

No. 735,709.

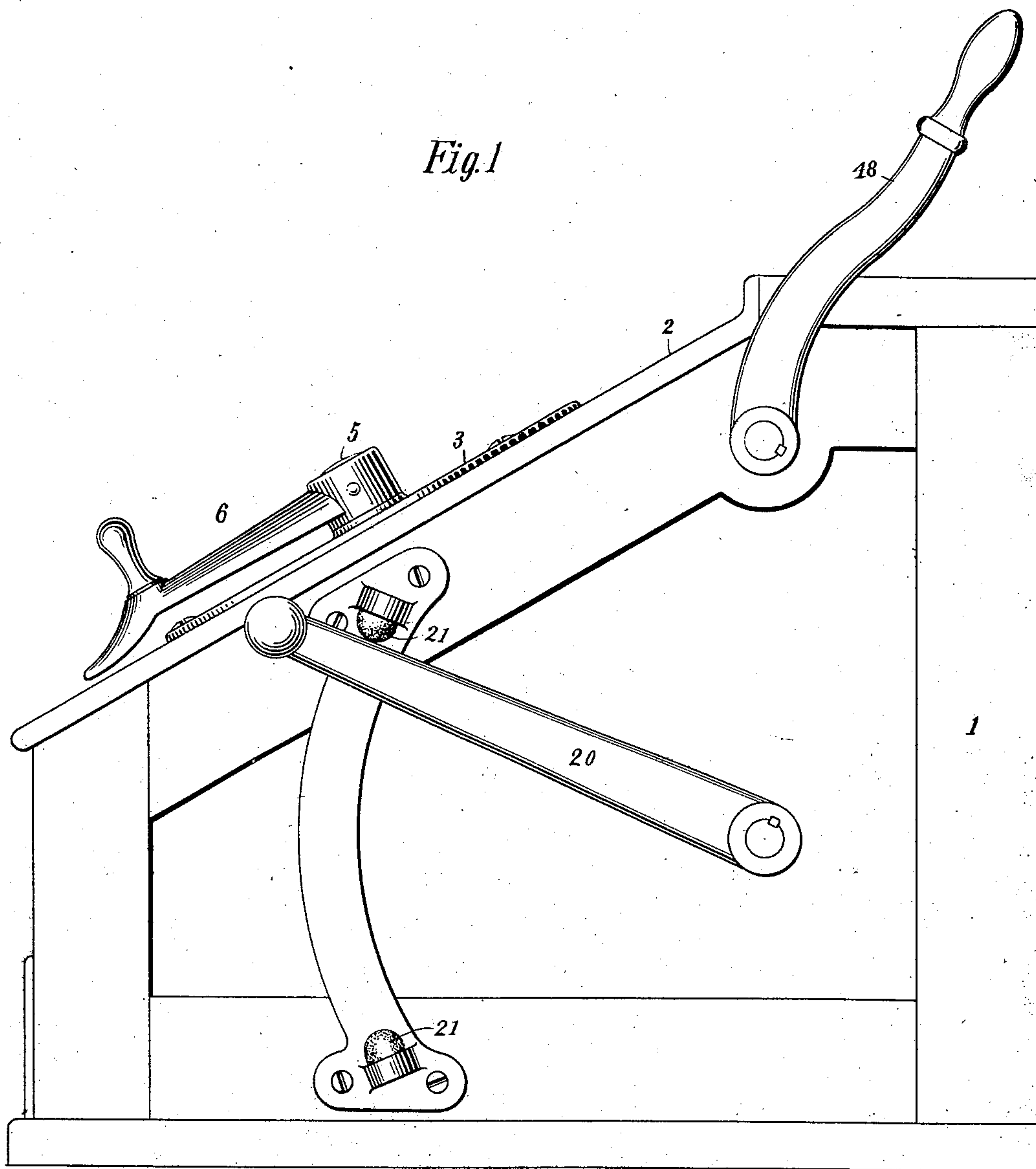
PATENTED AUG. 11, 1903.

H. CASLER.
EMBOSSING OR PUNCHING MACHINE.

APPLICATION FILED MAY 10, 1902.

NO MODEL.

5 SHEETS—SHEET 1.



Witnesses:

Raphael Better
H. Dunham.

Inventor

Herman Casler

by *Kerr, Page & Cooper, Attys*

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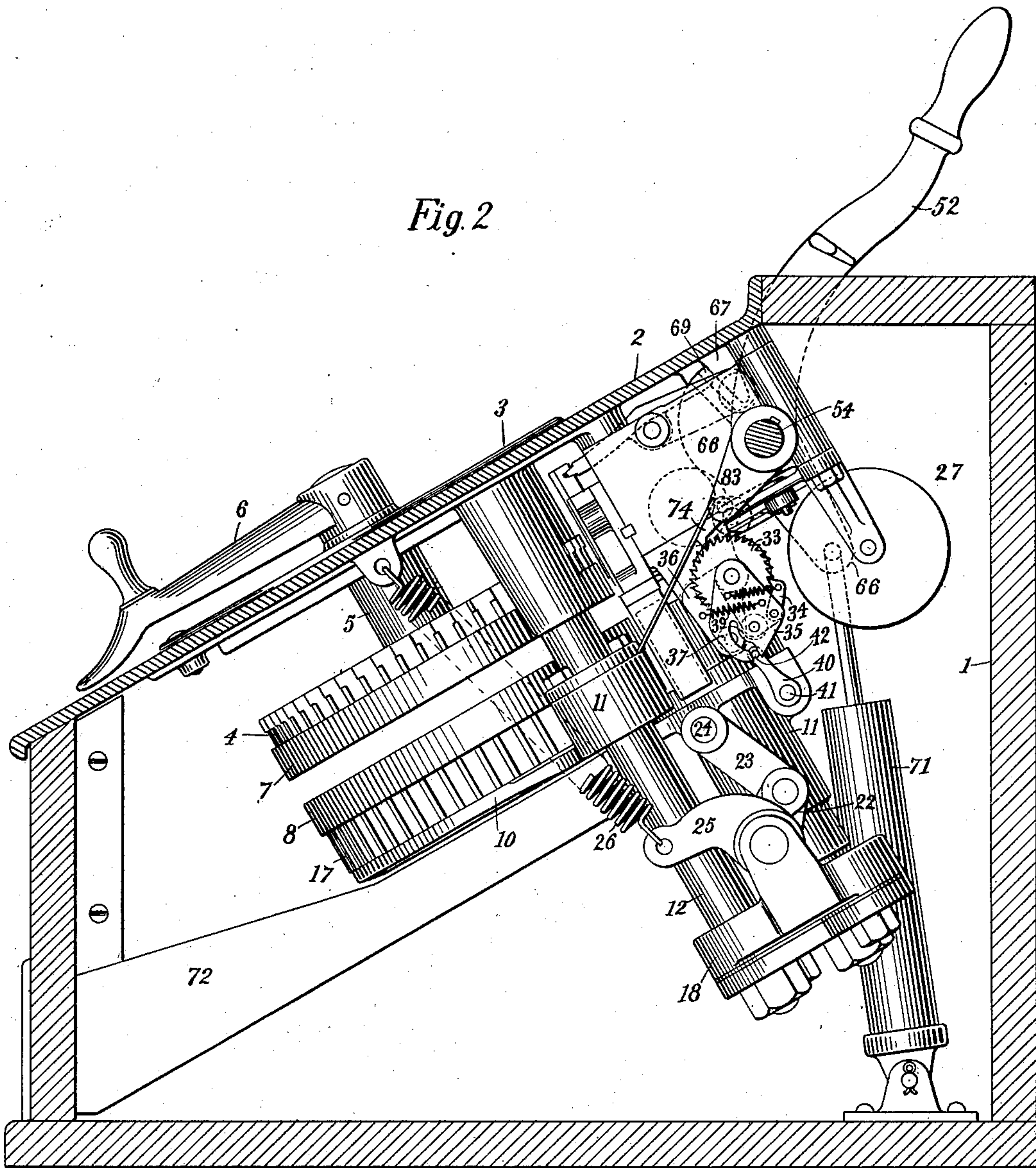
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6 SHEETS—SHEET 2.

Fig. 2



Witnesses:
Raphael Ketter
S. S. Dunham

Inventor
Herman Casler
by *Kerr, Page & Cook*, Attys

No. 735,709.

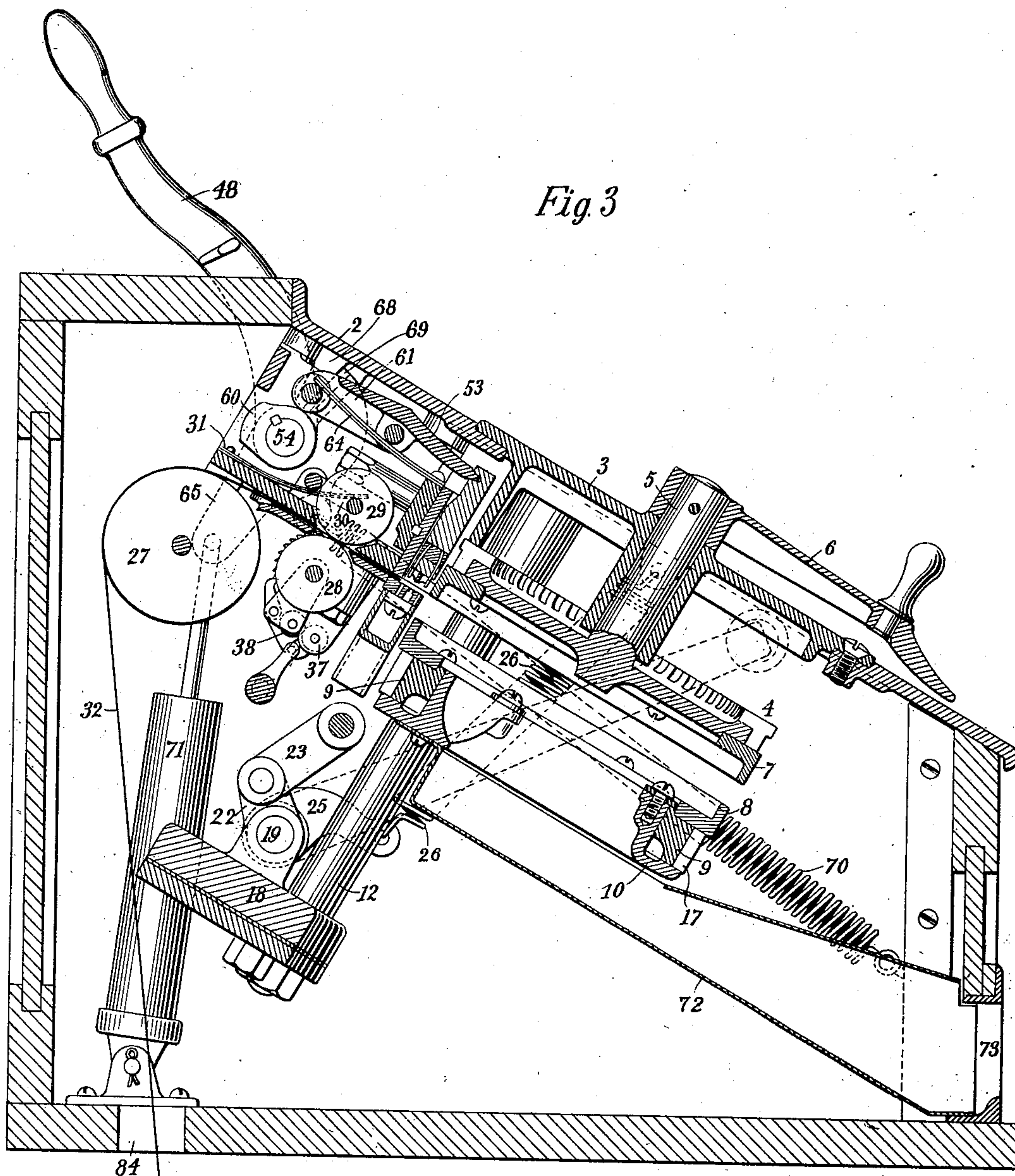
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Raphael Ketter
St Dunham.

Inventor

Herman Casler

by Kent, Page & Cooper, Attys

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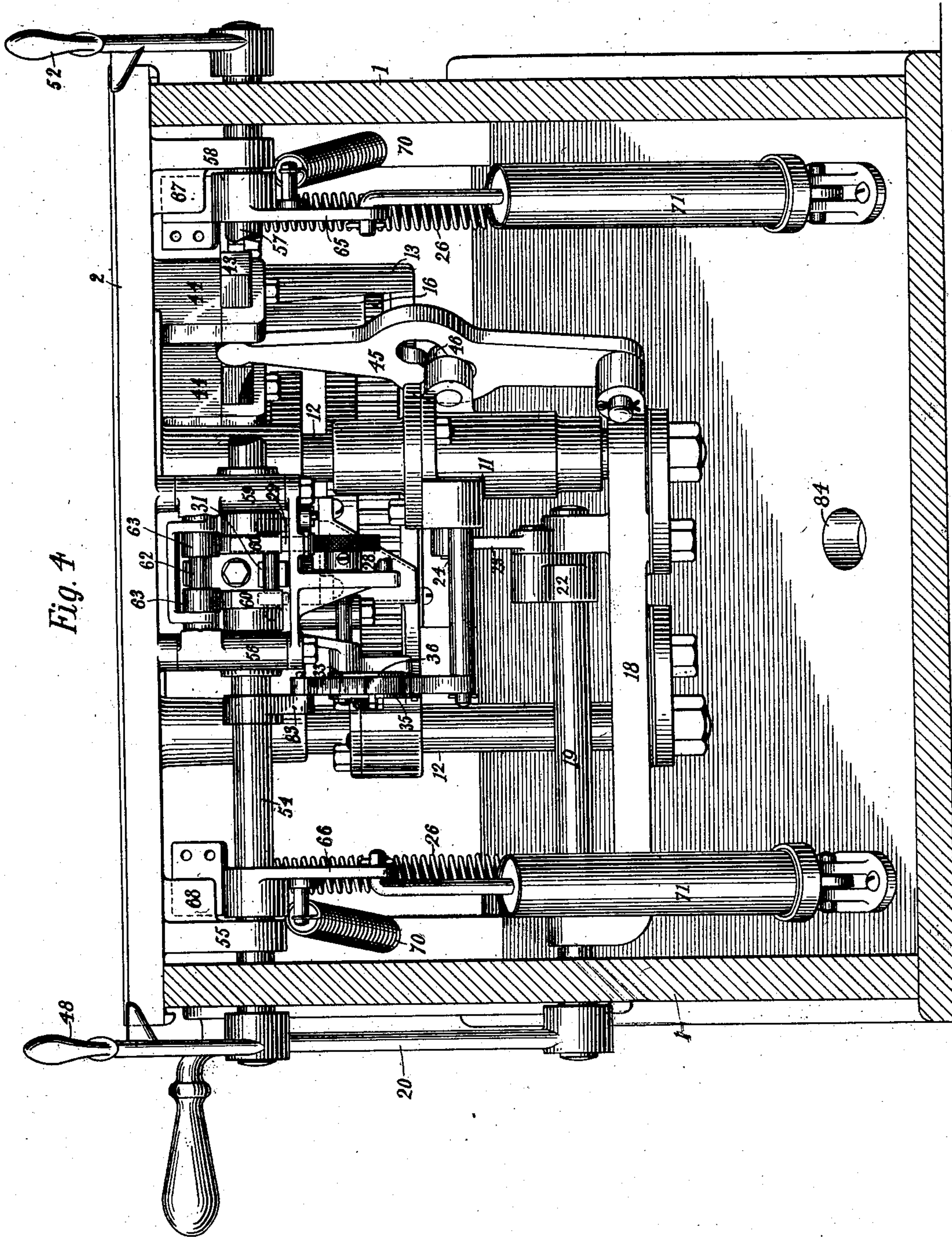


Fig. 4

Witnesses:

Raphael Ketter
S. S. Dunham.

Inventor

Herman Casler

by Kerr, Page & Cooper, Attys

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5 SHEETS—SHEET 5.

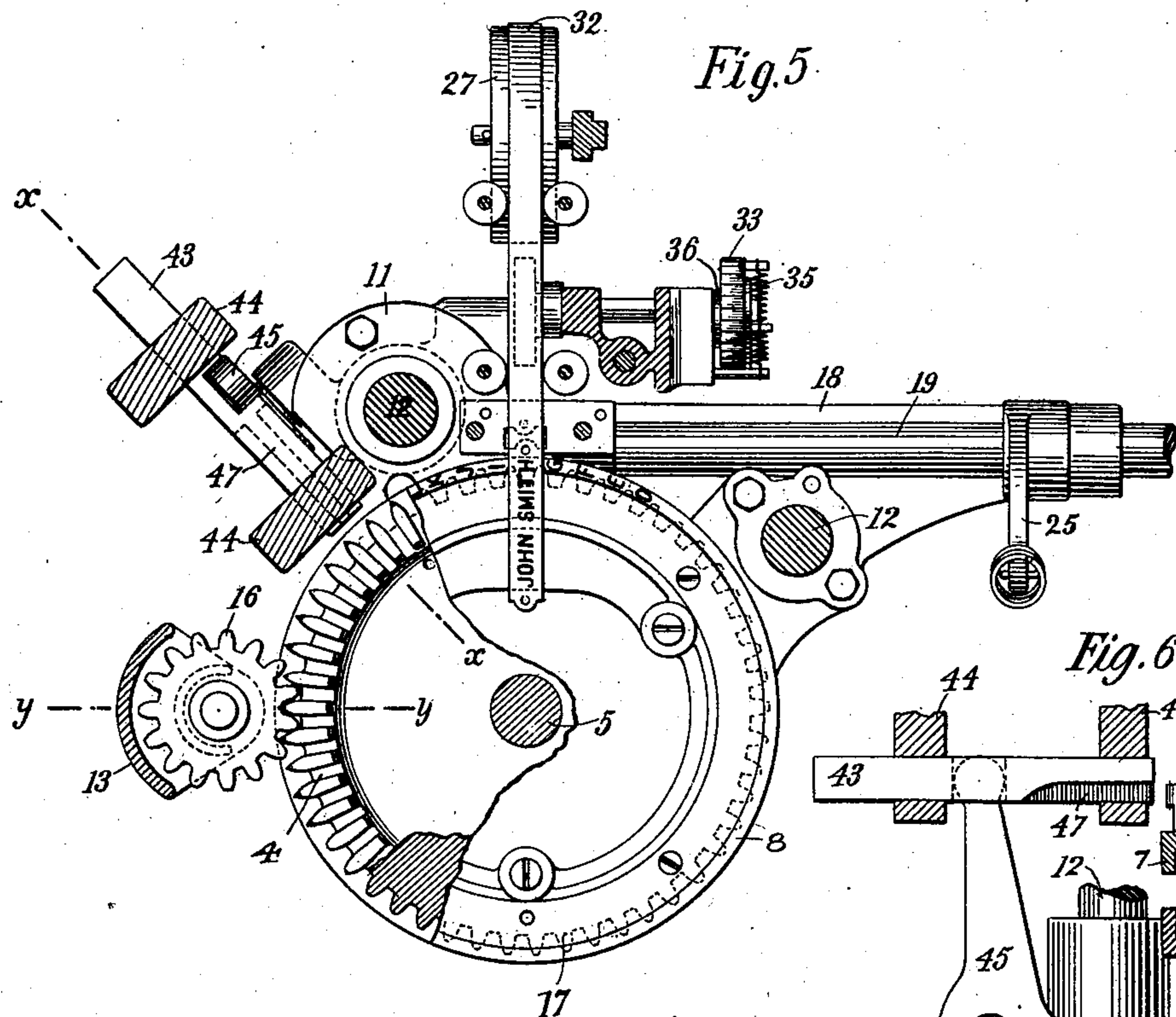


Fig. 5

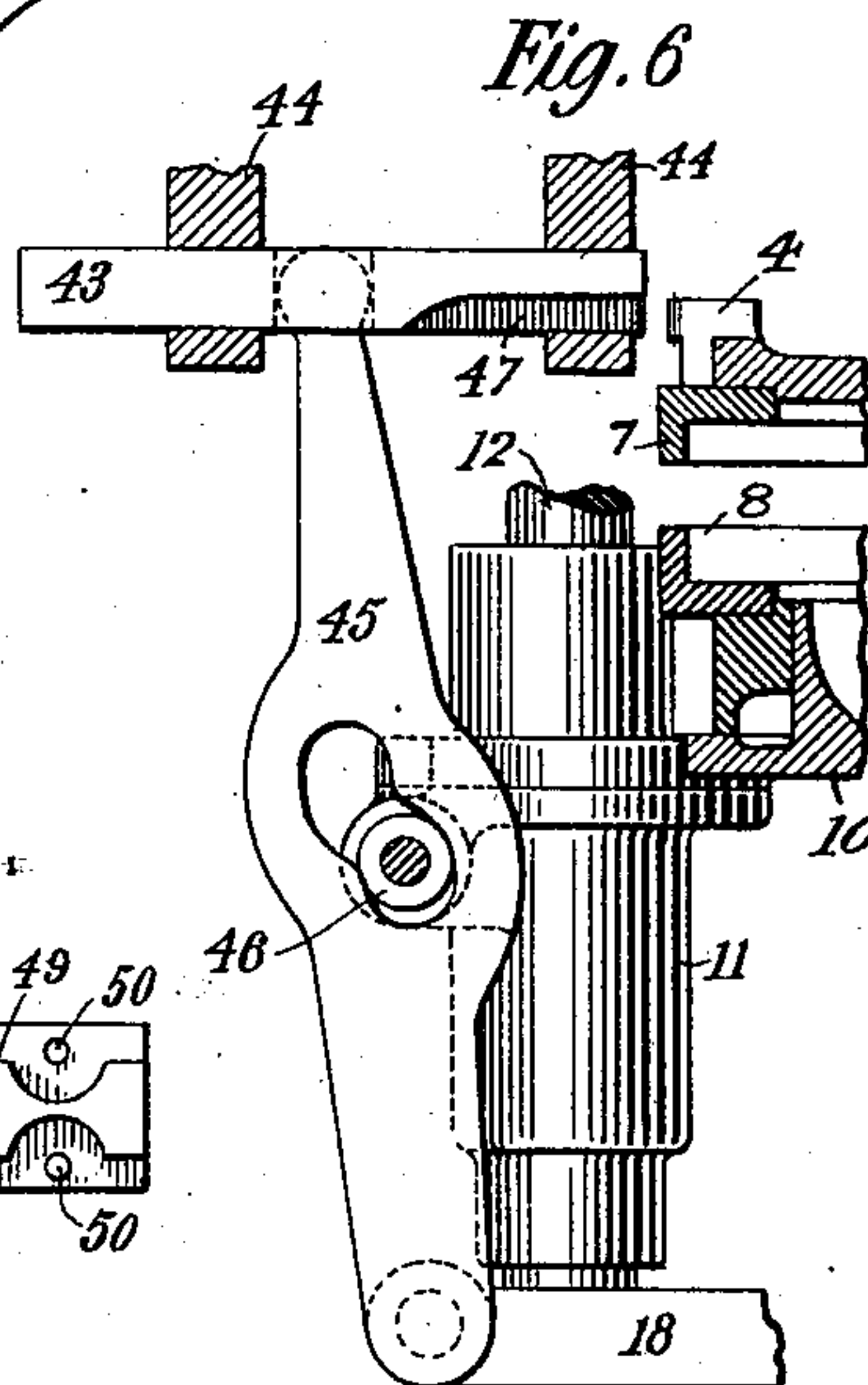


Fig. 6

Fig. 8

Fig. 11

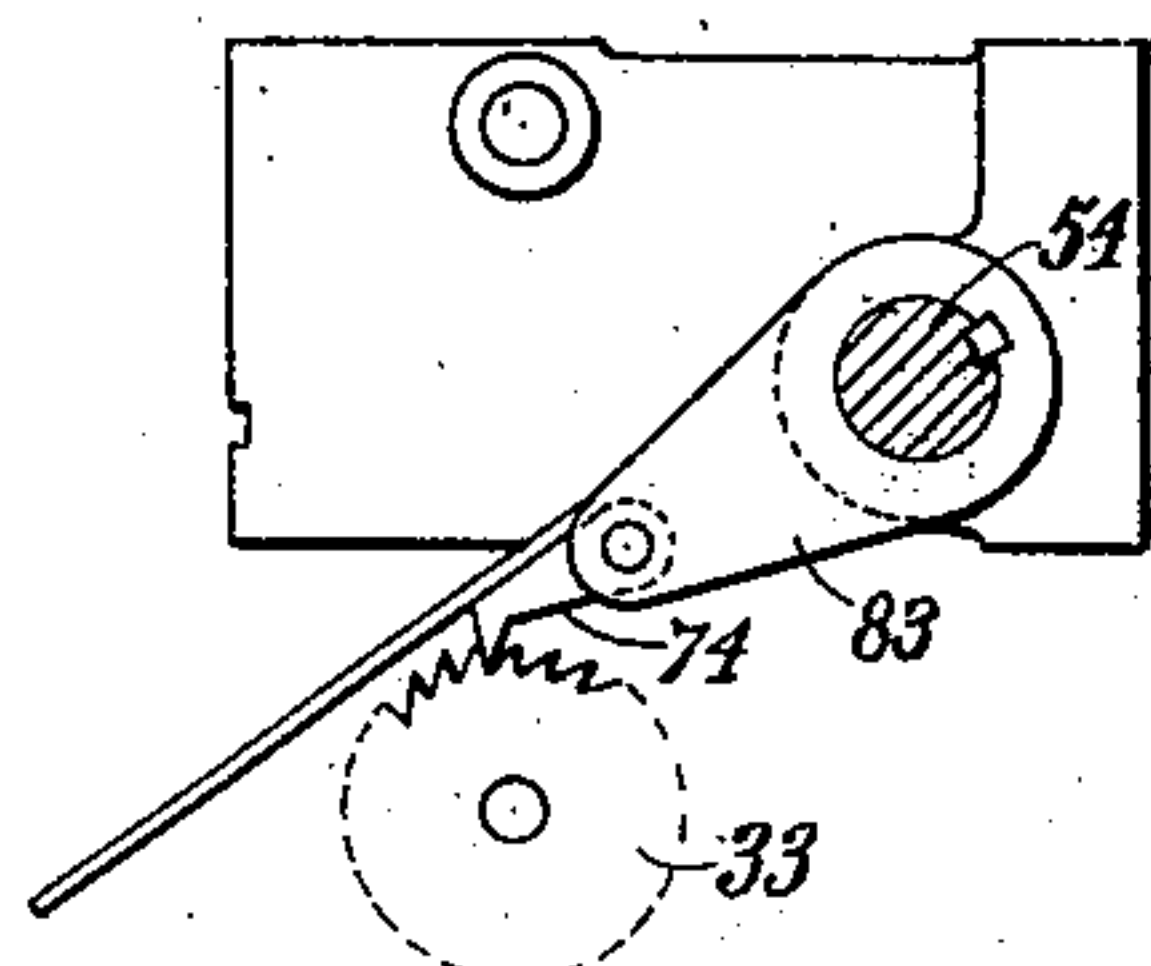


Fig. 9

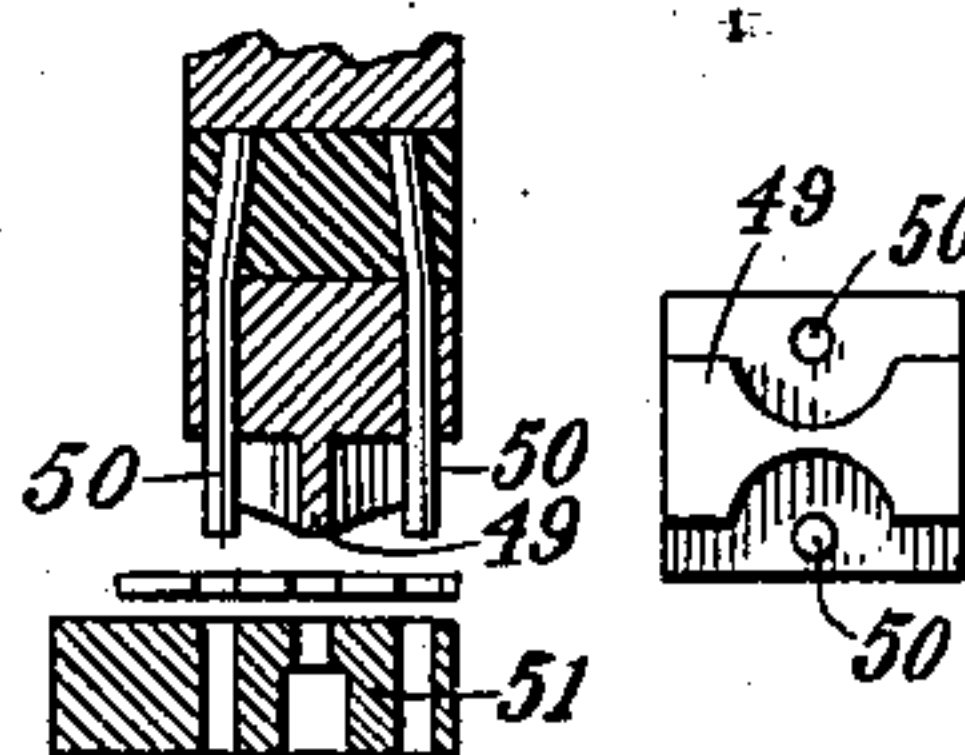


Fig. 10

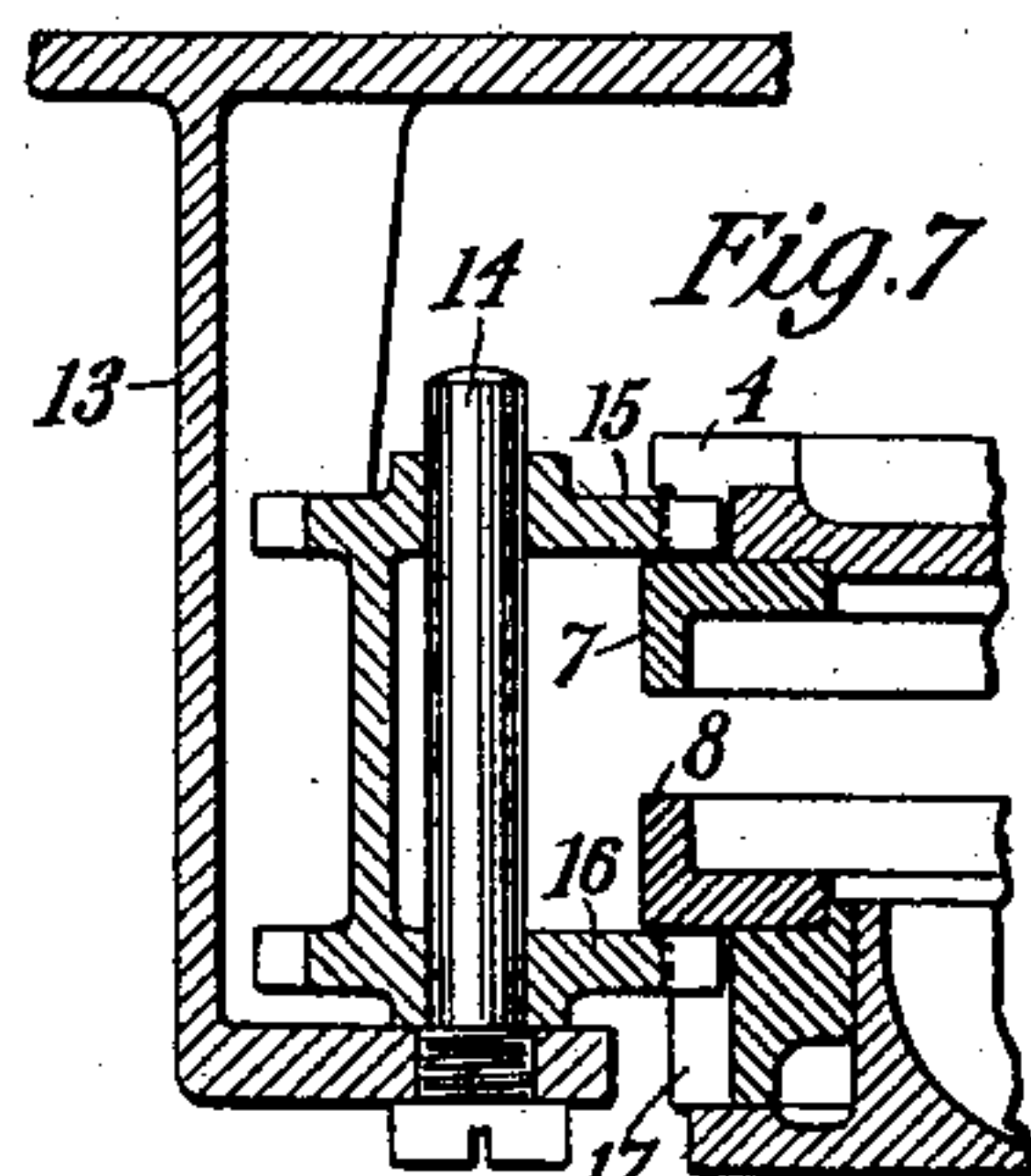
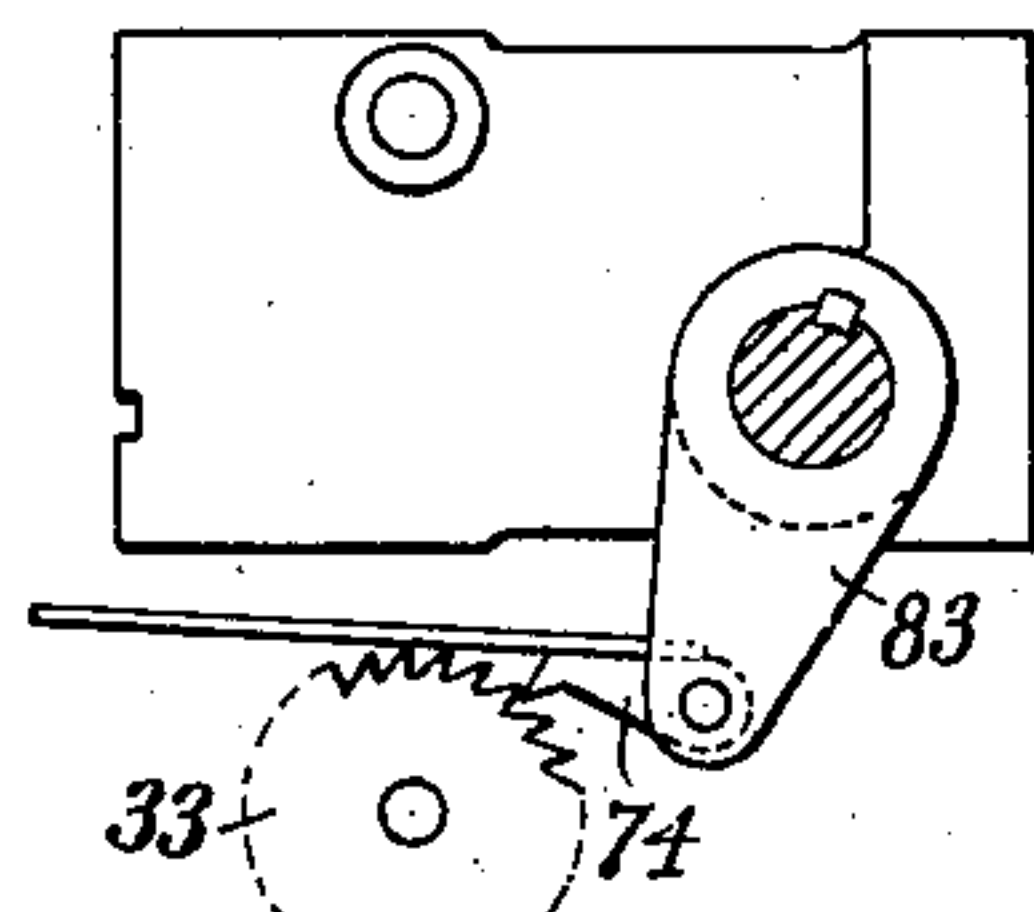


Fig. 7

Witnesses:

Raphaël Peller
A. Dunham

Herman Casler

by Kess, Page & Cooper, Attys

UNITED STATES PATENT OFFICE.

HERMAN CASLER, OF CANASTOTA, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO FANNIE E. CASLER, OF CANASTOTA, NEW YORK.

EMBOSSING OR PUNCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 735,709, dated August 11, 1903.

Application filed May 10, 1902. Serial No. 106,699. (No model.)

To all whom it may concern:

Be it known that I, HERMAN CASLER, a citizen of the United States, residing at Canastota, in the county of Madison and State of New York, have invented certain new and useful Improvements in Embossing or Punching Machines, of which the following is a specification, reference being had to the drawings accompanying and forming a part of the same.

The apparatus which forms the subject of my present application for Letters Patent is an improved machine for stamping, embossing, or punching letters and other characters in a strip of metal, paper, or like material to produce labels or name-plates.

In its entirety the machine comprises a means for feeding the strip of metal or other material which is to receive the impressions, a device for bringing successively to a fixed point the types or dies for producing the impressions, means for operating the same to emboss, stamp, or perforate the strip, and means for severing the embossed sections of the strip from the main body of the same.

In the production of my machine I have followed the ordinary and well-known principle upon which embossing, check-punching, and similar devices have heretofore been designed, but have improved the construction and mode of operation of the mechanism employed in order to render the same more practicable and useful for the particular purpose which I have in view, of providing a machine which may be readily manipulated by unskilled persons, and without liability of derangement, injury, or improper operation, for the production of metallic labels or name-plates.

My improvements will be described by reference to the annexed drawings, in which—

Figure 1 is a side elevation of the case or box containing the machine and showing the levers or handles provided for its manipulation. Fig. 2 is a side elevation of the operative mechanisms as shown by removing one side of the case and the handle or lever for effecting the operation of the type-rings. Fig. 3 is a central sectional elevation of the machine. Fig. 4 is a rear elevation of the same. Fig. 5 is a view in plan and part section of

the mechanism below the plane of that portion of the strip which receives the impressions. Fig. 6 is a view in elevation and part section of portions of the mechanism, taken on line *xx* of Fig. 5. Fig. 7 is a similar view on line *yy* of Fig. 5. Figs. 8, 9, 10 are three views of a pawl-and-ratchet mechanism forming part of the feed devices and in different relative positions. Fig. 11 is a sectional and plan detail of the cutter or die for reversing the strip.

The mechanism may be inclosed in any suitable case 1, preferably, however, provided with a sloping top 2, which constitutes the base or main support for the operative portions of the machine. A cap 3, which is secured over an opening in the top 2, affords a bearing and support for an index disk or wheel 4. The index-wheel 4 is secured to or made integral with a shaft 5, journaled in a sleeve in the cap 3, and is adapted to be rotated by a crank 6, the end of which is prolonged to form a pointer that sweeps over a series of letters and characters cast on or otherwise applied to the outer surface of the top 2. By this well-known arrangement when the pointer is turned to the letter or character which it is desired to print or emboss the type or die representing such letter and which is on a type-wheel 7, secured to the index-wheel, is brought to the impression-point.

Facing the type-wheel 7 is a corresponding wheel 8, the opposite peripheral edges or flanges of the two wheels being formed, respectively, with male and female types or dies of as many letters and characters as may be desired. The wheel 8 is secured to a ring 9, which turns freely on a casting 10, forming part of a plunger 11, adapted to slide on guide-rods 12, rigidly secured to the top plate 2. A bracket 13 (shown in detail in Figs. 5 and 7) depends from the plate 2 and carries a stud 14, parallel with the axis of rotation of the type-wheels 7 and 8 and affording a bearing for two rigidly-connected spur-wheels 15 and 16, which mesh with gear-teeth on the two type-wheels, so that the rotary movements of the said two wheels will always exactly correspond and their types or dies caused to register. In order to maintain

this relation and to permit of an axial movement of the wheel 8 to and from the wheel 7, the teeth 17 on the former are elongated.

A plate or bar 18 is supported by the rods 12 and provides bearings for a horizontal rock-shaft 19, the end of which extends out through the casing 1. A lever or handle 20 is rigidly connected to the shaft 19 and is arranged to partially rotate the same when depressed. Stops 21 are provided on the side of the casing to limit the play or movement of the handles.

At the inner end of the shaft 19 is a crank 22, which is connected by a link 23 with a stud 24 on the plunger 11, so that when the lever 20 is depressed the plunger will be raised and by such movement the type-wheel 8 forced up into contact with the wheel 7, the raised type on the one being caused to enter the corresponding matrices in the other.

A spiral spring 26 is connected by one end to the stationary frame and by the other to the end of an arm 25, extending from the shaft 19, and tends to draw down the plunger 11 and separate the type-wheels when the lever 20 is released.

The strip or tape 32 to be punched or embossed is led from a suitable receptacle through an opening 34 in the bottom of the case 1 and is carried over an idler 27, from which it passes between guides to a feed-roller 28 and a pressure-roller 29. The latter is journaled in a pivoted arm 30 and is held in contact with the feed-roller by the pressure of a flat spring 31. After leaving the feed-rollers the tape passes through a cutter and then between the two type-wheels 7 and 8.

The feed-roller is operated by the following mechanism: On the shaft which carries the feed-roller is a ratchet-wheel 33, with which engages a pawl 34, which is pivoted between two flat plates 35 and 36, suspended from and free to oscillate about the shaft carrying the ratchet-wheel 33. A roller 37 is mounted on the stationary frame which supports the ratchet 33, while a second roller 38 is mounted between the plates 35 and 36. These two rollers are normally held in contact by the action of a spiral spring 39, which is connected with the stationary frame and the swinging plate 35, respectively. These rollers are adapted to be forced apart by a finger 40, pivoted to a stud 41 on the plunger 11 and carrying a pin 42, which engages with a curved slot in plate 35. When the plunger is raised, the finger 40 passes up between the two rollers, and as the roller 38 is fixed the other is moved to one side. This swings the plates 35 and 36 about their pivotal axis, thereby forcing the pawl 34 forward and advancing the ratchet-wheel 33 and feeding the strip 32. When the plunger is lowered on the release of the lever 20, the finger 40 is withdrawn from between the rollers 37 and 38, so that the plates 35 and 36 swing back under the action of the spring 39 to their normal position.

It will be understood from the above description that when the desired type has been set or brought to the impression-point the lever 20 is depressed to emboss the character in the strip and that this operation effects the necessary feed of the strip, the devices being so rotated that the strip is fed forward during the upward movement of the plunger 11 before the two type-wheels have come into contact.

In order that each type shall be set in exactly the proper position and the two type-wheels brought into perfect registration before an impression is obtained, a key-bar 43 is mounted in stationary guides 44 and caused to engage with the teeth of the index-wheel through the instrumentality of a lever 45, pivoted to the stationary plate or bar 18 and operated by the plunger 11. The upper or free end of the lever 45 is formed with a knob or rounded portion which engages with a notch or slot in the key-bar 43.

The plunger 11 carries a stud or roller 46, which passes through a diagonal slot in the lever 45. This slot is so formed that when the plunger is raised by the operation of the lever or handle 20 the roller 46 will by reason of its engagement in the diagonal slot force the upper end of the lever 45 toward the type-wheels.

The upper surface of the index-wheel 4 is formed with radial slots or grooves, corresponding to and in line with the spaces between the gear-teeth, as shown in Figs. 2, 5, and 6. The under portion of the end of the key-bar 43 is cut away, leaving a pointed rib 47, which when the said bar is forced forward by the lever 45 enters one of these grooves. The ends of such portions of the teeth as lie in the path of the rib 47 are pointed, so that if the handle 6, with its pointer, is not brought to exactly the proper position to bring a character-type to the impression-point the action of the key-bar would be to shift slightly the index-wheel in one or the other direction as the rib 47 enters one of the radial slots in said wheel, and thus bring the types on the rings into proper registration with the tape.

When a section of strip of the length desired or which may be permitted by the arrangement of the apparatus has been embossed and it is desired to sever it from the main strip, either one of the levers or handles 48 or 52 is depressed to operate the punch. This device (illustrated in detail in Fig. 11) consists of a punch 49 of the form shown and with two pins 50 to produce holes in the strip by which to attach it to any desired object and a die or female member 51. The punch 49 is arranged to slide vertically in guides and is connected with an arm 53, extending from a rocking frame 61, operated by either of the two levers 48 or 52. Lever 48 is mounted on the projecting end of a rock-shaft 54, which has two stationary bearings 55 and 56. The other lever 52 is similarly mounted on a rock-shaft 57, having bearings 58 and 59. On

the inner ends of the rock-shafts 54 and 57 are cams 60, the shape of which is shown in Fig. 3. The frame 61 has a shaft 62, carrying rollers 63, which are engaged, respectively, by the cams 60, so that when either lever 48 or 52 is depressed the frame 61 is tilted and the punch forced down through the die 51. Flat springs 64, secured at one end to the frame, force the frame 61 back to its normal position and withdraw the punch from the die when the handles 48 52 have been turned to their original position after being depressed.

65 66 are arms extending from shafts 54 and 57, respectively, and afford means for limiting the movements of the levers 48 52 by their engagement with lugs 67 68 on the main frame, as shown in Fig. 2, in which 69 is intended to indicate a strip of leather fastened to the arms 65 66 to serve as a buffer to relieve the shock when the handles are released and allowed to spring back under the action of the retractile springs 70.

To prevent the handles from returning too quickly to their normal position when released, dash-pots 71, with their plungers connected with the arms 65 66, are also employed.

Figs. 8, 9, and 10 illustrate in different positions an auxiliary feed mechanism, which is shown in its operative relations in Fig. 2. The purpose of this device will be understood from a consideration of Fig. 5. In this figure a strip or tape is shown in the position which it occupies after the last letter of a name has been embossed. When the person operating the machine has embossed the final letter or character of a name, he depresses one of the levers 48 52 to cut off the plate. The depression of either of these levers operates the punch, which shears off the plate, which then drops down through the lower type-wheel into the chute 72, by which it is delivered through an opening 73 in the case. This operation of lever 48 or 52 forces the punch 49 down through the die and then retracts it; but this alone would not advance the tape to a position where it would receive an impression, and in order to effect this advance an arm 83 is secured to shaft 54 in such a position as to bring a pawl 74 into engagement with the ratchet-wheel 33.

In Fig. 8 the relative positions of the pawl 74 and ratchet 33 when the lever 48 is in its normal position are shown. When the lever is pulled forward to its full extent, the parts assume the positions shown in Fig. 10. Then as the lever returns to its normal position it allows the punch to recede from the die just as the pawl reaches the position shown in Fig. 9 and comes into engagement with the ratchet. The further movement of the lever then causes the pawl to turn the ratchet through a space of four teeth and feeds the strip over between the type-wheels in such position that when the lever 20 is next operated to emboss a letter it will be fed, as above explained, so as to receive the impression at exactly the right point.

While the operation of the machine has been sufficiently explained to enable one to use it, the following directions for its manipulation will conduce to a better understanding of its nature and purpose. Assume that a name-plate has been embossed and cut off. The machine would be in the condition shown in Fig. 2. If the user wishes to make sure that his plate is perfectly plain at starting, he may depress the lever 48 or 52, thus cutting off the short part fed forward after the last strip was severed and any other amount that may have been drawn out by improper manipulation of the machine, &c. On the return of the lever the tape is advanced to the printing position, as before described. The next operation would be to bring the pointer 6 over the first character to be embossed on the plate. The lever 20 is then depressed, which first forces the key-bar 43 into one of the radial grooves of the index-wheel and causes the type-rings to perfectly register. The further movement of the handle forces the plunger 11 upward and embosses a character by the types which are at the impression-point. Lever 20 is then released, the pointer moved to the next character desired, and the operation repeated.

When a space is required between any two characters, the pointer is moved to a point designated "Space," which brings a blank portion of the type-wheels to the impression-point. The lever 20 is then operated as before, but the tape is merely fed forward a space without being impressed.

Having now described my invention, what I claim is—

1. The combination in a machine of the kind described, with means for feeding a strip or tape past the impression-point, a series of types or dies, and means for effecting the feed and producing the impressions, of a cutting or punching mechanism for severing sections of the strip or tape, and a supplemental feed mechanism operated by the cutting mechanism, as set forth.

2. The combination, in a machine of the kind described, with constantly-parallel oppositely-disposed concentric type or die wheels having types or dies integrally formed in each, of an operating-lever, a rock-shaft actuated by the lever, a reciprocating plunger engaging a type or die wheel, and a toggle-lever intermediate the rock-shaft and a plunger, as set forth.

3. The combination in a machine of the kind described of two wheels having corresponding male and female types or dies, and adapted to be set to bring any desired type to a given point, manually-operated means for initially feeding a tape or strip between the wheels at such point, independent manually-operated means for forcing one wheel against the other to effect the impression of the types in the strip, and means for cutting off sections of the tape or strip, as set forth.

4. The combination in a machine of the

kind described, with constantly-parallel oppositely-disposed concentric type or die wheels having types or dies integrally formed therein, one of said wheels being annular in form, 5 of means for forcing the wheels together to produce the impressions, and means for feeding a tape or strip between the wheels, from the outside thereof radially inward toward their common center, as and for the purposes 10 set forth.

5. The combination in a machine of the kind described, with constantly-parallel oppositely-disposed concentric type or die wheels having types or dies integrally formed therein, one of said wheels being annular in form, 5 of means for forcing the wheels together to produce the impressions, and means for feeding a tape or strip between the wheels, from the outside thereof radially inward toward 20 the common center, and means for severing the tape or strip outside the wheels adjacent to the impression-point, as and for the purposes set forth.

6. The combination in a machine of the 25 kind described, of a male type or die wheel and a corresponding female type or die wheel, adapted to be set to bring any desired type or die to a given point, a reciprocating plunger for advancing one wheel toward the other, 30 a manually-operated lever to actuate said plunger, a strip-feeding mechanism for feeding a tape or strip between the two wheels to receive the impressions from the type thereon, a key-bar adapted to engage with one of 35 said wheels, and devices intermediate to the plunger and the feed device and key-bar respectively, whereby their operation is dependent upon the reciprocation of the plunger, as set forth.

40 7. In a machine of the kind described, means for feeding a strip or tape comprising, in combination, devices engaging the strip to advance the same, a ratchet connected with one of said engaging devices, an oscillating carrier having a slot, a pawl mounted on said 45 carrier and engaging the ratchet, a roller on said carrier adjacent to the slot, a second roller adjacent to the first and independent of the carrier, an arm engaging the slot, and 50 mechanism for reciprocating said arm, whereby as the arm moves in said slot the rollers

will be separated to oscillate the said carrier, as set forth.

8. In a machine of the kind described, the combination with devices engaging a strip or 55 tape to advance the same, a ratchet connected with the engaging devices, and means for rotating said ratchet to advance the strip uniformly one space at a time, of means for advancing the strip two or more spaces at arbitrary intervals, comprising a pawl engaging 60 the ratchet, and mechanism to retract the pawl over two or more teeth on the ratchet, whereby when the pawl is advanced the engaging devices will rotate the ratchet and feed 65 the strip two or more spaces, as set forth.

9. In a machine of the kind described, the combination with a type-wheel having gear-teeth, and an oppositely-disposed type-wheel having relatively long teeth and arranged to 70 be forced against the other type-wheel, of a gear-wheel engaging with the first type-wheel and a second gear-wheel rigidly connected with such first gear-wheel and engaging the long teeth of said second type-wheel, as and 75 for the purpose set forth.

10. In a machine of the kind described, the combination with rotatable, oppositely-disposed type-wheels, a reciprocating plunger arranged to be forced together to impress or 80 emboss a strip or tape fed between them, manually-operated means for reciprocating said plunger, and means for rotating said type-wheels to bring the desired character to the impression-point, of means for positively locking 85 the type-wheels exactly at the impression-point, comprising an index-disk secured to one of said type-wheels having radial slots or grooves corresponding with the characters on the type-wheel, a key-bar adapted to enter 90 one of said grooves or slots when the type-wheel is in approximately a proper position to emboss the strip, and mechanism engaging said key-bar and said plunger, whereby the reciprocation of the latter forces the key- 95 bar into the adjacent groove of the index-disk, as set forth.

HERMAN CASLER.

Witnesses:

J. S. PICHEL,
LELAND WILLIS.