

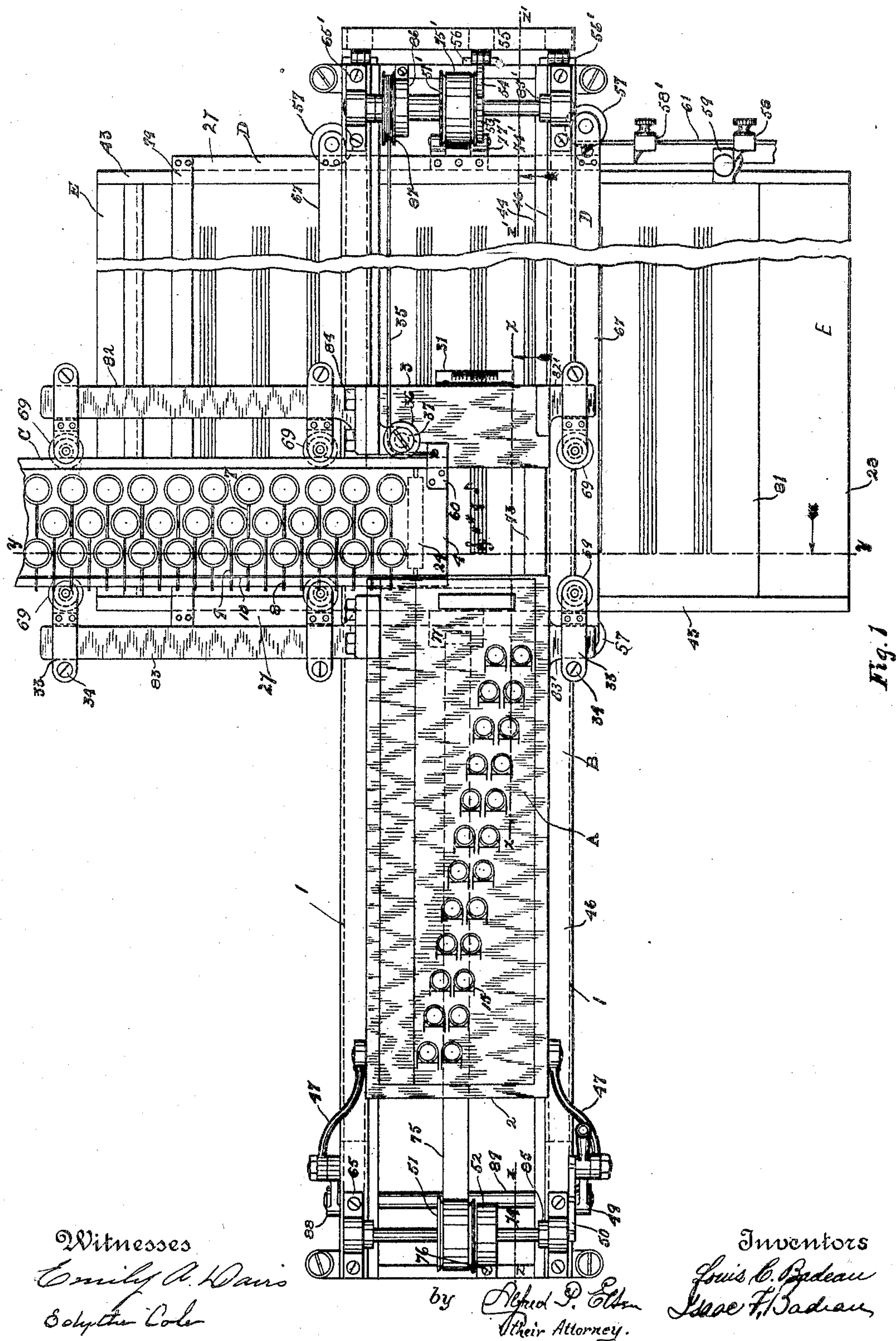
No. 789,351.

PATENTED MAY 9, 1905.

L. C. & I. F. BADEAU.
MUSIC TYPE WRITER.

APPLICATION FILED AUG. 9, 1904.

4 SHEETS—SHEET 1.



Witnesses
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by Alfred P. Ellen
Their Attorney.

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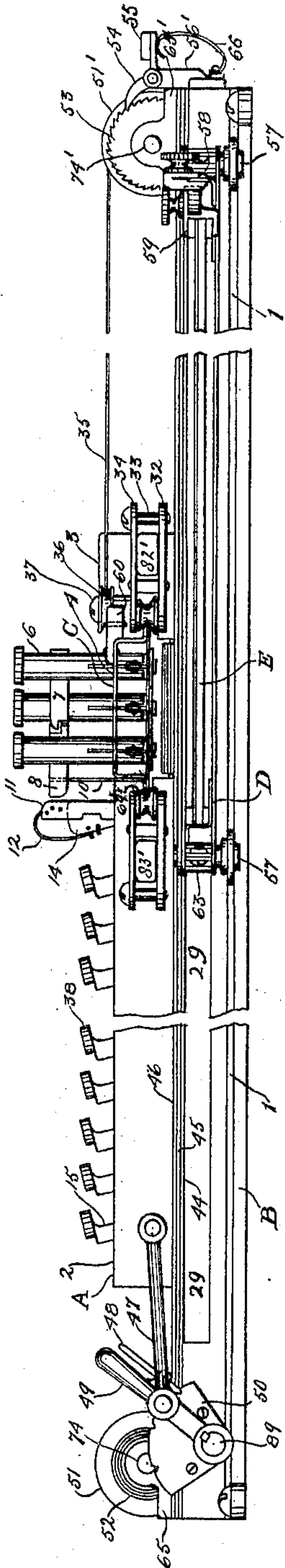


Fig. 2

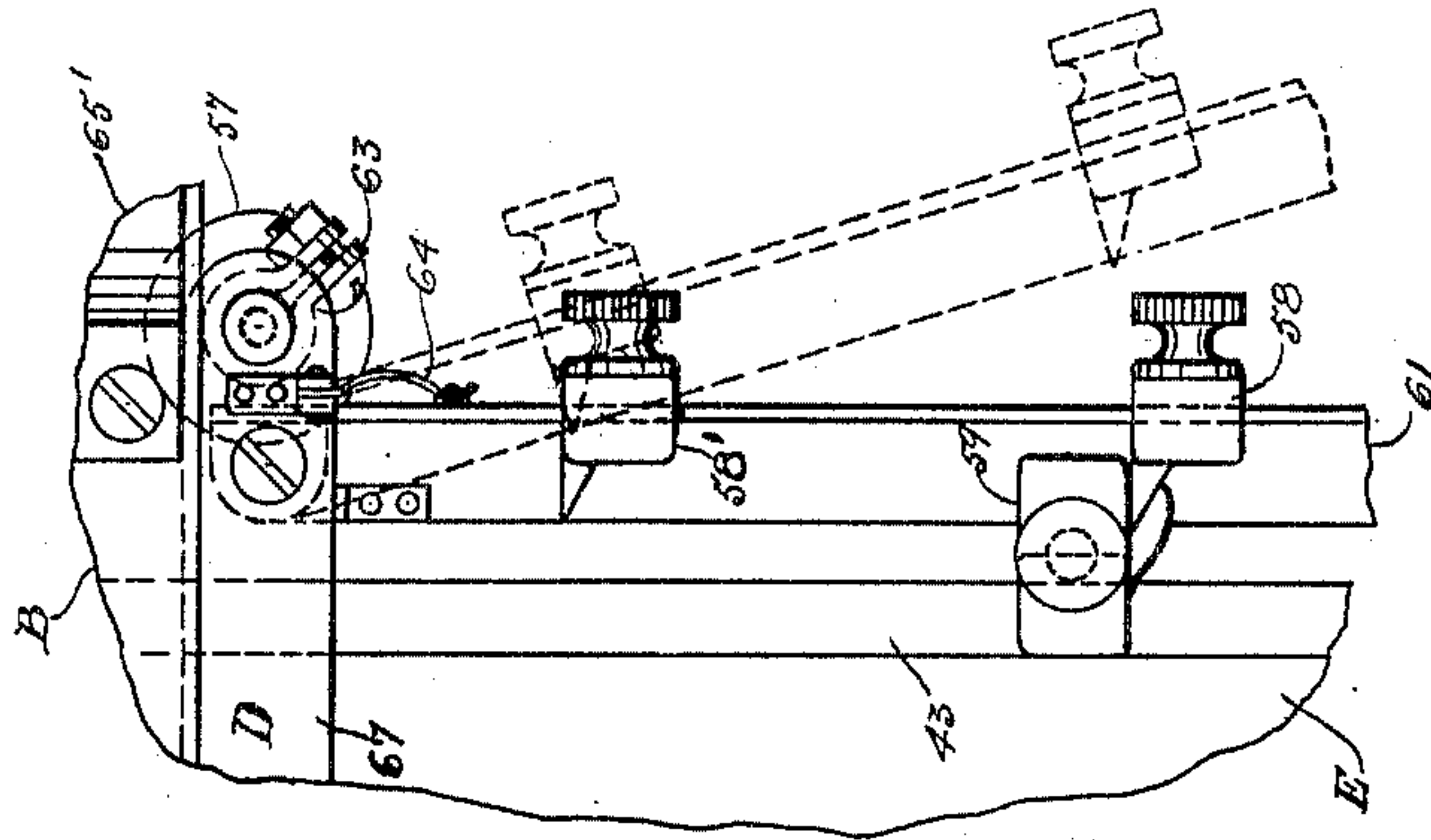


Fig. 4

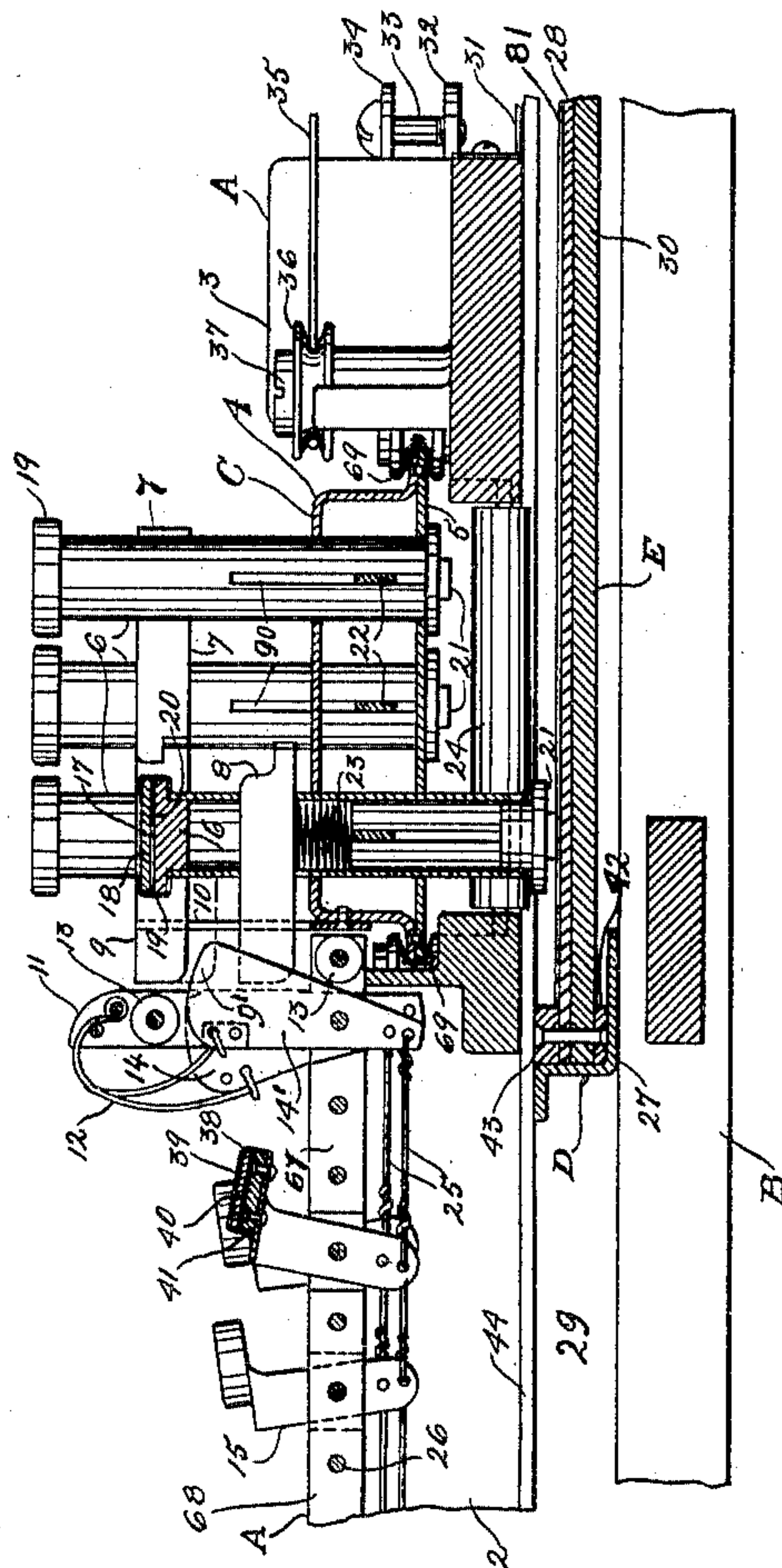


Fig. 3

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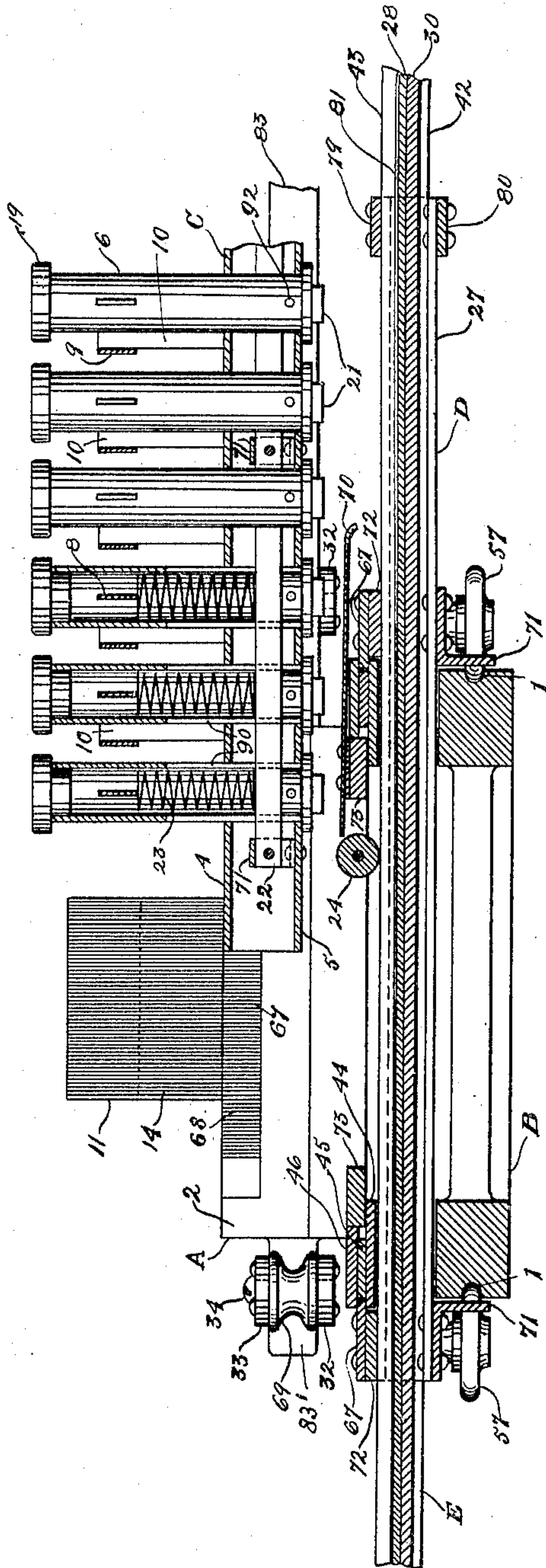


Fig. 5

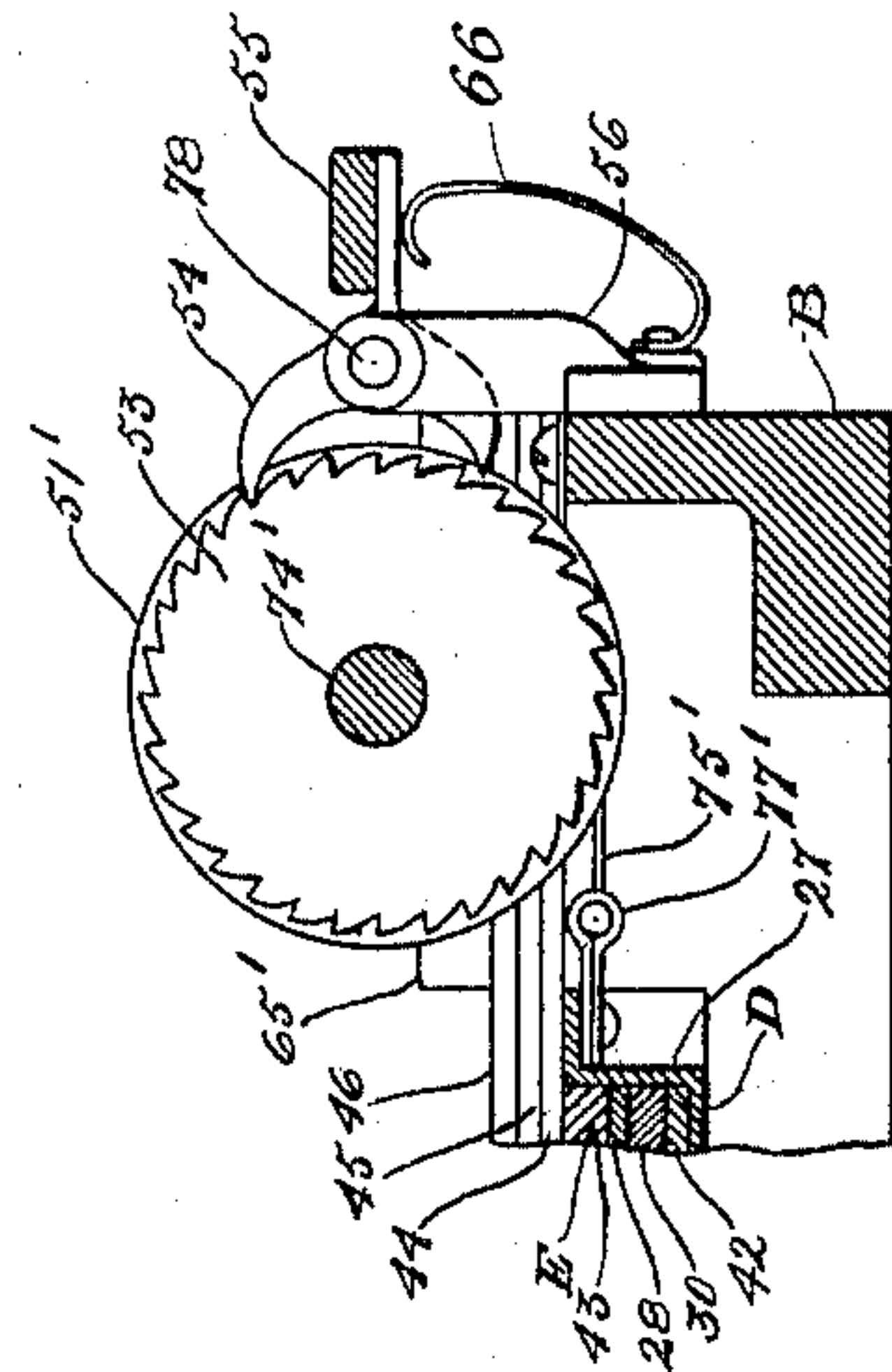


Fig. 6

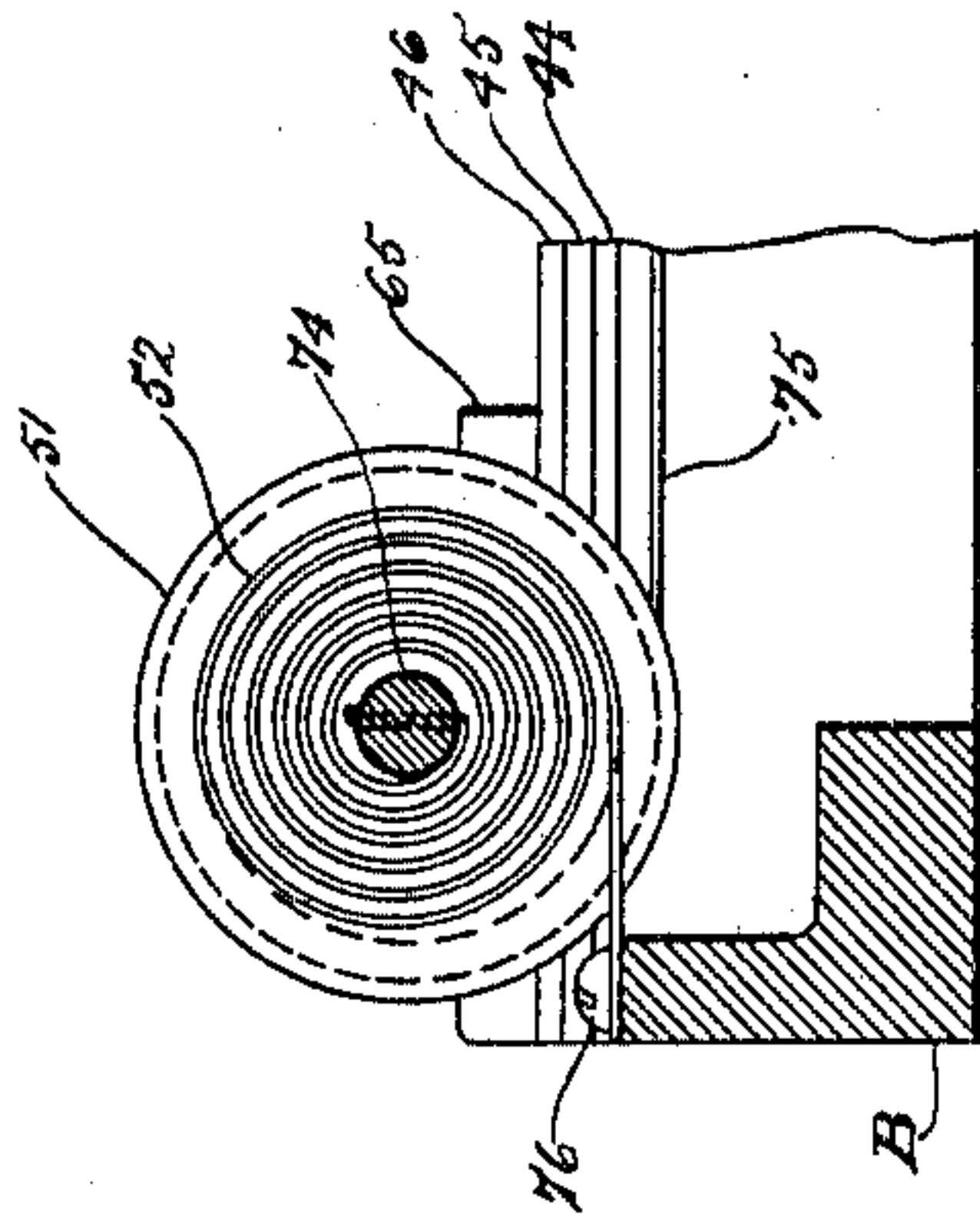


Fig. 7

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4 SHEETS—SHEET 4.

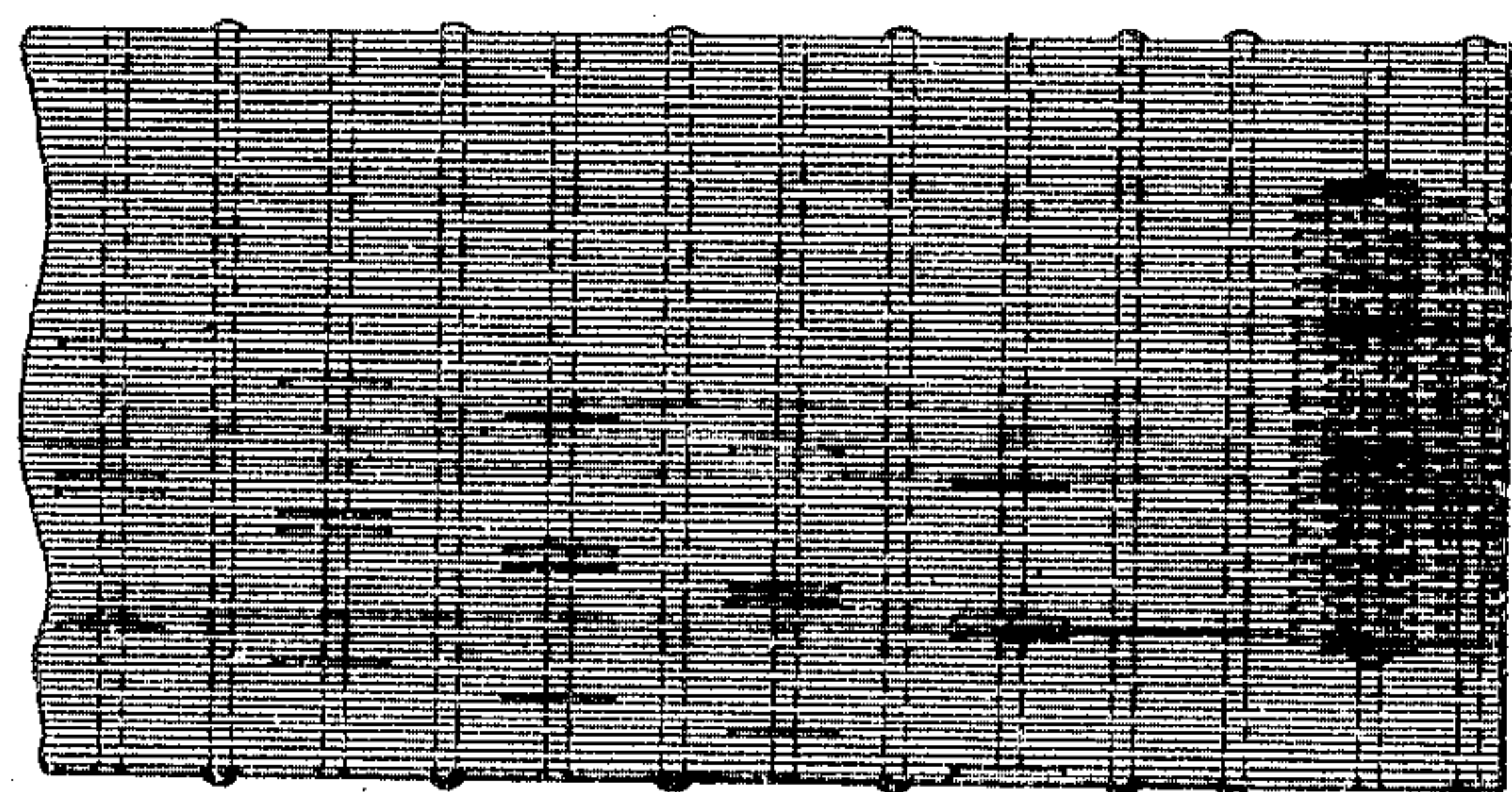


Fig. 8

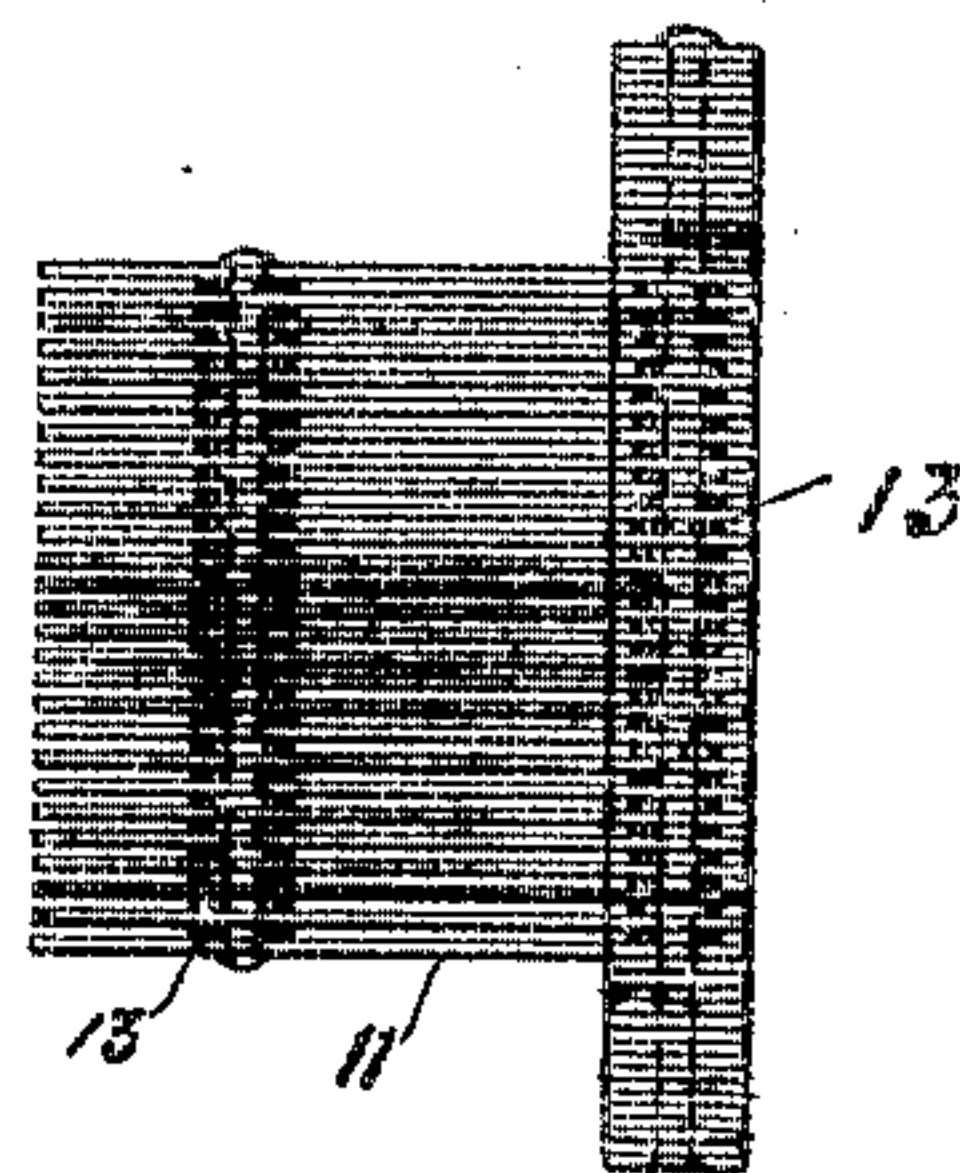


Fig. 9

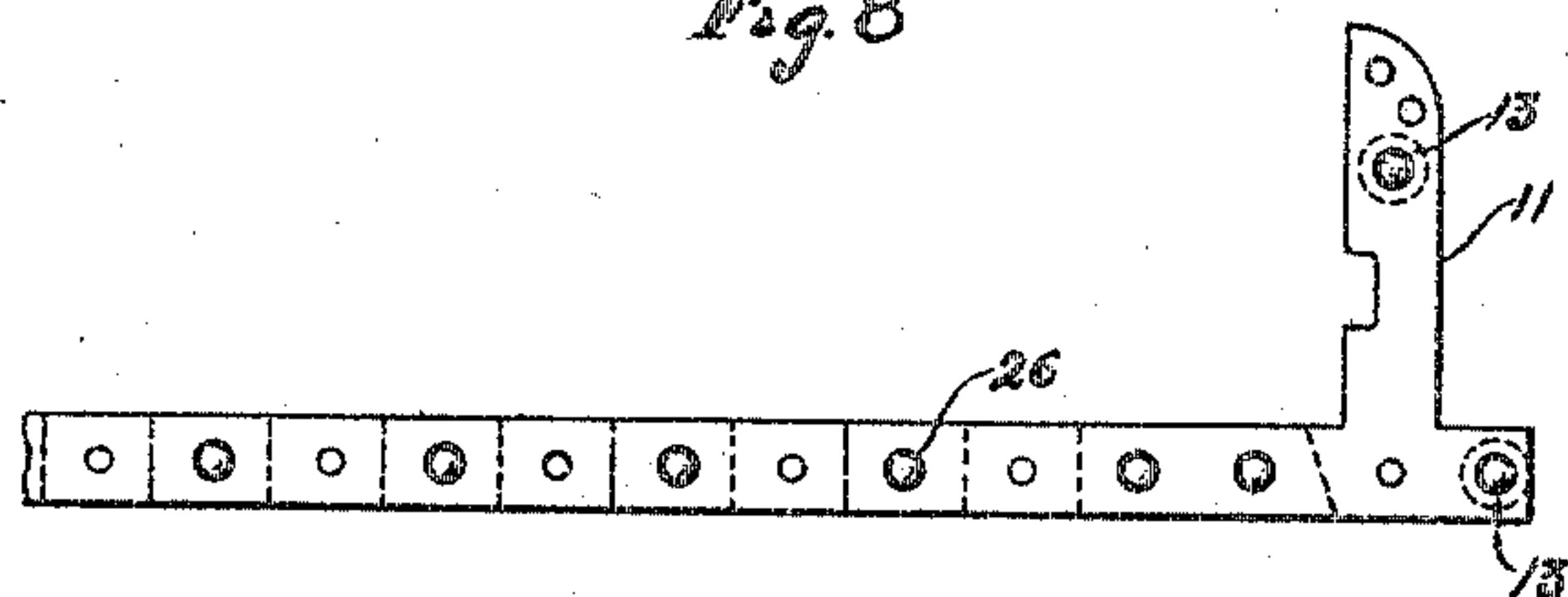


Fig. 10

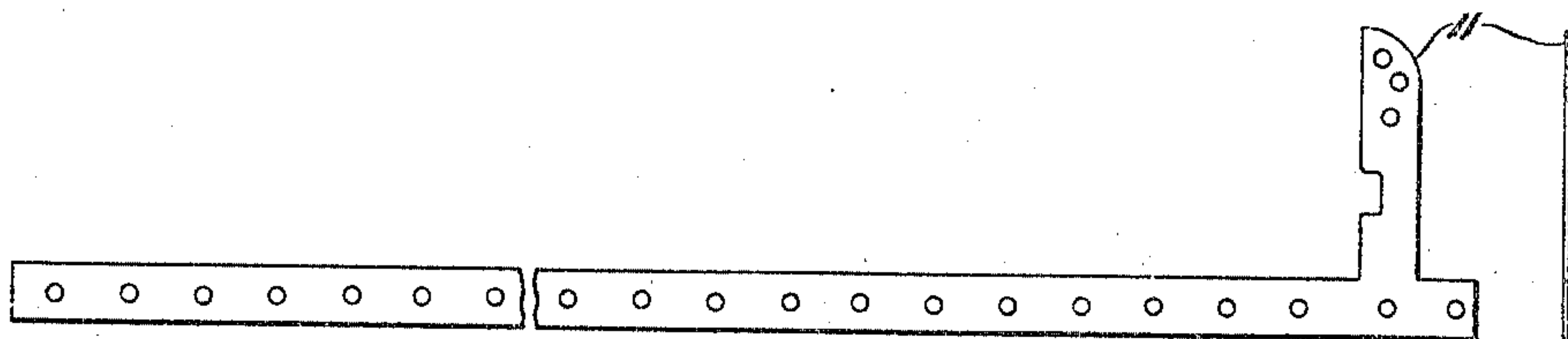


Fig. 11

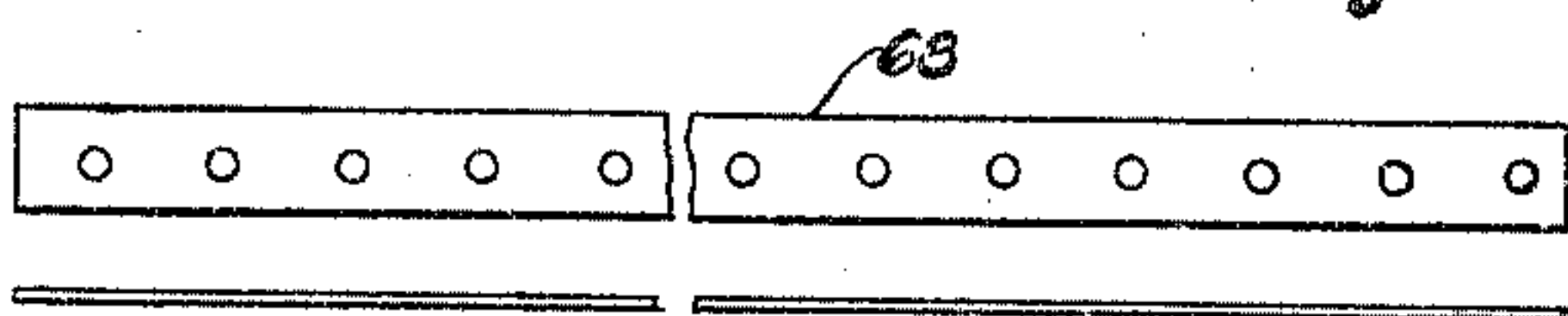


Fig. 12

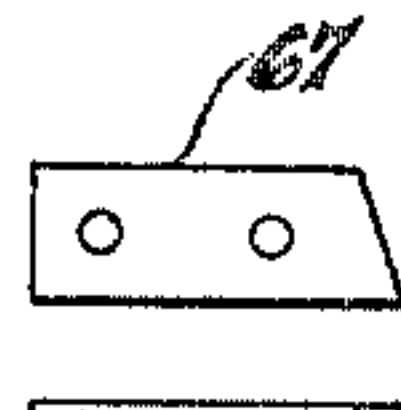


Fig. 13



Fig. 14

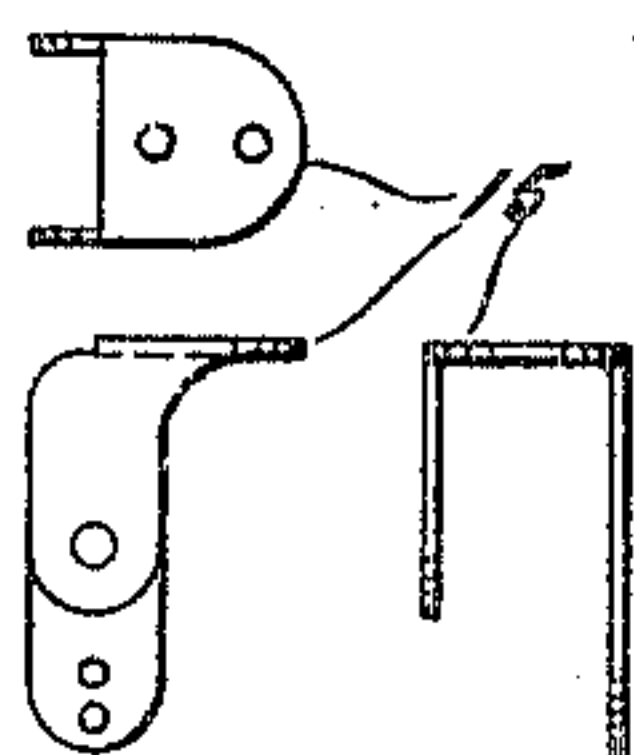


Fig. 15

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Inventors:
By their Attorney: Louis C. Badeau
Alfred P. Allen

UNITED STATES PATENT OFFICE.

LOUIS C. BADEAU AND ISAAC F. BADEAU, OF MAHOPAC, NEW YORK.

MUSIC TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 789,351, dated May 9, 1905.

Application filed August 9, 1904. Serial No. 220,151.

To all whom it may concern:

Be it known that we, LOUIS C. BADEAU and ISAAC F. BADEAU, citizens of the United States, residing at Mahopac, Putnam county, and State of New York, have invented certain new and useful Improvements in Music Type-Writers; and we do hereby declare that the following is a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of this invention is to produce a machine for printing musical characters on a previously-traced staff in a manner to enable the presentation of a musical composition correctly, attractively, and quickly.

A further object is to provide for a maximum of notes, signs, and characters of suitable nature without complicating the construction of the machine or making the same expensive, since it is desirable that a machine of this description should be capable of presenting a piece of music, with all the characters and notations employed in musical composition, complete, ready for use and not requiring any lettering or filling in.

In the accompanying four sheets of drawings, showing one way in which our invention may be carried out, which form part of this specification, and in which like letters and numerals indicate like parts in all the figures and views, Figure 1 is a plan view, and Fig. 2 is a side elevation, of our improved music type-writer. Fig. 3 is a section on line *x x* of Fig. 1, showing part of the stop-carriage with the type-carrier, the latter constituting the printing mechanism. Fig. 4 is a detail plan view of the device to lock the platen-frame. Fig. 5 is a partial sectional view on line *y y* of Fig. 1. Fig. 6 is a partial sectional view of the device for moving the music-sheet support or platen-carriage on line *z z* of Fig. 1. Fig. 7 is a partial sectional view on line *z' z'* of Fig. 1, showing the escape-ment. Fig. 8 is a plan view, Fig. 9 an end view, and Fig. 10 a side view, of the laminated block supporting the stop-keys, Figs. 11, 12, and 13 show different parts of the laminated block, while Fig. 14 represents one of the separating washers or rings. Fig. 15 shows

different views of the stamped part of one of the stop-keys.

Referring now to Fig. 1, our machine consists in the main of five parts: a base B, a platen-carriage D, a platen-frame E, a stop-carriage A, and a type-carrier C. Of these main parts only the base is stationary. Stop-carriage A is arranged to move in a direction parallel to the lines of the staff of music and supports the type-carrier C, which latter moves at right angle transverse to the lines of the staff. Platen-carriage D is arranged to move parallel to the lines of the staff, under the stop-carriage A, supporting platen-frame E, which latter can be moved transverse of the lines of the staff. It is thus seen that the base B supports movably two carriages arranged superposed, which may travel only in the direction of the lines of the staff of music, each of these two carriages supporting movably a device which moves at right angle to the lines of the staff.

The base.—B designates the rectangular elongated base, which at its longer and outer sides is provided with grooves 1, serving as runways or guides for the rollers attached to and carrying the platen-carriage D. At its two ends this base is somewhat higher than at the middle part. Plates or strips 44, 45, and 46 reach across and are secured to the ends along and over the sides of base B, forming thus a glideway 29 for the platen-carriage D. At the left end of the frame or base B is mounted a short shaft 74, suitably journaled in bearings 65, which carries a spool or reel 51 to receive a strap or band 75. One end of this band 75 is fastened to shaft 74, while the other end is secured to the platen-carriage D at 77. A coiled spring 52, placed around the shaft 74, has one of its ends fastened to this shaft 74, the other end being secured, by means of screw 76, to the base B in such a manner that when the platen-carriage D is caused to move to the right this spring 52 is being wound up or increased in tension for the purpose of returning the platen-carriage, preferably step by step during the printing or otherwise. At the right end of the base B is also mounted a short shaft 74', journaled in bearings 65', carrying

an escapement-wheel 53, which engages with pawl 54. This pawl is secured to spacing-key 55 and is mounted on a pin 78, a bracket 56, secured to the frame or base B, supporting this pin, with pawl and spacing-key. Spacing-key 55 is shown to extend across the end of the base supported at its ends by two additional brackets 56' 56'. A spool or reel 51' on shaft 74' carries a strap or band 75', one end of which is secured to the shaft 74', while the other end is fastened to platen-carriage D by means of a clamp 77'.

The platen-carriage.—This carriage D is provided to carry the platen-frame E, and it consists of a rectangular frame formed by parts 27 27, which latter extend across the frame or base B, and parts 71, 72, and 67, arranged parallel and close to the sides of the base B. Four rollers or guide-wheels 57, arranged horizontally and attached to this platen-carriage below the same, engage with the grooves 1 1 in the sides of base B. The platen-carriage in its motion along the base B is also guided by the plates 67, which slide in the recesses formed by the plates 44, 45, and 46, which latter are secured to and reaching from end to end of the base B. Parts 79 and 80 are provided to give additional rigidity to the platen-carriage and to aid in guiding the platen-frame E.

The platen-frame.—A frame E, formed by the bottom plate 30, the flat platen 28, which rests on the former, and parts 42 and 43, the latter extending across the base B at the sides of the bottom plate 30, serve as a movable support for the paper or material which is to be printed on. These parts of the frame E are held together securely by rivets or otherwise. Platen-frame E is arranged to slide in the platen-carriage D in a direction at right angle to the direction of the motion of the platen-carriage D.

The stop-carriage.—A designates the stop-carriage, consisting of parts 2 and 3, which together support the printing mechanism and which parts are connected across the space which is traversed by the type-carrier C by parts 73 73. Part 2 is preferably a casting recessed to receive the laminations 68, 67, and 11. These laminations in the form as shown are provided to act as support for the stop-keys 15, for the stops 14, and for the springs 12, which return the stops to their position at rest. They are held together by pins 26, a suitable number of which pass through perforations in the laminations, thus forming a block. These pins 26 also act as bearings and pivots for the stop-keys 15 and stops 14. Wherever a stop-key or a stop is located the lamination consists of two or more parts, as shown by Figs. 12 and 13, instead of in one piece, as shown by Fig. 11. By thus leaving out parts of the laminations spaces are provided to receive the stop-keys and stops. As shown in Fig. 15, one side of the stop-keys is

longer than the other. The longer side or end reaches a certain distance below the block of laminations and is connected, by means of a piece of stiff wire 25, with the corresponding stop. Washers 13 are placed between the laminations 11, Figs. 8, 9, and 10, at the ends of the laminations nearest to the printing mechanism. To receive the stops 14 and to provide sufficient space for these stops to freely move in when desired, laminations, as shown in Fig. 11, having an upwardly-projecting end alternate with laminations without such upwardly-projecting ends, as shown in Figs. 8 and 13. Wherever there are stop-keys placed in the laminated block, the laminations may consist of two or three parts, as shown in Figs. 12 and 13, instead of in one piece, as shown in Fig. 11.

The parts 2 and 3 of the stop-carriage A are connected by parts 73 73. The space between parts 2 and 3 is traversed by the type-carrier C in a direction at right angle to the lines of the staff of music.

The type-carrier.—The printing mechanism is contained mainly in the type-carrier C. A box-shaped support is formed by parts 4 and 5, which are perforated to receive short tubes 6. These tubes are provided at the top with keys 19 and at the bottom with types 21, suitable for printing the desired characters, and are slotted longitudinally at 90 to receive a strip or plate 22. This strip is supported by brackets 71, secured to part 5 of the type-carrier C, and passes through all of the type-tubes 6 of one of the three rows of such type-tubes shown, acting as a guide for the type-tubes to maintain perfect alinement of the types during the vertical reciprocating motion of these type-tubes on being depressed and subsequently returned to normal position. The return to the position of rest or normal position is effected by means of spiral springs 23, placed within the type-tubes, which rest on the strip or plate 22, while at the top pressing against the inner end and lower side of the wing-guides 7, 8, or 9. These wing-guides are fastened to the type-tubes 6 and extend laterally at right angle to the motion of the type-carrier C and to the left of the type-tubes.

Where the parts 4 and 5 of the type-carrier C are joined, a flange is formed on each side, which serves as a guide or rail for the rollers 69, of which six are shown. These rollers support the type-carrier and admit of its free horizontal motion transverse of the lines on the staff of music. Parts 82, 82', 83, and 83', which form part of the stop-carriage A, act as supports for the clamps which carry the rollers 69, these clamps consisting of parts 32 and 33, joined near their middle, a screw 34 serving to hold the clamp in position.

A pulley 87 is loosely mounted on shaft 74'. Around the former's sleeve is wound a spiral spring, the inner end of which is secured to

this sleeve, while the outer end of this spring 86 is fastened to the base B. A cord 35 of sufficient length is wound on this pulley, one end of the cord being fastened to the pulley, while the other end is secured to the type-carrier at 60, the cord passing round a pulley 36, mounted on a post 37.

The type-carrier C is also provided with a pronged sheet 10, which serves the purpose of guiding the wing-strips 8 and 9 when being moved vertically.

The base B is provided at its left end with a shaft 89, suitably journaled, which shaft carries at each end a lever 88 and 49. These levers connect, by means of curved links 47, with the stop-carriage A. A segmental plate 50 is shown attached to the base B, provided at its periphery with notches, preferably of a number equal to the number of rows of type-tubes on the type-carrier.

The platen-carriage D, Fig. 4, carries a hinged arm 61, to which a number of stops 58 may be adjustably secured to engage with a corresponding stop 59, secured to the platen-frame E. A spring 64 serves to press the stops into close contact.

An index-plate 31 is shown fastened to the part 3 of the stop-carriage A, the graduations of which correspond to the positions of the types on the type-tubes, as determined by the stop-keys 15 during the printing.

An inking-roller is shown at 24 in such a position that any one of the types secured to the type-tubes may in passing over this roller take a sufficient quantity of ink off the roller to successfully print its character on the paper carried by the platen-frame. A guide-sheet 70 is provided to prevent the type-tubes from being depressed to a degree detrimental to the inking-roller.

Operation of the music type-writer: When a sheet of paper 81, provided with music-staffs, is placed on the flat platen 28, held in a proper position thereon in any suitable manner, (not shown,) the placing-stops 58 and 59, which are adjustable on their supports, are placed in such a position relative to one another that on being interlocked the lines on the music-staff will register with the corresponding lines on the index-plate 31. With the relative positions of the different parts of our music type-writer, as shown in Fig. 1, the printing-line is covered by the line $y y$, and the type-carrier C, which constitutes the printing mechanism, is in its normal position or position of rest. The printing-line is at right angle to the music-staff, and any one of the type-tubes carrying the type situated in the left row of such tubes may be brought to any one of the positions of the music-staff, of which we have assumed twenty-four and for each provided a stop-key 15 and stop 14. On depressing a stop-key 15 the corresponding stop 14 is brought into the position 14', Fig. 3. The exact printing-point on the printing-line is

thus secured. To print the desired character, the corresponding type-tube is then depressed to such an extent that its wing-guide 9 is in the position 9', (shown by dotted lines,) after which the type-carrier is moved toward the bottom of the music-sheet 81 until the wing-guide 9 meets stop 14, the latter, now in the position 14', projecting into the path of the wing-guide. On its way to the printing-point the type comes in contact with the inking-roller 24 and on subsequently being further depressed will print on the staff in the desired position the desired character. On releasing type-tube 6, with its key 19, the spring 23 will return the type-tube to its normal position, and the spring 86 will return the type-carrier C to its position of rest, while on releasing stop-key 15 the spring 12 will return stop 14 to its position of rest. If the type to be printed is carried by a type-tube located in another row, then the middle line of the respective row of type-tubes is brought over the printing-line $y y$ by means of the shifting device, consisting of levers 49 and 88 and curved links 47. Through the medium of the lever 49, the free end of which ends in a handle, the stop-carriage A supporting the type-carrier C, the desired row of type-tubes is brought over the printing-line and held there by a latch-lever 48, which engages with the corresponding notch on segmental notch-plate 50. In this manner we are enabled to print any one of the types carried by the three rows of type-tubes we have shown in as many different positions on the printing-line—that is, a line at right angle to the music-staff—as there are stop-keys and stops. To move the paper to the left, spacing-key 55 is depressed, which causes the escapement-wheel 53 to be released step by step and permitting the spring 52 to move the platen-carriage D to the left, also step by step as long as the spacing-key is being alternately depressed and allowed to return to its normal position through the pressure of the string 66, the bands 75 and 75' serving as a means of connection between the platen-carriage and the spacing device aforescribed. When the next music-staff is to be printed on, the arm 61, which is pivotally secured to the platen-carriage D, is swung to one side until spacing-stop 58 is disengaged from stop 59, when the platen-frame, with the music-paper, may be moved to bring another staff into the proper printing position. Spacing-stop 58' may then engage with stop 59 to firmly hold the platen-frame during the printing. The arm 61 may be provided with as many spacing-stops as there are staffs on the music-sheet. To return the platen-carriage to the position shown in Fig. 1 or to print on a new staff, the escapement-wheel 53 is disengaged from shaft 74' through any suitable means, (not shown,) and this shaft is turned by means of a handle or similar device (not shown) in

a direction to wind up spring 52 on shaft 74 through the medium of bands 75 and 75'.

We have shown three rows of type-tubes on the type-carrier C or printing mechanism.

5 We may, however, prefer to arrange the type-tubes in a lesser or greater number of rows, according to the number of the types to be employed.

10 The platen-frame E may be withdrawn from the platen-carriage D on bringing the spacing-stops 58 or 58' out of engagement with stop 59.

15 Though we have shown an inking-roller or cylindrical revolving pad, we do not confine ourselves to such or similar devices, but may prefer to use an inking-ribbon.

20 The device for effecting reciprocating motion for the platen-carriage D parallel to the music-staffs by means of an escapement-wheel, pawl, and spring as shown and described may also be varied or replaced by a different device without affecting the nature of our invention.

25 Having now particularly described and ascertained the nature of our invention and in what manner the same may be performed, what we claim as new, and desire to secure by Letters Patent in the United States, is—

30 1. A music type-writer comprising, a stationary base, or frame, provided with ways longitudinally of the same, a platen-carriage movably mounted on said ways, means for imparting reciprocating motion to said platen-carriage, a paper-holding platen-frame movably mounted on said platen-carriage adapted to slide transversely to the motion of the said platen-carriage, a stop-carriage, also movably mounted on the said base on ways adapted to slide longitudinally of the same, parallel, and in juxtaposition, to the said platen-carriage, means for imparting reciprocating motion to the said stop-carriage, a type-carrier, or printing mechanism, movably mounted on the said stop-carriage, and means for imparting reciprocating motion to the said printing mechanism transverse to the motion of, both, the stop-carriage and the platen-carriage, but parallel to the motion of the paper-holding platen-frame, substantially as set forth.

50 2. A music type-writer comprising, a stationary base, or frame, provided with ways longitudinally of the same, a platen-carriage movably mounted on said ways, means for imparting step-by-step motion to said platen-carriage, a paper-holding platen-frame movably mounted on said platen-carriage, a stop-carriage mounted on the said base in juxtaposition to the said platen-carriage provided with a series of movable stops and a series of stop-keys engageable with the said stops whereby a predetermined stop may be projected beyond the line formed by the stops when in their normal position, a type-carrier, movably mounted on the said stop-carriage, provided with a series of movable types and

type-operated wing-guides, the said wing-guides, by a partial printing motion of their actuating-types after having been moved from their normal position, in conjunction with the said projecting stops, determining the desired printing-point on the printing-line for the desired type, and means for imparting transverse motion to the type-carrier and printing motion to the type, substantially as set forth.

75 3. A music type-writer comprising, a stationary base provided with ways longitudinally of the same, a platen-carriage movably mounted on said ways, means for imparting step-by-step motion to said platen-carriage, a paper-holding platen-frame movably mounted on said platen-carriage, a stop-carriage mounted on the said base in juxtaposition to the said platen-carriage provided with a series of movable stops normally out of the transverse path of the wing-guides, means for operating the said stops, whereby any desired stop may be projected into the transverse path of any guide which has been forced from its position of rest, a type-carrier, movably mounted on the said stop-carriage provided with a series of movable types and type-operated wing-guides, an inking-roller revolvably mounted on the said stop-carriage across, and below, the path of any type, and means for bringing the types in contact with the inking-roller, when moving to the printing-point, by a partial printing motion of the type-tube, substantially as set forth.

100 4. A music type-writer comprising, a stationary base provided with ways longitudinally of the same, a platen-carriage movably mounted on said ways, means for imparting step-by-step motion to said platen-carriage, a paper-holding platen-frame movably mounted on said platen-carriage, a type-carrier movably transversely of the music-staffs, movable types mounted on said type-carrier arranged to form a plurality of rows, each row being parallel with the line of transverse motion, type-actuated wing-guides for the types, a supporting-carriage for the type-carrier movable longitudinally of the music-staffs, means for adjusting such carriage to secure any desired row of type in line with the printing-point, movable stops on the carriage normally out of the transverse path of the wing-guides, means for operating the stops whereby the desired type may be guided to the printing-point, and means whereby transverse motion may be imparted to the carrier, and printing motion to the type, substantially as set forth.

125 5. A music type-writer comprising, a stationary base, provided with ways longitudinally of the same, a platen-carriage movably mounted on said ways, means for imparting step-by-step motion to said platen-carriage, a paper-holding platen-frame movably mounted on said platen-carriage capable of sliding transversely to the motion of the platen-car-

riage, means for imparting transverse motion
to the platen-frame, means for locking the
platen-frame with the platen-carriage, an in-
dex secured to the platen-carriage by the aid
5 of which the paper-holding platen-frame may
be guided to the proper printing position, a
type-carrier movable transversely of the mu-
sic-staffs, movable types mounted on said
type-carrier, type-actuated wing-guides for
10 the types, a supporting-carriage for the type-
carrier movable longitudinally of the music-
staffs, movable stops on the carriage normally
out of the transverse path of the wing-guides,
means for operating the stops whereby the

desired type may be guided to the printing- 15
point, and means whereby transverse motion
may be imparted to the carrier, and printing
motion to the type, substantially as set forth.

In testimony whereof we have hereunto set
our hands, this 8th day of August, A. D. 20
1904, in the presence of two subscribing wit-
nesses.

LOUIS C. BADEAU.
ISAAC F. BADEAU.

Witnesses:

EDYTHE COLE,
EMILY DAVIS.