

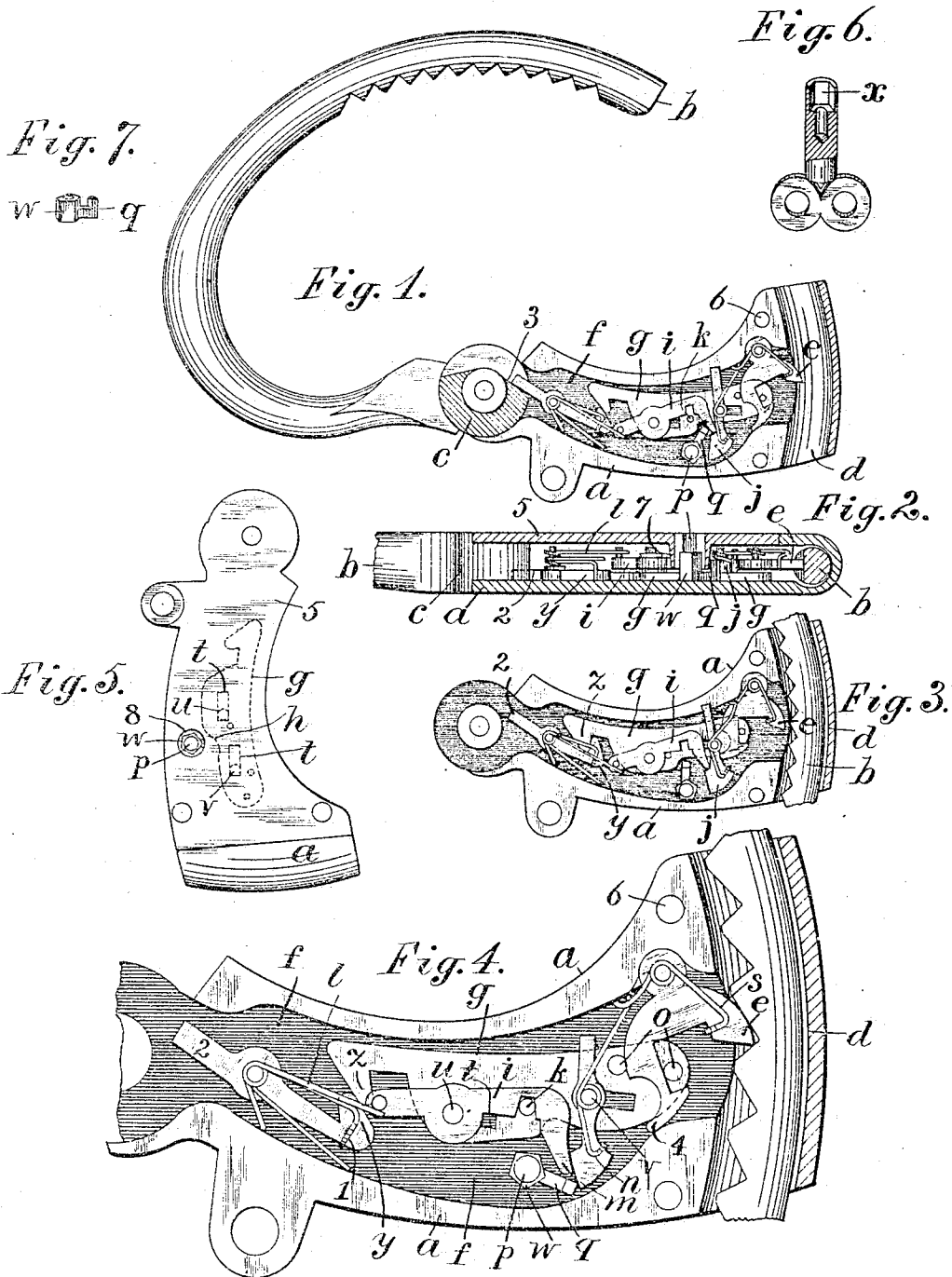
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H. G. JUDD.
HANDCUFF.

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NO MODEL.



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UNITED STATES PATENT OFFICE.

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HANDCUFF.

SPECIFICATION forming part of Letters Patent No. 766,263, dated August 2, 1904.

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To all whom it may concern:

Be it known that I, HENRY G. JUDD, a citizen of the United States, residing at 70 Central avenue, Waterbury, county of New Haven, State of Connecticut, have invented certain new and useful Improvements in Handcuffs or Leg-Irons, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The present invention embraces a handcuff in which a tumbler is provided to be actuated by the key in releasing the locking-dog from the shackle, and means is also provided to hold the tumbler raised when lifted by the key to permit the free movement of the locking-dog for reengaging the shackle. The tumbler may be held raised by a "spring-block" pressed against the same and arranged in the path of the key to be moved from the tumbler when desired.

The invention also includes various details of construction hereinafter set forth, including a guard-collar formed around the keyhole and extended past the tumbler and spring-block to prevent access to those parts, and thus protect them from any actuation except by the key.

In the drawings, Figure 1 is a side elevation of the handcuff with shackle opened and the parts set to lock the shackle and the cover-plate removed and the hub of the shackle cut away down to the cam-face, which operates the slide-pawl. Fig. 2 is an edge view of the case with the front side of the chamber cut away and the parts in the same position as in Fig. 1. Fig. 3 is a view of the case like that in Fig. 1 with the dog and slide retracted to unlock the shackle. Fig. 4 is a similar view, upon a larger scale, with the dog locked upon the shackle. Fig. 5 shows the outside of the case with a dotted outline of the slide. Fig. 6 is a partly sectional view of the key for use with the stud and bit shown in Fig. 1. Fig. 7 shows the key-bit *q* apart from the spindle *p*.

a designates the case, having shackle *b* jointed thereto by hinge-hub *c*. The case has a slot *d*, in which the shackle engages the point *e* of the dog, and has a chamber *f*, containing the lock parts. The locking-dog is hinged at

the middle of the chamber's width and pressed toward the slot *d* by spring *s*, and a slide *g* is engaged with an arm upon the dog by means of pins *o*. The heel *4* of the dog is formed to contact with the casing when the dog is set to engage the shackle, as shown in Fig. 1. The dog may be secured to the slide by a pivot instead of the pins *o*, as the same movement would result. The slide is formed in one edge with a shoulder *h* to engage the bit *q* of the key and is provided with slots *t*, fitted to studs *u* and *v*, upon which are pivoted, respectively, the tumbler *i* and the spring-block *j*. A notch in the tumbler is fitted to engage a pin *k* upon the slide when the dog is locked, as shown in Fig. 4, and the tumbler is pressed normally toward the pin *k* by a spring *l*. The end of the tumbler is provided with a toe *m*, which lies in the path of the key-bit when turned to reach the shoulder *h* on the slide, and thus lift the tumbler before retracting the slide.

The spring-block *j* is formed with a face (adjacent to the end of the toe *m*) which slopes toward the path of the toe when raised by the key and is pressed normally upon the outer side of the toe by spring *n*. When the dog *e* is locked, as shown in Fig. 4, the notch of the tumbler engages the pin *k* upon the slide, and the spring-block *j* presses against the toe on the tumbler to prevent it from accidental displacement or from any movement without the exertion of sufficient force to overcome the spring *n*.

A spindle *p* is shown adjacent to the notch *h* upon the slide, and a key-bit *q* is fitted to turn upon the same by a pentagonal hub *w*. The key shown in Fig. 6 is formed with cylindrical body to insert in the round keyhole (shown in Fig. 5) and has a pentagonal socket *x* to engage the hub *w* to turn the bit *q*.

The rotation of the bit *q* first presses the block *j* backwardly, then lifts the tumbler, and finally retracts the slide by contact with shoulder *h*, thus unlocking the dog. When thus unlocked, the dog is held backwardly by a pawl *y*, fitted to engage a hook *z* on the end of the slide and pressed toward such hook by spring *l*. The pawl has a tailpiece 2 projected toward the pivot of the shackle-hub *c*, and the hub is pro-

vided with a cam-face 3, which operates to retract the pawl from the hook z when the shackle is opened widely a little beyond the position shown in Fig. 1. When the slide and dog are retracted, they are thus held by the pawl, as shown in Fig. 3, so that the shackle can be withdrawn from the slot z . The dog then stands above the pin k and is held from any movement toward the pin by the spring-block j , which resists any downward movement of the tumbler. When the pawl is retracted, as shown in Fig. 1, the dog and slide are thus free to move without any obstruction from the pin k and the shackle can be engaged with the dog e .

To lock the dog and shackle, the key-bit is turned toward the spring-block to press back the same, which permits the tumbler to descend upon the pin k and locks the dog securely.

The cover-plate 5 of the casing is in practice secured by screw-rivets 6 and is shown with a guard-collar 7, projected into the chamber around the keyhole 8 and extended past the level of the tumbler and spring-block, so as to prevent the picking of the lock by reaching such parts. This arrangement is secured by locating the slide in the bottom of the chamber f and the tumbler and spring-block upon the top of such slide, like the locking-dog e . The bit g of the key is notched to clear the collar 7 and is of suitable length upon the end to reach the spring-dog, the toe upon the tumbler, and the shoulder upon the slide.

The pentagonal hub of the bit is extended upwardly within the collar and nearly fills the same, so as to obstruct effectually the entrance of any lock-picking tools.

It is obvious that the key-bit may be made integral with the stem and handle of the key by forming a slot at one side of the keyhole 8 to admit the bit.

It will be observed by reference to Figs. 1 and 2 that all of the working parts of the lock are of flat form and may be readily stamped from sheet metal of suitable thickness, while the springs are all made of bent wire, and the lock can thus be constructed very cheaply, so as to furnish great security from lock-picking without any expensive construction.

It is to be understood that this invention is applicable to leg-irons as well as handcuffs, as the construction of the lock would be the same whether the device were used for one purpose or the other.

Having thus set forth the nature of the invention, what is claimed herein is—

1. The handcuff having the locking-dog e , the slide g jointed to the dog and having shoulder h to engage a key and pin k to engage a tumbler, the spring s to engage the dog with the shackle, the tumbler i to engage the pin k , and means operated upon the tumbler to

hold the tumbler raised when lifted by the key, and thus permit the joint movement of the slide and dog for reengaging the shackle.

2. The handcuff having the locking-dog e , the slide g jointed to the dog and provided with the hook z and with shoulder h to engage a key, the spring-pawl y to engage the hook when the dog and slide are retracted, and the cam 3 upon the hinge of the shackle to detach the pawl from the hook and leave the slide and dog in position for locking.

3. A handcuff having a locking-dog, a slide jointed to the dog and having shoulder to engage a key, a spring to engage the dog with the shackle, a tumbler to engage the slide, a spring-block to hold the tumbler normally raised to permit the dog to engage the shackle, and the locking movement of the key operating to press back the block and permit the tumbler to lock the slide.

4. A handcuff having a locking-dog, a slide jointed to the dog and having shoulder to engage a key, a spring to engage the dog with the shackle, a tumbler to engage the slide, a spring-block to hold the tumbler normally raised, and formed to press the tumbler upon the tumbler-pin of the slide when the dog is locked.

5. A handcuff having a locking-dog, a slide jointed to the dog and having shoulder to engage a key and pin to engage a tumbler, a spring to engage the dog with the shackle, slots in the slide extended in opposite directions from the pin, studs projected through the slots and provided respectively with a pivoted tumbler and with a pivoted spring-block adapted to hold the tumbler normally raised, the slots and studs serving to guide the slide during the operation of the key.

6. A handcuff having a slot for the movement of the shackle, a chamber for the locking mechanism, a pivoted dog at the middle of the chamber's width to engage the shackle, a slide jointed to the dog and fitted to one side of the chamber, and provided with the shoulder to engage a key, a keyhole in the opposite side of the chamber-casing, a tumbler mounted in the middle of the chamber's width to lock the slide, and a guard-collar around the keyhole projected from the interior of the casing nearly to the surface of the slide, to protect the tumbler from access.

7. A handcuff having a locking-dog, a slide jointed to the dog and having a shoulder to engage a key, a tumbler to engage the slide, the casing having a stud upon one side and keyhole opposite such stud with a guard-collar projected inwardly around the stud, a key-bit pivoted upon the stud and retained in the casing by the collar and having a polygonal shank, and a key having polygonal socket upon the end to engage such shank, as and for the purpose set forth.

8. A handcuff having a locking-dog, a slide and tumbler to operate the same, a casing hav-

ing a stud upon one side and a cover-plate with
keyhole opposite such stud, and a guard-col-
lar projecting inwardly around the stud, and
a key-bit pivoted upon the stud and provided
5 with a polygonal shank extended outwardly
within the collar to obstruct the passage of
any picking-tools into the casing.

In testimony whereof I have hereunto set my
hand in the presence of two subscribing wit-
nesses.

HENRY G. JUDD.

Witnesses:

THOMAS S. CRANE,
ARTHUR F. HEATON.