

No. 640,119.

Patented Dec. 26, 1899.

R. C. ELLIOTT.
COMPOSING MACHINE.

(Application filed Sept. 9, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

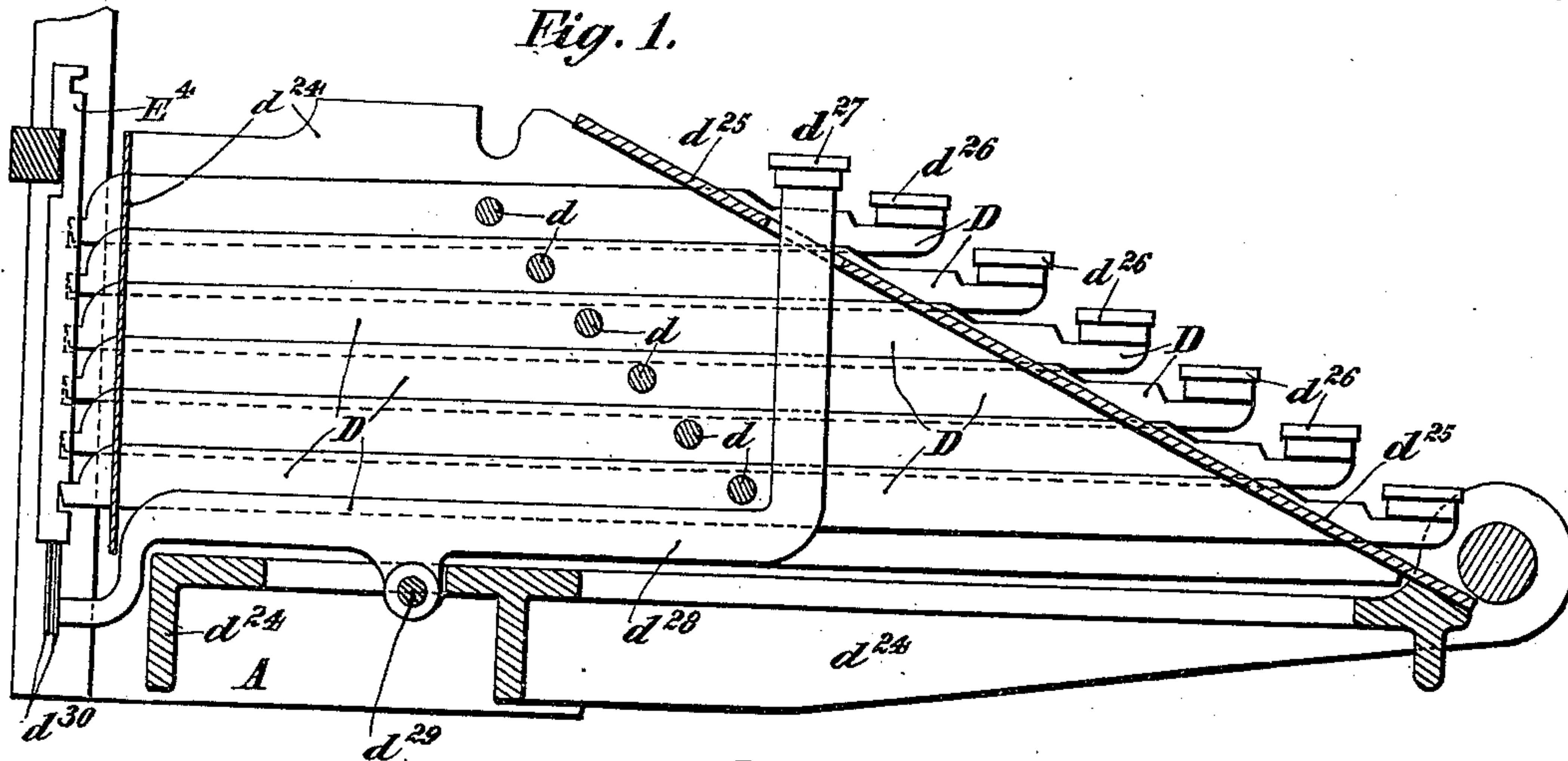


Fig. 2.

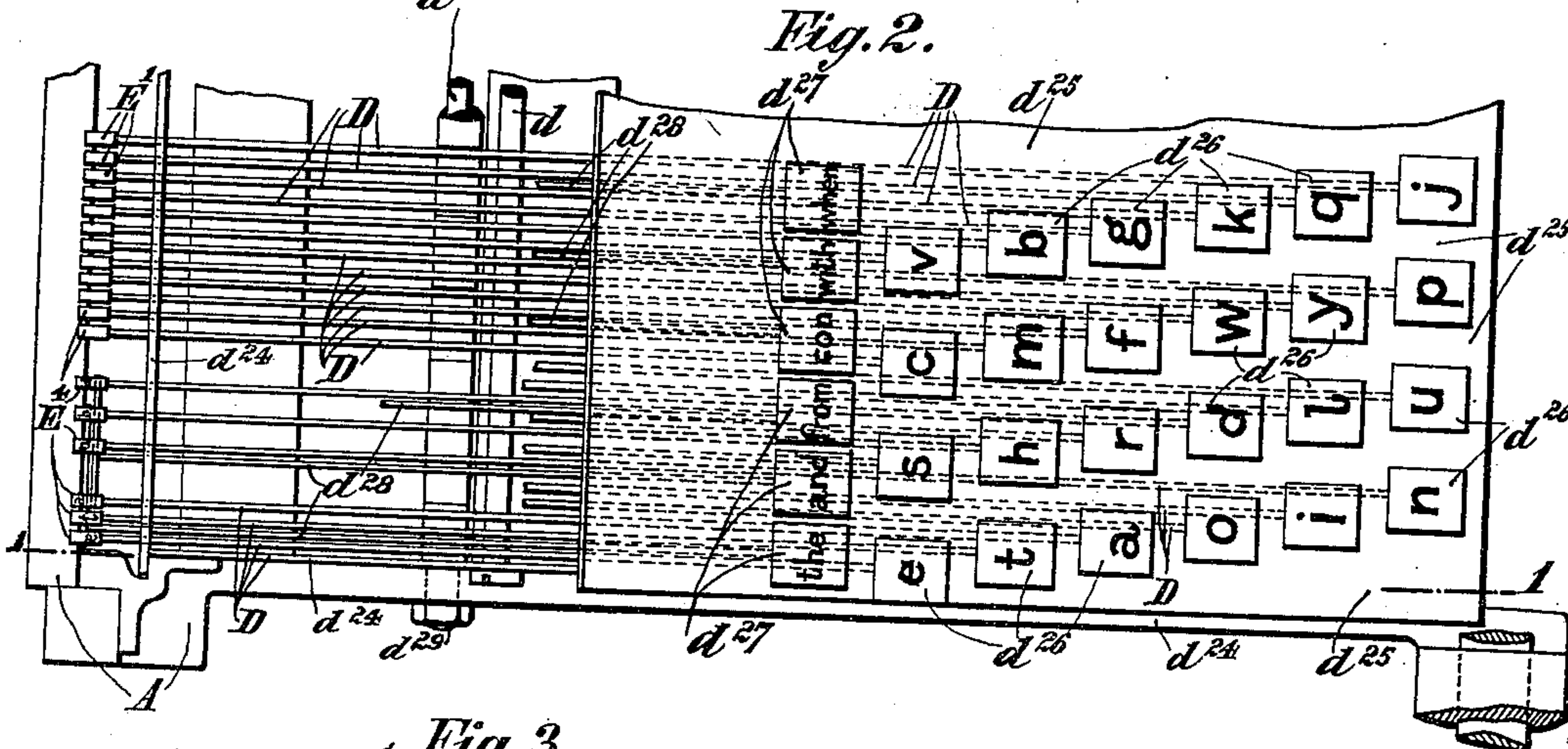


Fig. 3.

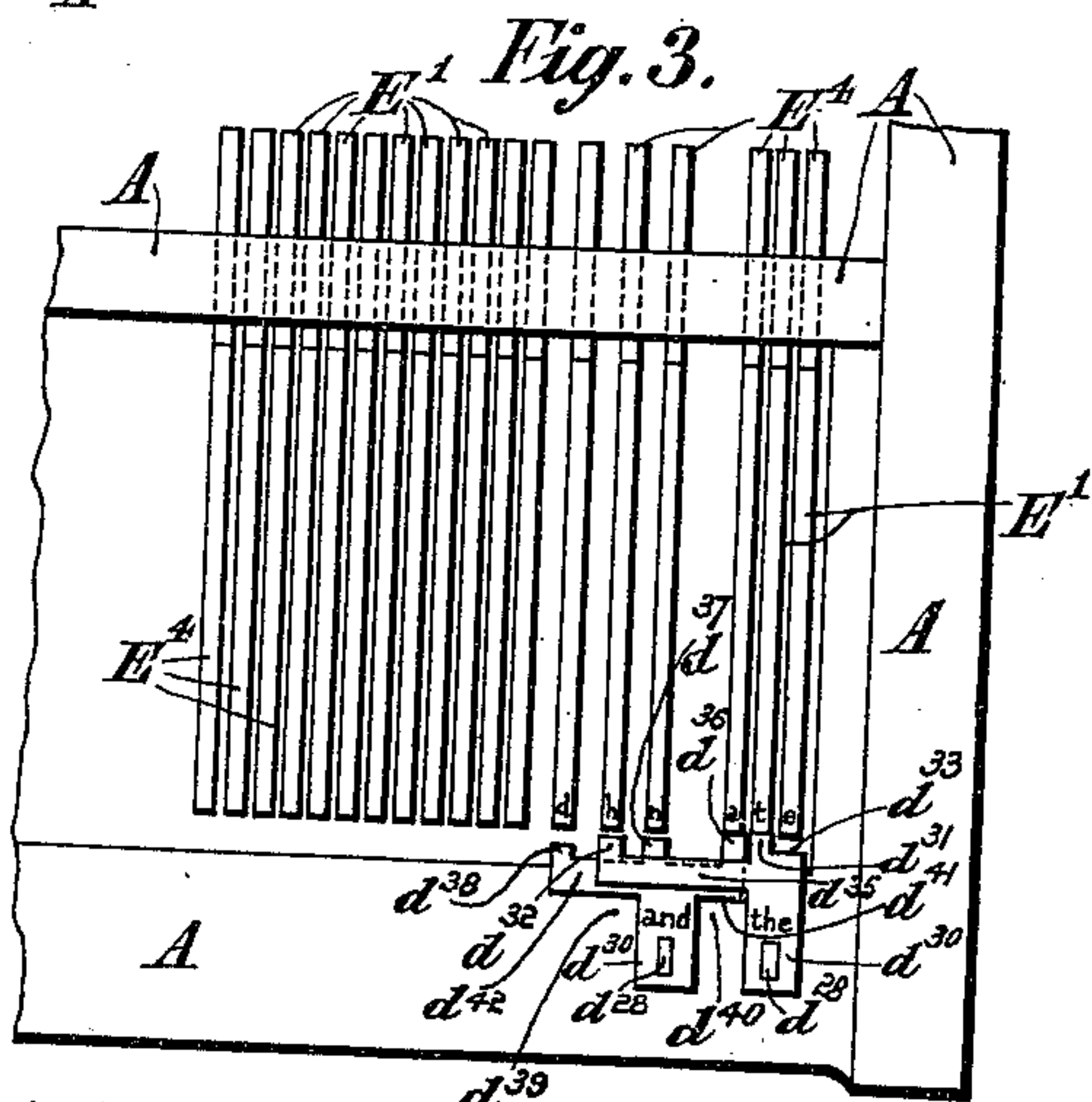
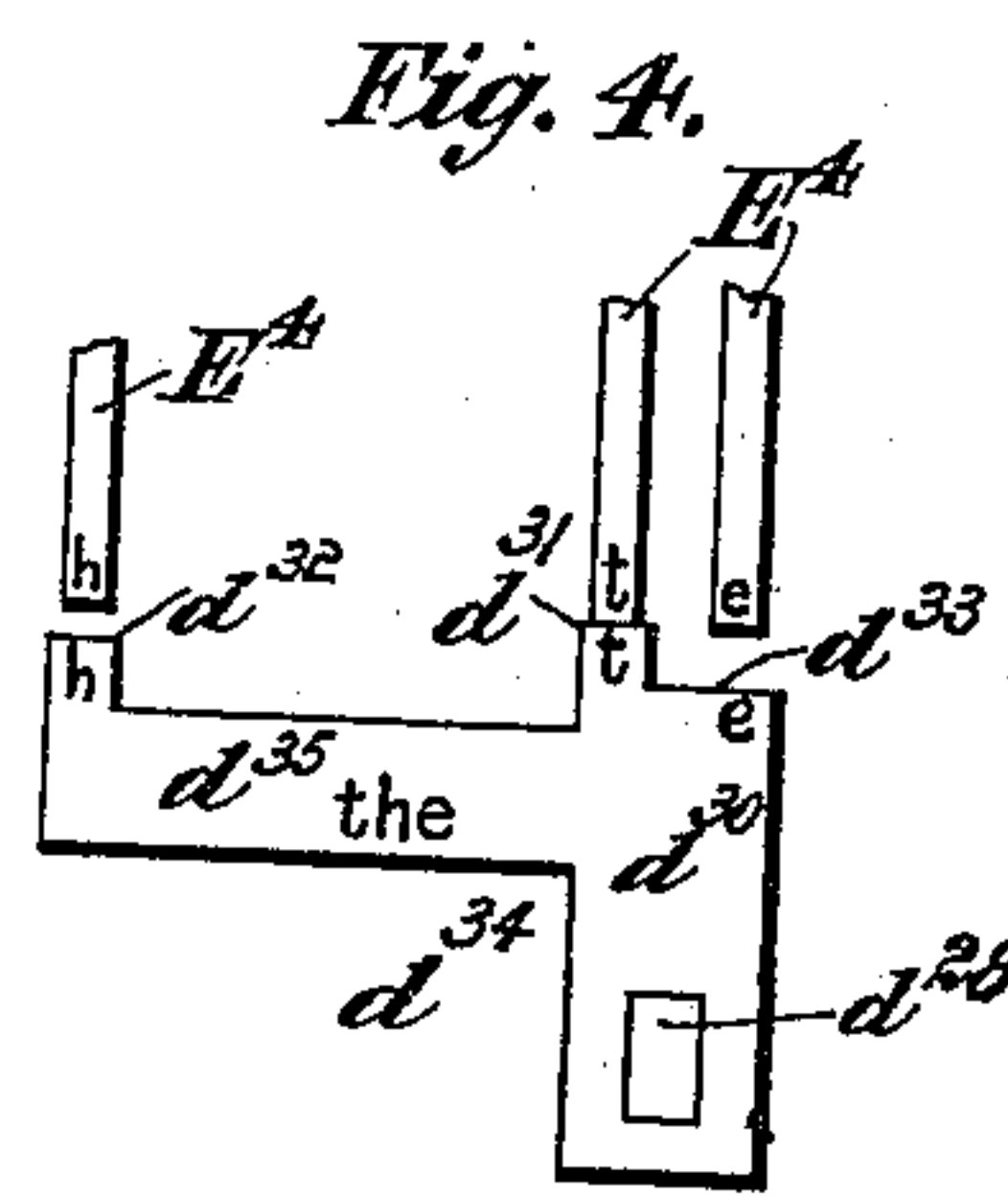


Fig. 4.



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2 Sheets—Sheet 2.

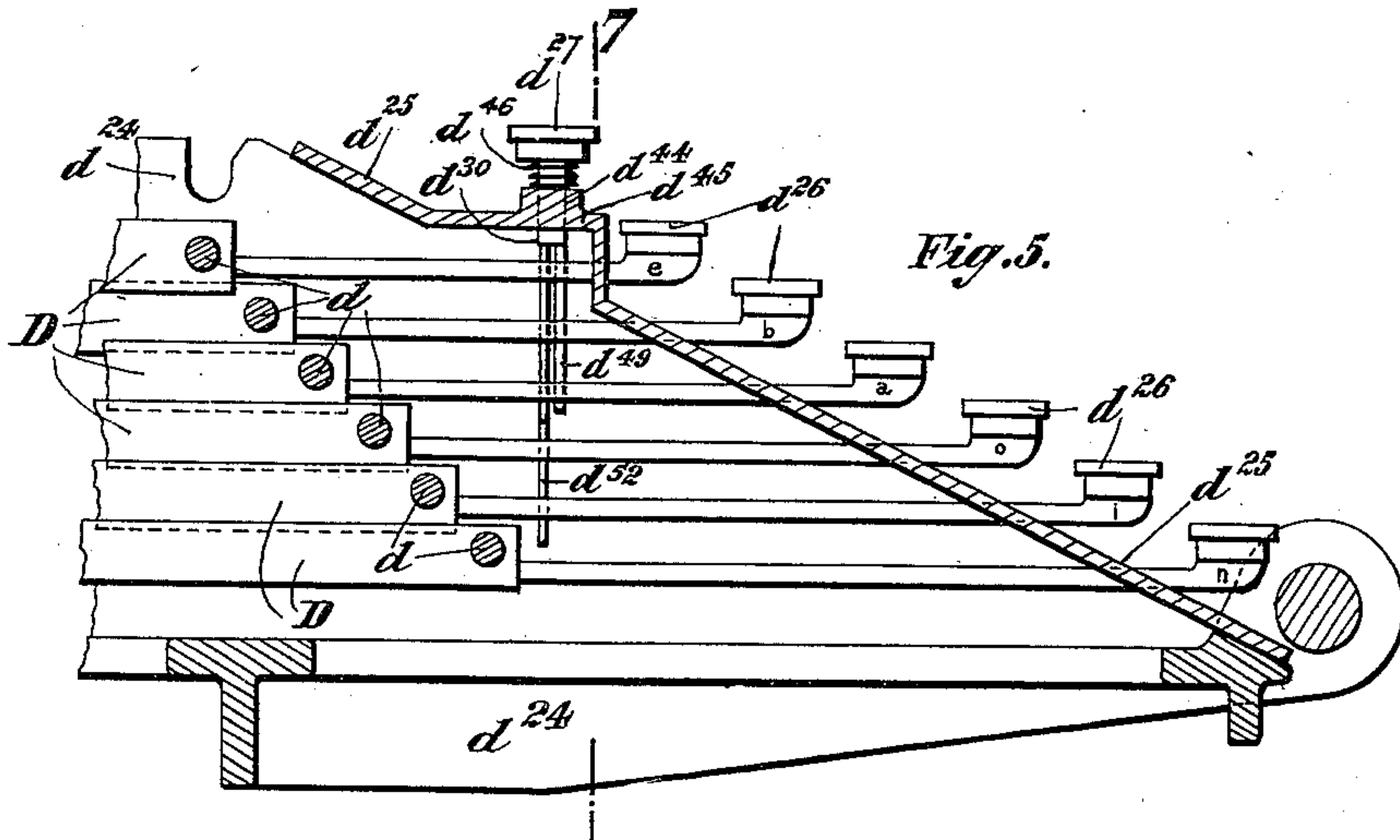


Fig. 5.

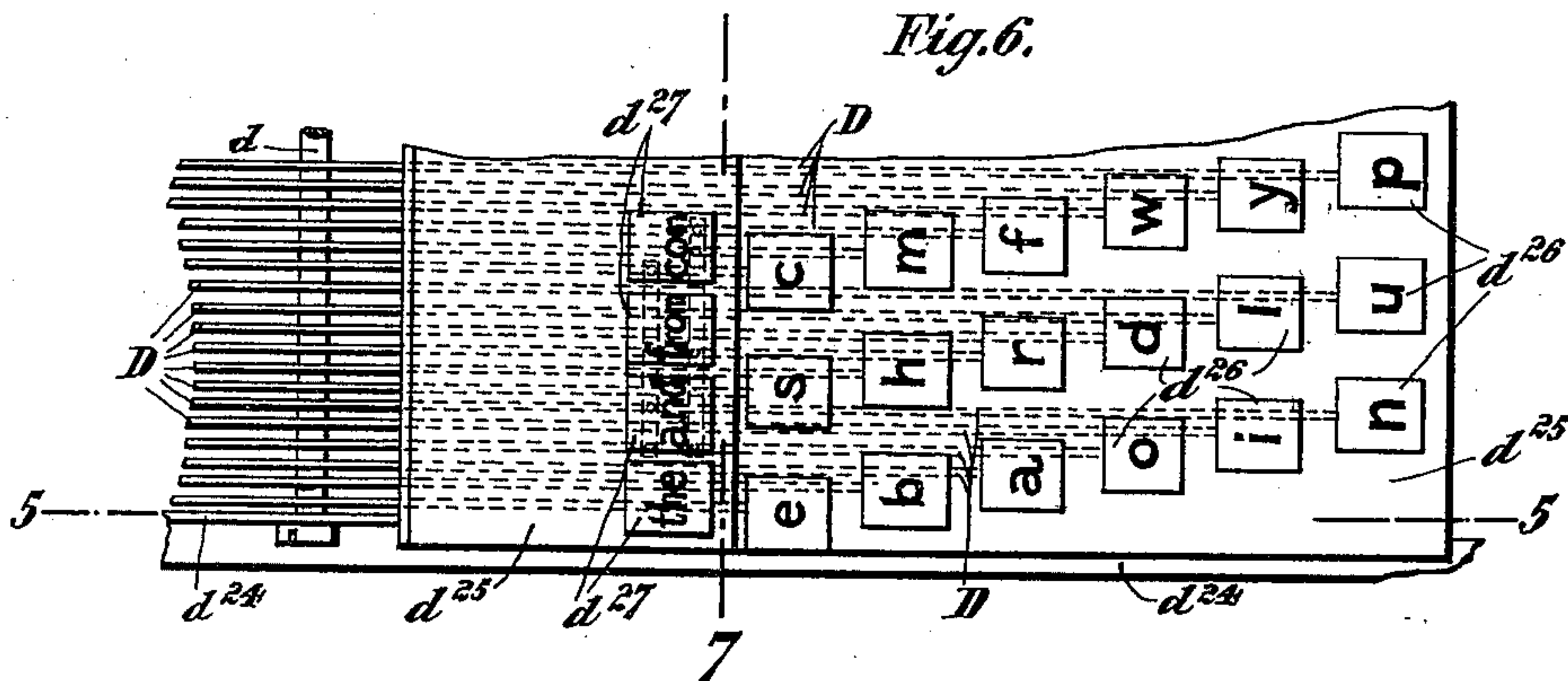


Fig. 6.

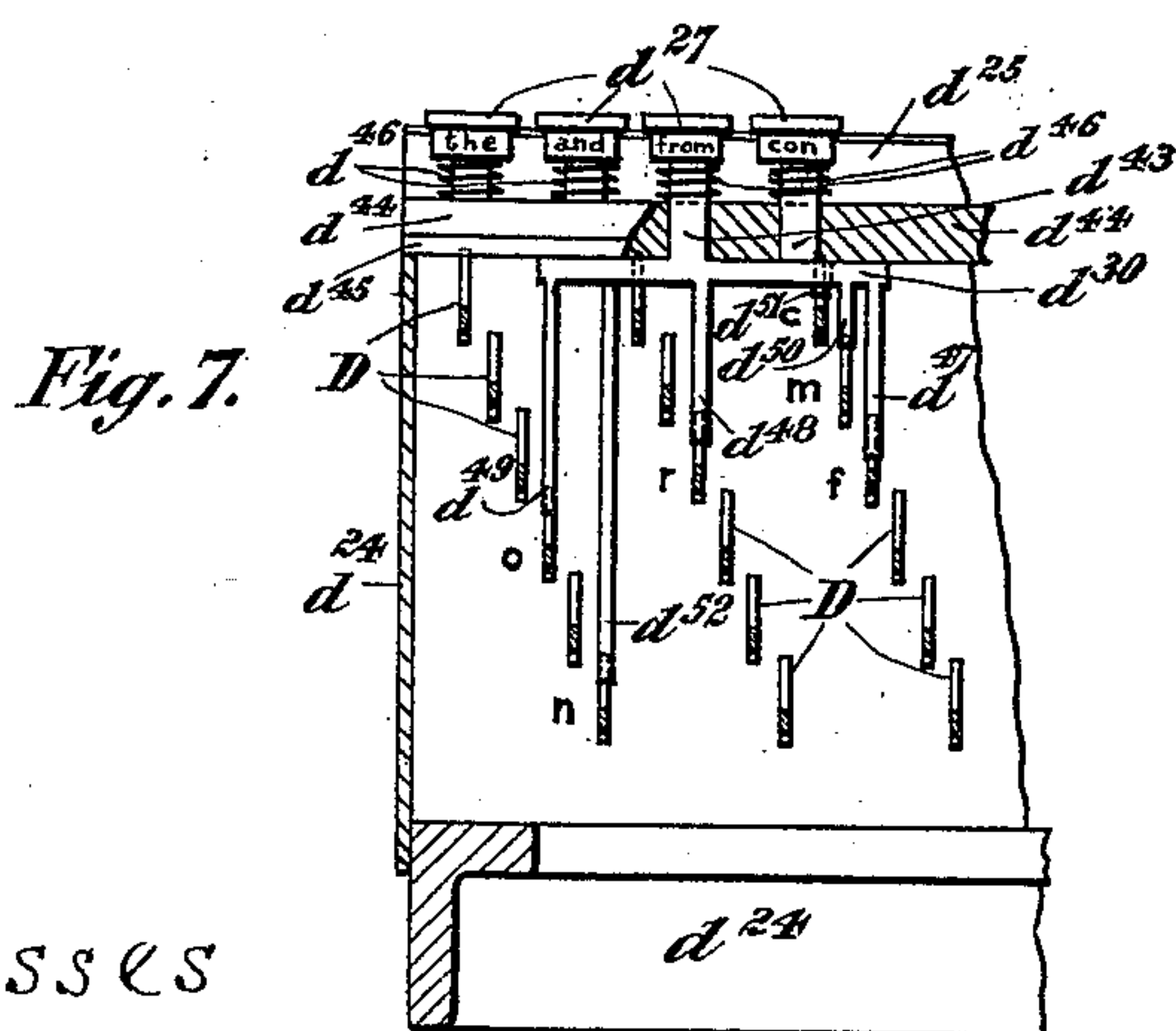


Fig. 7.

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UNITED STATES PATENT OFFICE.

RICHARD CORNELIUS ELLIOTT, OF BROADHEATH, ENGLAND, ASSIGNOR TO
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COMPOSING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 640,119, dated December 26, 1899.

Application filed September 9, 1899. Serial No. 729,991. (No model.)

To all whom it may concern:

Be it known that I, RICHARD CORNELIUS ELLIOTT, of Broadheath, in the county of Chester, England, have invented certain new and useful Improvements in Composing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in composing-machines; and it consists in means by which the actuation of a single key-lever shall effect the composition of all the types, type-dies, matrices, or whatever the machine in question may work with for a given syllable or short word, and in their proper order too, so that, for instance, the actuation of the "the" key-lever shall always produce "the" and not "het" or "eht." In carrying it into effect each syllable or short word is represented on the keyboard of the machine by a special key-lever adapted to actuate a comb having as many teeth as there are letters in the respective syllable or short word, those teeth standing at the proper distance from each other to actuate the respective escapements that release or deliver or actuate the type, type-dies, matrices, or their equivalents. Thus the special key-lever marked "the" actuates a comb having three teeth, which latter actuate the "t," "h," and "e" escapements. Now it is the common practice to aline all the escapements or the ends of the connecting-rods thereto with each other. It is evident, therefore, that some special means are necessary for making the comb actuate the respective escapements in the order of the letters in the syllable or short word. These means consist in the teeth of a comb differing in length, the tooth for the first letter-escapement being the longest and that for the last letter-escapement being the shortest, the lengths of the intermediate teeth being adjusted accordingly. The differences in length between a longer tooth and the next shorter one is as much as is necessary to allow of the escapement actuated by the former to do its work of releasing or delivering its type, type-die, matrix, or its equivalent before the said shorter tooth actuates its escapement.

The accompanying drawings illustrate the application of the invention to the keyboard, escapements, and connecting-rods of the Mergenthaler linotype-machine, as those escapements and connecting-rods are described in the specification of Letters Patent No. 530,931, dated December 18, 1894; but there is nothing in the invention itself which limits it to the composing mechanism of that or of any other composing-machine.

In the present instance my devices or attachments operate primarily on the finger-keys, which in turn serve in the usual manner to operate the escapements.

Referring to the said drawings, Figure 1 is a sectional side elevation taken on the line 1 1 of Fig. 2. Fig. 2 is a part plan. Fig. 3 is a rear elevation from the left of Figs. 1 and 2; and Fig. 4 is detail rear elevation of one comb, the respective key-lever, and connecting-rod ends.

A A are parts of the machine-frame; D D, some of the key-levers; d , their pivot-rods; d^{24} , the frame of the keyboard; d^{25} ; d^{26} , the keys of the key-levers D, and E' the respective connecting-rods of the series to the respective escapements.

All the foregoing parts are as heretofore; and a detailed description of the escapements and their connecting-rods will be found in the specification of the above-mentioned Letters Patent. Neither the order of the key-levers D and connecting-rods E' nor their coöperation is affected by the present invention.

d^{27} d^{27} are the keys of the special key-levers d^{28} d^{28} . There are six illustrated—for "the," "and," "from," "con," "with," and "when;" but there may be as many as may be required, according to the language in which the particular machine is made to compose. All the levers d^{28} are preferably pivoted upon a rod d^{29} , fixed to the frame d^{24} parallel with the pivot-rods d . The rear end of each lever d^{28} carries a comb, which is made fast to it. Two of these are illustrated, one for the "t," "h," and "e" connecting-rods and the other for the "a," "n," and "d" connecting-rods. A description of them will serve as a description of all the combs.

d^{30} is the body-plate of a comb. All the combs in the machine stand in suitable positions for their teeth to reach the respective

connecting-rods. The teeth must be immediately under the bottom ends of the said rods, as illustrated, or under equivalent offsets therefrom or from the rods. Either the said rod ends are wide enough for the purpose, as indicated in Fig. 1, or the teeth may be cranked, if necessary, to reach the respective rod ends, or the rods may carry offsets, as above mentioned.

Referring to the "the" comb, (shown in rear elevation in Figs. 3 and 4,) the tooth d^{31} to actuate the "t" connecting-rod of the series E^4 is the longest, for the reason already explained. It stands normally in contact with its connecting-rod. The tooth d^{32} to actuate the "h" connecting-rod is the next longest one and is not normally in contact with its connecting-rod, and so with the third or "e" tooth d^{33} . As the "h" rod is some distance away from the others, the bottom of the plate d^{30} of the respective comb is preferably cut away, as shown at d^{34} , leaving an outstanding arm d^{35} to carry the tooth d^{32} ; so with the "and" comb so far as regards the respective lengths of its teeth— d^{36} for the "a" rod, d^{37} for the "n" rod, and d^{38} for the "d" rod. The plate d^{30} of the respective comb is shown as cut away in two places—at d^{39} and d^{40} —leaving outstanding arms d^{41} and d^{42} to carry the teeth d^{36} and d^{38} . The "t," "h," "e," "a," "n," and "d" rods E^4 are marked with the respective characters in Figs. 3 and 4 to make the foregoing description of the relationship between them and the respective comb-teeth quite clear.

Fig. 5 is a sectional side elevation taken on the line 5 5 of Fig. 6; Fig. 6, a part plan corresponding therewith; and Fig. 7, a transverse sectional elevation taken on the line 7 7 of Figs. 5 and 6, illustrating a modification of the invention. According to it, the special key-levers d^{28} are dispensed with and the combs are carried on the ends of stems d^{43} , depending vertically from the special keys d^{27} . These stems d^{43} work in suitable guides d^{44} in a portion d^{45} of the keyboard d^{25} , which is thickened to make the guides long enough for their purpose, as shown in Figs. 5 and 7. There is a returning-spring d^{46} around each stem d^{43} , between its key d^{27} and the portion d^{45} . The teeth of the combs bear directly upon the ordinary key-levers D in front of their pivots d . The details of two combs are shown in Fig. 7, those for the short word "from" and the syllable "con."

d^{47} is the "f" tooth; d^{48} , the "r" tooth; d^{49} , the "o" tooth, and d^{50} the "m" tooth. d^{51} is the "c" tooth, and d^{52} the "n" tooth. The tooth for the "o" in "con" does not show in the figure, because that for the "o" in "from" stands in front of it. The change in the position of the combs and in the direction in which they work makes no difference in the relative lengths and positions of their teeth. Further, although the comb-teeth are shown as arranged to actuate the key-lever

D by depressing their front portions, I may attain the same result by making them depress the front ends of rocking levers the back ends of which raise the back portions of the levers D .

The front portions of the levers D are shown in Figs. 5 and 7 as much smaller than the back portions to indicate that these front portions may, if required, be pliant to some extent; but no importance is attached to this. All the levers D may advantageously be as heretofore.

It will be observed that when a composing-machine is provided with my improvement it is possible for the operator to manipulate the finger-keys individually and in any desired order or succession, thus permitting the operation of the machine in every respect in the usual manner, and that beyond this the operator is enabled by means of the improvement to operate several keys in succession and produce an entire word or syllable by a single stroke. It will be observed that one of the finger-keys may be acted upon at different times by two or more of the special or auxiliary keys. For example, one of the auxiliary keys may include the "e" key in one combination or in one word, while another auxiliary key will include the "e" key in another word or syllable.

What I claim as my invention is—

1. In a composing mechanism, a series of escapements, independently and manually operable as usual, in combination with a supplemental device adapted to operate a plurality of said escapements in succession; whereby an entire word or syllable may be produced by a single stroke, if desired.

2. In a composing mechanism, a combination of a series of escapement-actuating finger-keys, independently operable, and an operating-comb, having teeth arranged to operate a plurality of said keys, one after another in the required order.

3. In a composing mechanism, a combination of a series of escapements and operating connections therefor, independently and manually operable, and a supplemental key with connections adapted to operate a plurality of the escapements successively in the required order, and a returning-spring, whereby the supplemental key and its connections are held normally out of action.

4. In a composing mechanism, a series of escapement-controlling finger-keys, independently operable, and a series of auxiliary keys, each having connections to operate a group of the first-named keys.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

RICHARD CORNELIUS ELLIOTT.

Witnesses:

T. TAYLOR,
ARCHIE LOWE.