Oct. 20, 1953 H. G. WILSON 2,655,808

PICK FOR TUBULAR LOCKS

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Fig. 1

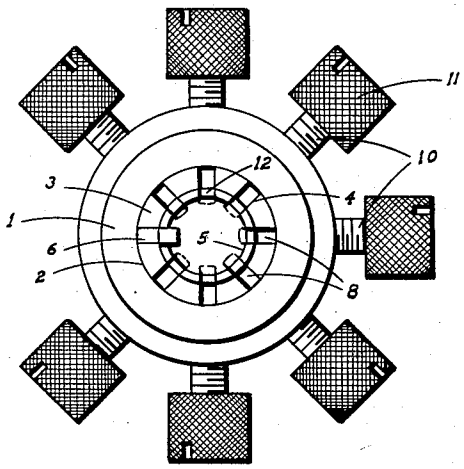


Fig. 2

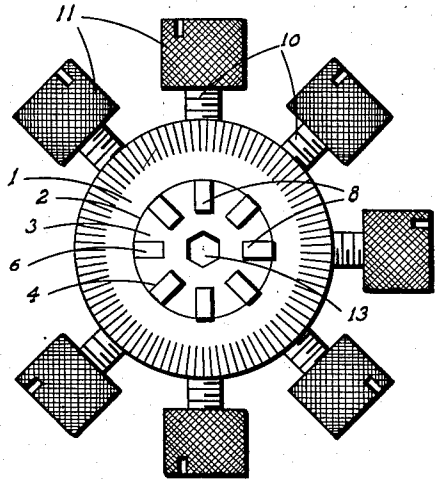


Fig. 3

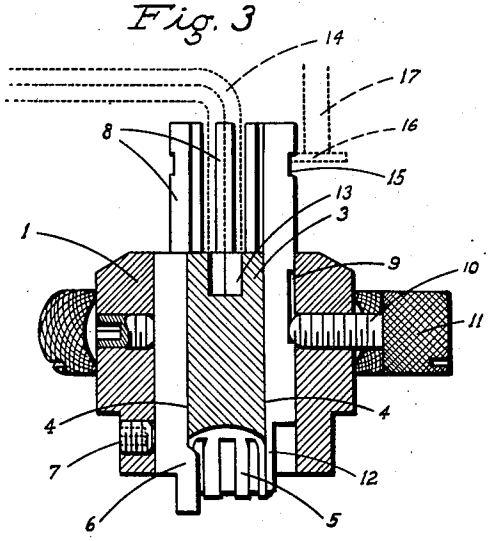


Fig. 4

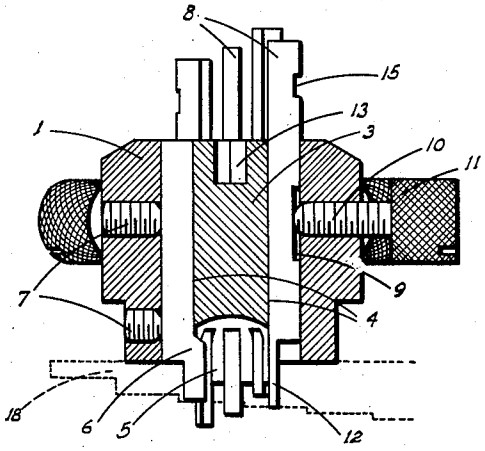


Fig. 5

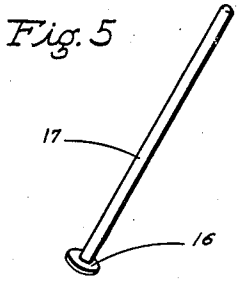
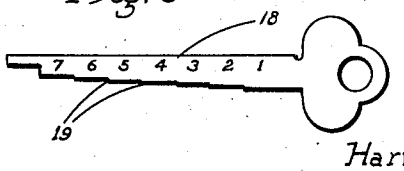


Fig. 6



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PICK FOR TUBULAR LOCKS

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3 Claims. (Cl. 70—394)

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The present invention is directed to, and it is a major object to provide, a pick—for use by locksmiths—which is of novel structural design and function.

Another important object of the invention is to provide a pick especially designed for use on tubular type locks, such as those commercialized under the trade name "Ace."

An additional object of this invention is to provide a pick, for tubular type locks, which can be manipulated readily and with ease to open a lock when the key has been lost or is otherwise unavailable.

A further object of the invention is to provide a pick, for tubular type locks, which can be conveniently and accurately decoded so that a key may be cut for the lock without taking the same apart.

It is also an object of the invention to provide a pick, for tubular type locks, which is simple in structure, being designed for ease and economy of manufacture.

Still another object of the invention is to provide a practical and reliable pick for tubular type locks, and one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

Fig. 1 is an enlarged inner end view of the pick for tubular type locks.

Fig. 2 is an outer end view of the same.

Fig. 3 is an enlarged sectional elevation of the pick showing the parts in their initial positions, and illustrating in dotted lines the manner of use of the finger manipulating tool.

Fig. 4 is a similar view, but shows the position of the parts after a lock has been picked, and illustrating in dotted lines the manner of use of the decoding gauge.

Fig. 5 is a perspective view of the finger manipulating tool.

Fig. 6 is a side elevation of the decoding gauge.

Referring now more particularly to the characters of reference on the drawings, the novel pick, for tubular type locks, comprises a cylindrical body 1 of relatively small diameter and thus readily manipulated; such body being formed initially with an axial bore 2 in which a central cylindrical plug 3 is fixed.

The central cylindrical plug 3 is formed, about its periphery, with a plurality of longitudinal, full-length guide slots 4 in evenly circumferentially spaced relation concentric to the body axis; there being eight of such slots in the present embodiment, and the same being rectangular in cross section.

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At the inner or lock engaging end of the device the central cylindrical plug 3 is formed with an integral, relatively short but outwardly projecting tubular neck 5; the slots 4 extending to the outer end of such neck and being cut wholly therethrough radially, whereby the neck 5 is in effect castellated.

A locator and tension finger 6 is secured in normally fixed but releasable relation in one of the slots 4 by Allen-head set screws 7 accessible at the socket end exteriorly of the body 1.

At the inner or lock-engaging end of the device the finger 6 is of reduced width, engages in the corresponding slot 4 in the castellated neck 5, and projects some distance outwardly thereof.

Pick fingers 8 are disposed in matching, initially slidable relation in the remaining seven slots 4, and such pick fingers are of substantially greater length than the axial extent of the cylindrical body 1.

Each of the pick fingers 8 is formed, in its radially outer edge and within the confines of the body 1, with a straight longitudinal notch 9 and a finger locking or set screw 10 is threaded radially through the body 1 in position to engage in each notch 9. The set screws 10 have serrated heads 11 on their outer ends whereby the screws may be tightened or loosened. When the screws are tightened, the pick fingers 8 are fixed with respect to the body 1, whereas when said screws are slightly loosened the pick fingers 8 can slide longitudinally but normally only within the limits of the length of the notches 9.

At the inner or lock-engaging end of the device—i . e., at the end corresponding to the castellated neck 5—the pick fingers 8 are reduced in radial width, as at 12, to that of said neck, whereby to matchingly run in the slots 4 therein.

In the initial or starting positions of the parts, as in Fig. 3, the pick fingers 8 are retracted into the neck 5 so that they have little, if any, projection, and the locator and tension finger 6 extends a short distance outwardly thereof.

At the outer end of the device the central cylindrical plug 3 is formed with an axial socket 13 adapted to receive an Allen wrench 14 in the manner shown in dotted lines in Fig. 3.

The pick fingers 8 are formed in the exposed outer end portions thereof with straight longitudinal notches 15 cut in their radially outermost edges; said notches being adapted to receive the

head 16 on a finger engaging stem 17 which forms a tool employed to manipulate the pick fingers 8, as will hereinafter appear. By pulling outwardly on the stem 17 the head 16 works in the engaged notch to retract the corresponding pick finger 8, while pushing inwardly on the stem causes the head 16 to work in the notch in a manner to advance said pick finger. In this way each pick finger can be easily manually shifted rearwardly or forwardly in the cylindrical body 1.

The above described device is used in the following manner to pick, and to decode, a tubular type lock, without the necessity of taking the lock apart:

Firstly, all of the pick fingers 8 are retracted in the manner shown in Fig. 3, and locked in such position by the set screws 10.

Then the castellated neck 5, together with the retracted ends 12 of the pick fingers, are inserted in the circular entry slot of a tubular lock about the lock post, and with the locator and tension finger 6 engaged in the locator notch in said post.

Next, the cylindrical body 1 is manually pressed down against the face of the lock, followed by slight loosening of the finger screws 10; i. e. to an extent that the pick fingers 8 are readily slidable in the grooves 4.

Thereafter, with a light rotary picking tension on the cylindrical body 1 imposed by hand on such body or by an Allen wrench 14 engaged in the socket 13, the pick fingers 8 are successively worked by the stem 17 in the manner hereinbefore described until each pin is brought to its shearing line. As each pin is brought to its shearing line the corresponding set screw 10 is tightened.

After all of the fingers 8 have been picked and tightened, the slight rotary picking tension is released. The lock is now picked and may be readily opened with the device.

If a key is to be cut by code from the device, a more accurate setting of the pick fingers 8 is made by turning the pick in the picked lock $\frac{1}{16}$ revolution so as to dispose pick fingers 8 and the corresponding pins in the lock in intermediate position against an internal abutment. Then the pick fingers 8 are released by slightly loosening the set screws 10, and with the body 1 held down against the face of the lock each finger is readjusted with the corresponding lock pin and retightened by the related set screw 10.

The differential projection of the working ends 12 of the pick fingers 8 resulting from picking of the lock, and as more accurately reset as above, is illustrated in Fig. 4.

To decode the pick for the purpose of cutting a key, the present invention contemplates the use of a decoding gauge, indicated at 18, which gauge is of flat key shape, being straight on one edge and stepped or staged along the other edge, as at 19 with each stage being numerically identified, as shown.

With this decoding gauge resting with its straight edge across the flat inner end of the cylindrical body 1 to one side of the neck, the extent of projection of each working end 12 of the pick fingers 8 is accurately measured, and the corresponding step or stage 19 is noted by its numerical identification. From this numerical identification and a code system referenced in depth of cut, a tubular type key can readily be made by a locksmith.

This decoding operation is preferably accomplished with the pick inverted from the position shown in Fig. 4, whereby it is more convenient to manipulate the decoding gauge 18 in relation to the differentially projecting working ends 12 of the pick fingers 8.

Also, in practice the pick fingers 8 are numerically identified in succession to aid in the decoding of the pick.

The described pick, for tubular type locks, serves as a handy aid to locksmiths in that the device is easy to work to open locks of this type, and further such device can be readily decoded for cutting a key.

From the foregoing description it will be readily seen that there has been produced such a device as will substantially fulfill the objects of the invention, as set forth herein.

While this specification sets forth herein the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention, the following is claimed as new and useful, and upon which Letters Patent are desired:

1. A pick, for tubular type locks, comprising a body including a relatively short tubular neck projecting axially from one end thereof, the body having a plurality of longitudinal guide slots therein in circumferentially spaced relation concentrically about said axis, the slots extending through the neck, a locator and tension finger fixed in one slot and projecting a distance beyond the neck, pick fingers slidably engaged in the other slots for adjustment to positions of differential projection beyond the neck, and means on the body to releasably secure the pick fingers in such positions; the slots being open to the other end of the body and the pick fingers projecting some distance out of the slots at said end, there being notches in the laterally outer edges of the pick fingers beyond said other end of the body, forming end shoulders for engagement with a push and pull tool to slide the pick fingers to said positions.

2. A pick, for tubular type locks, comprising a cylindrical body including a relatively short tubular neck of reduced diameter projecting axially from one end of said body, the latter having a plurality of longitudinal guide slots therein in circumferentially spaced relation concentrically about said axis in alinement with and extending through the neck, a locator and tension finger fixed in one slot and projecting a distance beyond the neck, pick fingers slidably engaged in the other slots for adjustment to positions of differential projection beyond the neck, said pick fingers at the end corresponding to the neck matchingly engaging in the slots therein both circumferentially and radially thereof, and set screws threaded radially into the body in circumferentially spaced relation and in positions to engage and releasably secure the pick fingers in said positions; the pick fingers being formed within the body with longitudinal notches cut into the fingers from their radially outermost edges, such notches being of limited length and the set screws normally engaging therein.

3. A pick, for tubular type locks, comprising a cylindrical body including a relatively short tubular neck of reduced diameter projecting axially from one end of said body, the latter having a plurality of longitudinal guide slots therein in circumferentially spaced relation concentri-

cally about said axis in alinement with and extending through the neck, a locator and tension finger fixed in one slot and projecting a distance beyond the neck, pick fingers slidably engaged in the other slots for adjustment to positions of differential projection beyond the neck, said pick fingers at the end corresponding to the neck matchingly engaging in the slots therein both circumferentially and radially thereof, set screws threaded radially into the body in circumferentially spaced relation and in positions to engage and releasably secure the pick fingers in said positions, the slots being open to the end of the body opposite the neck, and the pick fingers projecting some distance out of the slots at said opposite end, to allow of manual engagement of the pick fingers beyond said opposite end of the body to slide said pick fingers when said set

screws are unloosened; the body being formed at said opposite end and centrally thereof with a non-circular socket adapted for the reception of a wrench element.

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