J. S. ISIDOR.

KEY.

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1,127,770. Patented Feb. 9, 1915.

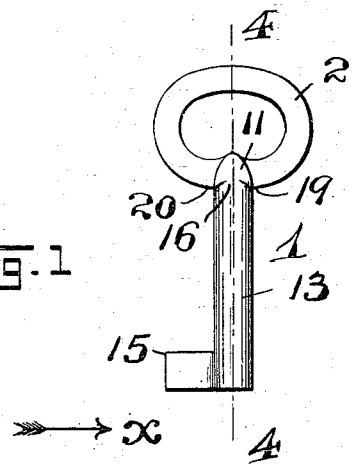


Fig. 1

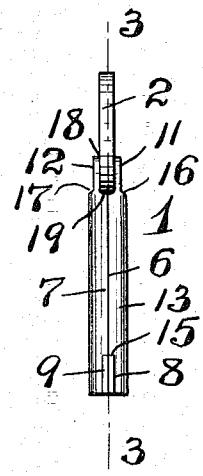


Fig. 2

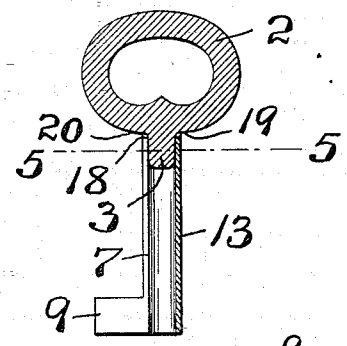


Fig. 3

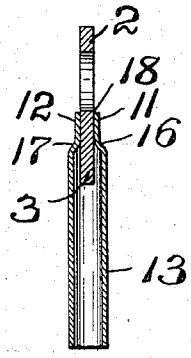


Fig. 4

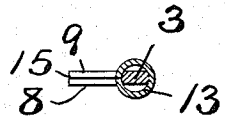


Fig. 5

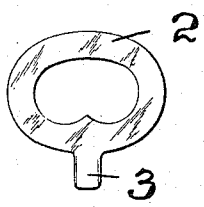


Fig. 6

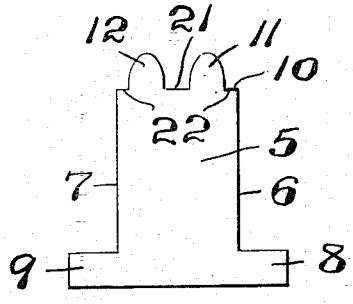


Fig. 7

WITNESSES:

Fredk. W. Fraentzel

Clayton S. Cadmus

INVENTOR:

Joseph S. Isidor,

BY

Fraentzel and Richards,

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D

UNITED STATES PATENT OFFICE.

JOSEPH S. ISIDOR, OF NEWARK, NEW JERSEY.

KEY.

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To all whom it may concern:

Be it known that I, JOSEPH S. ISIDOR, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Keys; 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, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

The present invention relates, generally, to improvements in keys.

The invention has for its principal objects to simplify the general construction of keys, with a view of reducing the cost of the manufacture of the same and providing a more accurate construction of key, as well as avoiding the loss of time and obviating the increased expense in the boring-out operation of that class of keys which are provided with tubular or hollow shanks.

The present invention has for its further object to secure other advantages and results not at this time more particularly enumerated and which will more fully appear from the following detailed description of the invention.

With the various objects of the present invention in view, the invention consists, primarily, in the improved key hereinafter set forth; and, the invention consists, furthermore, in the novel arrangements and combinations of the parts of the key, all of which will be more fully described in the following specification, and then finally embodied in the clauses of the claim which are appended to and which form an essential part of this specification.

The invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a front elevation of a key made according to and embodying the principles of the present invention; and Fig. 2 is a side elevation of the same. Fig. 3 is a longitudinal vertical section of the key, said section being taken on line 3—3 in said Fig. 2; Fig. 4 is a transverse vertical section of the key, said section being taken on line 4—4 in Fig. 1, looking in the direction of the arrow *x;* and Fig. 5 is a horizontal section of the key, said section being taken on line 5—5 in Fig. 3. Fig. 6 is a face view of the bow of the key, before being secured to and connected with the tubular shank of the key; and Fig. 7 is a plan of a blank from which the tubular shank of the key and the bit thereof are constructed.

Similar characters of reference are employed in all of the above described views, to indicate corresponding parts.

Referring now to the accompanying drawings, the reference-character 1 indicates a complete key, showing one embodiment of the principles of the present invention, the key comprising two separately made, but rigidly connected elements, namely the bow and the main tubular body or hollow shank.

The bow is indicated by the reference-character 2 and connected with said bow, and forming an integral part thereof, is a shank-extension, as 3. The said bow and its extension may be in the form of a casting, or may be struck up out of flat stock of the proper thickness, by means of a suitable die, or other means suitable for the purpose.

The main tubular body or hollow shank of the key is made from suitable flat sheet steel, or other suitable metal, by means of a suitable die in the form of a blank, illustrated in Fig. 7 of the drawings, the blank comprising a flat and substantially rectangular main body 5, formed at its lower edge-portion, and extending at right angles from the respective marginal edges 6 and 7, with suitably formed bit-extensions 8 and 9. Connected with the upper marginal edge 10 of the main body 5 of the blank, and at suitable intervals, are a pair of bow-shank engaging extensions or projections, as 11 and 12, preferably of the marginal configuration shown in said Fig. 7, and arranged substantially in the manner shown.

In producing the tubular body or hollow shank of the key, shown in Figs. 1 to 5 inclusive, by means of the proper tool or tools, the main body 5 of the sheet-metal blank is forced into a hollow or tubular cylinder, as 13, with the two bit-extensions, which are of the same size, in registration with the other and resting one directly upon the other, so that the tubular cylindrical shank is formed with a single key-bit, as 15, as will be evident from an inspection of the several figures of the drawings. The upper portions of the cylindrical shank thus produced, and upon opposite sides, are bent or turned inwardly, as at 16 and 17, see Figs. 2 and 4, so

that the upwardly extending bow-shank engaging projections 11 and 12 will be brought into two vertical planes, the faces of which are parallel to each other, and whereby a suitable space 18 will be the result between the two parallel bow-shank engaging projections. The tubular cylindrical shank having thus been produced, the shank-extension 3 of the bow 2 is arranged in the space 18 formed between the two bow-shank engaging projections 11 and 12, with a portion of the extension 3 extending into the interior of the hollow shank, until the edge-portions 19 and 20 of the bow suitably rest upon the opposite seat-portions formed between the projections 11 and 12 by the parts 21 and 22 of the upper marginal edge of the blank-body 5. The elements, thus assembled, are rigidly connected by brazing or otherwise securing the bow-shank engaging projections 11 and 12, to the opposite faces of the shank-extension 3, and by brazing or otherwise securing the joint formed by the registering longitudinal marginal edge-portions of the tubular cylindrical shank, and also by brazing or otherwise securing together the two registering bit-extensions 8 and 9, so as to produce a complete key of the general appearance indicated in Figs. 1 and 2 of the drawings.

From the foregoing description of the present invention it will be clearly evident, that I have produced, in a simple manner, a strong key, in which the tedious and more or less difficult operation of boring the shank of the key is entirely overcome, whereby a great saving in time and labor, and hence in the cost of construction is the result.

I claim:—

1. The improved key having a tubular shank and a bit formed of a single piece of sheet-metal, said bit comprising two bit-extensions of the same size and arranged face to face in registration with each other, and said tubular shank being formed upon its upper marginal edge with upwardly extending flat bow-shank engaging projections and seat portions located between said projections, combined with a bow having a flat shank-extension, said shank-extension being arranged between and secured to the flat faces of said bow-shank engaging projections, substantially as and for the purpose set forth.

2. The improved key having a tubular shank and a bit formed of a single piece of sheet-metal, said tubular shank being formed upon its upper marginal edge with upwardly extending flat bow-shank engaging projections and seat portions located between said projections, combined with a bow having a flat shank-extension, said shank-extension being arranged between and secured to the flat faces of said bow-shank engaging projections, substantially as and for the purpose set forth.

3. The improved key having a tubular shank and a bit formed of a single piece of sheet-metal, said tubular shank being formed upon its upper marginal edge with upwardly extending flat bow-shank engaging projections and seat portions located between said projections, combined with a bow having a flat shank-extension, said shank-extension being arranged between and secured to the flat faces of said bow-shank engaging projections, and the upper marginal edge-portion of said tubular shank being formed with seat-portions upon which the marginal edge-portions of the bow contiguous to the shank-extension rest, substantially as and for the purpose set forth.

In testimony, that I claim the invention set forth above I have hereunto set my hand this 27th day of June, 1913.

JOSEPH S. ISIDOR.

Witnesses:
FREDK. C. FRAENTZEL,
FREDK. M. W. FRAENTZEL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."