion, a tool carrier journaled thereon and supported by said shouldered portion, and provided with a series of tapering teeth and vertical recesses aligned with the spaces between said teeth, character forming tools movably mounted in said recesses, the support for said carrier permitting it to be moved by hand to present the tools singly in operative position, a carriage having blank holding means to support a blank in operative relation to said tool, and tool-recess engaging means, operative by one hand, for determiningly positioning said carrier, operating the presented tool mounted in said recess, and provided with connected mechanism operated thereby for moving said carriage and its blank holding means for spacing purposes.

4. A machine of the type described, comprising in combination a movable carrier provided with a series of vertically movable stencil punches, a tubular column support on which said carrier is mounted to permit it to be moved for presenting the punches singly in operative position, a presser arranged to operate the punch presented by the movement of said carrier, a blank holder, spacing means therefor, hand operated means comprising a pivoted lever having a cam surface to depress said presser and actuate said punch, and means mounted or housed within said column for returning said presser to normal position and to actuate said spacing means.

5. A machine of the type described, com-

prising in combination, a movable carrier provided with movable stencil punches and supporting means to permit it to be moved to present a desired punch in cutting position, a movable bed of fibrous material for the punches to cut against, and a bed holding carriage having means for positioning a stencil blank between said punches and bed, hand operated means for operating said punch in said position, and means actuated by said operating means to move said carriage for spacing purposes and thereby cause simultaneous feeding movement of said bed.

6. A machine of the type described comprising in combination, a rotary carrier provided with a series of stencil punches and supporting means to permit it to be turned to bring the punches singly in cutting position, one or more bed strips of fibrous material for the punches to cut against, a support therefor, a blank holding carriage for positioning a blank of stencil material in cutting position, hand operated means for operating the tools when moved to cutting position, means operating automatically for moving said carriage for spacing the blank, and means mounted upon said carriage for causing said strip or strips to move with said carriage.

7. In a machine of the type described, a rotary wheel or disk provided with a series of vertical peripheral recesses, each adapted to receive a character forming tool, a band secured to the rim of said wheel for retaining the tools in place, and a ribbon secured to the periphery of said band and provided with a series of characters or letters corresponding to the characters to be formed by said tools.

8. In a machine of the type described, a rotary wheel or disk provided with a series of vertical peripheral recesses, each adapted to receive a character forming tool, a band secured to the rim of said wheel for retaining the tools in place, and provided with removable character indicating means corresponding to the characters to be formed by said tools.

9. In a machine of the type described, the combination of a tubular column stand presenting a cylindrical head, a wheel or disk shaped tool carrier having its hub journaled exteriorly on said cylindrical head and provided with a series of vertical peripheral recesses, a series of stencil punches circumferentially arranged and slidably mounted in said vertical recesses, resilient means normally to hold said punches elevated, and hand operated means to enter said recesses when singly presented thereto for positioning and depressing the punch therein.

10. In a machine of the type described, a carrier provided with a plurality of character forming tools, means singly to operate

said tools, a yielding bed, a carriage provided with means for releasably clamping said bed thereto to effect feeding movement thereof with the spacing movement of said carriage, means connected with said carriage for supporting a blank in operative position relative to said bed, and means operatively connected with said tool operating means and comprising a rack on said carriage, a pawl, and connected mechanism for moving said carriage and blank for spacing and feeding said bed successively to present new portions thereof to the action of said tools.

11. In a machine of the type described, stencil punches, a blank supporting and feeding carriage provided with means for moving it for letter or word spacing, a blank holder thereon provided with a rotary device, arranged transversely to the direction of carriage movement and having a plurality of faces each provided with one or more notches corresponding to one or more lines of characters to be cut on a blank, and carriage means for engaging one of said notches to adjust the holder transversely for line spacing.

12. In a machine of the type described, a blank holder having a bearing, a rotary line spacing device journaled therein having a peripheral groove, and means carried by said bearing to engage said groove to prevent longitudinal movement of said device.

13. In a machine of the type described, a blank holder provided with a socket, a line spacing pin rotatably mounted thereon having a cylindrical portion provided with a circumferential groove, and a spring pressed ball mounted in said socket and frictionally engaging said groove to prevent longitudinal movement of said pin relative to said holder.

14. In a machine of the type described, a carriage, a blank holder movable thereon, a line spacing device for said holder having a plurality of notched faces and rotatably mounted on said holder, and notch engaging means connected with said carriage for positioning the holder relative to said carriage, said device being adapted to be rotated to bring a desired notched face into operative relation with said means.

15. In a machine of the type described, a tubular column stand having a tubular head provided with a vertical slot, an actuator lever pivoted within said head and extending through said slot, a tool presser carried by said lever, means for depressing said lever, and means for returning it to normal elevated position, said means comprising a spring housed within said stand.

16. In a machine of the type described, a tool presser, and an actuator carrier provided with eccentric thrust bearing means against which the end of said tool presser is seated, said means having provision for adjusting

the position of said presser and securing the same to said carrier.

17. A machine of the type described comprising in combination a tubular column stand having an exteriorly shouldered cylindrical head, a carrier provided with a series of vertically slidable character forming tools recessed therein, said carrier having its hub journaled on said cylindrical head and forming a sleeve thereon supported at its lower end by said shoulder, a ball bearing interposed between the shoulder of said head and the lower face of said hub to facilitate rotating said carrier to present said punches singly in operative position, and hand operated means for operating the punch thus presented.

18. In a machine of the type described, a plurality of stencil punches, a stand having a bottom recess, bed strip roll carriers journaled within said recess, bed strip rolls for said carriers, means for carrying the free ends of said strips outwardly to present them to the cutting action of said punches, supporting and guiding means therefor, and means for operating said punches and feeding said bed strips.

19. In a machine of the type described, character forming tools, a movable carriage for presenting a blank to operate upon, a movable bed comprising one or more strips of yielding material for the tools to operate against, a bed holding device on said carriage, and means for operating said tools and to effect subsequent movement of said carriage and bed.

20. In a machine of the type described, stencil punches, a movable carriage for holding a stencil blank to be cut, a movable bed for the punches to cut against, bed clamps for holding said bed to cause movement thereof with said carriage, and means for operating said punches and moving said carriage and bed.

21. In a machine of the type described, stencil punches, a movable carriage for holding a stencil blank to be cut, a movable bed for the punches to cut against, bed clamps for holding said bed to cause movement thereof with said carriage, and means for operating said punches and moving said carriage and bed, said clamps having hand means for releasing said bed and connected mechanism simultaneously operated thereby to prevent feeding movement of said carriage.

22. In a machine of the type described, a stand provided with a lateral support, a blank holding carriage slidably mounted thereon, a bed of yielding material movable on said support, means for securing said bed to said carriage, and means for moving said carriage for spacing purposes and the bed secured thereto.

23. In a machine of the type described, a

stand provided with a lateral support, a blank holding carriage slidably mounted thereon, a bed of yielding material movable on said support, an adjustable clamp to secure said bed to the carriage to be moved thereby in spacing, means for moving said carriage for spacing purposes, and means connected to said clamp to prevent spacing movements of said carriage when the bed is disconnected therewith.

24. In a machine of the type described, a stand provided with a carriage slidably mounted thereon, a rack on said carriage, a pivoted pawl and connected mechanism to operate it to move said carriage for spacing, one or more bed strips, means for connecting and disconnecting said strips and carriage for simultaneous movement of the same in feeding and upon disconnection of said strip or strips and said carriage to prevent spacing movement of the latter.

25. In a machine of the type described, a movable blank holding carriage, a movable bed comprising one or more strips of fibrous material, means for securing said carriage and bed together for simultaneous spacing or feeding movement, and means for moving one of them to produce such simultaneous movement.

26. In a machine of the type described, a movable blank holding carriage, a movable bed, means for securing them together, means for moving one of them to produce simultaneous movement of the other, and means connected with said securing means for disconnecting them and preventing a movement of either by said moving means.

27. In a machine of the type described, a blank holding carriage provided with means for moving it for spacing the blank, a movable bed, clamping means connected with said carriage to secure said bed thereto to cause said bed to move with said carriage, and means connected with said clamping means and operable in unclamping said bed to prevent spacing movement of said carriage.

28. In a machine of the type described, a plurality of stencil punches, a supporting stand provided with an interior recess, a bed strip roll carrier journaled within said recess, a bed strip roll for said carrier, and means for carrying said strip outwardly to present it to the cutting action of said punches.

29. In a machine of the type described, a movable carriage having means for holding a stencil blank thereon and provided with a clamping lever for removably securing a bed strip or strips thereto to cause the latter to move simultaneously with said carriage in one direction for spacing the blank and feeding said strip and to release the latter to permit moving said carriage in the opposite direction and independently of said strip.

30. In a stencil cutting machine, a movable carriage, a movable bed and means mounted on said carriage comprising a plurality of clamping members for releasably securing said bed thereto, one of said members being mounted to permit of releasing movement and when moved to release the bed, providing a handle by which said carriage may be conveniently moved relative to the disconnected or released bed.

31. In a stencil cutting machine, a support, a carriage slidably mounted thereon provided with clamping members adapted to secure a movable bed thereto, a vertical rack secured to said carriage, and means including a spring pressed pawl normally held in operative relation to said rack, and means connected with said clamping members adapted by unclamping movement thereof to render said pawl inoperative thereby permitting free movement of said carriage on its support.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

WILLIAM E. CHOATE.

Witnesses:

ARTHUR E. CARSON,
SIDNEY F. SMITH.