

J. S. BANCROFT & M. C. INDAHL.

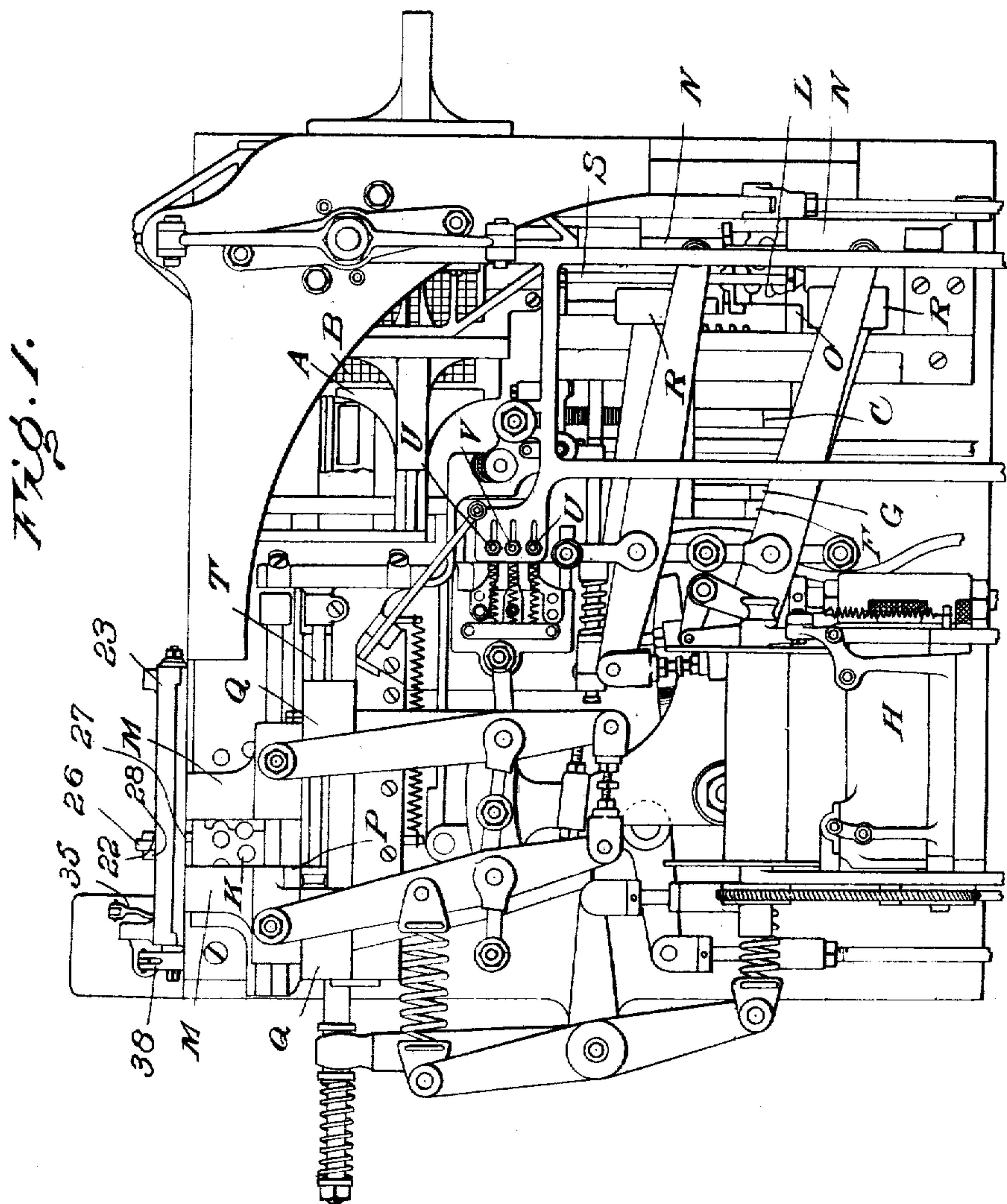
TYPE CASTING MACHINE.

APPLICATION FILED JAN. 8, 1907.

915,538.

Patented Mar. 16, 1909.

4 SHEETS—SHEET 1.



Inventors

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Witnesses

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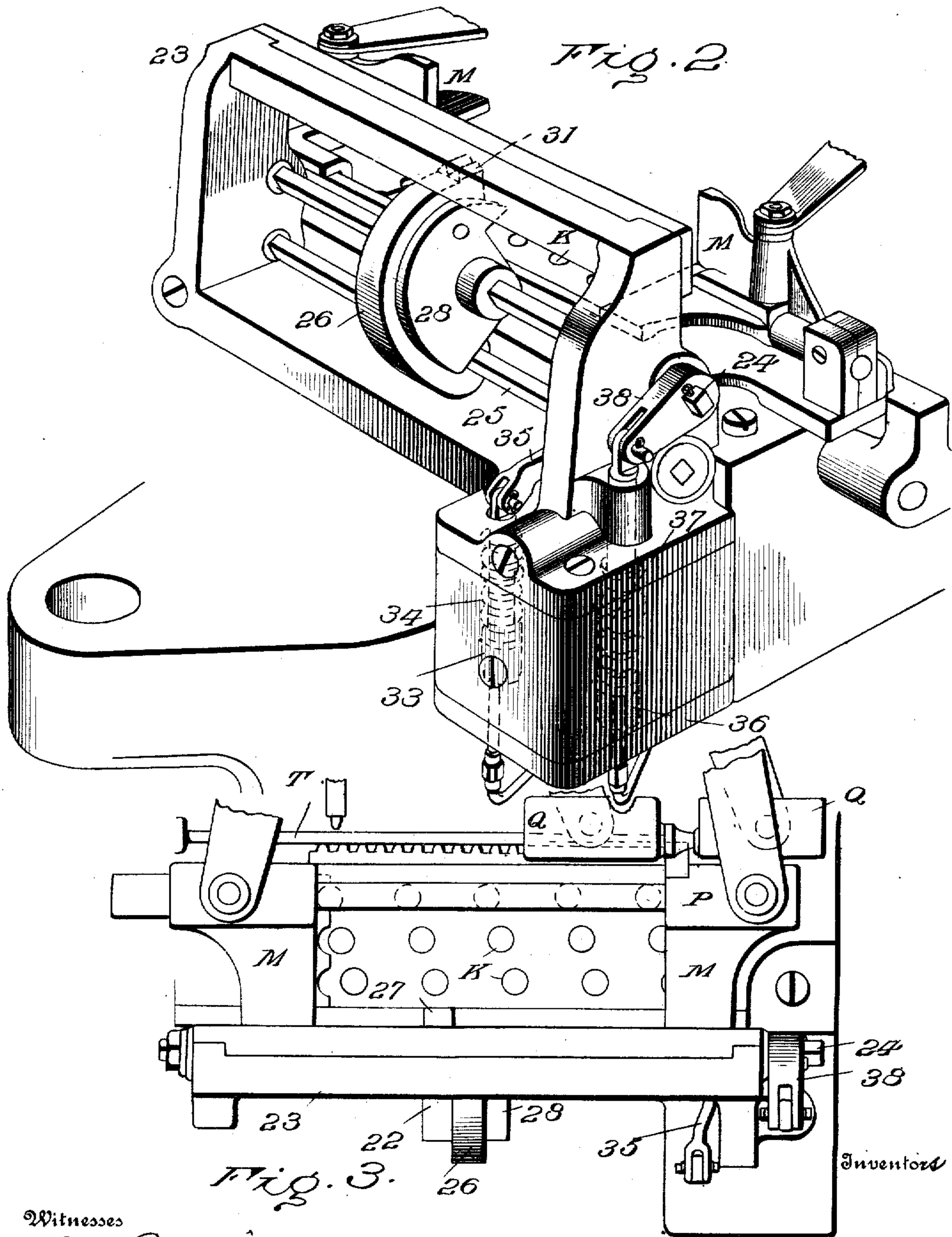
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4 SHEETS—SHEET 2.



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Fig. 4.

Fig. 5.

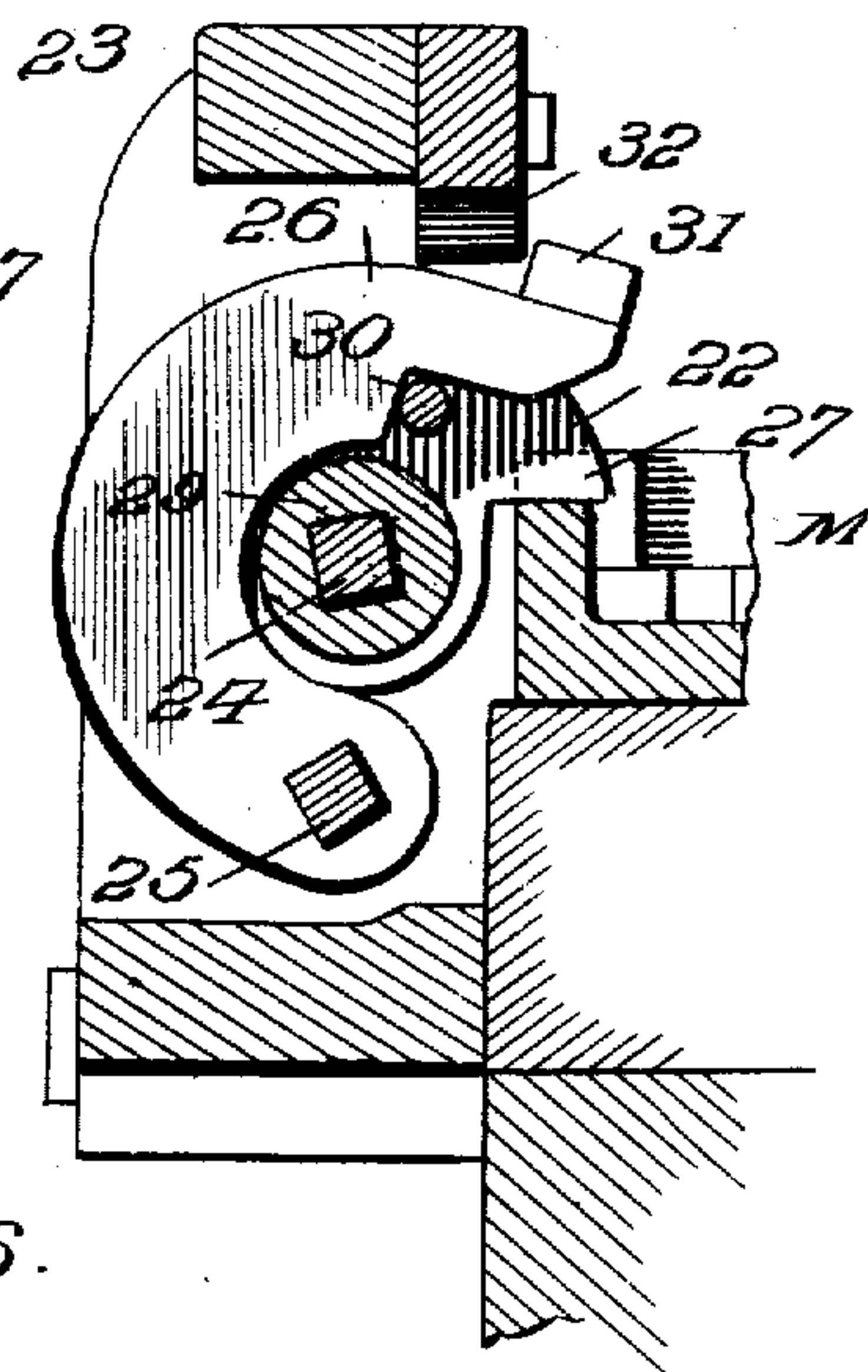
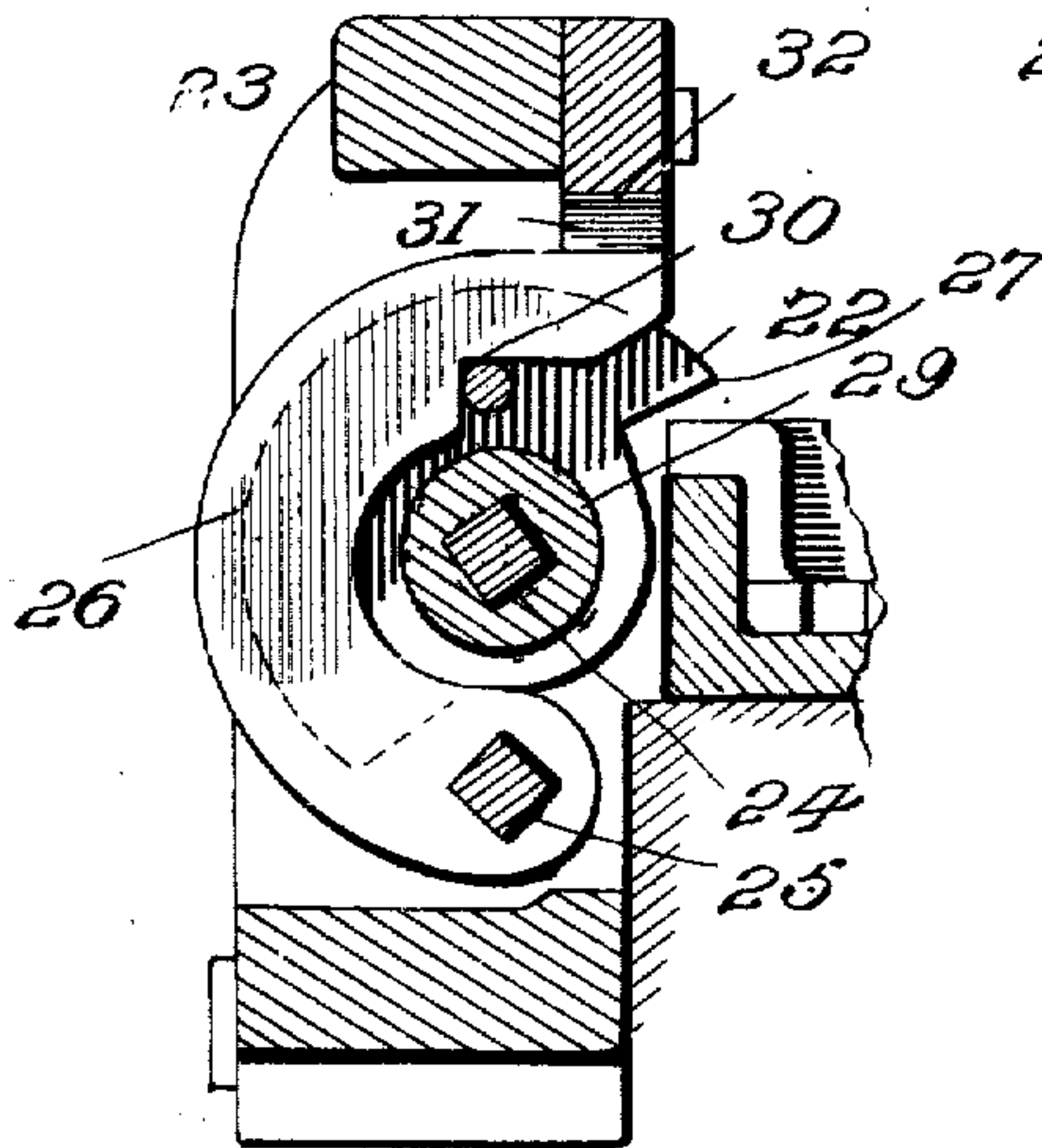
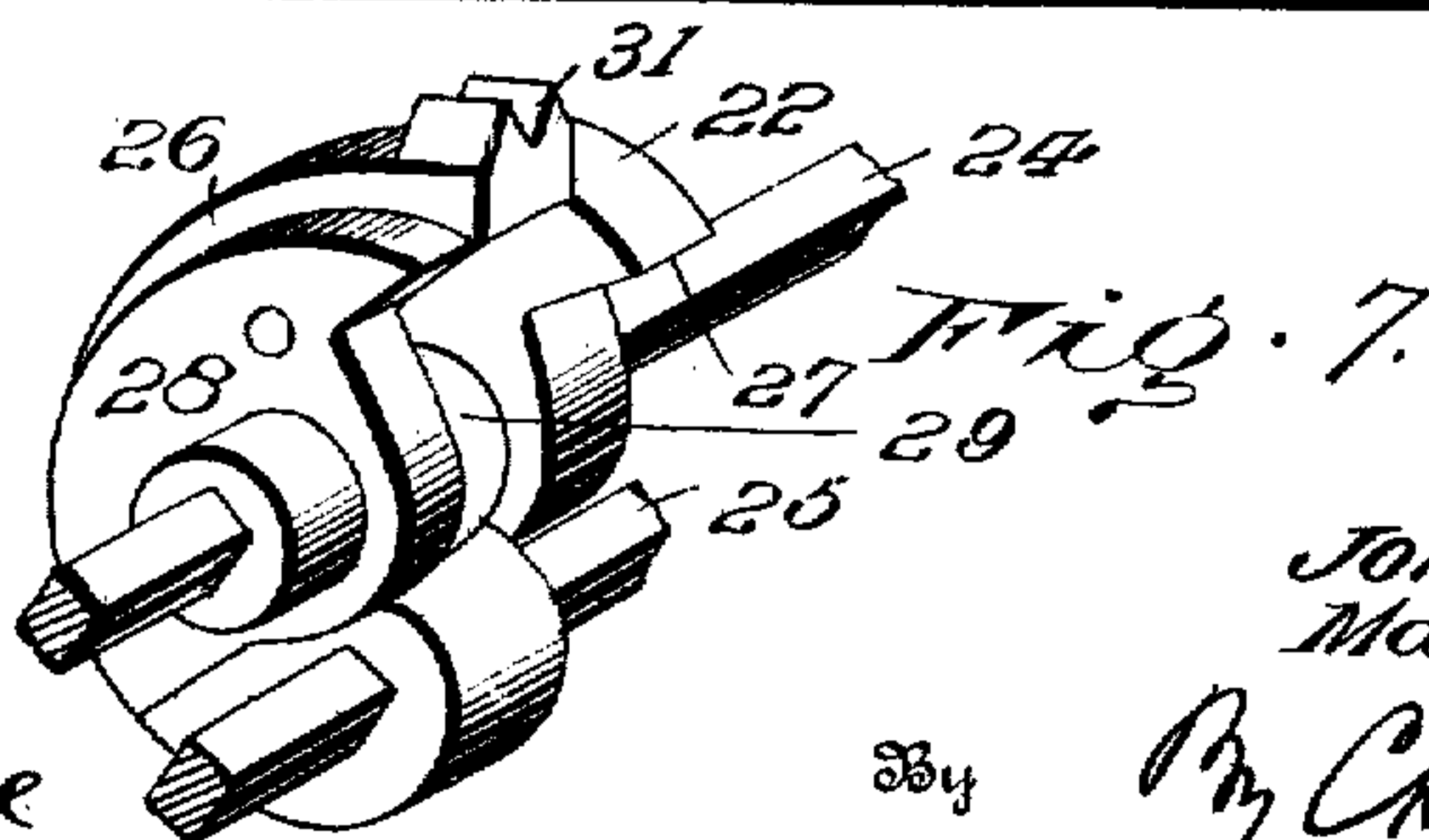
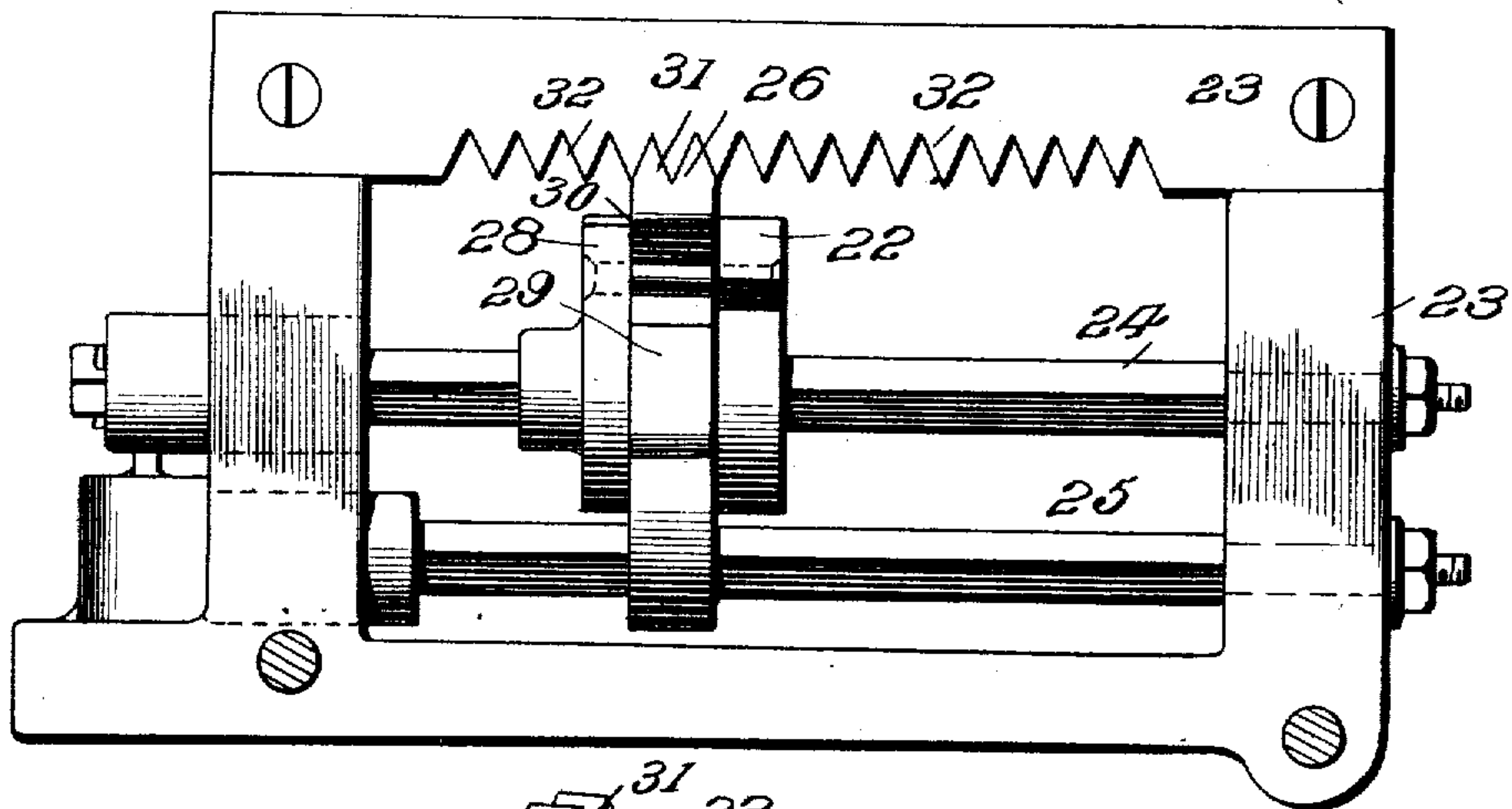


Fig. 6.



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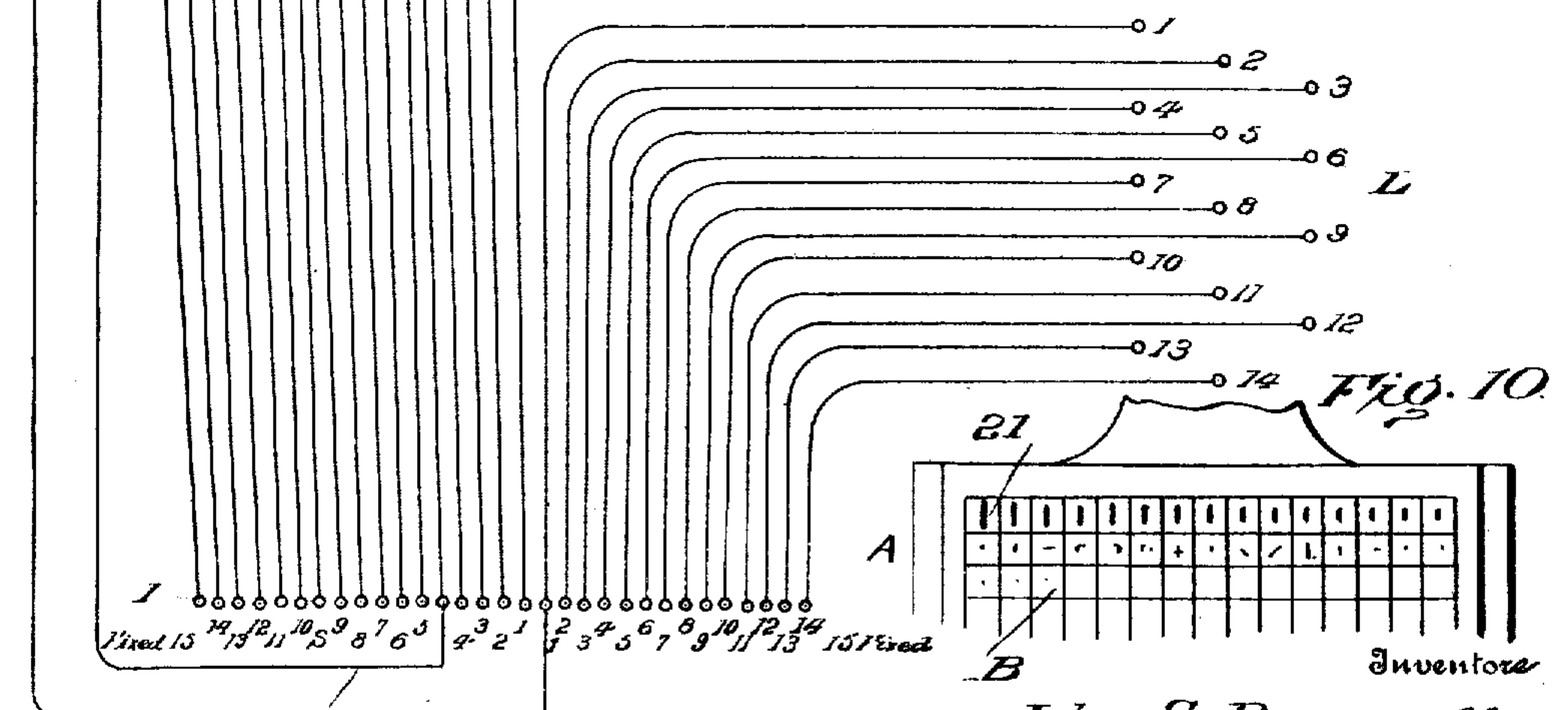
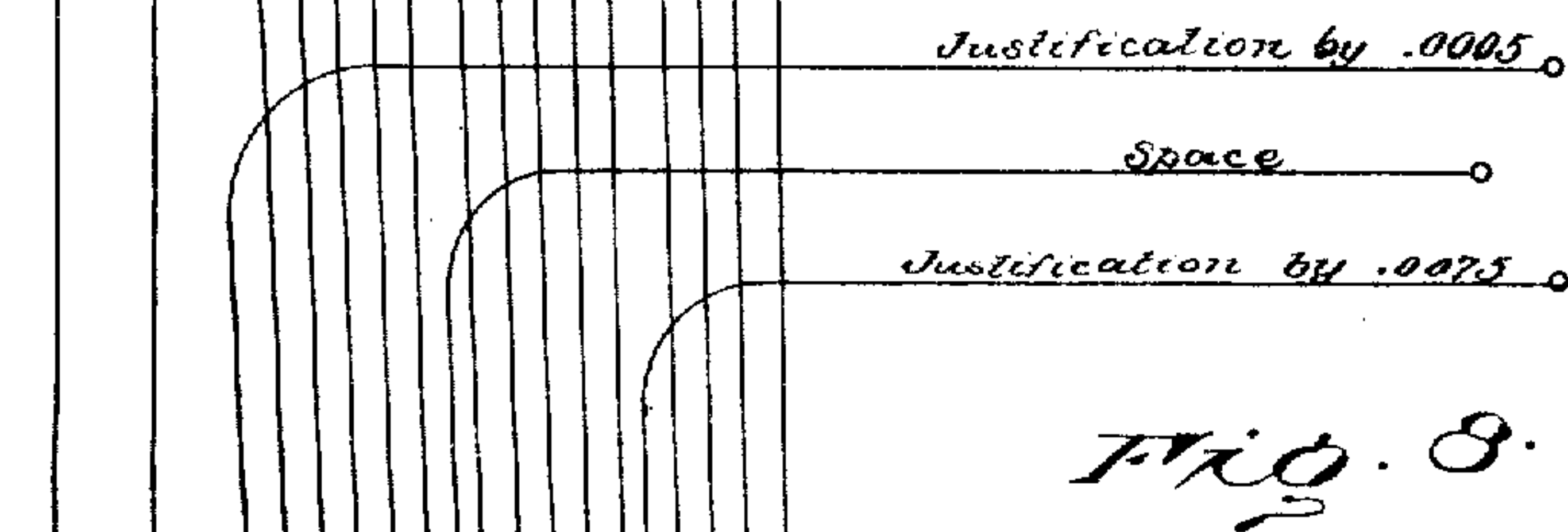
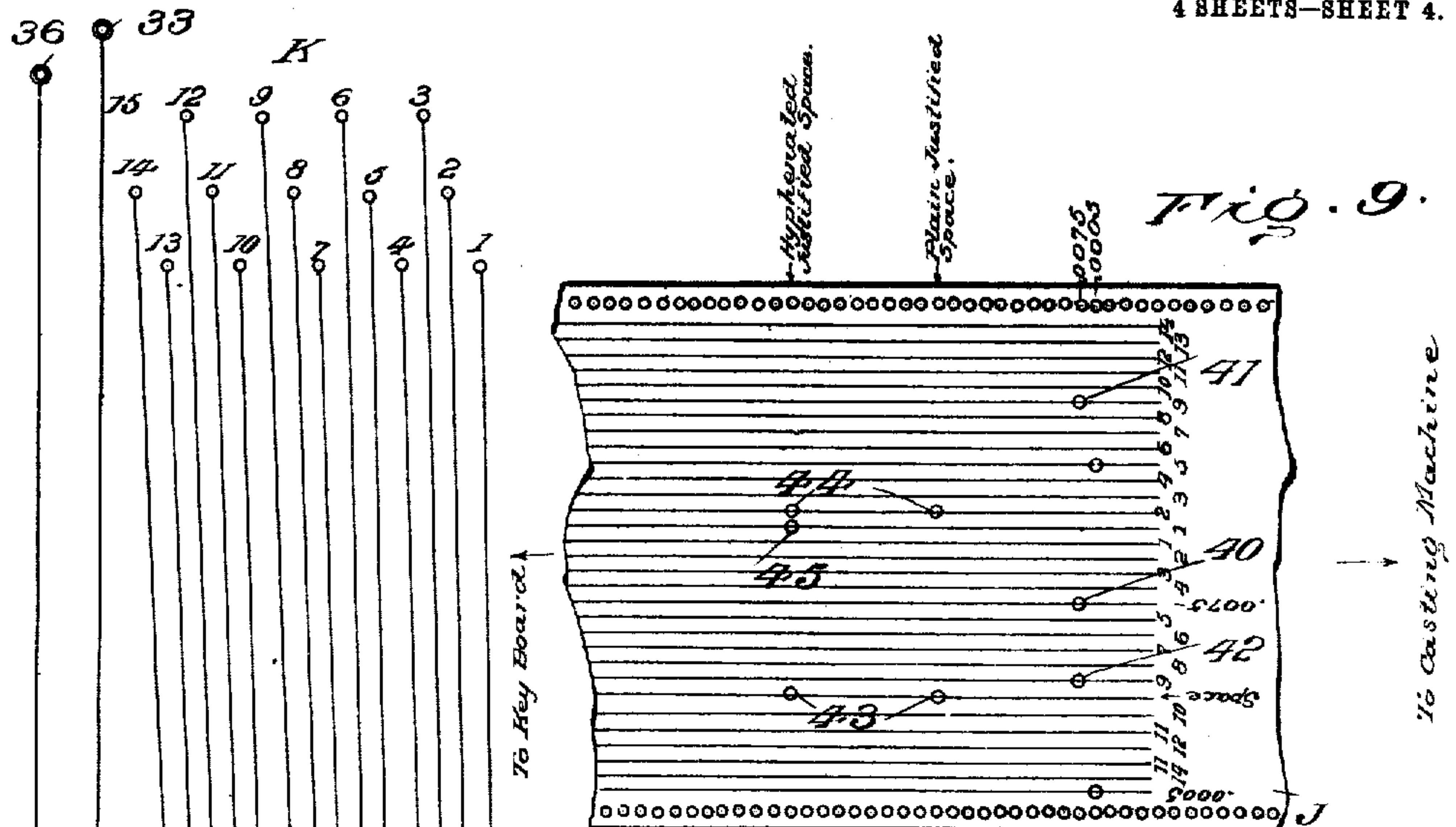
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4 SHEETS—SHEET 4.



Witnesses 40 39

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# UNITED STATES PATENT OFFICE.

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ASSIGNORS TO LANSTON MONOTYPE MACHINE COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF VIRGINIA.

## TYPE-CASTING MACHINE.

No. 915,538.

Specification of Letters Patent.

Patented March 16, 1909.

Application filed January 8, 1907. Serial No. 351,378.

*To all whom it may concern:*

Be it known that we, JOHN SELLERS BANCROFT and MAURITZ C. INDAHL, both citizens of the United States, and residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Type-Casting Machines; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

This invention relates to automatic type casting and composing machines wherein separate type are produced in the order of composition and assembled in justified lines, and it has for its principal object to enlarge the capacity of the machine so that printing surfaces or characters may be imposed upon the variable space type, when desired, thus producing what may be termed justifying-character type as distinguished from normal character and justifying space type.

The invention is especially designed for use in the production of what is known as cancelled matter wherein each character is provided with a cross-bar extending approximately the full width of the type body so that when assembled the cross-bars unite to produce a continuous line intersecting such of the characters, or so much of the composition, as represents canceled matter; but it is also adapted for other uses, as where other forms of printing surfaces are to be applied to the variable space type.

It is desirable that lines of cancellation should be continuous, crossing the spaces as well as the characters; but prior to this invention it has been found impossible to produce this class of work on automatic machines owing to the variable dimensions of the spaces, for justifying purposes, and the impracticability of providing correspondingly variable matrices.

The present invention is designed to overcome this defect in or supply the deficiency of prior machines and to this end it consists broadly in equipping the type casting machine with a graded series of matrices, and providing automatic means for selectively presenting that one of the matrices corresponding in dimension with the predetermined justifying space type, whereby the

latter, when cast, will be provided with a cross bar, hyphen or other printing surface equal to or closely approximating the width of said justifying space type.

It also consists in a preferred form of embodiment wherein the type casting machine is equipped with supplemental matrix selecting and positioning devices adapted to be automatically set to correspond with the adjustment of the justification dimensioning member or mechanism as, for example, the justifying wedge, and to be brought into action in conjunction with the justifying space mechanism to present the hyphenated or other matrix corresponding with the predetermined dimensions of the space type.

It also includes means whereby the setting of the supplemental matrix selecting and positioning devices and the bringing of the latter into action are controlled directly from the perforated record strip or controller.

It also includes minor features of construction, arrangements and combinations of parts as hereinafter more fully described and pointed out in the claims.

In the accompanying drawing illustrating a preferred form of embodiment, Figure 1 is a top plan view of a portion of a type casting and composing machine with the improvement applied thereto. Fig. 2 is a perspective view of the positioning jaws and the supplemental matrix selecting and positioning attachment. Fig. 3 is a top plan view of said attachment and jaws. Fig. 4 is a sectional view of the attachment showing the locking member of the auxiliary stop in engaged position. Fig. 5 is a similar view with the locking member disengaged to permit adjustment of the auxiliary stop. Fig. 6 is a side elevation of the supplemental selecting and positioning attachment detached. Fig. 7 is a perspective view of the auxiliary stop and its associated locking member. Fig. 8 is a diagrammatic view of the pneumatic control system. Fig. 9 illustrates a section of the record strip with signal perforations for governing the adjustment and action of the auxiliary stop. Fig. 10 is a face view of a portion of the die-case containing the graded series of hyphen matrices.

The same letters and numerals occurring in the several figures designate like parts.

The improvements are illustrated as applied to the type casting and composing ma-



chine of Patent No. 625,998, dated May 30, 1899, to which reference may be had for a full disclosure of the mechanism thereof.

It will suffice for present purposes to designate some of the principal parts with which the present invention is immediately connected, such as the two way movable die-case A equipped with a plurality of matrices B arranged in parallel lines and columns and graded in one direction according to width of character; the adjustable mold (not shown) located beneath the die-case and upon which the selected and centered matrix is clamped; the normal wedge and major and minor justification wedges F and G for dimensioning the mold for character and space type; the paper feed mechanism H provided with a series of ports I controlled by the perforated record strip J, Fig. 6, to admit pressure to the several devices connected with said ports; the primary controllers or fixed gages represented by the two series of stop pins K and L; the primary positioning or gaging mechanisms, represented by the two pairs of jaws M and N whose closed positions are determined by the stop pins; the secondary controllers or shiftable gages represented by stop bars O and P brought to position by the closing of jaws M and N; the secondary positioning or gaging mechanisms represented by the two pairs of jaws Q and R closing on the stop bars O and P respectively, and engaging translating devices S and T, to shift the die case, one of said pair of jaws (R) also operating to shift the normal wedge E in unison with the die-case, to effect an adjustment of the mold corresponding with the columns of matrices, and to successively shift the justification wedges F and G when coupled therewith; the trip rods U for shifting the justifying wedges into the path of jaws R to adjust said wedges; and the trip rod V controlling the transfer wedges (not shown) for bringing into action the justification wedges to dimension the mold when space type are to be cast.

The paper feed mechanism is provided with thirty-one ports, I as indicated in Fig. 8 divided into two series of fourteen each—numbered 1 to 14, inclusive, one series connected to and controlling the projection of pins K and the other that of pins L. Of the remaining ports one controls the trip rod U of the major or .0075 justification wedge, another the trip rod of the minor or .0005 justification wedge, and the third trip rod V for bringing into action the justification wedges when a space is called for by the record strip.

The series of stop pins K corresponds with the lines of matrices in the die-case, while the series of stop pins L corresponds with the columns of matrices and with successive stages of adjustment of the normal and justification wedges, there being in the present in-

stance, fifteen stop pins in each series of which fourteen are controlled by ports I in the paper feed mechanism, as indicated by the diagram, Fig. 8, the fifteenth or last pin of each series being fixed and permanently projected. But one jaw of each pair of jaws M N is adapted to engage the stop pins of its series K or L; hence if two or more pins are projected simultaneously, the first alone will designate the closed position for the jaws.

To locate any given matrix and adjust the mold a pin of series L representing column and, incidentally, width is brought into action in conjunction with a pin of series K representing line or position in column, whereby jaws M N in closing bring stop bars O and P to corresponding positions, where they are locked, so that upon the subsequent closing of jaws Q R upon said stop bars translating devices S T and normal wedge E will be actuated to center the desired matrix and adjust the mold to correspond therewith.

When a space type is required the stop pins are operated as before described, to locate the blank matrix and shift the normal wedge, but, in addition, the trip rod V is operated to bring into action the justifying wedges, to produce a type body of predetermined width. But preliminary to the production of any type for a line the justifying wedges F G are set to produce the desired width of space type for the line. The major justification wedge F has a pitch of .0075 inch per degree of movement, and the minor justification wedge G a pitch of .0005 inch. To set either wedge a stop pin of series L corresponding to the desired degree of adjustment is brought into action in conjunction with the proper designating trip rod U, so that when jaws R move to engage the stop-bar, the wedge thus designated will be acted upon by said jaws and carried to adjusted position, after which it will move from the path of the jaws until its trip rod is again operated at the beginning of the next succeeding line of composition. While the adjustment of the justification wedges is being effected the pump action is automatically suspended so that no metal is supplied to the mold at this time.

The bringing into action of the stop pins K L and trip rods U V is effected by perforations properly located in the record strip J and acting to control the admission of pressure to the appropriate ports I.

As thus far described, the mechanism and mode of operation are identical with those of the prior patent referred to.

Attention is directed to the circumstance that whereas the set-way dimensions of the character type of a given font are constants, due to the correlative adjustments of the die-case and normal wedge, those of the space type, while uniform for the line, are variable for different lines, the size depending upon



the space to be filled divided by the number of space type, which factor is determined by the setting of the justification wedges F G. The problems are (1) to supply some or all of these variable spaces with printing surfaces proportioned to their width; (2) to determine and control the occasions where such printing surfaces are so applied, to the end that some or all of the spaces in a line may be so provided; and (3) to effect these results without interference with the normal action of the machine.

In the preferred form of embodiment illustrated the left hand column of the die-case as it stands in the machine corresponding with the first stop-pin L is equipped with a series of matrices 21 equal in number to the stages of adjustment of the major justification wedge F and all containing the same character, such as a hyphen or dash, but of different set-way dimensions, the latter varying progressively and uniformly by an amount equal or closely approximating the unit of the major justification wedge, in this instance .0075 of an inch. In addition, there is provided an auxiliary primary controller 22 adapted to be set or adjusted to correspond in position with the major justification wedge F at the time the latter is set, and to operate in place of or as a substitute for the normal primary controller K, when a character-space is desired or designated, to designate and bring into action that one of the series of matrices 21 corresponding in dimensions with the space type resulting from said adjustment or setting of the major justification wedge.

The improvements are detachably applied to the main frame, being contained in or mounted upon a frame 23, located in proximity to the jaws M of the primary controller, which latter, it will be remembered, controls the position of the die-case in a direction parallel with the columns of matrices that is longitudinally of the series of matrices 21.

Supported in bearings in opposite ends of frame 23 are two parallel shafts 24, 25, the upper one, 24, carrying the auxiliary primary controller 22, and the lower one 25, a locking member 26 for retaining said controller 22 in adjusted position. Auxiliary controller 22 is mounted to move freely in a direction longitudinally of its shaft 24 and to turn with the latter, and in the form shown it consists of a disk provided with a transverse opening fitting the angular section of shaft 24 and cut away at one side to form an intercepting shoulder or abutment 27 adapted to be advanced into and withdrawn from the path of the engaging member of jaws M by reverse movements of its shaft 24. Similarly mounted on shaft 24 is a second disk or retainer 28 attached to disk 22 and separated therefrom by a hub or collar 29 to form a space for the accommodation of the

locking member 26, the latter mounted on shaft 25 in a manner to prevent independent rotating and permit independent longitudinal motion. This locking member is received in the space between disks 22 and 28 and is provided with a shoulder 30 engaging the pin connecting said disks, and is further provided, on its upper extremity, with one or more teeth 31 adapted to engage a series of teeth 32 formed on or applied to frame 23.

The arrangement is such that when shaft 25 is rotated to withdraw locking member 26 from engagement with teeth 32, the auxiliary controller will be advanced to project its shoulder 27 into the path of the engaging member of jaws M so that in closing upon any of its stop-pins K the auxiliary controller 22 will be moved to a position corresponding with that of the stop-pin at the time acting; and when the auxiliary controller and locking members are retracted, to cause the latter to reengage teeth 32, the auxiliary controller will be locked and held in its adjusted position while the auxiliary controller is free to be again advanced independently into the path of jaws M.

The disengaging and engaging movements of the locking member are controlled through a piston 33 working in a chamber in frame 23, provided with a retracting spring 34 and connected to a crank arm 35 on shaft 25, said locking member being normally held in engagement with teeth 32 by spring 34 and withdrawn therefrom by the admission of pressure below piston 33. In like manner piston 36 and retracting spring 37 acting through crank arm 38 on shaft 24 serve to actuate the auxiliary controller.

It is obvious that with the apparatus thus far described it is possible to set the auxiliary controller 22 to correspond with the stage of adjustment of the major justification wedge F or, what is the same thing, with that one of the graded matrices 21 approximating most nearly the size of justifying space type required and designed to be produced, and, when thus set to cause it to select and apply the matrix thus designated to any or all of the space type, by simply advancing the auxiliary controller 22 from its designated position into the path of jaws M to thus act as the substitute whenever a space type is called for. To effect this correlative adjustment and advance of the auxiliary controller 22 automatically and selectively the following arrangement has been devised. That one of the series of ports I communicating with the major or .0075 justification wedge trip rod U is connected by a branch pipe 39 with the cylinder of piston 33 controlling the locking member of the auxiliary controller 22, while the cylinder of piston 36 communicates through pipe 40 with the port I leading to the first of the series of stop-pins I designating columns of matrices in the die-case, as illustrated in the diagram Fig. 8.



The effect of this is that whenever the port leading to pin No. 1 of series L is opened and the machine thereby set to bring the first or left hand column of matrices 21 into alignment with the mold, auxiliary controller 22 will be simultaneously advanced, to intercept and designate the closing position of jaws M, thus indicating the matrix 21 corresponding to the adjusted position of said auxiliary controller; and similarly whenever the port leading to the trip U for the major justification wedge F is opened pressure will be admitted to the cylinder of the locking member 26, to disengage the latter and bring it within the influence of jaws M.

To render the apparatus automatic in action and selectively controllable from the record strip, it only requires that a perforation representing a pin in series K corresponding with the pin in series L employed for designating the position of the major justification wedge F should be added to the major justification signal, and that the normal space signal should be supplemented by a perforation corresponding to pin No. 1 of the series L. The normal signal for the major justification wedge has two components, a constant or designating perforation 40 pertaining to trip rod U and operating to place the wedge temporarily under the control of the secondary positioning jaws R and a variable member or dimensioning perforation 41 in line with that one of the ports I controlling a pin in series L representing the stage or degree of adjustment for the wedge. To these is added a perforation 42 in line with port I controlling the corresponding stop pin of series K, so that the auxiliary controller 22 being set free by perforation 40, and advanced into the path of jaws M will, through the action of the stop-pin K, be brought to a position corresponding to the stage of adjustment given the major justification wedge by its dimensioning stop-pin L. Thus the auxiliary controller 22 is set for the line concurrently with the adjustment of the major justifying wedge. The normal space type signal is made up of two perforations, of which one, 43 registers with a port s leading to the transfer wedge trip rod V, and the other, 44, registers with port No. 2 of stop-pin series L, to designate the column containing the blank matrix. This matrix being located at one extreme of the column, its position longitudinally of the column is determined by the fixed pin No. 15 in series K hence no perforation is required for this movement. When, however, a hyphen or other character is to be imposed upon the space type a supplemental perforation 45 is added to the space signal, said perforation registering with the port leading to stop-pin No. 1 of the series L, thereby causing the die case to be arrested with the first instead of the second column of mat-

rices in alinement with the mold and simultaneously advancing the previously adjusted auxiliary stop 22 into the path of jaws M, to select the matrix 21 corresponding to the adjustment of the major justification wedge. It should be added that with this arrangement the stepped normal wedge of the prior patent is employed and the same space value is assigned to the first two sections corresponding to the first and second columns of matrices in the die-case, hence the transfer from the first to the second column and corresponding shifting of the normal wedge incident to the change from blank space to character-space and vice versa does not change the dimensioning adjustment for the mold which remains the same for all justifying spaces in the line.

The invention herein described is believed to be broadly new in principle as well as in form of embodiment and result, and is susceptible of change and modification in many particulars without material departure from its spirit and scope, hence we do not desire to be limited to the preferred form of embodiment shown other than as specified in the claims.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. A type making and composing machine equipped to selectively produce individual character type and spaces or quads and provided with selective means for imposing a printing surface upon the normal spaces or quads as the latter are produced.

2. A type making and composing machine equipped to selectively produce individual character type and justifying spaces and provided with means for automatically and selectively imposing a printing surface upon said normally blank justifying spaces.

3. The combination with an automatic type casting and composing machine equipped to produce characters and justifying spaces, of means adapted to produce upon the justifying spaces, printing characters proportional to the width of said spaces.

4. In an automatic type casting and composing machine equipped to produce cancelled character type and justifying space type and in combination therewith automatic means for supplying the justification space type with hyphen or cancelled printing surfaces varying in length in proportion to the width of the spaces to which applied.

5. In a type casting and composing machine, equipped to produce character and justifying space type of varying widths, and set the same up in justified lines and in combination therewith a graduated series of matrices and means for automatically presenting the matrix approximately the predetermined width of the justifying space when the latter is produced.



6. In a type casting and composing machine equipped with means for producing and assembling character type in the order of composition, a mold and independent mold-adjusting devices for the justification space type, and in combination therewith, a graded series of hyphen matrices and means for selectively presenting the hyphen matrix corresponding with the set of the mold adjusting devices to produce upon the variable space type printing surface proportional to the width of such type.

7. The combination with a type casting and composing machine provided with a plurality of matrices, means for selectively presenting individual matrices, an adjustable mold, and a plurality of mold dimensioning mechanisms including a justification member, of auxiliary control devices for said matrix presenting means adapted to be set to correspond with said justification member of the mold dimensioning mechanism and operating to present one of a series of matrices corresponding in dimensions with the justification space or type thus indicated.

8. In a type casting and composing machine provided with a plurality of matrices including a graded series of hyphens, means for selectively presenting individual matrices, an adjustable mold and a plurality of mold dimensioning mechanisms including a justification member for determining the dimensions of the justifying spaces for each line, and in combination therewith, means for controlling the presentation of said graded hyphen matrices coupled with the justification member of the mold dimensioning mechanism, to select the matrix appropriate to the setting of said justification member.

9. In a type casting and composing machine the combination with its movable die case, mold, normal and justification mold dimensioning devices and means for shifting the die case to present individual matrices to the mold, of an auxiliary controller for said die case shifting means.

10. In a type casting and composing machine such as described and in combination with the two way movable die case equipped with a plurality of matrices including a graded series of hyphens, an adjustable mold, normal and justification mold dimensioning devices, means for shifting the die case, a governing record strip and transmitting devices intermediate said record strip and said justification mold adjusting and die case shifting means; of an auxiliary controller adapted to be positioned by and to subsequently control the die case shifting devices.

11. In a type casting and composing machine the combination with the die case shifting or positioning devices of an auxiliary controller therefor adapted to be positioned by said shifting or positioning devices and to

be brought into action by the controlling record strip.

12. In a type casting and composing machine the combination with the die case shifting or positioning means, of an auxiliary controller therefor, and a graded series of hyphen matrices in the die case.

13. In a type casting and composing machine provided with a two way movable die case containing a graded series of hyphen matrices and two sets of shifting devices controlling the movements or position of said die case, and in combination therewith an auxiliary controller for one set of shifting devices.

14. In a type casting and composing machine provided with a two way movable die case equipped with a plurality of matrices including a graded series of hyphens, two sets of shifting devices for the die-case and a record strip governing said shifting devices and in combination therewith an auxiliary controller for one of said shifting devices and means governed by the record strip for bringing said auxiliary controller into action.

15. In an automatic type casting and composing machine provided with an adjustable mold, a series of matrices and a record strip, the latter governing the selective presentation of individual matrices to the mold and the dimensioning devices for said mold and in combination therewith an auxiliary controller for the die case adjusting devices governed by the record strip.

16. In an automatic type casting and composing machine provided with an adjustable mold, a movable series of matrices, normal and justification mold adjusting devices and a record strip, the latter governing the selective presentation of the matrices, the setting of the justification mold-adjusting devices and the application of said justification mold-adjusting devices and in combination therewith an auxiliary controller for the die-case adjusting devices and means governed by the record strip for adjusting said auxiliary controller to correspond with the set of the justification mold-adjusting devices and for bringing the same into action.

17. In an automatic type casting and composing machine provided with an adjustable mold, a plurality of matrices including a graded series, and a record strip governing the presentation of individual matrices to the mold and the adjustment of the dimensioning devices for the latter, and in combination therewith means governed by the record strip for positioning that one of the graded series of matrices corresponding in set way dimension with the space type when the mold is set therefor.

18. In an automatic type casting and composing machine provided with selective transmitting devices controlled by a record strip; an adjustable mold; a plurality of



mold dimensioning devices including major and minor justification members; a two way movable die-case containing a plurality of matrices; two die-case shifting mechanisms each including primary and secondary controllers and positioning devices, one of said shifting mechanisms operating to set the mold dimensioning devices; and in combination therewith, an auxiliary controller; means for adjusting said auxiliary controller to correspond with the indicated set of the major justification devices; and means for automatically actuating said auxiliary controller preliminary to the production of a justifying space type.

19. In a type casting and composing machine such as described and in combination with the primary controller for the matrix or die case centering mechanism, of an auxiliary controller movable longitudinally of said primary controller and provided with means for locking it in adjusted position.

20. The combination with centering or adjusting mechanism including a controller and complementary positioning device of an adjustable auxiliary controller.

21. The combination with centering or adjusting mechanism including a controller and complementary positioning device, of an adjustable auxiliary controller provided with means for retaining it in position, and means for connecting said auxiliary controller with the positioning device to govern the latter.

22. The combination with a centering or adjusting mechanism provided with a primary controller and complementary positioning devices, of an auxiliary controller movable longitudinally of said primary controller, retaining means for said auxiliary controller, and means for advancing the latter into the path of the positioning device.

23. The combination with a positioning or centering mechanism including a primary controller and complementary positioning device, of an auxiliary controller movable both longitudinally and transversely of the path of said positioning device.

24. The combination with a positioning or centering mechanism provided with a primary controller or fixed gage and a complementary positioning member of an auxiliary controller movable in guides parallel with the path of said positioning member, a lock for said auxiliary controller, and means for actuating said lock and for projecting said auxiliary controller into the path of said positioning member whereby the auxiliary controller may be both set by and caused to act upon said positioning member.

25. An auxiliary controller attachment for the matrix centering mechanism of a type casting machine including in combination a supporting frame, an auxiliary controller movable in transverse directions on said

frame, a lock for restraining movement in one direction and a motor for advancing said auxiliary controller.

26. An auxiliary controller attachment for the matrix centering mechanism of a type casting machine the same including, in combination, a supporting frame, a controller movable in transverse directions on said frame, a locking member engaging the controller and movable therewith, a motor for said locking member, and a motor for advancing the controller independently of its locking member.

27. An auxiliary controller attachment for the matrix centering mechanism of a type casting machine the same including, in combination, a supporting frame; two shafts in parallel relation; an auxiliary controller mounted to move laterally and longitudinally with respect to one of said shafts; a locking member supported upon the other shaft, coupled with said controller and engaging the frame, to hold the controller in adjusted position, said locking member also engaging the controller to move it laterally of its supporting shaft when the locking member is disengaged from the frame; and means for moving the locking member, to disengage it from the frame, and for independently actuating said controller while in locked position.

28. An auxiliary attachment for the matrix centering mechanism of a type casting machine including, in combination, a frame; two shafts in parallel relation; an auxiliary controller free to reciprocate longitudinally of but turning with one of said shafts; a motor coupled with said controller shaft; a locking member free to reciprocate longitudinally of and turning with the other shaft, said locking member engaging the controller and the frame; and a motor coupled with the said last named shaft, to withdraw the locking member from engagement with the frame and simultaneously advance the controller in a direction transverse of its supporting shaft.

29. In a type casting machine provided with a matrix centering or adjusting mechanism and in combination with the primary controller and complementary positioning device thereof, an auxiliary controller supported beyond but movable into the path of said positioning device, a locking member engaging the frame and operating to hold said auxiliary controller in adjusted position and to release the same, a motor acting upon said locking member to release the auxiliary controller and advance it into the path of the positioning device for adjustment; and a motor for so advancing the auxiliary controller while locked in adjusted position, to admeasure the movement of the positioning device.

30. In a type casting machine provided



with a matrix centering or adjusting mechanism including two sets of primary controllers and complemental positioning devices, a perforated or pattern record strip and a control system governed thereby, and in combination therewith an auxiliary controller for one of said positioning devices controlled both as to position and time of application by the record strip.

10 31. In a type casting machine provided with a matrix centering or adjusting mechanism including two sets of controllers and complemental positioning devices, normal and justification mold adjusting mechanisms, a record strip, and a control system governed by said strip, and in combination therewith an auxiliary controller for one of said positioning devices and means governed by the record strip for automatically adjusting said auxiliary controller to correspond with the position of the justification mold adjusting mechanism.

20 32. In a type casting machine provided with a plurality of matrices, a matrix centering or adjusting mechanism including two sets of primary controllers and complemental positioning devices, a mold, normal and justification adjusting devices for the mold, a record strip and a control system governed by said strip and in combination therewith, an auxiliary controller for one of said posi-

tioning devices, and means governed by the record strip for automatically adjusting said auxiliary controller to correspond with the justification devices and to call it into action at predetermined intervals. 35

33. A controller or record strip for type casting machines such as described provided in addition to its character, space and justification signals or perforations, auxiliary controller setting and actuating signals or perforations, the one associated with the justification and the other with the space signals or perforations. 40

34. A controller or record strip for automatic type casting machines provided with auxiliary perforations associated with the normal space signal for bringing into action an auxiliary controller for the matrix centering mechanism. 45

35. The combination with the matrix centering mechanism of an automatic type casting machine, of an auxiliary controller and a record strip, the latter provided with perforations for positioning and actuating said auxiliary controller. 50 55

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