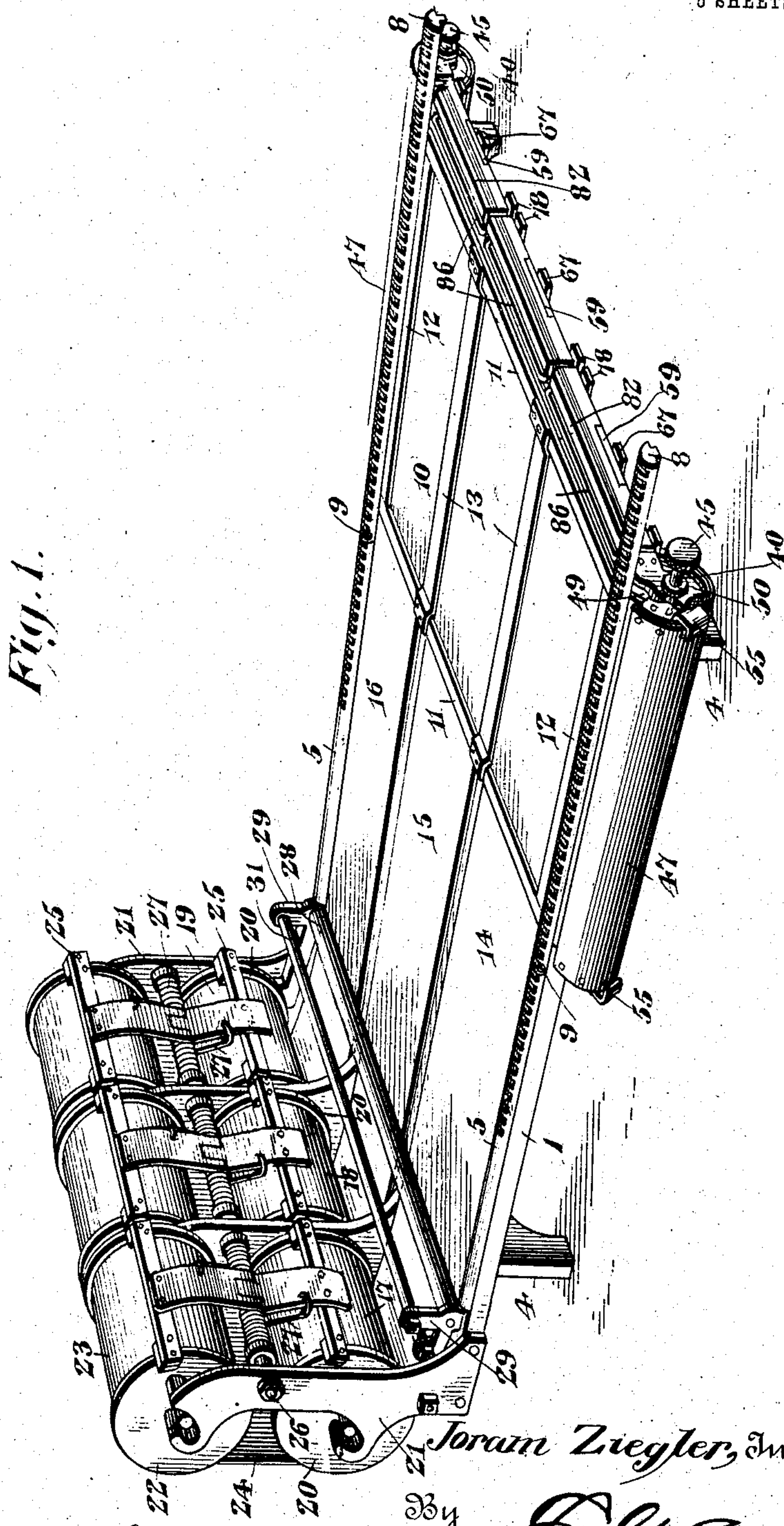


No. 827,136.

PATENTED JULY 31, 1906.

J. ZIEGLER.  
TYPE WRITING MACHINE.  
APPLICATION FILED OCT. 15, 1903.

5 SHEETS—SHEET 1.



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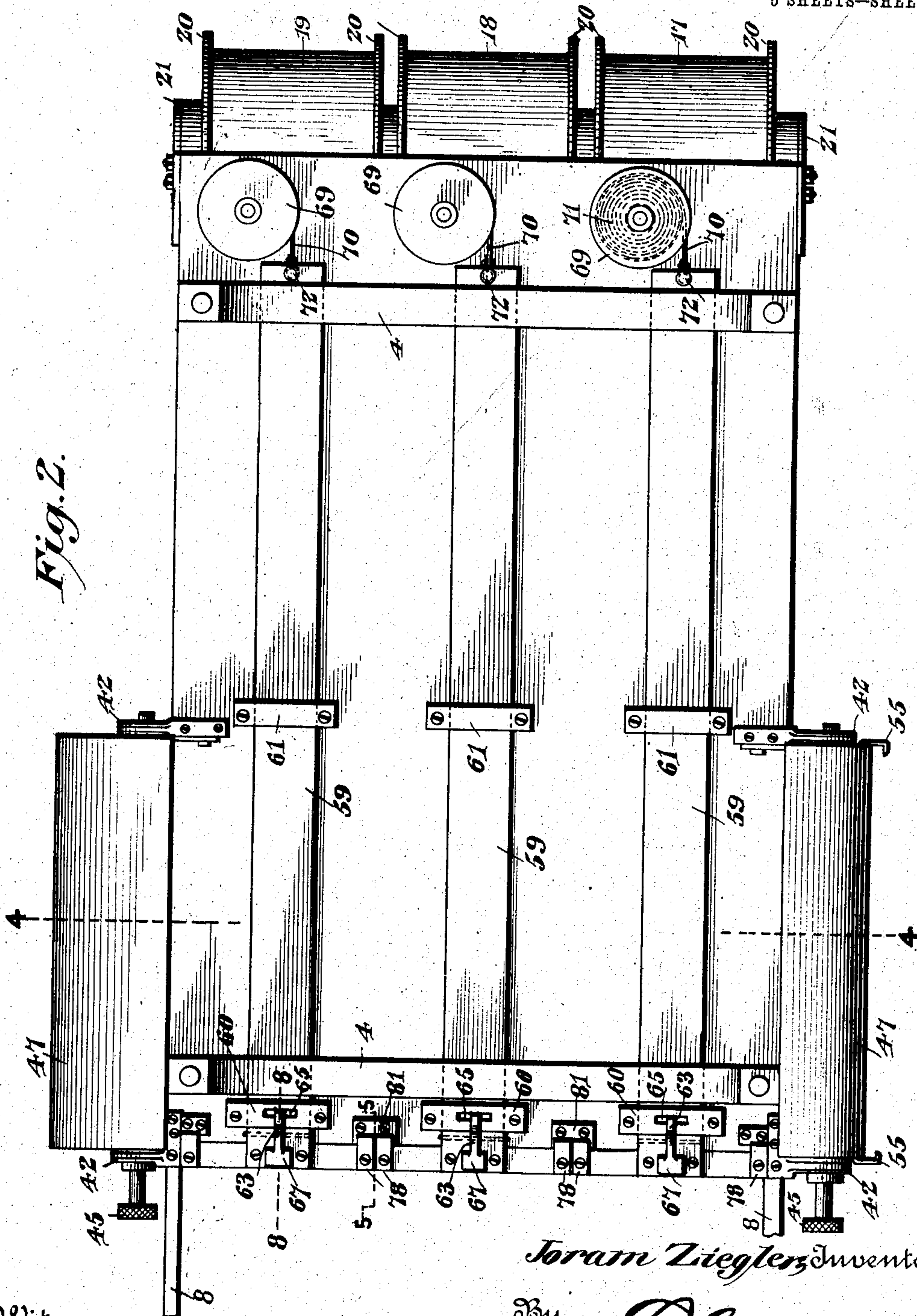
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5 SHEETS—SHEET 2.

Fig. 2.



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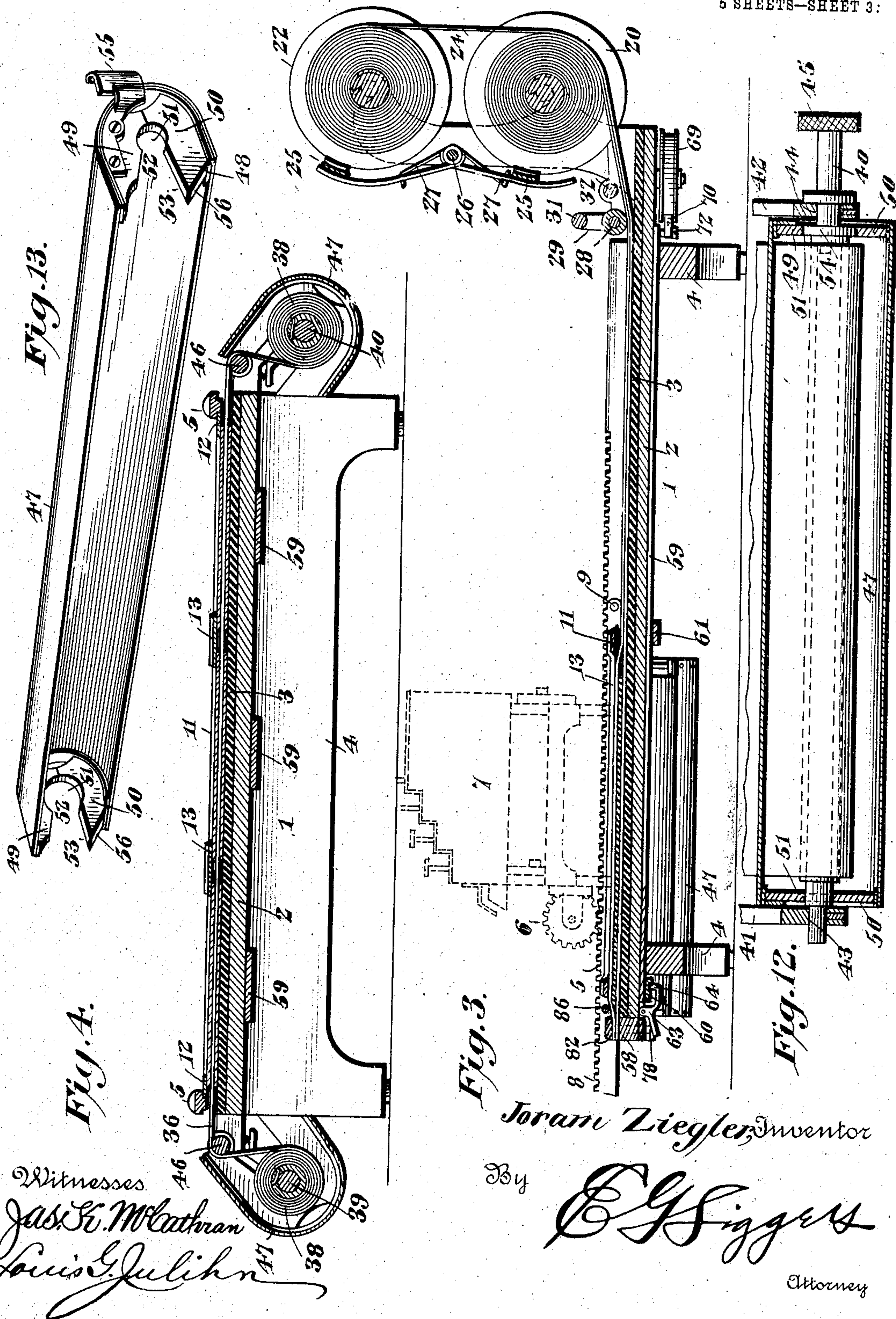


No. 827,136.

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5 SHEETS—SHEET 3:



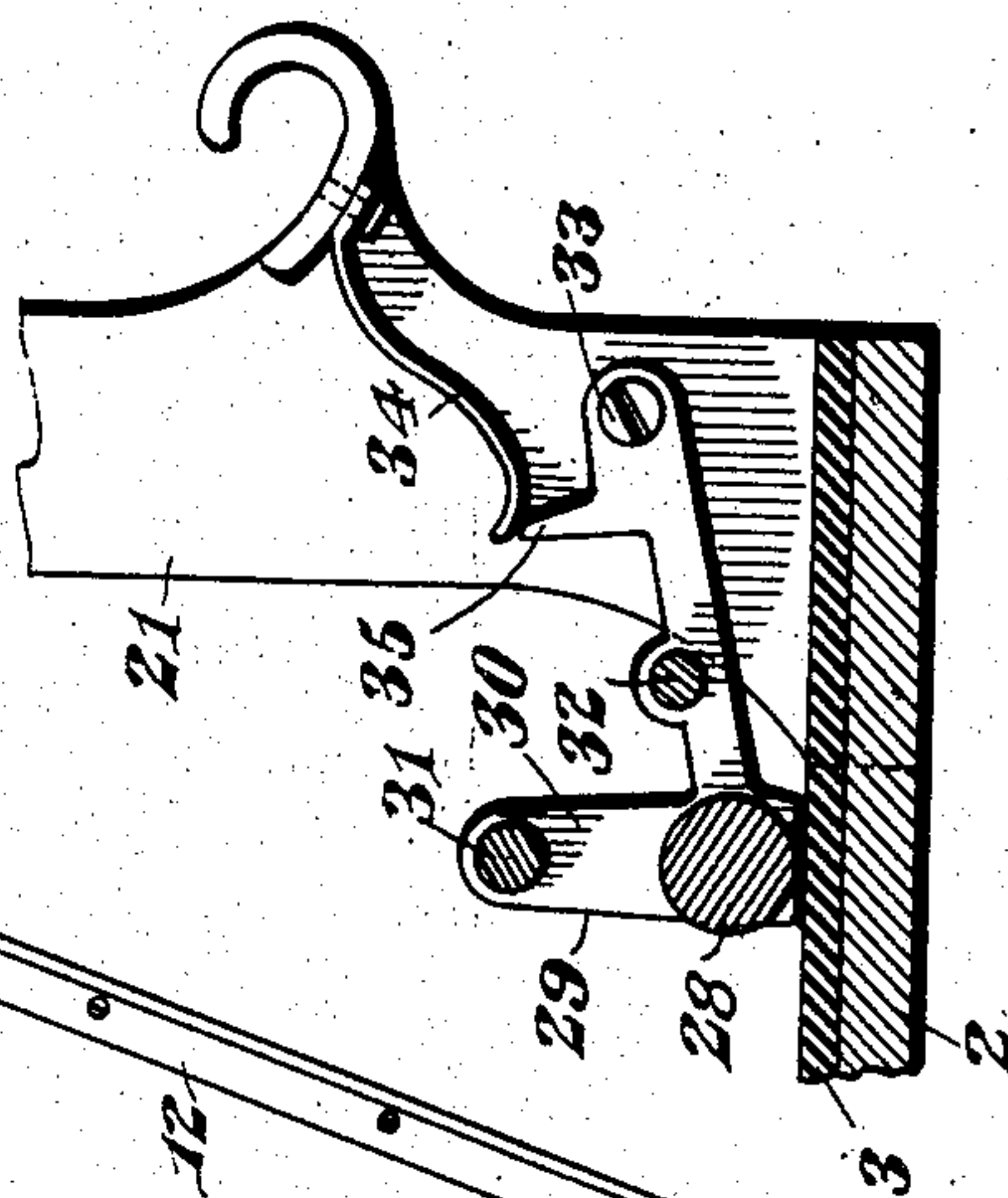
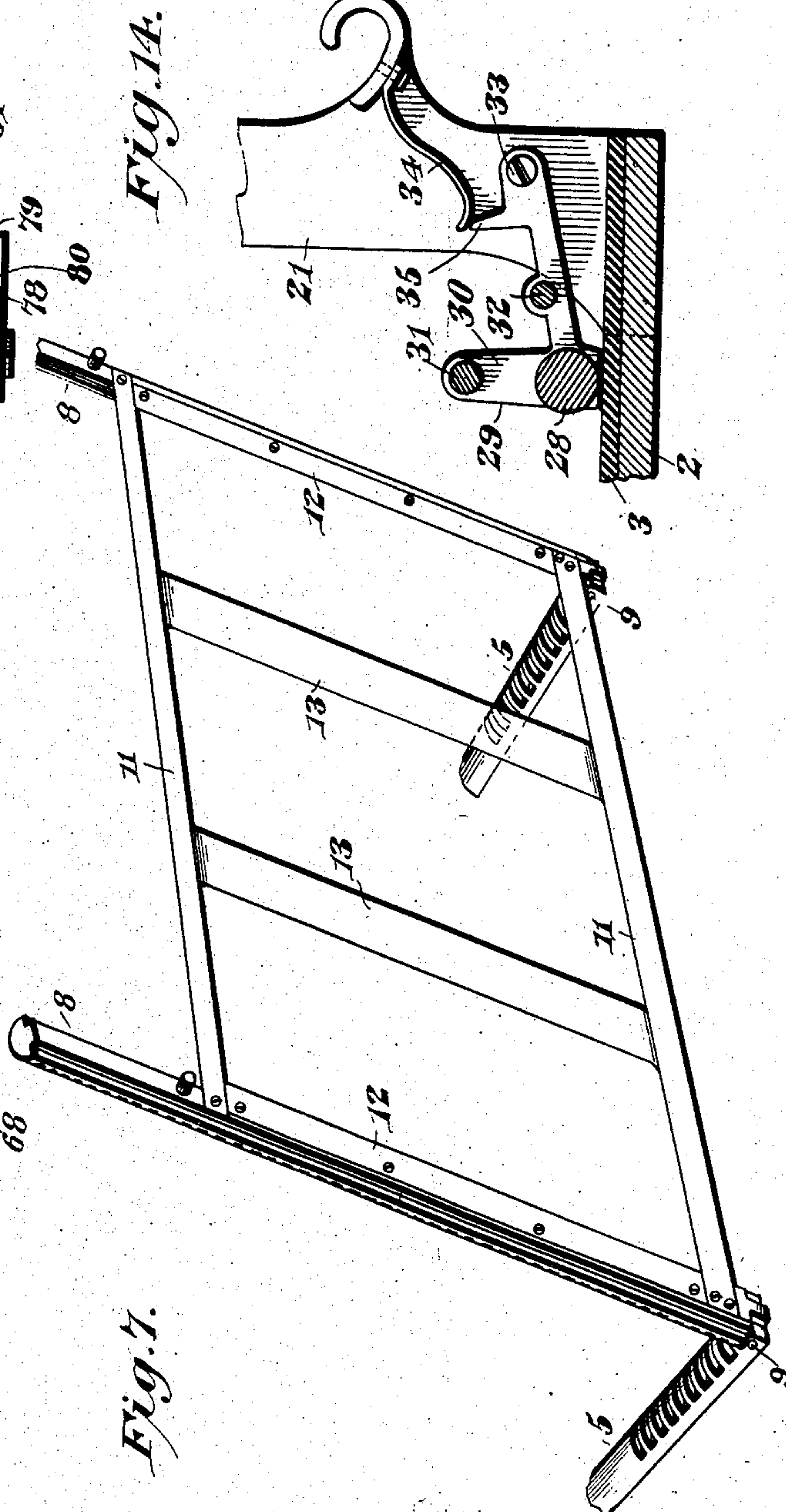
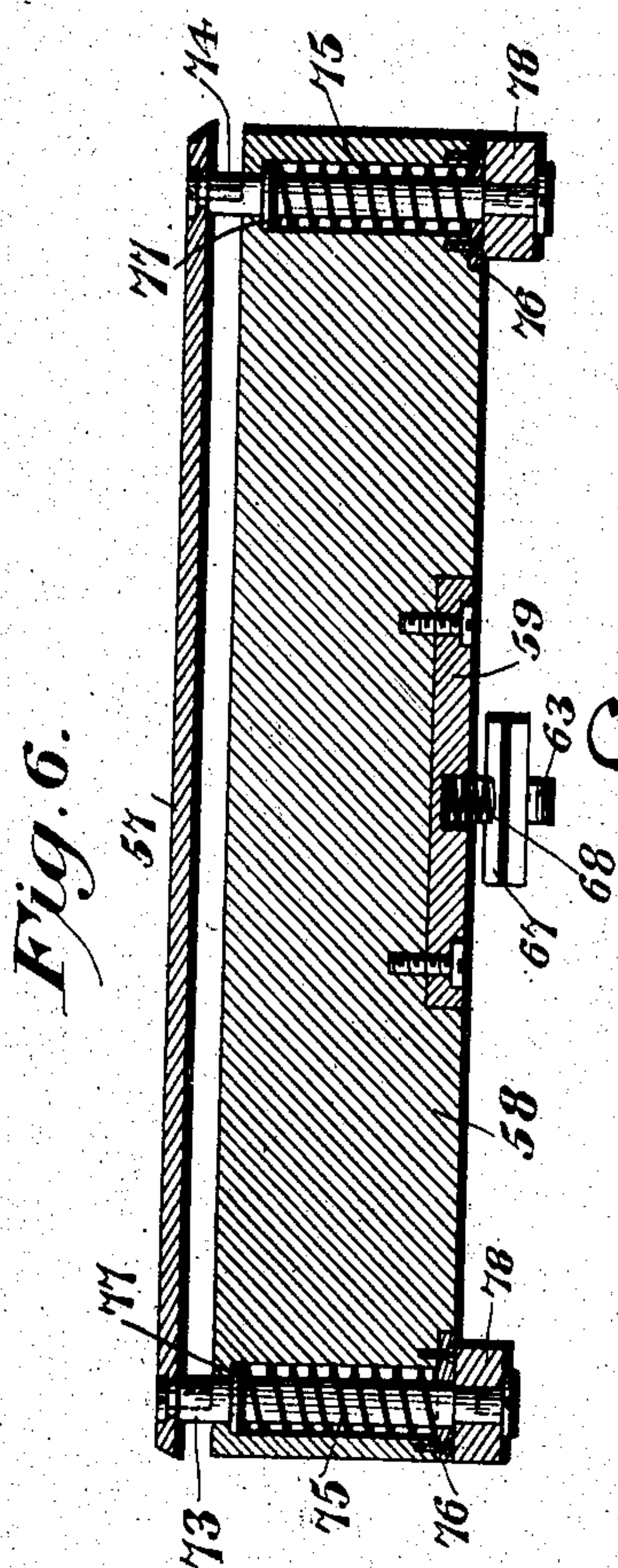
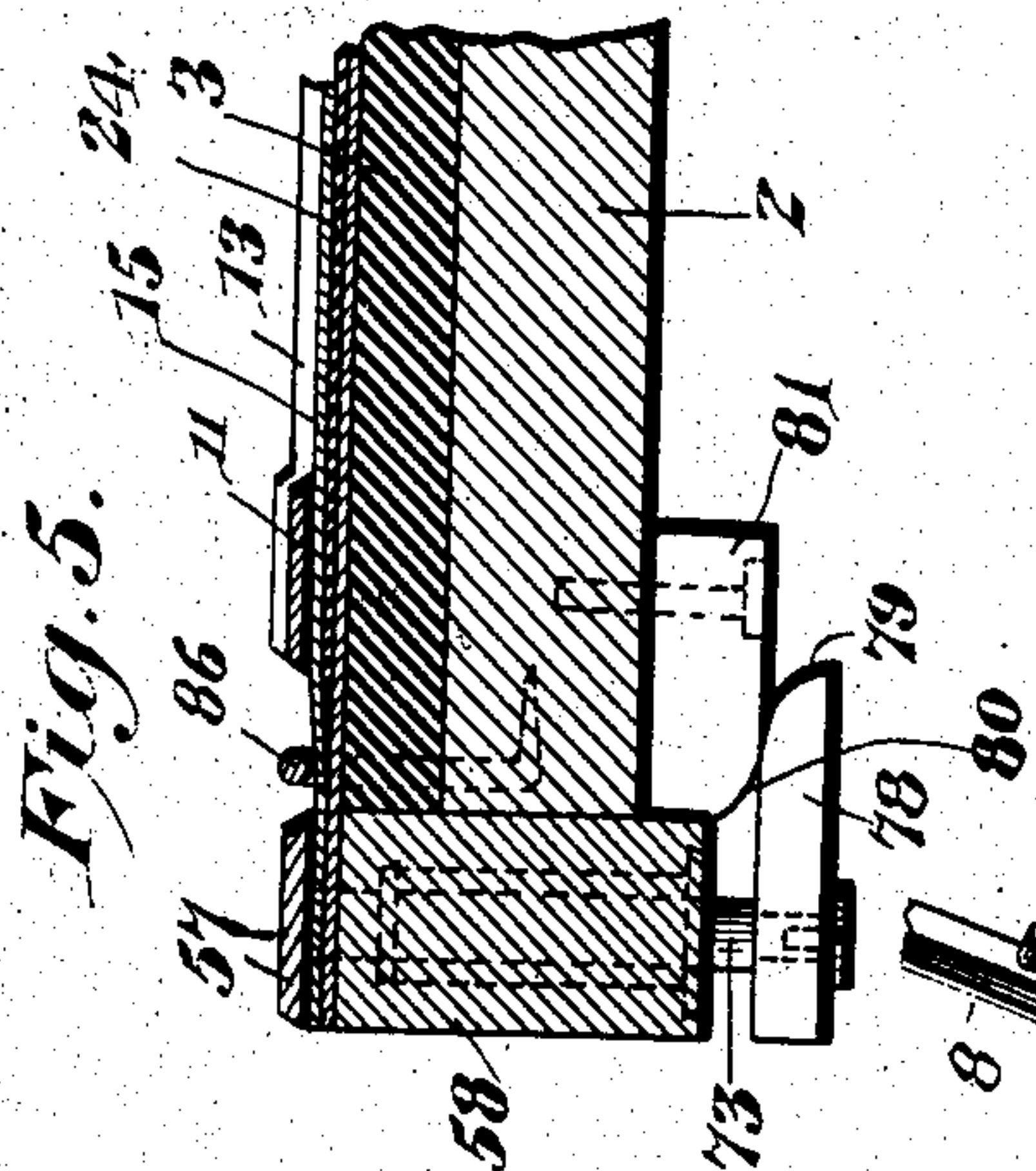


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5 SHEETS—SHEET 4.



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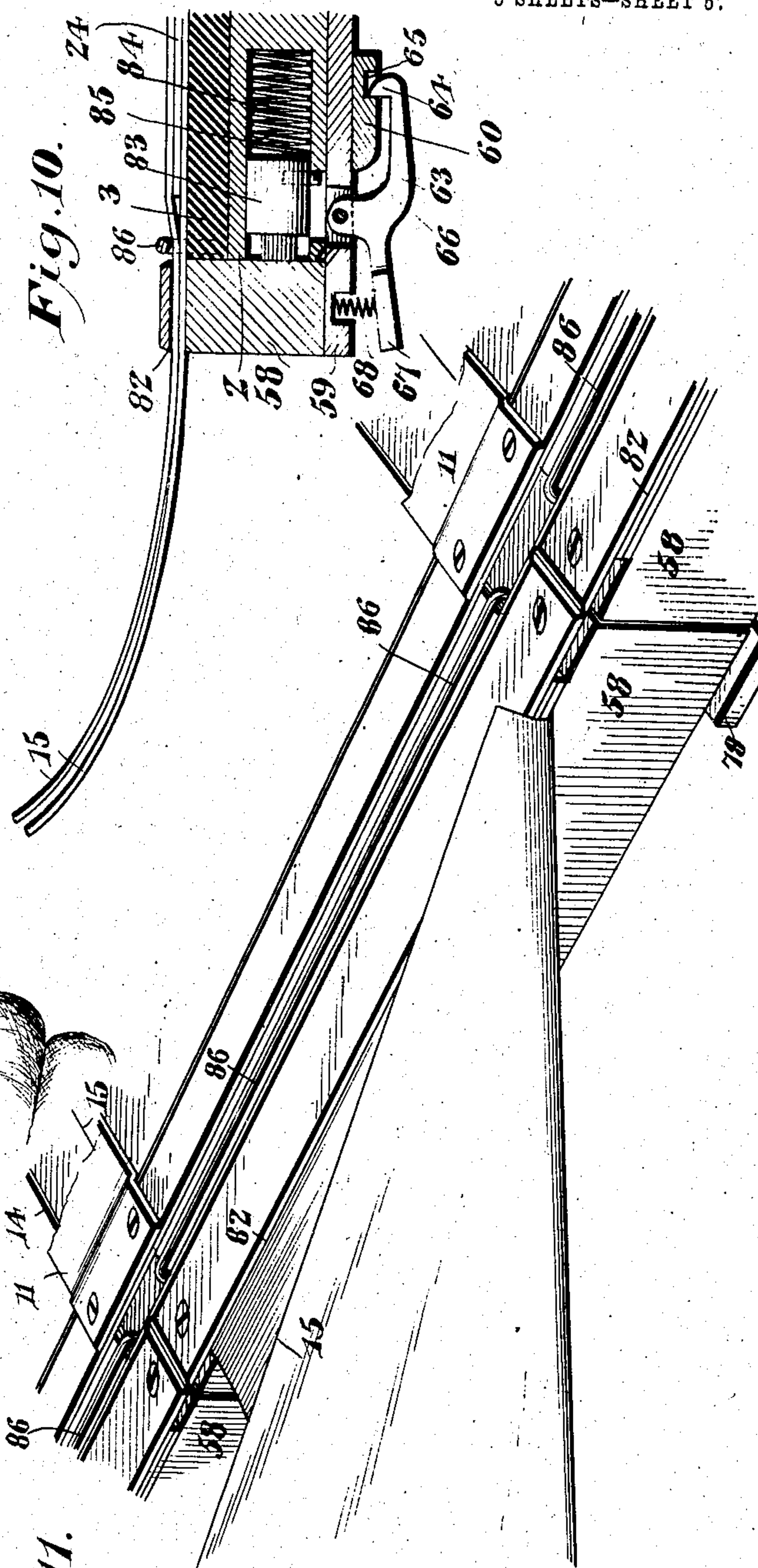
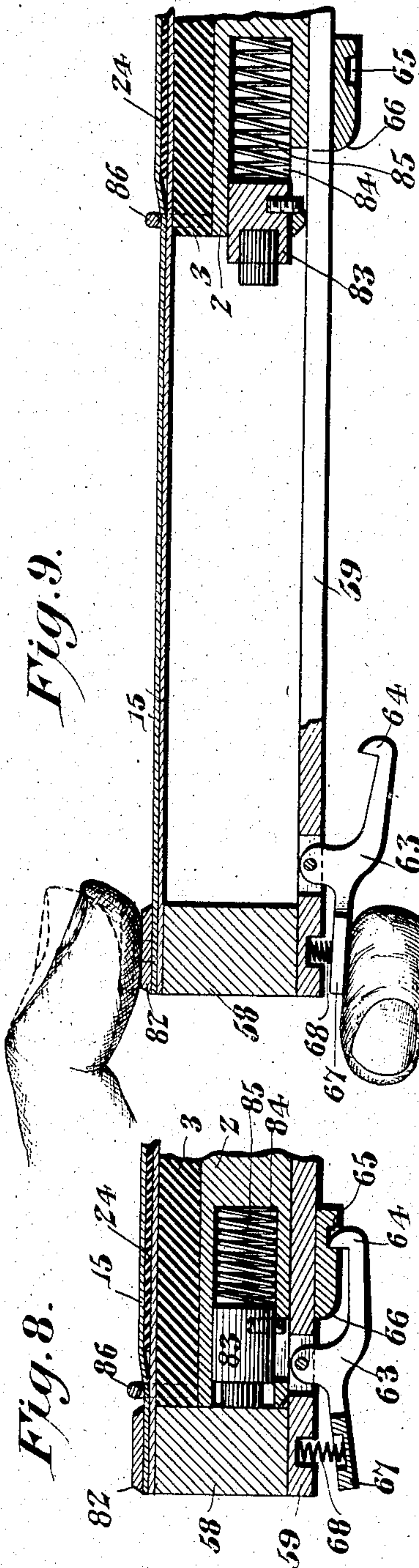


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5 SHEETS—SHEET 5.



*Fig. 11.*

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334

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# UNITED STATES PATENT OFFICE.

JORAM ZIEGLER, OF CLEVELAND, OHIO, ASSIGNOR TO ELLIOTT-FISHER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

## TYPE-WRITING MACHINE.

No. 827,136.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed October 15, 1903. Serial No. 177,200.

*To all whom it may concern:*

Be it known that I, JORAM ZIEGLER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Type-Writing Machine, of which the following is a specification.

This invention relates to type-writing machines of the flat-platen type, but has special reference to the improvement of the platen equipment disclosed in the application, Serial No. 70,809, of Hiram J. Halle for Letters Patent. In the Halle application is disclosed a flat platen equipped, as usual, with tracks or guides for the traveling machine, the printing mechanism of which is movable longitudinally and transversely of the platen for line and letter spacing. At the rear end of the platen are mounted a plurality of paper-rolls which deliver paper strips or webs over the platen longitudinally. The paper-webs are disposed one above the other and are retained in proper position by guiding means of appropriate form. Provision for manifolding is made by leading a transfer element or web transversely across the platen and between the paper webs, the opposite ends of the carbon web being wound upon carriers disposed longitudinally of the platen at opposite sides thereof. At the front edge of the platen is located a stationary cutter by means of which the printed portion is severed from the web after the latter has been drawn or fed forward a sufficient distance to displace the printed portion thereof from the printing area and to present a fresh portion of the work element in position to be printed upon.

The Halle platen, arranged in the manner stated, is well adapted for the making out of sales or charge slips and duplicates thereof; but I have found that the use of the platen for commercial purposes is greatly facilitated by a further development of the invention. To the attainment of this end therefore, the present invention has for one of its objects to equip the platen with a series of paper webs or strips arranged side by side on the platen and associated with underlying duplicate or record strips or webs, so that the machine may be used to make out one charge-slip and its duplicate while another charge-slip and duplicate previously made out on the platen are being drawn forward and removed. A

further usefulness of this equipment of the platen with a plurality of sets of paper strips or webs resides in the fact that they may each be utilized for the sales made by a different department or for transactions of different character—as, for instance, cash sales, credit sales, and goods returned or exchanged.

Another object of the invention is to provide the platen with paper-feeding mechanism; the present embodiment thereof comprehending a manually-operated device engaging the extremity of the paper web or of the over and under lying webs to draw the same endwise, and thus displace the printed and record-bearing portions of said webs from the printing area.

Another object of the invention is to provide as an adjunct to the paper-feeding mechanism a combined paper gripping and cutting device serving first to connect the end of the paper to a feed-slide for advance with the latter and to subsequently constitute a cutter carried back to a position at the front end of the platen by the retraction of the feed-slide to permit the advanced end of the paper web to be quickly severed.

Subordinate objects of the invention will appear during the succeeding description of the illustrated embodiment thereof.

In the accompanying drawings, Figure 1 is a perspective view of a platen equipped in accordance with my invention. Fig. 2 is a bottom plan view of the same. Fig. 3 is a longitudinal sectional view. Fig. 4 is a transverse section on the line 4 4 of Fig. 2. Fig. 5 is a sectional view of the front end of the platen on the line 5 5 of Fig. 2, showing one of the paper-grips held in engagement with the paper. Fig. 6 is a sectional view through one of the paper-grips, showing the manner in which the combined paper gripping and cutting plate is mounted at the front end of the feed-slide. Fig. 7 is a perspective view of the work-holding frame in its raised or elevated position. Fig. 8 is a sectional view similar to Fig. 5, taken on the line 8 8 of Fig. 2 and designed to show the arrangement of the catch or lock for holding the feed-slide in its normal position. Fig. 9 is a sectional view showing the feed-slide drawn out to advance the printed portion of one web and the record-bearing portion of the subjacent web beyond the front end of the



platen. Fig. 10 is a similar view showing the feed-slide retracted independently of the webs to present the grip-plate in position to act as a cutter. Fig. 11 is a perspective view showing the manner in which the advanced ends of the webs are severed. Fig. 12 is a longitudinal sectional view of one of the carbon-roll guards and the mounting of a carbon-carrier. Fig. 13 is a detail perspective view of one of the carbon-roll guards, and Fig. 14 is a detail sectional view of the swinging roller-frame at the rear end of the platen.

Like numerals of reference are employed to designate corresponding parts in the several figures of the drawings.

The platen 1 comprises, as usual, a metallic base 2, having a rubber or other suitable writing-surface 3 and preferably mounted upon transverse supports 4, designed to rest upon a table, counter, or the like. Along the opposite side edges of the platen are disposed the main tracks or guides 5, toothed for engagement with the line-spacing elements 6 of the traveling machine 7. The front sections 8 of the tracks or guides are hinged, as indicated at 9, and are rigidly connected to form a vertical machine-supporting frame. The particular character of this connection is not material; but in the present embodiment of the invention the swinging track or guide sections are connected by a work-holding frame 10, composed of transversely-disposed metal plates or strips 11, longitudinal plates or strips 12, immediately adjacent to the tracks or guides, and additional longitudinally-disposed plates or strips 13, arranged in parallel relation and secured at their opposite ends to the transverse members 11 of the frame. The members 11 and 12 of the work-holding frame are screwed or otherwise secured to the under sides of the track-sections and are flush therewith, as shown in Fig. 7.

The work-holding frame 10 is constructed in the manner described to enable it to protect and to assist in the retention of paper sheets, strips, or webs 14, 15, and 16, delivered over the platen from paper-rolls 17, 18, and 19, arranged end to end above the rear extremity of the platen and mounted on spools 20, rotatably supported in a roll-frame 21. The precise character of the roll-frame is unimportant, and while the same is shown secured to and upstanding from the platen, it may, if desired, be suspended from the platen or from an adjacent support, so as to support the paper-rolls in a plane below the writing-surface. In addition to the spools 20 the roll-frame rotatably supports a second corresponding series of spools 22, upon which are wound additional paper-rolls 23, arranged to deliver the record-webs 24 over the platen in subjacent relation to the webs 14, 15, and 16 and designed to receive the transferred record of the matter printed upon the overlying webs by the machine. Obviously

an increased number of manifold copies may be provided for by increasing the number of the underlying record sheets or webs, and the latter instead of being delivered from individual rolls, as shown, may be wound into a single roll either in conjunction with or independently of the overlying web or work element.

Undue rotary movement of the several spools is prevented by retarding devices or brakes 25, the brakes cooperating with the corresponding spools of each series, being preferably swung from a common supporting-bar 26 and urged toward the spools by springs 27, coiled upon the bar 26. (See Figs. 1 and 3.)

The several sets or pairs of webs are carried under a paper holding and guiding roller 28, extending transversely of the platen adjacent to its rear end, as shown in Fig. 3, and mounted in a swinging roller-frame 29, made up of end plates 30 and transverse connecting-bars 31 and 32, the former serving as a handle, which may be grasped by the operator to lift the roller-frame when desired. The rear extremities of the end plates 30 are swung from studs 33, projecting forwardly from the opposite sides of the roller-frame 21. The roller 28 is designed to hold the paper webs in close contact with the platen, and while the weight of the roller and its frame may be sufficient for this purpose I prefer to employ means for yieldingly urging the roller-frame in the direction of the platen. This means preferably comprehends, as shown in Fig. 14, a spring 34, located adjacent to each end of the frame and bearing against a vertical projection or finger 35, extending from each of the end plates 30 slightly in advance of the axis of the roller-frame.

It will now be seen that the platen is equipped with several work elements or webs each of which is capable of being printed upon directly and is associated with an underlying record-web to which the matter imprinted upon the original paper web is transferred. The normal printing area is located within the confines of the work-holding frame 10, and at this point, therefore, it is necessary to provide a transfer element interposed between the original and record webs. This element is preferably in the form of a carbon web 36, extending transversely of the platen and wound into delivering and receiving rolls 38, located beyond the opposite sides thereof. These carbon-rolls are preferably located in a plane somewhat below that of the writing-surface and are mounted upon shafts or carbon-carriers 39 and 40, rotatably supported in bearing-brackets 41 and 42, projecting laterally from the platen. (See Figs. 1, 4, and 12.) Each of these carbon-carriers or shafts is disposed longitudinally of the platen and is formed with shoulders 43 and 44, abutting against



brackets 41 and 42 and having a knurled head or thumb-wheel 45, by means of which the shaft or carrier may be rotated for the purpose of advancing an unused portion of the carbon web to a position opposite the writing-surface of the platen. To facilitate the adjustment of the carbon web, the guide-rollers 46 are located adjacent to the opposite sides of the platen and in a higher plane than the carbon-rolls. The carbon-rolls are preferably protected by guards or shields 47 of substantially U-shaped cross-sectional contour, as shown in Figs. 4 and 13. These guards are designed to be detachably secured in place, and in order that no separate attaching devices may be necessary I construct them in the form of spring-clips arranged to be snapped in place and to retain their positions by reason of their inherent resiliency. At the opposite ends of each guard, the latter being constructed of sheet-metal, are secured reinforcing-springs 48, and to the opposite ends of each of these springs are in turn attached a pair of bearing-plates 49 and 50; yielding urged toward each other and arranged to grip the carbon-carrier. The contiguous edges of the plates 49 and 50 are formed to produce an intermediate bearing-opening 51, having a constricted throat 52, to which extends a splayed entrance 53, the bearing-opening 51 at one end of the guard being somewhat larger than the other opening to accommodate a flange 54, formed on the carbon-carrier at the inner side of the bracket 42 and cooperating with the shoulder 44 to prevent undue endwise movement of the shaft or carrier. Each of the upper plates 49 is provided with a finger-piece 55, and the front edge of each of the lower plates 50 is beveled, as indicated at 56, to present said edges in the vertical plane of the adjacent side edge of the platen. In order to attach one of these guards, the operator retains the opposite ends thereof by means of the finger-pieces 55 and moves the guard toward the platen to present the adjacent carbon-carrier or shaft within the splayed entrances 53. By pushing the guard slightly the carrier is forced back through the constricted throats 52 and enters the bearing-openings 51, the upper and lower portions of the guard yielding to permit this manipulation and the resiliency of said guard serving to prevent its accidental detachment.

I have illustrated a single transfer element or carbon web; but it will be understood that if more than a single copy is required the record-strips will be multiplied, as heretofore stated, and in like manner the necessary number of carbon webs will be wound into the rolls. Each set of paper webs—that is to say, each original web and the record web or webs underlying the same—is securely held at the front end of the platen by a work-holder in the form of a grip-plate or clamp 57,

between which and a subjacent block 58 the ends of the paper webs comprising a set are passed. (See Fig. 5.)

The block 58 is normally disposed against the front end of the platen with its upper face in the plane of the writing-surface thereof, and it is carried at the front end of the feed-slide 59 in the form of a metal plate disposed longitudinally of the platen, as shown in Fig. 2, and imposed against the under side of the platen and slidably retained by front and rear guide-brackets 60 and 61, screwed or otherwise secured to the bottom of the platen. The platen-supports 4 also constitute guides common to the several feed-slides, since said supports are provided with openings through which the slides extend. Each feed-slide is normally retained against movement by a pivoted catch 63, mounted in the slide adjacent to its front end (see Fig. 8) and having a beak 64 located at its rear end and arranged to engage a notch 65 in a front bearing bracket or plate 60, the front edge of the bracket being beveled or rounded, as indicated at 66, to permit the beak of the catch to ride under the plate and enter the notch when the slide is retracted in a manner to be described.

To facilitate the disengagement of the catch 63, the latter is provided with a forwardly-extending finger-piece 67, underlying the extreme front end of the slide and urged away from the latter by an interposed spring 68. Each feed-slide 59 is provided with suitable retracting mechanism, preferably reactive and in the form of a spring-drum 69, rotatably mounted upon the under side of the platen adjacent to its rear end and connected to the adjacent extremity of the slide by a tape 70, wound upon the drum in opposition to the operating-spring 71 of the latter. The manner of connecting the tape to the slide is not material; but a pin 72, depending from the slide, preferably serves as a means for attaching the tape thereto and also constitutes a stop element designed to limit the forward movement of the slide by contacting with the bearing-bracket 61. Ordinarily a predetermined advance of the paper is contemplated for the purpose of displacing the printed portion thereof from the printing area; but, if desired, one or the other of the stop elements 61 or 72 may be made adjustable in order to regulate the extent of the maximum forward movement of the feed-slide.

As will presently appear more clearly, the grip-plate 57 while constituting means for normally retaining the ends of a set of webs is also designed to insure the retention of said webs by the feed-slide to secure their advance with the latter, and as it is aimed to permit the retraction of the slide independently of the webs it is necessary to mount the grip-plate in a manner to obtain the release of the webs



from the slide when the advance movement of the latter is completed. For this reason the plate 57 is mounted at the upper ends of a pair of vertically-disposed rods 73 and 74, extended through the block 58 adjacent to the opposite ends thereof and urged upwardly by springs 75, incased within the block. The springs 75 bear at their lower ends against bearing-plates 76, set into the under surface of the block 58, and at their upper ends against annular flanges 77, integral with the rods 73 and 74, constituting means for limiting the upward movement of the grip-plate 57. At the lower extremities of the rods 73 and 74 are fixed grip-operating cams 78, having their front ends rounded, as indicated at 79, and cooperating with the curved front faces 80 of the fixed cam elements 81, secured to the under surface of the platen. (See Fig. 5.)

Normally, as heretofore stated, the blocks 58 are disposed against the front end of the platen, and the grip-plates 57 are retained in their depressed positions against the resistance of their elevating-springs to securely hold the front ends of a set of paper webs. When, however, a sales-slip or the like has been made out by printing any desired data upon that portion of one of the original webs lying within the confines of the work-holding frame 10, the operator grasps the front end of the feed-slide, preferably by imposing the thumb upon the plate 57 and the forefinger of the same hand under the finger-piece of the catch 63. The act of grasping the feed-slide in this manner effects the release of the catch and prevents the subsequent elevation of the grip-plate. The slide is now drawn back to the position indicated in Fig. 9 of the drawings to feed forward or advance a set of paper webs for the purpose of displacing the printed portion thereof from the printing area and of resupplying the same with fresh or unused portions of the webs. The operator now releases the slide to permit the grip-plate to rise, as shown in dotted lines in Fig. 9, for the purpose of releasing the webs and to permit the independent retraction of the slide to its normal position, as indicated in Fig. 10. The extended or displaced ends of the webs will then project beyond the grip-plate, as shown in Fig. 10, and as the slide reaches the limit of its retractile movement the cams 78 will engage and ride under the fixed cams 81 to draw down the grip-plate 57 to its normal web-engaging position, as shown in Figs. 5 and 10.

As the grip-plate is designed to perform the additional function of a paper-cutter, its front edge is sharpened, as indicated at 82, so that the projecting ends of the webs, constituting, for instance, a charge-slip and one or more duplicates thereof, may be simultaneously severed by drawing them against the cutting edge 82 of the grip-plate in a

manner which will be obvious from an inspection of Fig. 11 of the drawings.

In order to minimize the shock incidental to the arresting of the slides when the latter are retracted, each slide is preferably provided with a buffer 83, mounted in a suitable socket 84 in the platen and urged outward by a spring 85 to the position indicated in Fig. 9 for engagement with the block 58 of the slide. Between the front end of the work-holding frame 10 and each of the adjacent grip-plates 57 is preferably located a paper-guide 86, secured to the platen in any suitable manner—as, for instance, by extending the extremities of the wires constituting said guides into the body of the platen.

This platen is particularly designed for use in department stores and other similar commercial establishments, and it will be seen that by providing it with a plurality of sets of paper webs the capacity of the platen is not only increased, but that it also makes it possible for a charge-slip to be made out during the manipulation of a feed-slide to displace and sever a charge-slip previously made out on the platen.

It may be remarked that while a platen equipped in accordance with my invention is designed with special reference to its use in connection with a type-writing machine it is obvious that, viewed in its broader aspects, the invention comprehends a platen or support equipped in a novel manner to facilitate the production of records, either single or manifold, regardless of whether the recording instrument is a type-writing machine or a pen, pencil, or stylus.

It is thought that from the foregoing the construction, operation, and many advantages of this platen will be clearly apparent; but while the illustrated embodiment of the invention is thought at this time to be preferable it is desired to reserve the right to effect such changes, modifications, and variations of the illustrated structure as may fall within the scope of the protection prayed.

What I claim is—

1. The combination with a platen, of paper-feeding means including a reciprocatory feeding-slide, a clamp-plate carried thereby and normally occupying a position at the edge of the platen, and means holding the clamp-plate depressed when in its normal position and active, immediately upon the movement of the slide, to release the plate.
2. The combination with a flat platen, main tracks or guides, and printing mechanism mounted to travel thereover, of independent paper-carriers for delivering a plurality of separated paper webs over the platen in position to be operated upon directly by said printing mechanism.

3. The combination with a flat platen, main tracks or guides, and printing mechanism mounted to travel thereover; of means



for delivering a plurality of separated paper webs over the platen in position to be operated upon directly by said printing mechanism, and means for advancing said webs.

5 4. The combination with a flat platen; main tracks or guides, and printing mechanism mounted to travel thereover; of means for delivering a plurality of separated paper webs over the platen in position to be operated upon directly by said printing mechanism, and means for effecting the independent advance of said webs.

15 5. The combination with a flat platen, main tracks or guides, and printing mechanism mounted to travel thereover; of means for delivering a plurality of separated paper webs over the platen in position to be operated upon directly by said printing mechanism, and separate independent devices for advancing the webs to displace the printed portions thereof from the printing position.

25 6. The combination with a flat platen, tracks or guides and printing mechanism mounted to travel thereover; of means for delivering a plurality of laterally-spaced paper webs over the platen, and a work-holder common to said webs.

30 7. The combination with a flat platen, main tracks or guides, and printing mechanism mounted to travel thereover; of means for delivering a plurality of separated paper webs over the platen in position to be operated upon directly by said printing mechanism, and a separate feed-slide for each of said webs, each slide having web-engaging means.

35 8. The combination with a flat platen and printing mechanism, of means for delivering a plurality of superposed webs over the platen, and means, carried by the platen and normally abutted against the end thereof, for simultaneously feeding or advancing the printed and record-bearing portions of said webs beyond the printing position.

45 9. The combination with a flat platen; of separate holders for delivering a plurality of separate sets of paper webs over the platen, and means for retaining a transfer element common to webs of the several sets.

50 10. The combination with a flat platen; of means for delivering a plurality of separate independent sets of paper webs over the platen, and means for delivering a carbon or transfer web over the platen substantially at right angles to the paper webs and between the paper webs of each set.

55 11. The combination with a flat platen, of independent means, located substantially at right angles to each other, for delivering a carbon web and separate independent sets of paper webs over the platen.

60 12. The combination with a stationary flat platen, and printing mechanism mounted to travel thereover; of means for delivering a plurality of separate independent sets of paper webs over the platen, and means for re-

taining a transfer element common to webs of the several sets.

13. The combination with a stationary flat platen, and printing mechanism mounted to travel thereover; of means for delivering a plurality of separate sets of paper webs side by side over the platen in one direction, means for delivering a common carbon or transfer web over the platen in another direction, and means for advancing each set of paper webs independently of the other set or sets and of the carbon web.

14. The combination with a flat platen, of a feed-slide, carried by the platen, and having web-engaging means, movable beyond the limits of the platen, and including a member projecting from the slide, and having its upper edge flush with the writing-surface of the platen, and a clamping and cutting plate mounted on said projecting member.

15. The combination with a platen and a feed-slide carried thereby; of a paper-clamp mounted on the slide, and a block located at the front end of the slide below the clamp and normally abutted against the edge of the platen.

16. The combination with a stationary platen; of a feed-slide movable to advance a web thereover, a clamp carried by the slide, and clamp-operating means carried by the platen and arranged to move the clamp into engagement with the web.

17. The combination with a platen; of a feed-slide movable to advance a web thereover, a clamp carried by the slide, a spring for moving the clamp in one direction to disengage the web, and automatic means for moving said clamp in opposition to the spring to clamp the web.

18. The combination with a platen, and a feed-slide movable to advance a web thereover; of a clamp carried by the slide and movable to engage and release the web, a spring for urging said clamp to its released position, and means, operated automatically upon the retraction of the slide, to move the clamp into engagement with the web.

19. The combination with a platen and a feed-slide movable to advance a web thereover; of a clamp carried by the slide, and cooperating cam members, connected to the clamp and platen respectively, for moving the clamp to engage the web.

20. The combination with a flat platen; of a feed-slide mounted thereon at the under side thereof and having an elevated portion normally opposed to one edge of the platen, a reactive device, carried by the platen, for retracting the slide, and clamping and cutting means mounted on the elevated portion of the slide.

21. The combination with a platen, of a feed-slide associated therewith and movable therefrom to advance a paper web, and means for locking the slide in one position.



22. The combination with a flat platen and a manually-operated paper-feeding device; of means for locking said device, said means being arranged for release by the act of gripping the device preparatory to its manual actuation.
23. The combination with a platen; of a feed-slide, a catch therefor having a finger-piece, and a clamp, said finger-piece and clamp being located at the same end of the slide to permit the catch to be actuated and the clamp to be retained by the act of grasping the front end of the slide.
24. The combination with a flat platen, of a paper-feeding slide having a portion normally abutted against the platen, means for retracting the slide after the latter has been operated to feed the paper, and a buffer disposed at the edge of the platen and cooperating with the slide.
25. The combination with a flat platen, and a carrier arranged to deliver a web thereover; of a guide-roller disposed over the platen adjacent to the carrier, and a swinging roller-frame supporting the roller.
26. A guard for carbon rolls and the like, formed from a single piece of spring metal bent to guard the roll, and having opposed plates mounted in the guard at each end thereof and urged toward each other by the resiliency of the guard itself.
27. In a type-writing machine, the combination with a flat platen, and a roll-support mounted at one edge thereof; of a resilient transversely-U-shaped guard having gripping members urged into engagement with the roll-support by the resiliency of the guard.
28. A metallic guard for carbon rolls and the like, having a substantially U-shaped cross-sectional contour and having opposed gripping-plates therein and finger-pieces at the opposite ends thereof.
29. The combination with a flat platen and printing mechanism mounted to travel thereon, of means for delivering a plurality of separate sets of paper webs side by side over the platen in one direction, means for retaining a carbon or transfer element common to the webs of the several sets, and paper-advancing means.
30. In a type-writing machine, the combination with a flat platen, of tracks or guides, a traveling machine, and a paper-feeding slide, all carried by the platen.
31. The combination with a platen and printing mechanism, of separate paper-carriers for delivering a plurality of separated paper webs over the platen in position to be operated upon directly by said printing mechanism.
32. The combination with a platen and printing mechanism, of means for delivering a plurality of separated paper webs over the platen, in position to be operated upon directly by said printing mechanism, and means for effecting the independent advance of the webs.
33. The combination with a platen and printing mechanism, of means for delivering a plurality of paper webs over the platen side by side, and a work-holder common to said webs.
34. The combination with a platen, of means for delivering a plurality of separated paper webs over the platen, and a separate feed-slide for each web, each slide having web-engaging means.
35. The combination with a platen, of independent means, located substantially at right angles to each other, for delivering a carbon web and separate independent sets of paper webs over the platen.
36. The combination with a platen and means for delivering a web thereover, of a feed-slide supported by the platen and movable to advance the web, a work-engaging device movable with the slide, the space between said device and the slide constituting an unobstructed passage in order to permit the web to remain between the work-engaging device and the slide as the latter is retracted, and means for operating the work-engaging device to release the web at the beginning of the retractile movement of the slide and to reengage the web at the completion of said retractile movement.
37. The combination with a platen, of web-feeding means associated therewith, and means for locking the feeding means against movement in the direction to feed the web.
38. The combination with a platen and a manually-operated feeding device for a web, of means for locking said device, said means being arranged for release by the act of gripping the device preparatory to its manual operation.
39. The combination with a platen, of a plurality of independently-movable feed-slides arranged side by side, slide-retracting mechanism associated with each slide, and paper-engaging means carried by each slide and movable beyond the limits of the platen and independent paper-carriers arranged to deliver a plurality of paper webs side by side over the platen to be engaged and advanced by the slides.
40. The combination with a flat platen, of guiding means secured to the underside thereof, a feed-slide guided by said means, a spring-drum carried by the platen and operatively connected to the rear end of the feed-slide, and paper-engaging means mounted at the front end of the feed-slide and disposed normally substantially in the plane of the upper surface of the platen.
41. The combination with a flat platen, of a reciprocatory feed-slide carried thereby at its under side, a block located at the front end of the feed-slide, said block normally



abutting against the front end of the platen and having its upper edge substantially flush with the writing-surface thereof, and a combined clamping and cutting plate mounted 5 above the block and arranged to reciprocate toward and from the same, the passage between the block and the plate being unobstructed to permit the slide to move back along the previously-extended edge of the 10 web without necessitating the removal of the latter from between the block and plate.

42. The combination with a platen, of paper-feeding means including a movable member, a vertically-disposed rod mounted in 15 said member, a clamp carried by the rod, and means for moving the rod in one direction to operate the clamp.

43. The combination with a platen, of paper-feeding means including a movable member, a reciprocatory rod mounted therein, a 20 clamp carried by the rod, and a spring for moving the rod in one direction to operate the clamp.

44. The combination with a platen, of paper-feeding means including a movable member, a clamp-plate mounted on said member and movable toward and from the same, and 25 guides located at opposite ends of said plate.

45. The combination with a platen, of paper-feeding means including a movable member, a clamp-plate carried by said member, 30 guide-rods at opposite ends of the plate, and means for automatically moving the plate.

46. The combination with a platen, of a 35 feed-slide, a clamp-plate disposed above the same, a pair of reciprocatory guide-rods supporting the plate and mounted in the slide, springs for urging the guides to elevate the plate, and means for moving said rods in op- 40 position to the springs.

47. The combination with a platen, of a feed-slide mounted at the under side thereof

and having an elevated front end, a pair of reciprocatory guide-rods mounted in said elevated front end of the slide, a clamp-plate 45 carried by the upper ends of the rods, cam members mounted at the lower ends of the rods, springs for urging the rods to elevate the plate, and fixed cam members cooperating with the cam members on the rod to move 50 the same and thus depress the plate in opposition to the springs.

48. The combination with a platen and printing mechanism mounted to travel there- 55 over, of a paper-feeding slide carried by the platen and having paper-engaging means normally abutted against one edge of the platen and disposed substantially in the plane of the writing-surface thereof, said feeding-slide being movable to withdraw the printed portion 60 of the paper from the printing area of the platen.

49. The combination with a platen, tracks or guides and printing mechanism mounted to travel thereover, of web-feeding means 65 carried by the platen and movable beyond the writing-surface thereof to displace the printed portion of the web, and a locking device for the web-feeding means.

50. The combination with a flat platen, of 70 guiding means, a feed-slide guided by said means, slide-retracting means connected to the rear end of the slide, and paper-engaging means mounted at the front end of the feed-slide and normally disposed substantially in 75 the plane of the upper surface of the platen.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JORAM ZIEGLER.

Witnesses:

A. R. WARNER,  
W. T. McELROY.