

No. 854,110.

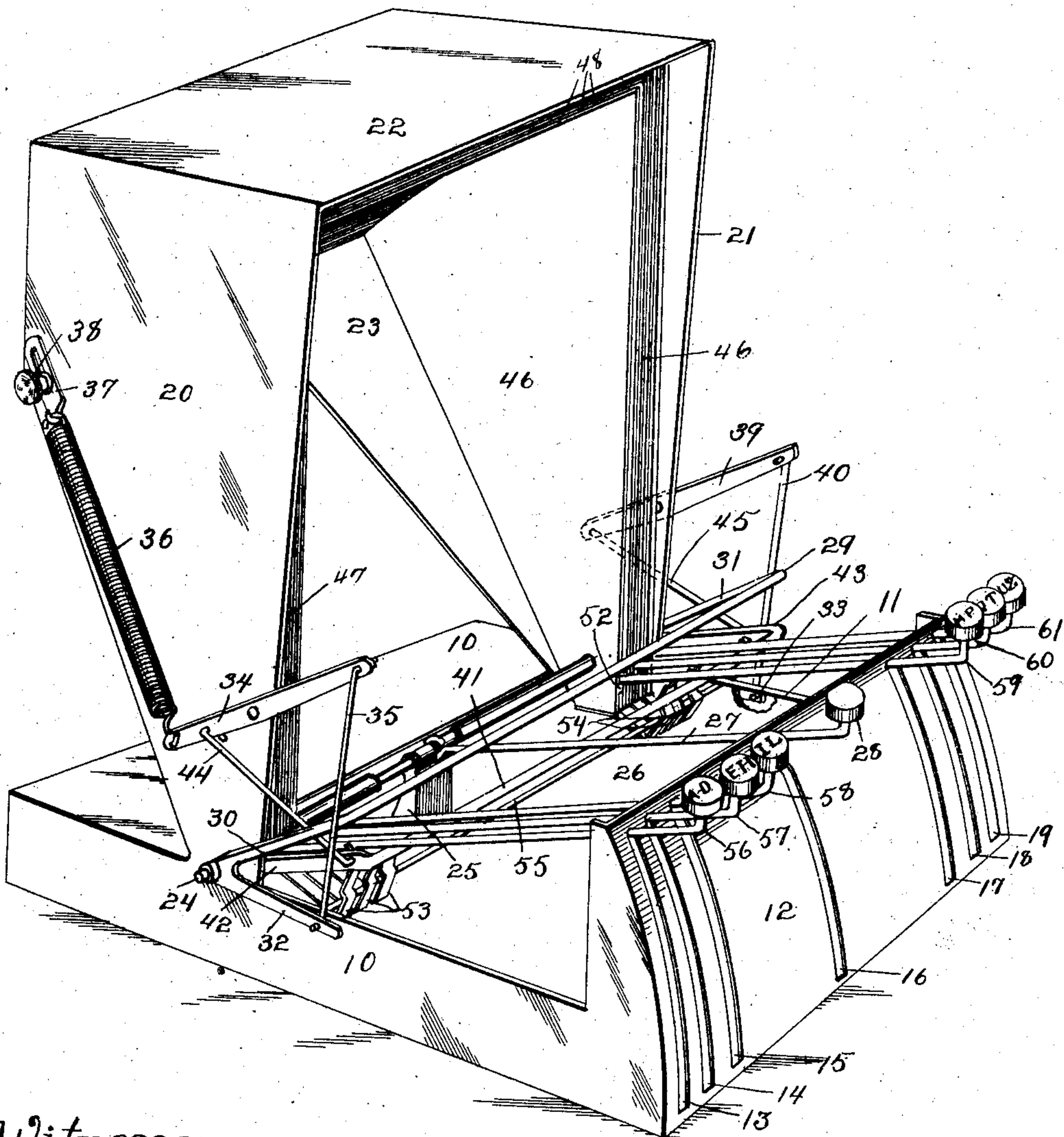
PATENTED MAY 21, 1907.

F. H. SCHULTZ & M. H. BERKEMEIR.  
INDEX MACHINE.

APPLICATION FILED MAR. 27, 1905.

2 SHEETS—SHEET 1.

*Fig. 1.*



Witnesses

A. S. Hague  
A. E. Woody

Inventors, F. H. Schultz and  
M. H. Berkemeir.  
by *Quig & Lane* Attys

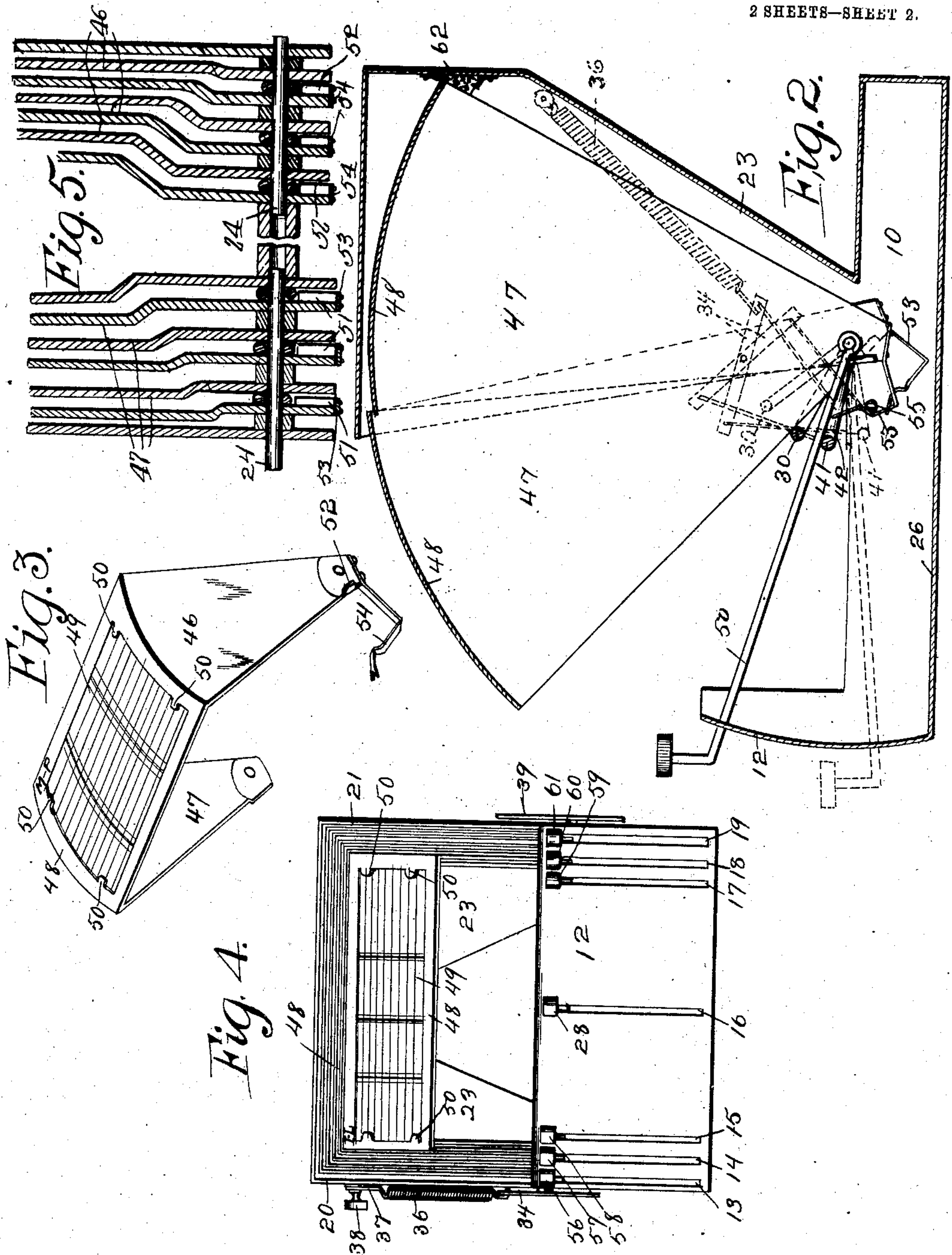
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Inventors F. H. Schultz and  
M. H. Berkemeir.  
by *Orwig & Lane* Attys



# UNITED STATES PATENT OFFICE.

FERDINAND H. SCHULTZ AND MARTIN H. BERKEMEIR, OF TREYNOR,  
IOWA.

## INDEX-MACHINE.

No. 854,110.

Specification of Letters Patent.

Patented May 21, 1907.

Application filed March 27, 1905. Serial No. 252,290.

*To all whom it may concern:*

Be it known that we, FERDINAND H. SCHULTZ and MARTIN H. BERKEMEIR, citizens of the United States, residing at Treynor, Iowa, have invented a certain new and useful Index-Machine, of which the following is a specification.

The objects of our invention are to provide an index machine in which there is a series of key actuated members upon which the index cards are designed to be placed, in which the keys in it and the parts operated by them are so arranged that the operation of a single key will throw the card bearing the same letter as the key to a position where it can be easily seen and a single operation of another key will cause the first mentioned card to return to a position inside of the casing at the same time another card bearing the same letter as the last mentioned key is drawn to a position where it can be easily seen.

A further object is to provide a key returning mechanism for simply returning the card which has been thrown out to the position where it can be seen to a position inside of its casing without withdrawing another card.

A further object is to provide an index machine in which there can be placed any number of cards desirable, operated by keys, and thus be adapted for use where a large number of names or a small number of names have to be indexed.

A further object is to provide a holder for the various indexes so constructed that the cards used for indexing the names may be easily removed whenever it is desirable to make up a new list of names.

A further object is to provide a muffler against which the various index carriers are to strike in being returned so as to eliminate to a great extent the noise which would otherwise be prevalent with the use of the machine.

A further and very material object is to provide a device of this class in which the index portion of the device may be kept from dust and other similar accumulations and at the same time be readily and easily accessible by the simple operation of touching a key.

Our invention consists in certain details in the construction, arrangement and combination of the various parts of the device, where-

by the objects contemplated are attained, as hereinafter more fully set forth, pointed out in our claims and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the device. Fig. 2 is a longitudinal, sectional view of a portion of it designed to show the operation of the keys on the index carrier. Fig. 3 is a detail view of one of the index carriers detached from the rest of the machine. Fig. 4 is a front elevation of the device, showing one of the index sheets exposed to view, and Fig. 5 is a detail, sectional view of the lower portion of one side of the index carriers, showing the way of mounting these, and the mechanism by which they are operated.

Referring to the accompanying drawings, it will be seen that we have provided a base, comprising the two sides 10 and 11 which are connected at their forward end by the keyboard 12 having a series of slots 13, 14, 15, 16, 17, 18 and 19, which extend from the upper to the lower portion of it. There may be any number of these slots to provide for any number of keys that it may be desirable to use in the construction of our index machine. Extending upwardly from the central portion of the sides 10 and 11 of the base is a casing having the sides 20 and 21 therein and the top portion 22, said sides being connected at their rear portion by the back 23 which is partially opened for lightness in construction.

Extending across the base and mounted in that portion of it to which the sides 20 and 21 of the casing is attached is a shaft 24, which shaft is supported at its central portion by means of the upright 25, which upright is attached to the bottom 26 of the base. This upright 25 also serves as a retaining mechanism for securing the returning key 27 in position relative to the shaft 24, which passes through the slot 16 and has a cap 28 upon which is marked the word "Return", or some other suitable word to indicate that this key is the one which returns the indexes into the casing in the manner hereinafter specified.

Pivotaly mounted on the ends of the shaft 24 and outside of the sides 20 and 21 of the casing is a rod which extends forwardly from its point of attachment a short distance, and then extends across the device above the base 26. We have indicated this rod by the numeral 29. For the sake of convenience we



have designated this rod, "the returning rod". Securely attached to the ends 30 and 31 of this returning rod are the arms 32 and 33.

5 Pivotaly attached to the side 20 of the casing is a lever 34, which lever is connected at its forward end with the forward end of the arm 32 by means of the rod 35. The rear end of the lever 34 has attached to it a spring  
10 36, which spring is attached at its upper end to an adjustable support, which support comprises a slotted sliding member 37, and a thumb screw 38 which is inserted into the slotted member and into the side 20 of the  
15 casing so that the tension of the spring may be increased or diminished by adjusting the slotted member 37, and fixing it in a desired position.

Pivotaly attached to the side 21 of the  
20 casing is a lever 39 corresponding to the lever 34, the forward end of which arm is connected with the lever 33 by means of the rod 40. Pivotaly mounted on the shaft 24 is a rod 41 extending across the device above the base,  
25 and having its end portions 42 and 43 bent substantially at right angles to its body portion, and it is through these end portions that the shaft 24 passes. The body portion of the rod 41 is the transverse portion of it,  
30 and this is beneath the returning rod 29, and it is upon this rod 41 that the keys for operating the index carriers rest normally, and which maintain these rods at their upper limit of movement, as hereinafter set forth.

35 Pivotaly connecting the lever 34 with the end 42 of the rod 41 is a rod 44. Connecting the rear end of the lever 39 with the end 43 of the rod 41 is a rod 45. Inasmuch as the spring 36 normally holds the return end of  
40 the lever 34 at its upper limit of movement, the rod 44 will be held at its upper limit of movement and will correspondingly hold the rod 41 at its upper limit of movement, and the rod 45 co-acting with the lever 39 and the  
45 rod 40 which is connected with the rod 29 will also assist in maintaining the rod 41 at its upper limit of movement and thus normally support the operating keys, hereinafter described, at their upper limit of movement.

50 Pivotaly mounted on the shaft 24 is a series of index carriers, each of which has the side portions 46 and 47 and the curved top portion 48 in which is placed a card 49 having a series of lines thereon like those on the  
55 ordinary index card. Each of these curved top portions has a series of retaining lugs 50 for securely holding the card in position relative to the curved top portion, and yet enable the person using the index machine to  
60 remove the card therefrom at his pleasure. These carriers are made to telescope inside of each other and the largest carrier has its sides 46 and 47 adjacent to the sides 21 and 20 respectively of the casing, and the one next in  
65 size is immediately inside of this and so on,

until the desired number of carriers has been pivoted on the shaft 24. Each of the sides 46 and 47 of the carriers extend a slight distance below the shaft 24 and every other one of the extensions to the sides 47 have the lateral  
70 projections 51 which are to be engaged by the operating keys, for throwing the carriers on which these lugs are, to their forward limit of movement where they can be seen by  
75 the operation of the operating keys the first, third, fifth, and in consecutive order the odd numbered carriers commencing at the left have these lugs upon them. On the even  
80 numbered carriers on the extension of the side 46 below the shaft 24 is a projection 52 corresponding to the projection 51, which are designed to be engaged by the keys for operating the even numbered carriers commencing from the right of the machine. Attached  
85 to the lower end of the extension of the side 47 and on each odd carrier is a spring hook 53. Attached to the lower end of the extension of the side 46 of each of the even numbered carriers is a similar hooked spring 54,  
90 all of which springs 53 and 54 are designed to coact with the rod 55, which extends across the base and attached to the sides 10 and 11 of it for normally holding the carriers in their closed position inside of the casing, and which  
95 are designed to be released by the operation of the operating keys. The free ends of each of these springs 53 and 54 are indented to receive the broad portions of the keys hereinafter described.

Pivotaly mounted on the shaft 24 and between the first and second sides 47 of the index carriers and the third and fourth sides 47 of the index carriers, and so on is a series of keys, 56, 57 and 58 which extend outwardly from their pivotal points of attachment,  
100 the rod 29 resting upon the rod 41 and passed through the slots 13, 14 and 15 respectively. Each key has a cap upon which is a designating letter corresponding to the indicating letter on the index carrier, to be  
105 brought into sight by the operation of this key. Any number of keys and a corresponding number of carriers may be used.

Extending between the second, third, fourth and fifth carrier, commencing with  
110 the right and coming to the left are a series of keys 59, 60 and 61 for operating the even numbered carriers which are pivoted to the shaft 24 and extend outwardly in the same manner as the keys 56, 57 and 58 extend and  
115 constructed exactly like them.

Attached to the rear upper portion of the back 23 of the casing is a muffler 62 against which the rear edge of the index carriers are designed to rest in their closed position  
120 which is designed to prevent the index carriers from creating a noise as they approach their inner limit of movement.

In practical operation and assuming that the parts of the device are assembled in the  
125 130



manner above designated and that the index carriers are on the interior of the casing as shown in Fig. 1 of the drawings and that it is desirable to obtain access to the index on the index card marked A to D, the operator places his fingers upon the cap of the key 56, forces it downwardly, and this will cause the rod 41 to be forced downwardly and at the same time draw the rear end of the levers 34 and 39 downwardly against the resistance of the spring 36 and thus cause the rod 29 to be raised slightly. The downward movement of the key is continued until it forces the spring 53 out of engagement with the rod 35, so that the carrier will be released from its locked position and the key will engage the lug 51 and force the carrier and index into the desired opening outside of the casing where the sides 46 and 47 of the carrier rest upon the rod 29, the spring 36 having drawn the parts connected with it back to their normal position. When it is desired to simply return the index carrier to the interior of the casing, the operator places his finger upon the return key 28 and presses downwardly upon it, which forces the rod 41 downwardly and correspondingly draws the rod 29 upwardly and forces the index carrier into the interior of the casing. In doing this, however, the return key 28 has to be moved downwardly with some rapidity in order to throw the carrier past the dead center and to a normally closed position where it is locked by the spring 53 coacting with the rod 55. However, if the index carrier is in its open position and it is desired to force this carrier to its closed position inside of the casing and by the operation of a single key, force another index carrier from the interior of the casing to the exterior of it, this can be done by simply pressing downwardly on the key 57, for illustration, by moving this key downwardly with some momentum, when the index carrier which is in its open position will be forced to its inward position in the same manner as if the key 28 was pressed downwardly, and at the same time by continuing to press the key 57 downwardly, it will force the spring 53 on the carrier to be thrown out to its open position and engage the lug 51 on said carrier and throw it to its outer limit of movement. By this operation the forcing of one carrier into the casing and of forcing another carrier to a position outside of the casing can be accomplished by the operation of a single key. The returning key, therefore, need only be used when the operator desires to have all of the carriers on the interior of the casing. If, at any time the keys are not maintained in the proper position, the position may be easily adjusted by the adjustment of the tension of the spring 36.

Having thus described our invention, what we claim and desire to secure by Letters Patent of the United States, therefor is—

1. In an index machine, the combination of a casing, index carriers pivoted in the casing and arranged to swing forward therefrom, a returning rod against which the index carriers rest when the same are swung forward, a key complementary to each carrier for swinging the same forward, a rod resting under the several keys, and a connection intermediate said rod and the returning rod for moving the latter upward when the former is forced downward.

2. In an index machine, the combination of movable index carriers, a returning rod against which the index carriers rest when moved forward, a key complementary to each carrier for moving the same forward, a rod arranged to be moved by the keys when the same are actuated to move the index carriers forward, and a connection intermediate said rod and the returning rod for moving the latter by the former.

3. In an index machine, the combination of movable index carriers, a returning rod against which the index carriers rest when moved forward, a key complementary to each carrier for moving the same forward, a rod arranged to be moved by the keys when the same are actuated to move the index carriers forward, a return key for moving said rod, and a connection intermediate said rod and the returning rod for moving the latter by the former.

4. In an index machine, the combination of a casing, index carriers pivoted in the casing and arranged to swing forward therefrom, a returning rod against which the index carriers rest when the same are swung forward, a key complementary to each carrier for swinging the same forward, a rod resting under the several keys, a returning key for depressing the said rod, and a connection intermediate said rod and the returning rod for raising the latter when the former is depressed.

5. In an index machine, the combination of a casing, index carriers pivoted in the casing and arranged to swing forward therefrom, a returning rod against which the index carriers rest when the same are swung forward; said rod having arms pivoted to the casing and provided with arms, a key complementary to each carrier for swinging the same forward, a rod resting under the several keys and having arms pivoted to the casing, levers pivoted on the casing, a spring connecting one arm of one of said levers and the casing, connections between the forward arms of said levers and the arms of the returning rod, connections between the rear arms of said levers and the arms on the rod below the keys, and a returning key having for its sole function to depress the latter rod.

6. In an index machine, the combination of a casing, a fixed rod therein, a rod also arranged in the casing, index carriers pivoted



on the last mentioned rod and having lugs  
and also having spring hooks yieldingly en-  
gaged with the fixed rod, a returning rod  
against which the index carriers rest when  
5 the same are swung forward, a key comple-  
mentary to each carrier for swinging the same  
forward; said key being pivoted on the sec-  
ond mentioned rod arranged in the casing  
and adapted to engage the lug of the carrier,  
10 a rod resting under the several keys, a return-  
ing key for depressing the said rod, and a con-  
nection intermediate said rod and the return-  
ing rod for raising the latter when the former  
is depressed.  
15 7. In an index machine, the combination  
of a casing, a fixed rod 55 therein, a rod 24  
also arranged in the casing, index carriers  
pivoted on the rod 24 and having lugs and  
also having spring hooks yieldingly engaged  
20 with the rod 55, a returning rod against  
which the index carriers rest when the same  
are swung forward; said rod having arms piv-  
oted to the casing and provided with arms, a  
key complementary to each carrier for swing-  
25 ing the same forward; said key being pivoted

on the rod 24 and arranged to engage the lug  
of the carrier, a rod resting under the several  
keys and having arms pivoted to the casing,  
levers pivoted on the casing, a spring con-  
necting one arm of one of said levers and the 35  
casing, connections between the forward arms  
of said levers and the arms on the arms of the  
returning rod, connections between the rear  
arms of said levers and the arms on the rod  
below the keys, and a returning key having 35  
for its sole function to depress the latter rod.

8. In an index machine, the combination  
of a pivoted index carrier having a lug and a  
spring hook, a stationary keeper which the  
spring hook yieldingly engages, and a mov- 40  
able key arranged to engage the spring hook  
and the lug in the order named to disengage  
the spring hook from its keeper and then  
swing the index carrier about its pivot.

FERDINAND H. SCHULTZ.  
MARTIN H. BERKEMEIR

Witnesses:

EDW. KOCH,  
R. H. STEPHENS.