No. 647,218. Patented Apr. 10, 1900.

# C. CHRISTIANSEN.

## INDEX.

(Application filed Nov. 29, 1899.)

(No Model.)

Fig. 1.

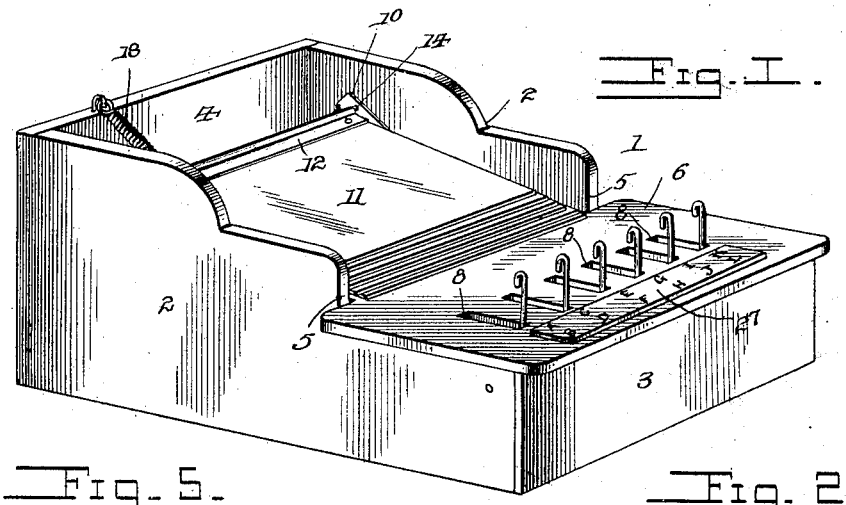



Fig. 5.

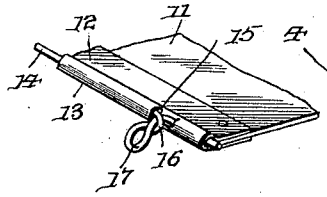



Fig. 2.

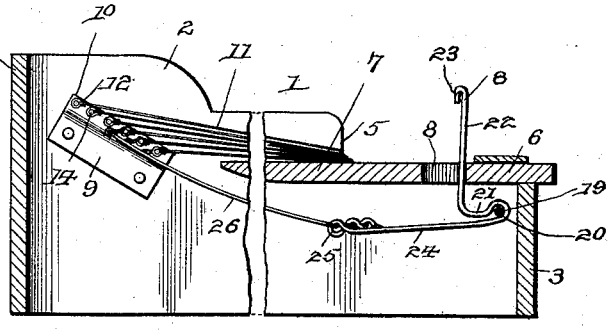



Fig. 4.

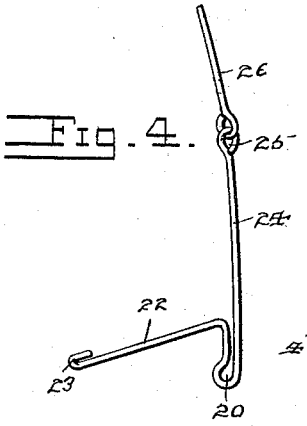
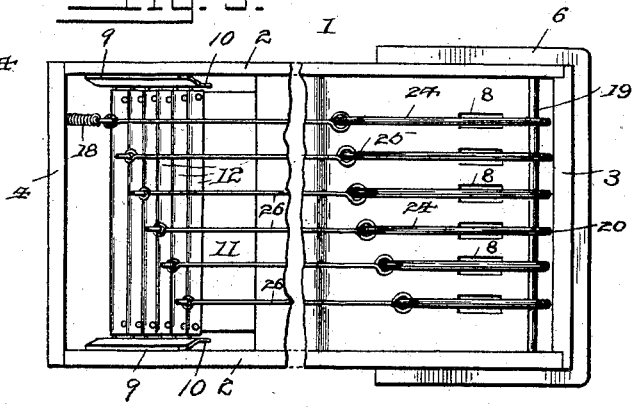



Fig. 3.




Witnesses
F. E. Alden.
Chas. S. Hoyer.

Christopher Christiansen Inventor.
By Their Attorneys.
C. A. Snow & Co.

# UNITED STATES PATENT OFFICE.

CHRISTOPHER CHRISTIANSEN, OF FAIRHAVEN, WASHINGTON.

## INDEX.

SPECIFICATION forming part of Letters Patent No. 647,218, dated April 10, 1900.

Application filed November 29, 1899. Serial No. 738,742. (No model.)

*To all whom it may concern:*

Be it known that I, CHRISTOPHER CHRISTIANSEN, a citizen of the United States, residing at Fairhaven, in the county of Whatcom and State of Washington, have invented a new and useful Index, of which the following is a specification.

This invention relates to indexes of that class in which the names and other subject-matter constituting the index are arranged on a series of tablets in convenient position for inspection. The object of the same is to provide a simple and efficient device of this character by which an index or directory may be quickly opened at the desired point and which is independent of a book corresponding thereto and adapted to be conveniently used for ascertaining the desired names or other matter in posting books or for other purposes and also the page of any accounts, and it may also be employed for indicating the proper book in the event that a number are used therewith.

With these and other objects and advantages in view the invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of the improved index. Fig. 2 is a longitudinal vertical section of the same broken away at the center. Fig. 3 is a bottom plan view of the improved device. Fig. 4 is a detail perspective view of one of the combined keys and levers and a portion of the connector attached thereto. Fig. 5 is a detail perspective view of a part of the rear of one of the tablets, showing the pintle construction therefor.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a casing or frame comprising opposite sides 2, which are extended vertically at the rear to form opposite guards and closed at the front and rear ends by vertically-disposed cross-strips 3 and 4 of a width corresponding to the vertical extent of the edges or ends of the said sides to which they are applied. The sides 2 are stepped, as at 5, and to the front thereof and the end 3 a plate 6 is secured and disposed horizontally, the said plate at its opposite ends and front projecting over the adjacent portion of the casing or frame and has a reduced rear central extension 7, snugly fitted between the adjacent parts of the sides 2. The plate 6 has a series of elongated slots 8 cut therethrough and arranged parallel with the opposite ends, and to the inner sides of the rear upper portions of the sides 2 bearing-plates 9 are fastened and disposed at a downward inclination in a forward direction, each plate having its upper edge struck out, as at 10, from the adjacent face of the side 2 and provided at regularly-spaced distances with openings in alinement and parallel with the upper edge of the plate. Between the sides 2 and normally resting upon the extension 7 of the plate 6 are a plurality of tablets 11, which will be equal in number to the letters or information required by the index or directory, and both faces of each tablet will be employed to carry index or other matter, with the exception of the topmost tablet, which is preferably blank on its upper exposed surface. Each succeeding tablet from the bottom toward the top of the series will extend rearward a greater distance than the one or number below the same and have attached to its rear edge a metallic or other binder 12, which in each instance is formed with an elongated tubular eye or roll 13, in which is mounted an elongated pintle 14, projected at opposite ends and bearing in the flanges 10 of the plates 9. In each of the eyes or rolls 13 adjacent one end, commencing with the uppermost tablet and gradually increasing in distance through the series of tablets until a point adjacent the opposite end is reached, a slot 15 is formed, and therethrough projects a twisted right-angular extension 16 of the pintle 14, which terminates in a bent eye 17 for the movable connection thereto of a device which will be presently described. All the pintles 14 are firmly held in fixed position in the tubular eyes or rolls 13, and the projecting ends of said pintles, as heretofore set forth, are loosely mounted in the said bearing-plates 9. The tablets are free to move in relation to the bearing-plates 9, and when raised they work against the repulsion of a spring or analogous device 18, attached to the eye 17 of the pintle of the uppermost tablet,

and which is strong enough to throw down a part or the whole series of tablets.

Extending transversely across the casing or frame at the front and below and within the plate 6 and end 3 is a bearing-rod 19, on which are movably mounted a plurality of combined bell-crank levers and keys comprising loops or eyes 20 on the rod 19, from which extend horizontal members 21, continuing into upright key-arms 22, having the upper terminals upset or bent over, as at 23, to avoid the formation of injurious ends. Below the rod 19 the combined bell-crank levers and key are continued rearwardly in the form of horizontal arms 24, which have their rear terminals formed into eyes 25, and attached to said eyes and the eyes 17 are connectors 26, which are in the form of wire rods and are of a length corresponding to the distance of the eyes 17 from the eyes 25, the difference in distance of the eyes 17 from the front of the casing being compensated for by proportionately lengthening the arms 24 of the combined bell-crank levers and keys, thereby making each tablet quickly responsive in its raising operation to the depression of its key-arm and also cause the several tablets to be thrown up equally.

The key-arms 22 project upwardly through and are freely movable in the slots 8 and are normally in the position shown by Fig. 1, and arranged in advance thereof is an indicating-strip 27, of suitable material, and having thereon the index-letters in alinement with and corresponding to each key-arm or the letters carried by the tablets, which the operation of the several arms will expose to view. It is preferred to make the tablets of some light material having sufficient rigidness to preserve their shape, and thereon will be applied a strip of paper to receive the index or other directory matter, and in some instances the index matter may be directly applied to the material of which the tablet is formed.

In operation a rearward pressure on the key-arm 22, adjacent the letter or letters or other matter of index desired to be exposed, will throw up one or more of the tablets in accordance with the location of such devices carrying the desired index matter and against the resistance offered by the spring 18. The rearward pressure on the said key-arm 22 will throw its horizontal arm 24 downwardly and draw on the connector 26, attached thereto, and through the medium of the eyes 17, to which the rear of said connection is coupled, the tablet containing the desired information is cleared for view. As soon as the operating pressure is removed from the key-arm 22 the spring 18 immediately sets up or exerts its function and closes the several tablets or forces them downward in the position shown in Figs. 1 and 2.

It will be observed that only a portion of the alphabet is shown applied to the indicating-strip 27; but it will be understood that in practice the proportions of the device will be extended to include the entire alphabet or a large amount of other directory information for which the device may be employed. The increase of the number of key-arms 22 will of course demand a corresponding increase in the number of tablets 11, and in the operation of the said key-levers the rearward movement of the second or third will similarly actuate the first or the first and second in view of the fact that the tablet 11, corresponding to the first key, rests on that of the second key or key-arm and the first and second tablets bear upon that actuated by the third key-arm, and so on through the whole series. No matter how many key-arms may be used or what one is operated distant from the beginning of the series they will all be restored to normal position simultaneously with the downward movement of the tablets due to the action of the springs 18.

Changes in the form, proportions, and minor details of construction may be resorted to without in the least departing from the principle or sacrificing any of the advantages of the invention.

Having thus described the invention, what is claimed as new is—

1. In a device of the character set forth, the combination of a plurality of hinged tablets normally disposed in a substantially-horizontal position, a similar number of combined bell-crank levers and keys having portions extending upwardly in normally-vertical position and remaining parts disposed horizontally, said combined levers and keys having eyes or loops at their angles, a bearing-rod extending transversely to the horizontal portions of the combined levers and keys and on which the eyes or loops of the latter have loose bearing, the horizontal members of the combined levers and keys being gradually shortened in regular progression toward one side of the device, and a series of connectors, all of equal length, loosely attached to the rear extremities of the horizontal portions of the combined levers and keys, and individually to the hinged portions of the tablets.

2. In a device of the character set forth, the combination with a casing, of a series of tablets normally disposed in substantially-horizontal planes and overlapped and having pintles at their rear edges, each provided with an eye at a right angle thereto, and the ends movably bearing in oppositely-situated, angularly-disposed plates, said tablets being successively projected toward the rear a greater distance, combined bell-crank levers and keys loosely mounted in the front of the casing for movement in the arc of a circle, and having substantially-horizontal members of gradually-decreasing length toward one side of the casing, a rod extending transversely across the front portion of the casing on which the said combined levers and keys are loosely mounted, and a series of connectors, all of equal length, loosely attached directly to the

rear terminals of said horizontal members and the eyes of the pintles.

3. In a device of the character set forth, the combination of a casing having vertical sides and a front horizontal plate, bearing-plates arranged at a downward angle of inclination on the inner opposing faces of the rear portions of the sides, a plurality of tablets confined between the sides of the casing and normally arranged in a vertical stack, each tablet from the bottom uppermost projecting rearwardly a greater distance than the one next below, a metallic binding on the rear edge of each tablet having a tubular portion, pintles located in the said tubular portions of the bindings and each provided with an angularly-disposed eye, the opposite ends of the pintles projecting beyond the metallic bindings and extending into the bearing-plates, a yielding resisting device connected to the uppermost tablet, a series of combined bell-crank levers and keys movably mounted in the front portion of the casing and comprising rearwardly-projecting horizontal arms gradually decreasing in length toward one side of the casing and also having upwardly-extending arms movable in the horizontal plate at the front of the casing, a transversely-extending rod at the front of the casing on which the combined levers and keys are loosely mounted, and a series of connectors of equal length extending from the rear terminals of the horizontal arms of the levers and keys to the eyes of the pintles, one connector being attached to each pintle.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHRISTOPHER CHRISTIANSEN.

Witnesses:

JOHN F. DUFUR,

B. W. BENSON.