

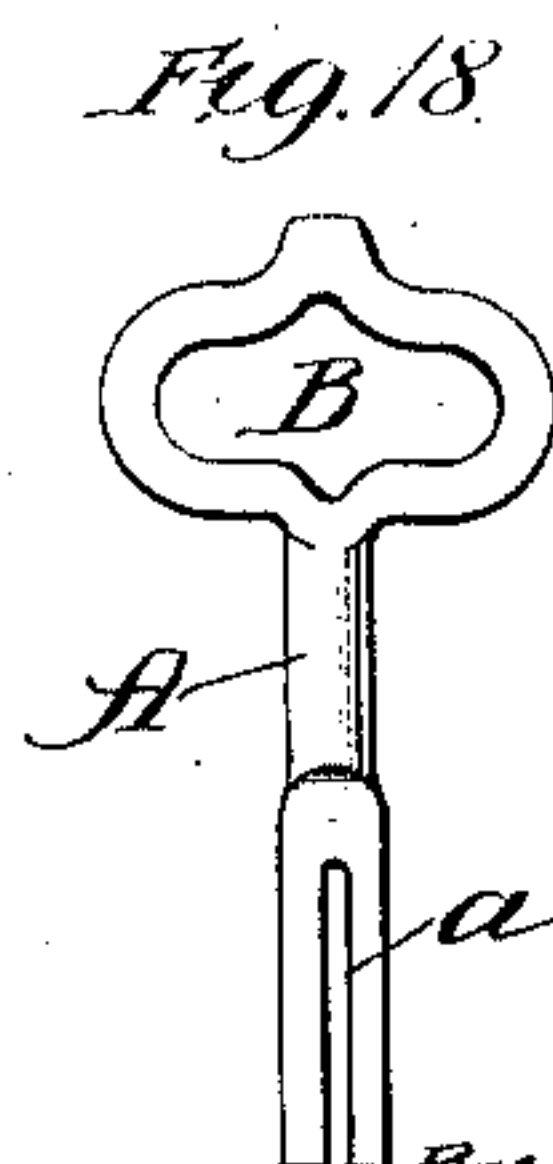
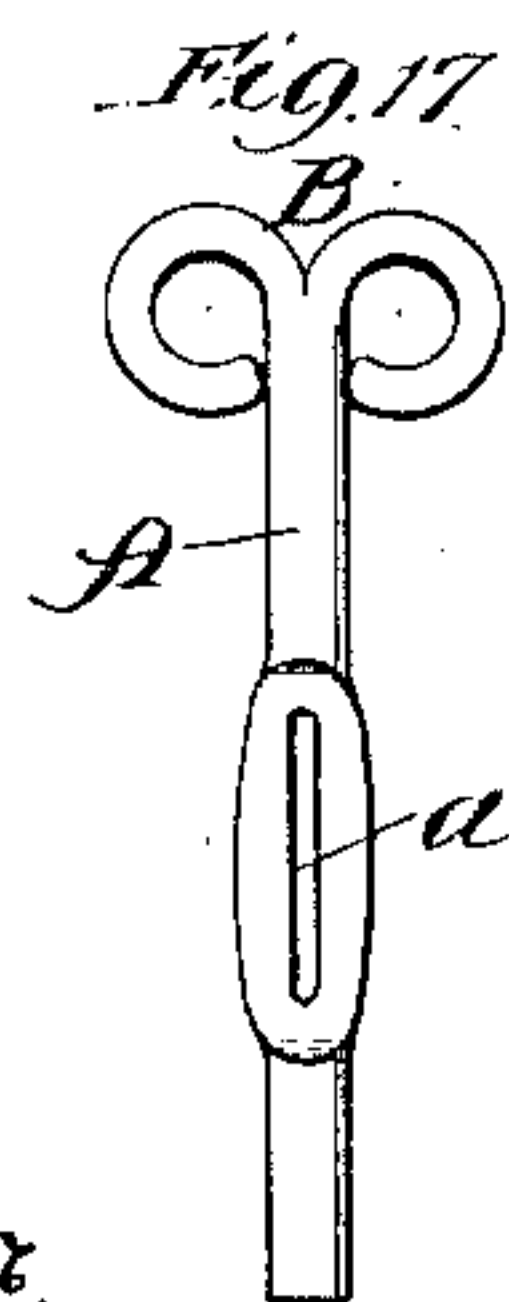
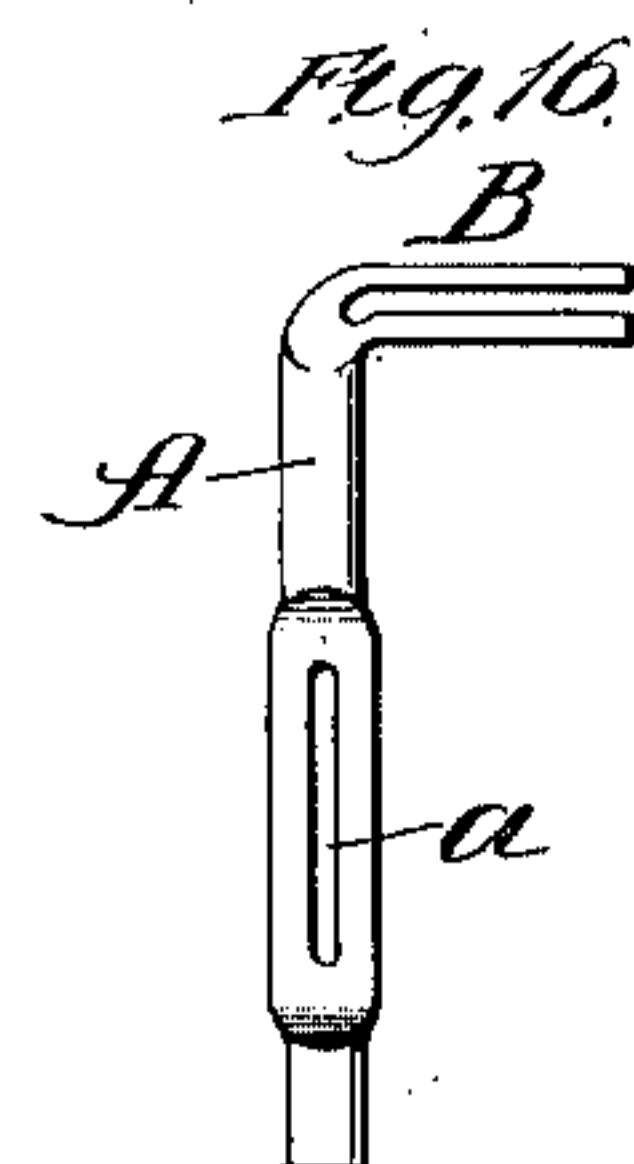
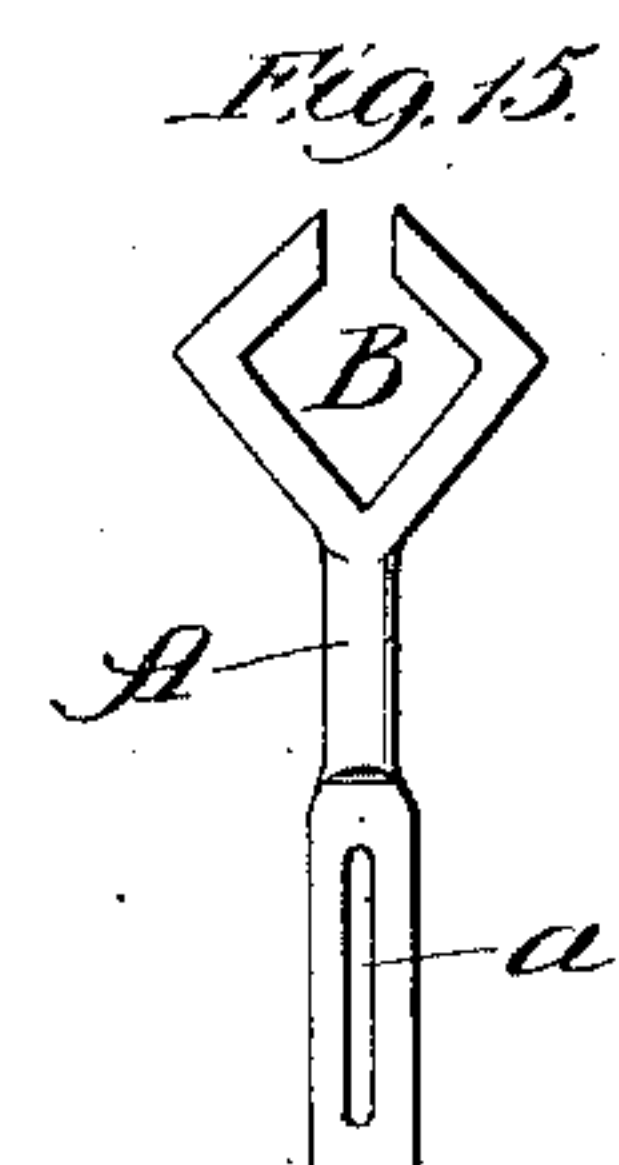
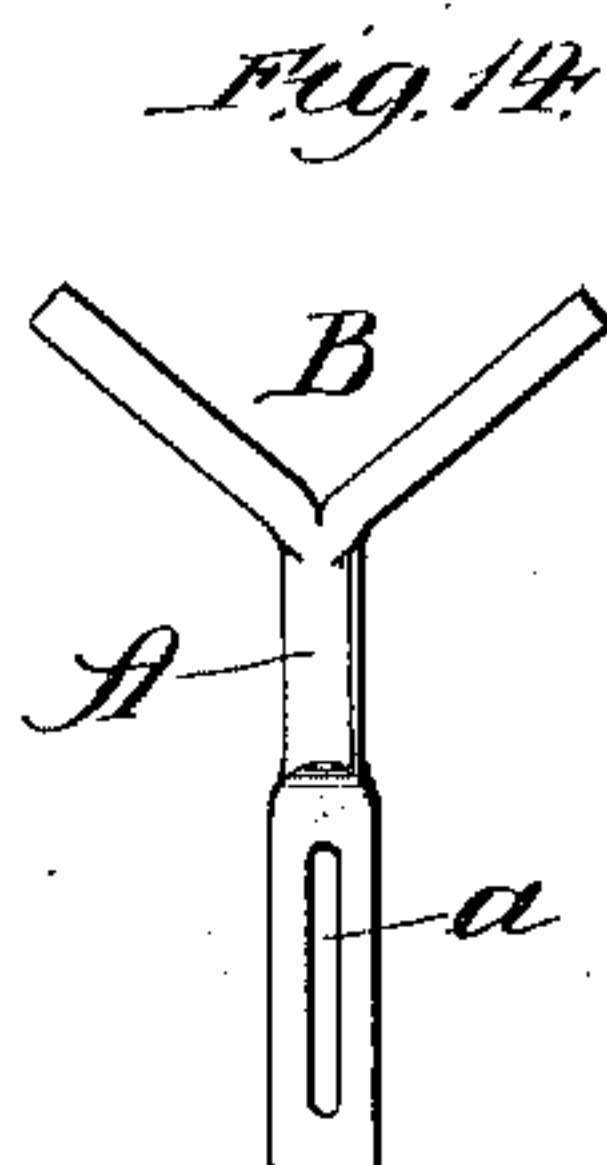
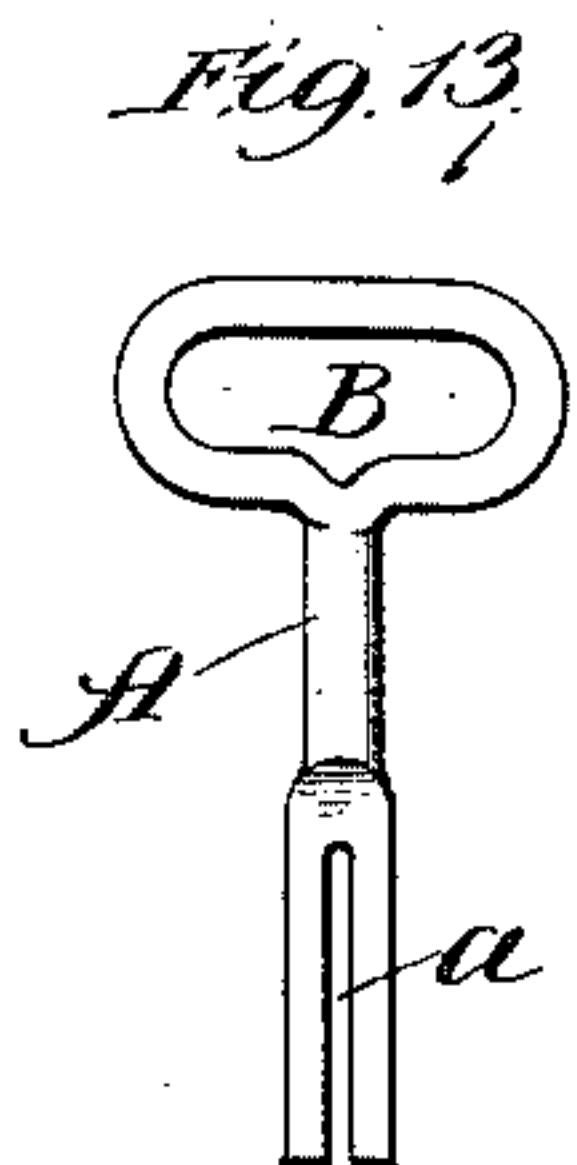
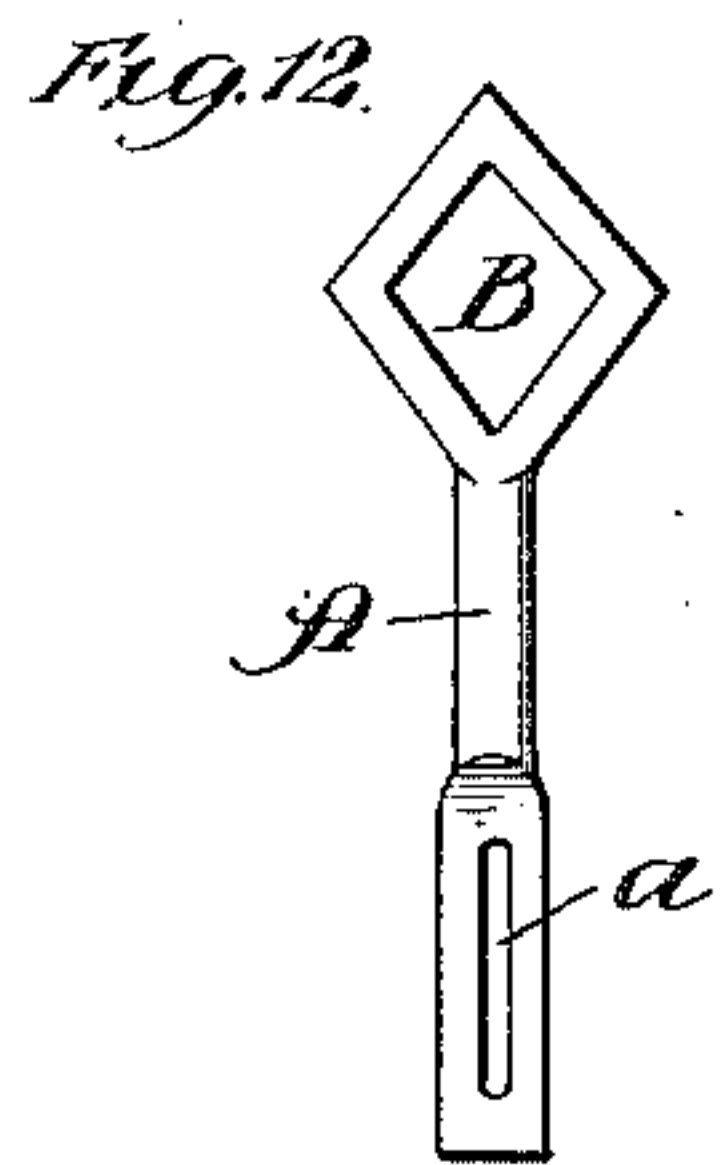
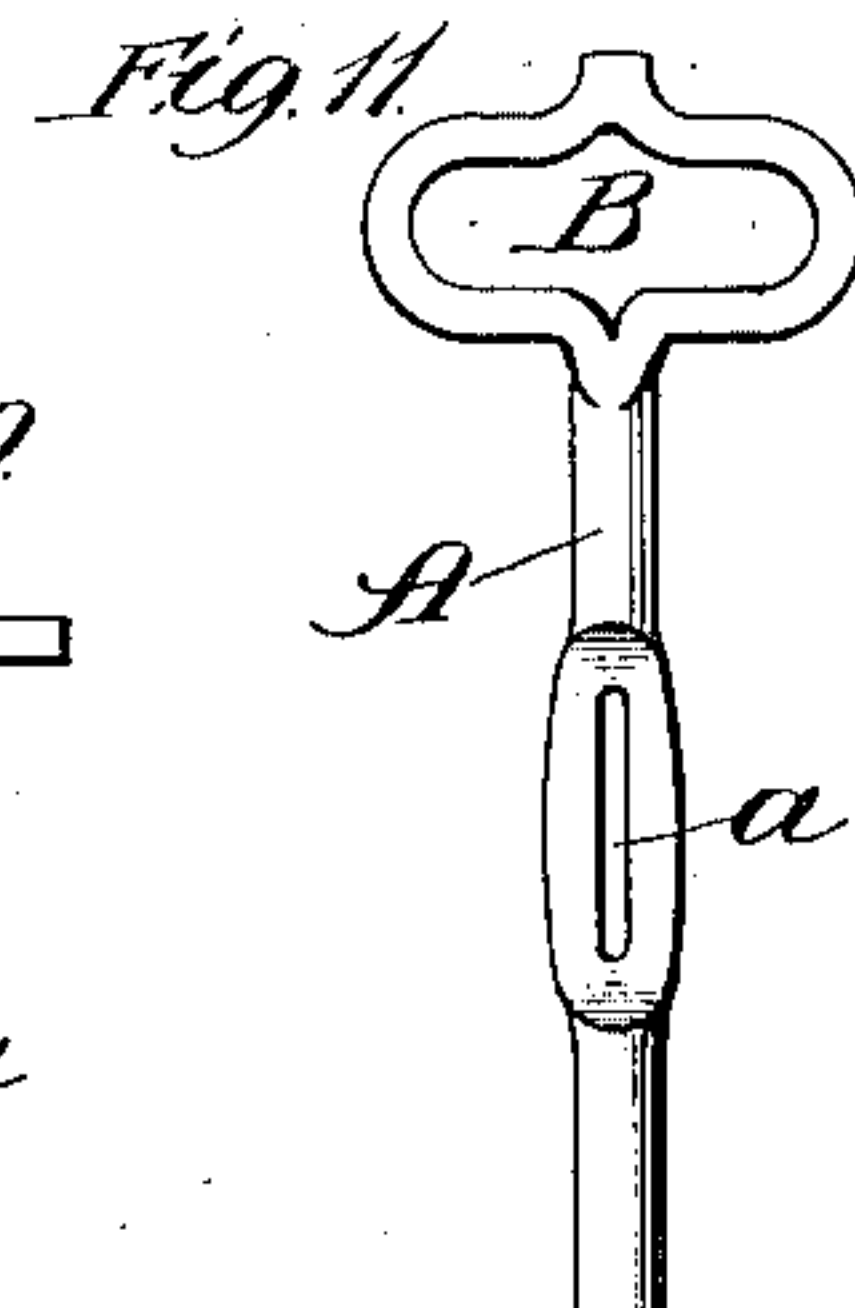
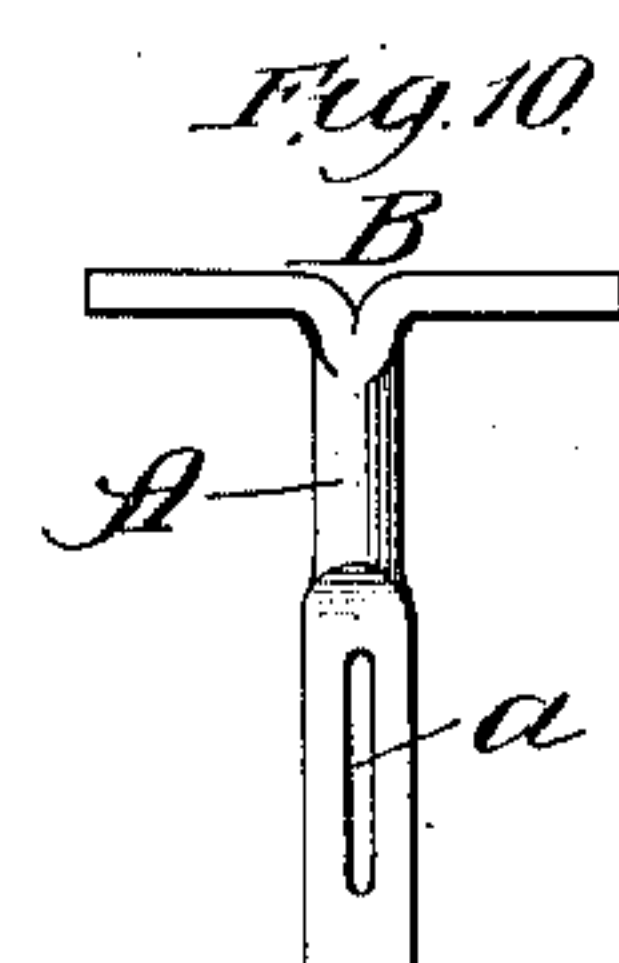
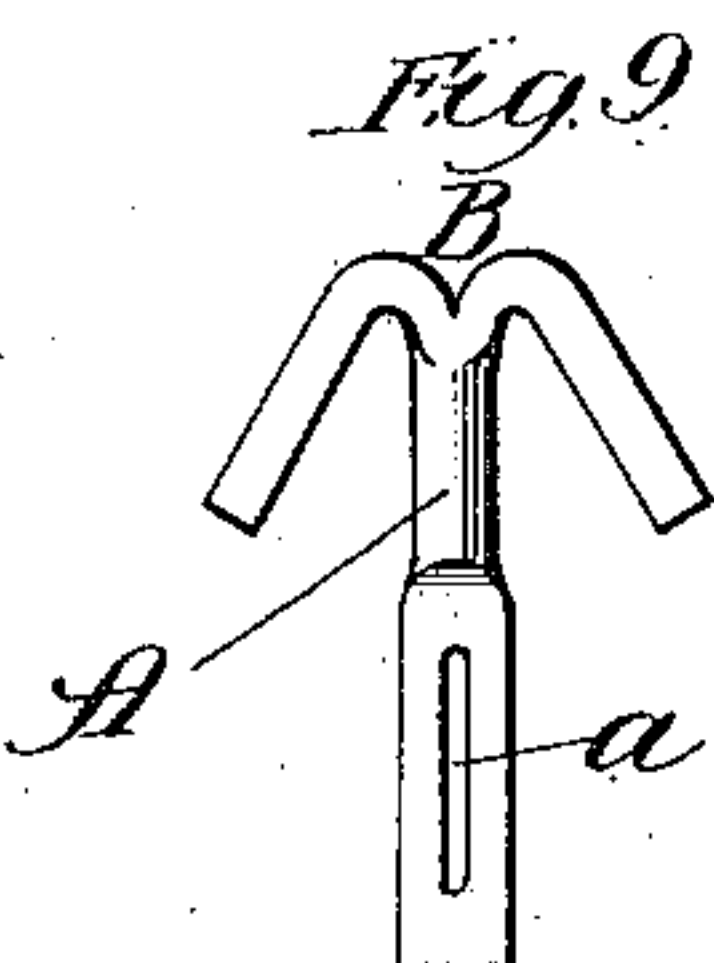
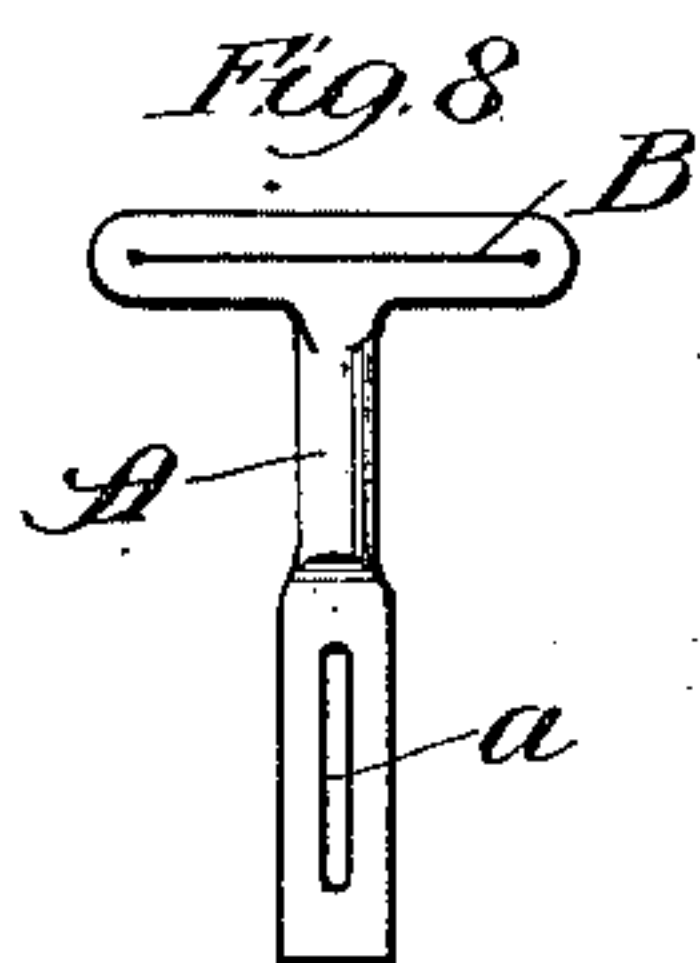
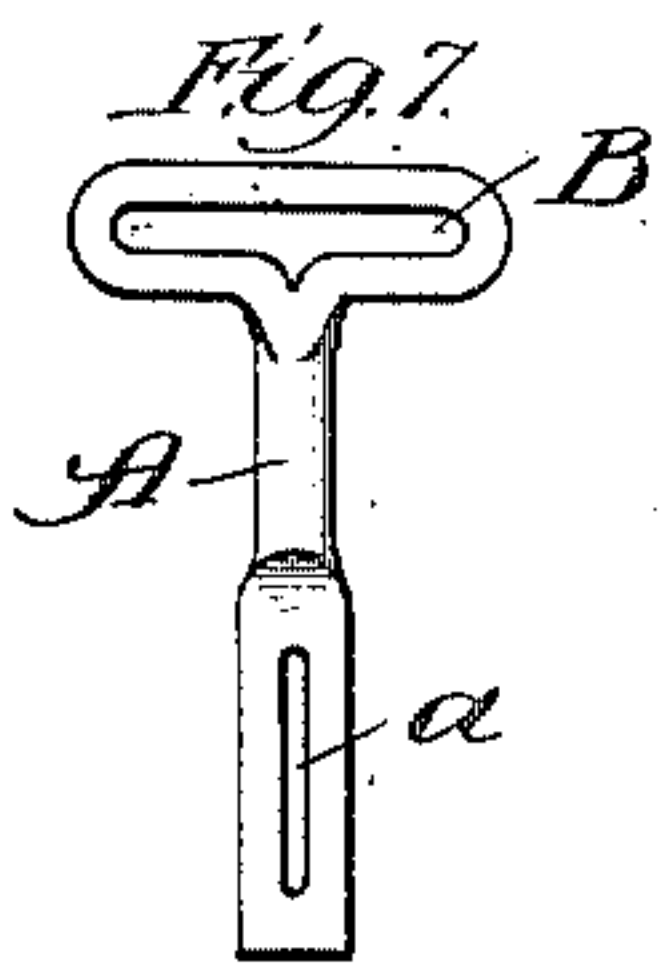
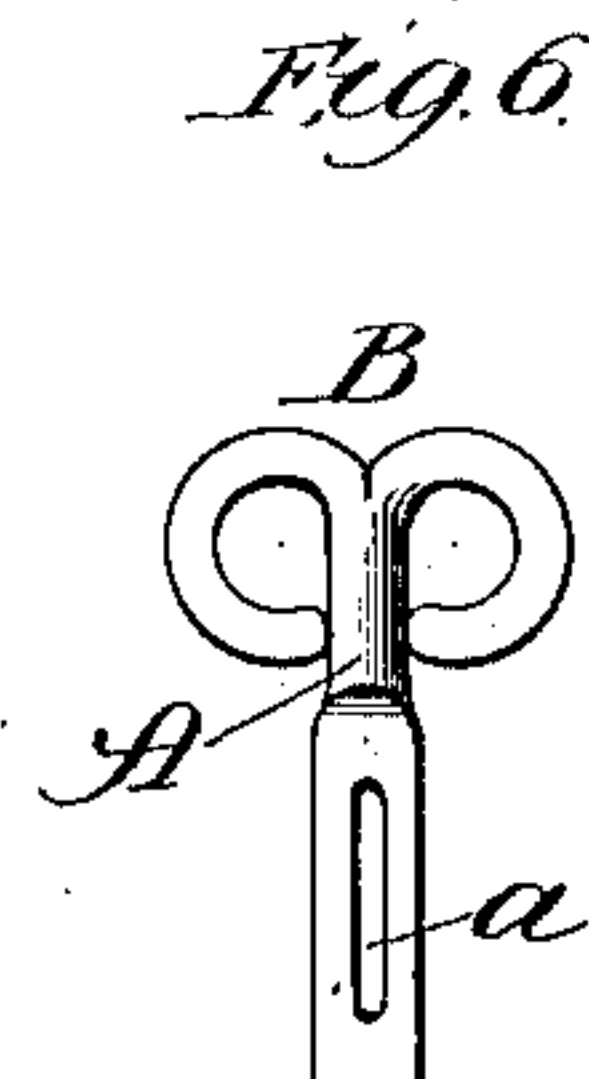
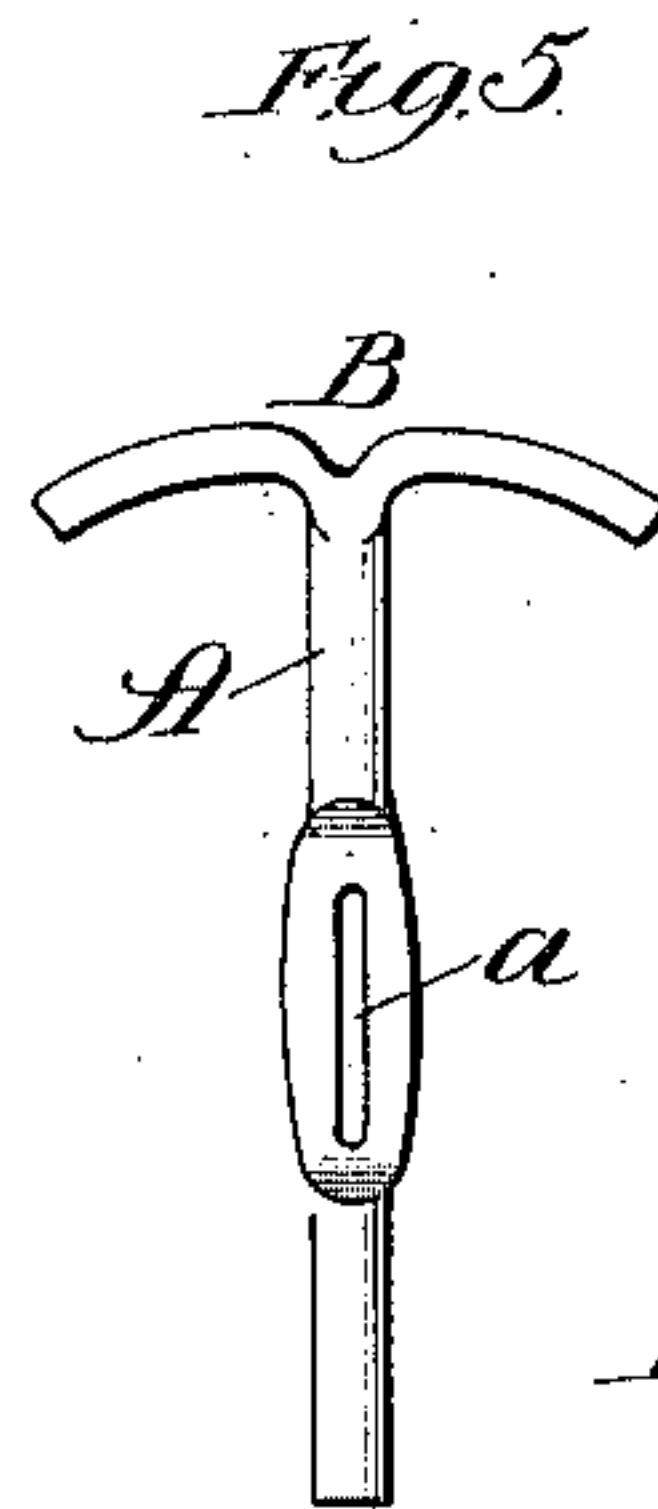
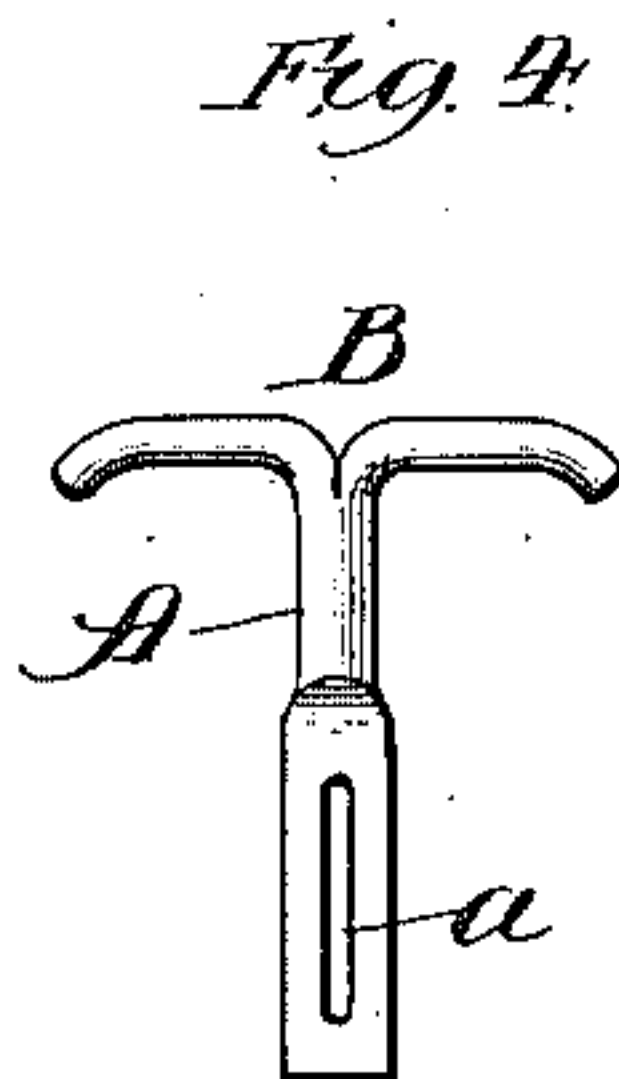
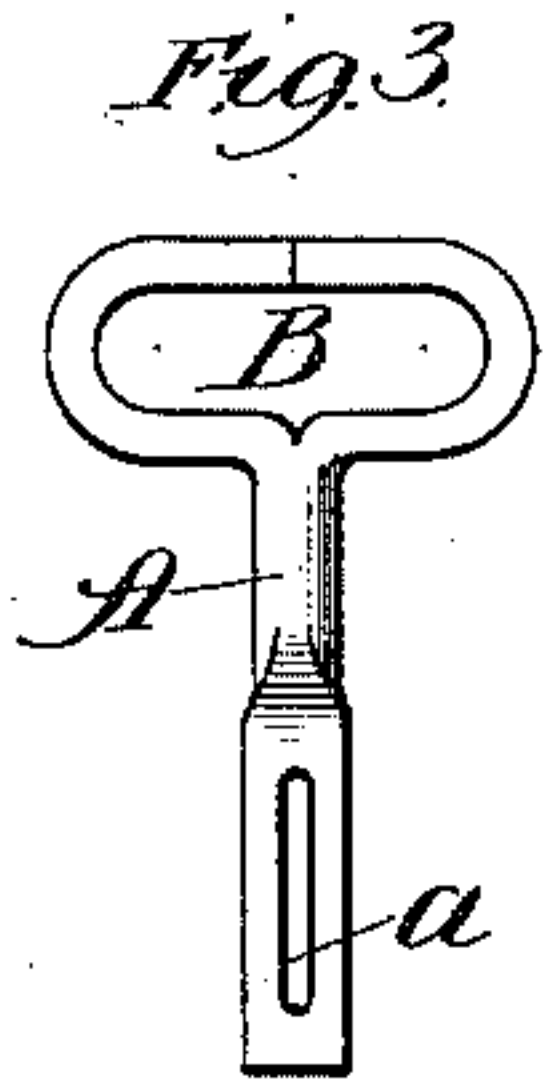
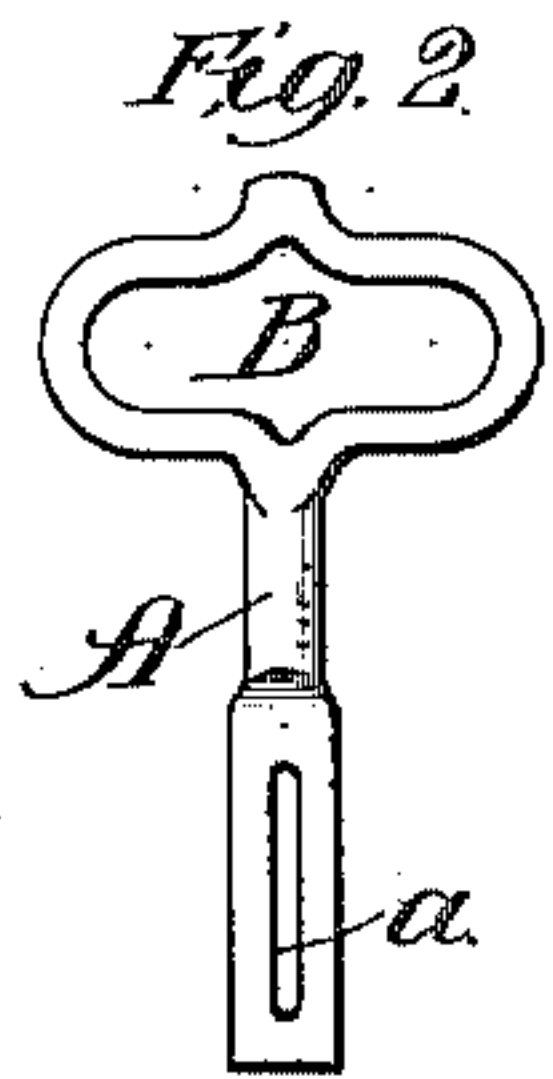
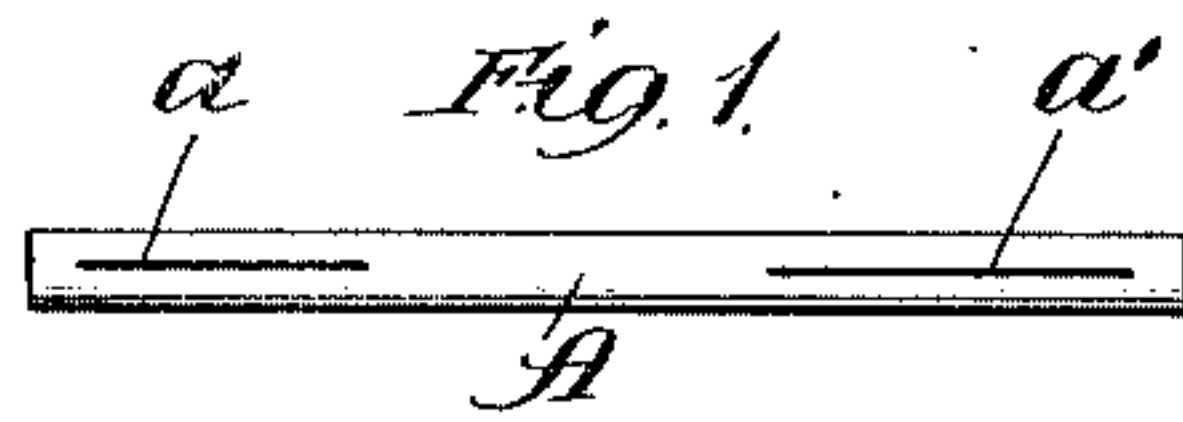
No. 661,253.

Patented Nov. 6, 1900.

J. ZIMMERMAN.
CAN OPENING KEY.

(Application filed Aug. 21, 1899.)

(No Model.)



Witnesses:

Lute B. Allen
Thomas B. McGregor.

Inventor:

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By *Banning & Banning & Sheridan*
Attys.

UNITED STATES PATENT OFFICE.

JOHN ZIMMERMAN, OF CHICAGO, ILLINOIS.

CAN-OPENING KEY.

SPECIFICATION forming part of Letters Patent No. 661,253, dated November 6, 1900.

Application filed August 21, 1899. Serial No. 727,919. (No model.)

To all whom it may concern:

Be it known that I, JOHN ZIMMERMAN, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful Improvements in Can-Opening Keys, of which the following is a specification.

The object of my invention is to make a key for opening tin cans that employs in the construction or formation thereof a less amount in length of wire or material than has heretofore been required for the purpose, producing a great saving in that respect and a resultant economy in production; and my invention consists in the features and details of construction hereinafter described and claimed.

In the drawings I have represented a number of different forms in which my invention may be embodied.

Figure 1 is a plan view of a piece of wire formed into a blank out of which to make one species of my improved key. Figs. 2, 7, 8, 11, and 12 represent forms of keys that may be made out of the blank of Fig. 1; and Figs. 3, 4, 5, 6, 9, 10, 13, 14, 15, 16, 17, and 18 represent forms of keys that may be made out of the blank of Fig. 1 slightly modified.

In making my improved can-opening keys I take a piece of wire A, that may be either round, square, or oblong in cross-section and of the desired size to secure the requisite strength for the purpose intended. I then provide it with longitudinal slots *a* and *a'*, which may be made by stamping, punching, splitting, or in any desired manner. These slots can of course be made by machinery, and at the same time the wire may be flattened, if desired, along the portion in which the slot is made. One of the slots *a'* is intended to be distorted or spread into any desired shape in which it is preferred to make the handle B of the key. The other slot *a* retains its slot form, so as to receive the end of the strip of tin which is intended to be inserted in it and by the winding up of which the can is intended to be opened. The operation, however, of the key is in this respect the same as other well-known forms of can-opening keys and need not be further described in detail. It will be noticed that all of the keys shown in the drawings fall within one of two classes. They are all provided

with either open or closed slots. The group of keys formed from the blank of Fig. 1 have both of their slots closed, while the group of keys formed from the blank of Fig. 1 modified have one of their slots open. Where both of the slots are closed, it is immaterial which slot is distorted into shape to form the handle of the key; but where one of the slots is open I prefer to distort such slot for the handle, although, as shown in Figs. 13 and 18, the open slot may be left in its initial shape to receive the strip of tin. They all, however, have a common characteristic in that they all have the handle formed by the distortion or spread of one of the slots, which changes it from its initial position until it ceases to be a slot. This distortion or spread of the shape of the slot may be made by machinery or in any desired way and in the same operation that forms the slot.

As already said, I have illustrated a number of forms in which the handle of the key may be formed by the distortion or spread of the slot. There are other ways also; but I deem it unnecessary to illustrate them.

The essential idea of the invention consists in forming a can-opening key having an acting end, a stem or body, and a handle or turning end, all integral or in one piece, by taking a piece of wire, providing it with longitudinal slots, and distorting or spreading one of the slots to form the handle of the key. This distorting or spreading of one of the slots produces an enlarged handle or turning end, and such production is had with a decreased length of material over what would be required if the handle or turning end were formed by continuing the wire for the stem or body without decreasing its size or diameter. This saving in material amounts in every case to one half or side of the turning end or handle and creates in the manufacture of a large number of keys an immense saving in material.

I am aware that it has been the practice to spread a slot, but not for the purpose of forming an enlarged handle or turning end for a can-opening key, which practice is new with me in its application to can-opening keys and results in a great saving in material and cost of production and enables the key to be formed with its acting end, its stem or body,

and its handle or turning end from a shorter length of wire as compared with prior constructions.

What I regard as new, and desire to secure by Letters Patent, is—

1. A can-opening key comprising an acting end, a stem or body and a spread or enlarged handle or turning end formed integral from a single piece of metal containing an undistorted slot at the acting end, left intact at the stem or body and flattened, slotted and spread outwardly at the handle or turning end, substantially as described.

2. A can-opening key comprising a slotted acting end, a stem or body and a spread or enlarged handle or turning end formed integral from a single piece of metal flattened and containing an undistorted and longitudinal slot at the acting end, left intact at the stem or body and flattened, longitudinally slotted and spread outward at the handle or turning end, substantially as described.

JOHN ZIMMERMAN.

Witnesses:

THOMAS A. BANNING,
THOMAS B. MCGREGOR.

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