No. 811,672. PATENTED FEB. 6, 1906.

B. SMITH.

TRANSFER PRESS AND ATTACHMENTS THEREFOR.

APPLICATION FILED MAR. 18, 1905.

4 SHEETS—SHEET 1.

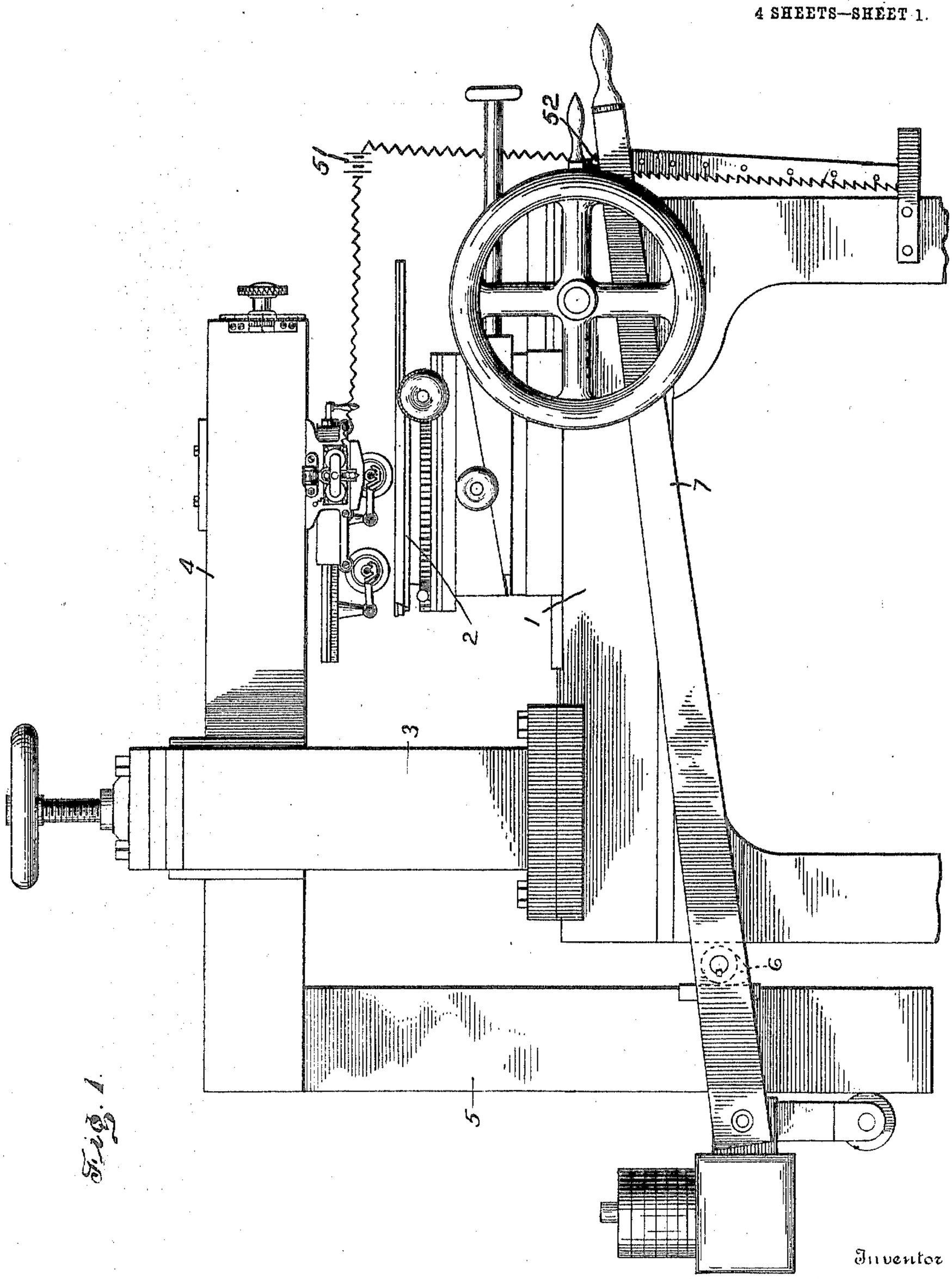

Fig. 1.

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4 SHEETS—SHEET 2.

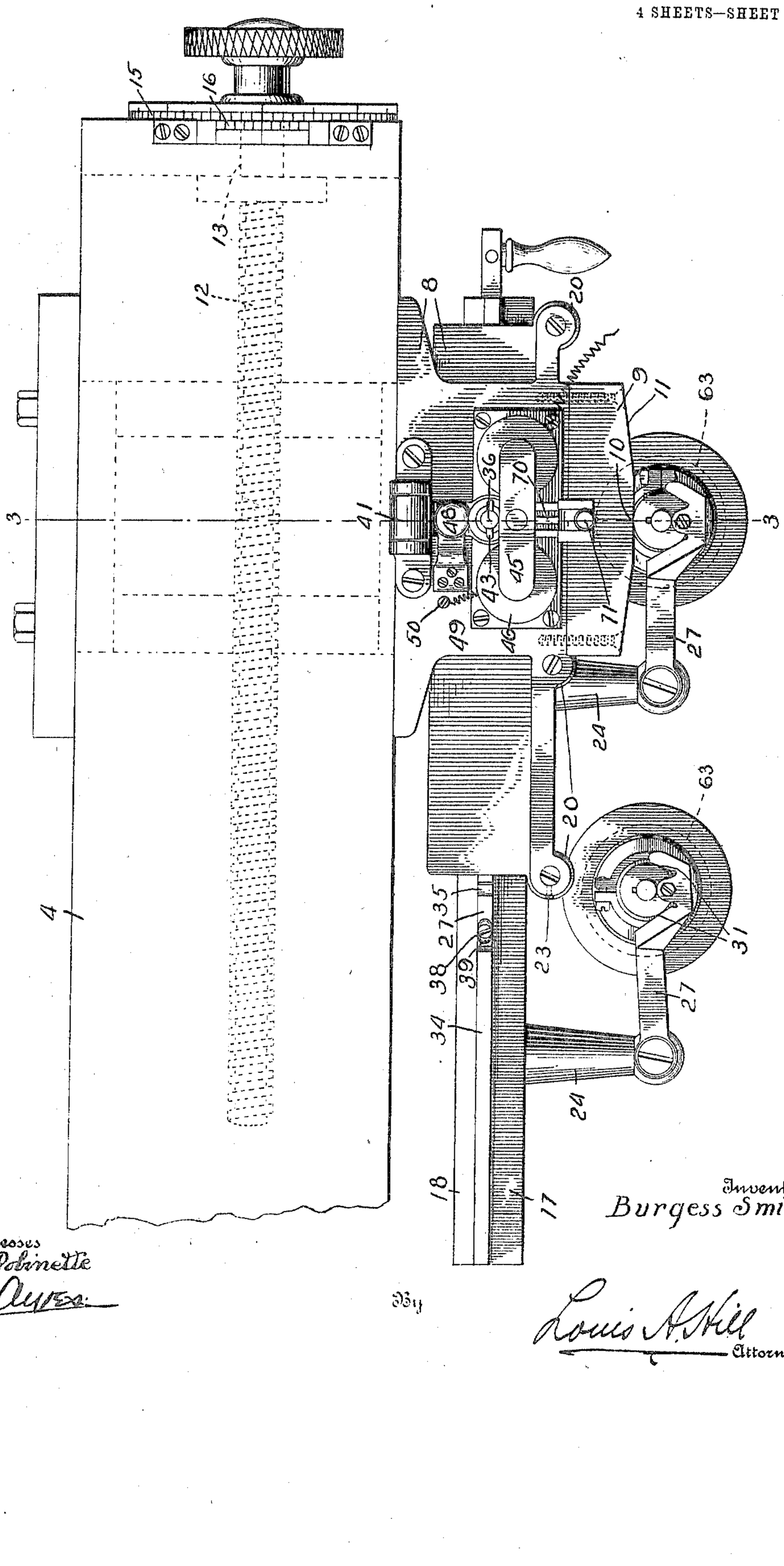

Fig. 2.

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4 SHEETS—SHEET 3.

Fig. 4.

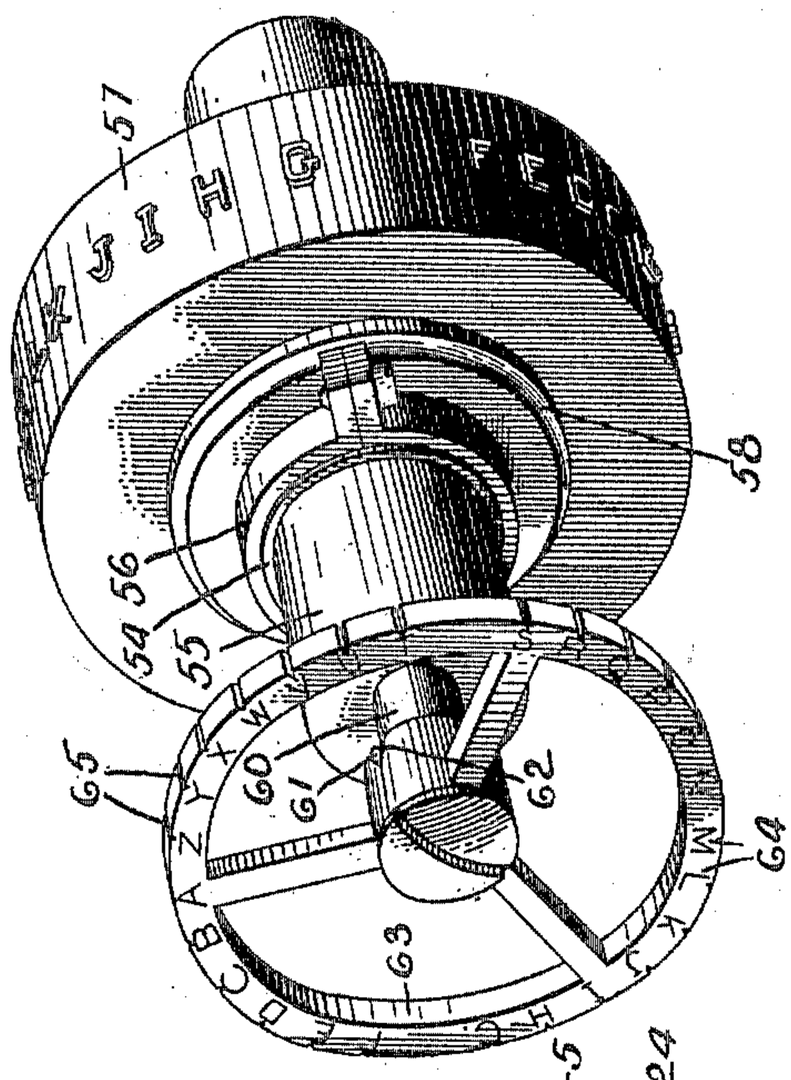
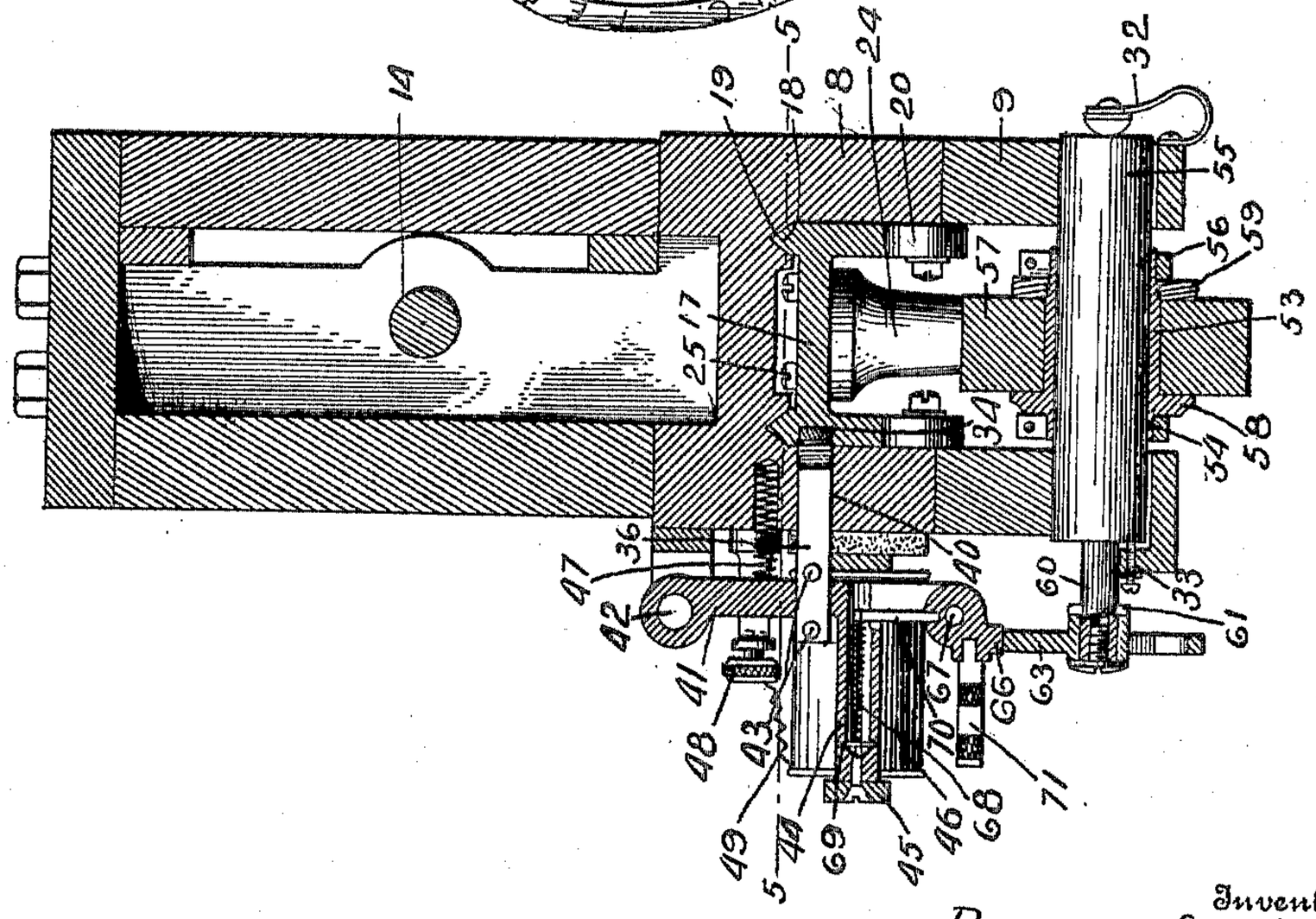


Fig. 3.



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4 SHEETS—SHEET 4.

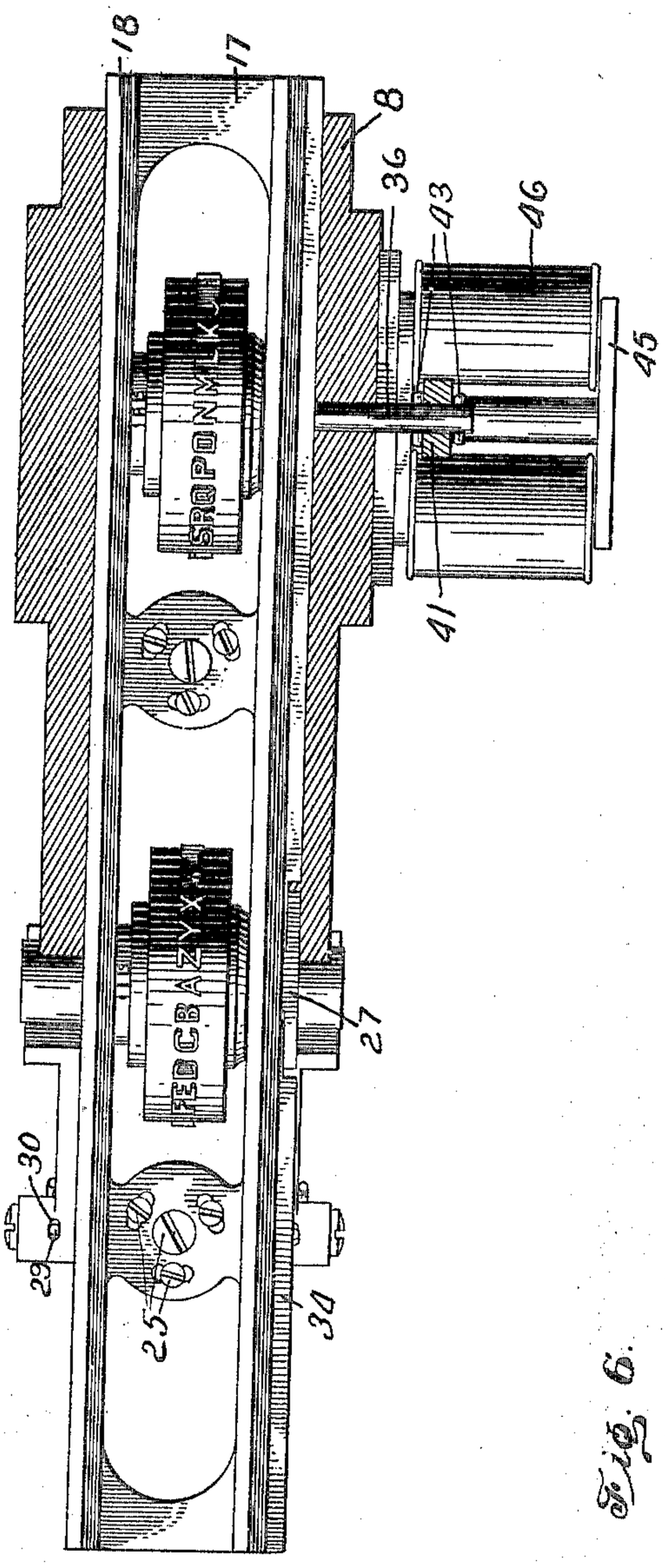

Fig. 5.

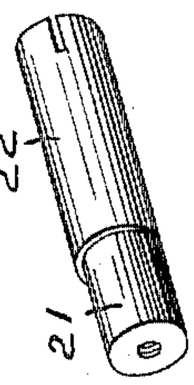

Fig. 8.

Fig. 7.

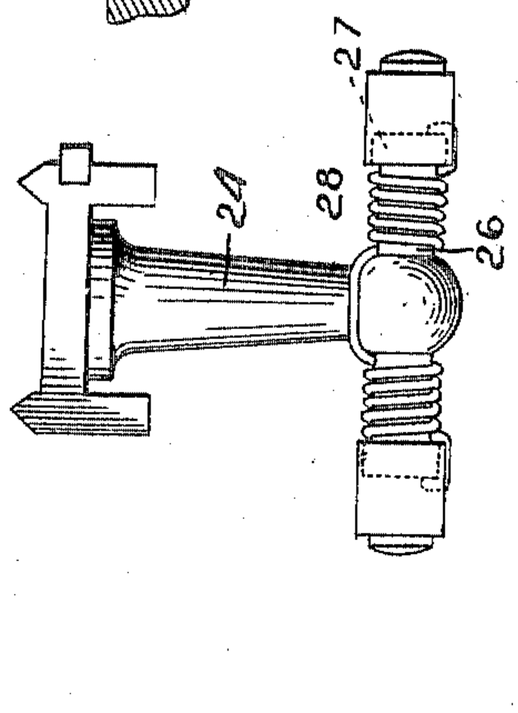

Fig. 6.

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UNITED STATES PATENT OFFICE.

BURGESS SMITH, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO JOHN R. HILL, OF WASHINGTON, DISTRICT OF COLUMBIA.

TRANSFER-PRESS AND ATTACHMENTS THEREFOR.

No. 811,672. Specification of Letters Patent. Patented Feb. 6, 1906.

Application filed March 18, 1905. Serial No. 250,865.

To all whom it may concern:

Be it known that I, BURGESS SMITH, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Transfer-Presses and Attachments Therefor, of which the following is a specification.

My invention relates to improvements in transfer-presses; and it consists in the constructions, combinations, and arrangements herein described and claimed.

The object of my invention is to provide a simple and convenient means whereby all combinations and arrangements of characters can be accurately transferred to printing-plates by the employment of a limited number of stock-transfer rolls, thus obviating the necessity of manufacturing a separate transfer-roll for each different arrangement or group of characters.

In the accompanying drawings, forming a part of this application, and in which similar reference-symbols indicate corresponding parts in the several views, Figure 1 is a side elevation of a transfer-press equipped with one embodiment of my invention. Fig. 2 is a detail view, on a larger scale, of the press-beam and transfer-rolls shown in Fig. 1. Fig. 3 is a sectional view on the line 3 3 of Fig. 2. Fig. 4 is a perspective view, on a larger scale, illustrating a preferred form of transfer-roll with an index member secured to its arbor. Fig. 5 is a sectional plan view on the line 5 5 of Fig. 3. Fig. 6 is a detail elevation showing spring means for retaining the roll-supporting arms in their upper position. Fig. 7 is a detail section, on a larger scale, showing the adjustable attachment of a notched block to the key on the roll-support; and Fig. 8 is a detail perspective view, on a larger scale, illustrating the eccentric spindle of the retaining-rollers for the roll-support.

In the drawings I have illustrated a common form of transfer-press similar to that shown in J. R. Hill's United States Patent No. 778,313, dated December 27, 1904, in which 1 indicates the usual press-bed carrying a work-chuck 2 and provided with stanchions 3. A press-beam 4 is trunnioned in the stanchions and provided with an angular extension 5 in engagement with a cam 6, an operating-lever 7 being provided for actuating said cam to tilt the beam 4 on its trunnions.

A head 8, slidably mounted on the beam 4, carries bearers 9, which latter are shown provided with an operating-face 10, substantially parallel with the surface to which the characters are to be transferred, and with two inclined surfaces 11 leading thereto. A screw 12 is swiveled at 13 in the beam 4 and threaded at 14 in the head 8 for adjusting the latter along said beam, a vernier-wheel 15 being secured to said screw in coöperative relation to an index 16 on the beam for permitting accurate adjustment of the head 8 through any predetermined distance.

A multiple-roll support 17 is provided with V-shaped rails 18, fitting corresponding track-grooves 19 in the head 8, retaining-rollers 20 being provided for maintaining said rails in sliding engagement with their tracks. Each retaining-roller is rotatively secured on an eccentric portion 21 of a spindle 22, journaled in the head 8, any suitable means, such as a set-screw 23, being provided for locking each spindle in any desired angular position for accurately adjusting the rails 18 to their tracks.

A plurality of supporting-standards 24 are shown adjustably supported by screws 25 to the adjustable roll-support 17 and carry at their lower ends spindles 26, on which are journaled supporting-arms 27 for the transfer-rolls. A spring 28 engages each standard and its arms 27 for normally maintaining the latter in their upper position, the movement of said arms being limited by pins 29 on the spindles engaging slots 30 in the arms. Each arm 27 is provided with inclined ways 31 for supporting and accurately positioning the roll-arbor, and spring means 32 are carried by one of said arms in position to maintain said arbor against an adjustable stop 33 on the other arm, thereby assuring axial adjustment of said arbor.

A key 34, secured to the slidable roll-support 17, is provided with notches 35 for engagement with a pin or latch 36. As shown especially in Figs. 2 and 7, said notches are preferably formed in blocks 37, adjustably secured to the key 34 by screws 38, extending through slots 39 in said blocks.

A notch 35 is provided in such relative position to each of the supporting-standards 24 as to bring the transfer-roll carried by any standard in proper position with the bearers 9 when the multiple-roll support 17 has been shifted to bring the notch 35, corresponding

to said standard, into engagement with the latch 36. This construction provides a convenient means for supporting the several transfer-rolls in such manner that any desired one of them can be quickly shifted into accurate operative position.

The latch 36 is slidably mounted in a slot 40 in the head 8 and extends through an arm 41, pivotally supported at 42 on said head, pins 43 being secured to said latch at opposite sides of the arm 41. The pivoted arm 41 is provided with a hollow angular extension 44, which carries the armature 45 of an electromagnet 46. A spring 47 is shown engaging the pivoted arm 41 for maintaining it in its outer position against an adjustable stop 48 when the electric circuit through the magnet is open. One terminal 49 of the coils of the electromagnet is electrically connected to the frame of the press through a binding-post 50, and the other terminal of said coils leads through a battery or other suitable source of electrical energy 51 to a contact 52, which is insulated from the frame of the press in position to be engaged by the operating-lever 7 when in its normal upper position.

A sleeve 53 is provided with split ends 54 for clamping it to the roll-arbor 55 by means of straps 56. The transfer-roll 57 tightly fits said sleeve and is clamped against a shoulder 58 thereon by a nut 59. The roll-arbor is provided with a reduced portion 60, carrying a pin 61 in position to engage notches 62, formed in the hub of an index member 63. The index member is provided with characters 64, similar in kind and relative arrangement to those on the roll. The said index characters are so positioned on the index member that a predetermined relative position will exist between the corresponding characters on the index member and roll when the notches 62 of the index member engage the pin 61 on the roll-arbor. A preferable construction is that shown in the drawings, in which the index characters are positioned diametrically opposite to the corresponding characters on the roll.

A notch 65 for each character on the index member is formed in the periphery of said member for engagement by a latch 66, pivoted at 67 to the arm 41. A tension-spring 68 is secured between a pin 69 within the hollow extension 44 and a lug 70, carried by the pivoted latch 66, for normally maintaining said latch in operative relation to the notches 65.

From the above description it will be seen that when the operating-lever 7 is in its normal upper position the circuit through the coils of the electromagnet 46 will be closed, thereby energizing said magnet and causing its armature 45 to be attracted against the tension of the spring 47. As shown especially in Fig. 3, this position of the parts will force the sliding latch 36 into engagement with whatever notch 35 is in registry therewith and will swing the pivoted latch 66 into operative relation with the notches 65 on the index member. The latch 66 is provided with an arm 71 for conveniently swinging it against the tension of the spring 68 in order to throw it out of engagement with the notches 65 when it is desired to shift another notch into engagement with said latch.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a transfer-press, the combination of a transfer-roll, an index member carried thereby and provided with notches, and a latch carried by the press in operative relation to said notches, substantially as described.

2. In a transfer-press, the combination of a transfer-roll, an index member carried thereby and provided with notches, and an automatically-operated latch carried by the press in operative relation to said notches, substantially as described.

3. In a transfer-press, the combination of a transfer-roll, an index member carried thereby and provided with index characters and notches, and a latch carried by the press in operative relation to said notches, substantially as described.

4. As an article of manufacture, a transfer-roll comprising an arbor, a roll secured thereon and provided with the usual peripheral characters, an index member provided with characters corresponding to those on said roll, and means for securng said index member on the roll-arbor with a predetermined relation between the corresponding characters on said roll and index member, substantially as described.

5. As an article of manufacture, a transfer-roll comprising an arbor, a roll secured thereon and provided with the usual peripheral characters, an index member provided with characters corresponding in kind and relative arrangement to those on the roll, and means for securing said index member on the roll-arbor with a predetermined relation between the several corresponding characters on said roll and index member, substantially as described.

6. In a transfer-press provided with a beam, the combination of a head adjustably supported on said beam, bearers carried by said head, said bearers constructed with operating-faces substantially parallel with the surface of the work and with inclined surfaces leading to said operating-faces, substantially as described.

7. In a transfer-press, the combination of a multiple-roll support, a plurality of transfer-rolls carried thereby, and means for adjusting said support to bring any desired one of said rolls into operative position, substantially as described.

8. In a transfer-press provided with a

beam, the combination of a head adjustably supported on said beam, bearers carried by said head, a multiple-roll support adjustably mounted on said head, a plurality of transfer-rolls carried by said support, and means for adjusting said support to position any desired one of the rolls in coöperative relation to said bearers, substantially as described.

9. In a transfer-press, the combination of a multiple-roll support, a plurality of transfer-rolls carried thereby, means for adjusting said support to bring any desired one of said rolls into operative position, and means for locking said support in its several adjusted positions, substantially as described.

10. In a transfer-press provided with a beam, the combination of a head adjustably supported on said beam, bearers carried by said head, a multiple-roll support adjustably mounted on said head, a plurality of transfer-rolls carried by said support, means for adjusting said support to position any desired one of the rolls in coöperative relation to said bearers, and means for locking said support in its several adjusted positions, substantially as described.

11. In a transfer-press provided with a beam, the combination of a head adjustably supported on said beam, bearers carried by said head, a multiple-roll support adjustably mounted on said head, a plurality of transfer-rolls carried by said support, means for adjusting said support to position any desired one of the rolls in coöperative relation to said bearers, means for locking said support in its several adjusted positions, and means for automatically releasing said locking means upon depression of said roll-support, substantially as described.

12. In a transfer-press provided with a beam, the combination of a head adjustably supported on said beam, bearers carried by said head, a multiple-roll support adjustably mounted on said head, means for adjusting said support to position any desired one of the rolls in coöperative relation to said bearers, and means for locking the roll so positioned with any desired one of its characters in operative position, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

BURGESS SMITH.

Witnesses:

H. RALPH BURTON,

DONALD A. DE LASHMUTT.