J. J. TOWER & H. W. KAHLKE.

Hand-Cuffs.

No. 200,950. Patented March 5, 1878.

Fig. 1.

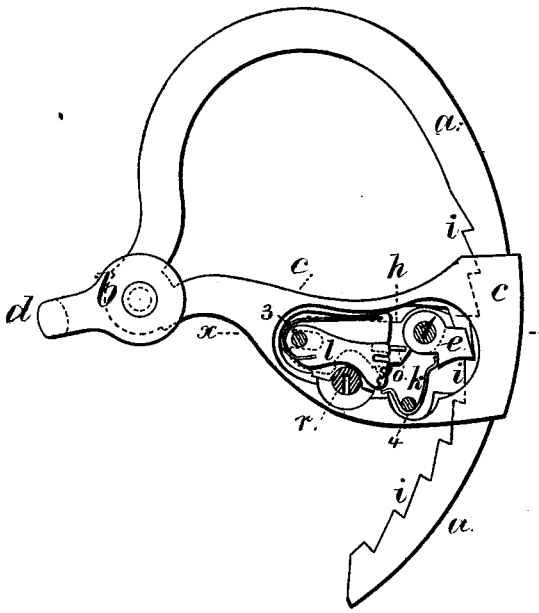
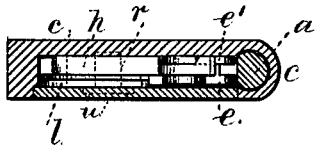


Fig. 4.

Fig. 3

Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN J. TOWER AND HENRY W. KAHLKE, OF BROOKLYN, NEW YORK, ASSIGNORS TO SAID JOHN J. TOWER.

IMPROVEMENT IN HANDCUFFS.

Specification forming part of Letters Patent No. **200,950**, dated March 5, 1878; application filed May 17, 1877.

To all whom it may concern:

Be it known that we, JOHN J. TOWER and HENRY W. KAHLKE, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Handcuffs, of which the following is a specification:

Handcuffs have been made with a segmental notched loop and a radius-bar containing the lock or catch.

Our improvement is made to avoid the risk of the lock or catch being opened, either by an instrument introduced through the key-hole, or by a quill or thin piece of metal inserted between the segmental bar and the radius-bar.

In the drawing, Figure 1 is an elevation of the handcuff with the plate of the lock removed. Fig. 2 is a cross-section at the line *x x*, and Fig. 3 shows the key.

The notched segment *a* is connected by the joint *b* with the radius-bar *c*, and the link *d* for the chain is applied at the joint *b*, as usual.

The radius-bar is made hollow to form the lock-case. Instead of using one catch or bolt to the interior notches of the segment *a*, we employ two independent spring-catches, *e e'*, which take into the notches *i*, and are preferable to one catch, because it is difficult to insert any thin instrument between the eye of the radius-bar and the segment that will operate both catches at once. These spring-catches are jointed at 1 to the sliding bolt *h*, and the springs *k* serve to project the bolt and operate the catches.

The tumbler or tumblers *l*, that swing on the stud 3, have notched ends; and there is a fence or stud, *o*, upon the bolt *h*, that prevents the key withdrawing the bolt until the tumbler or tumblers are in position for the stud to pass into the tumbler-notches. There are one or more guard-plates between the bolt and tumblers, that render necessary notches in the key, and thus make it difficult to open the lock.

The cylinder *r* is grooved longitudinally to receive the plate-key and be revolved by the same; and this cylinder *r* is held in place by the cap-plate *u*, but turns freely in its bearings. This cap-plate *u* is secured in place by riveting up the ends of the studs 3 and 4, and by the edge of the lock-case being riveted up against the plate. The bolt is shown in the detached view, Fig. 4.

It will be seen that when the bolt is acted upon by the key it is drawn bodily endwise, to allow the notched segment-bar to be swung out of the radius-bar and the handcuff opened; but when the handcuff is closed it is not necessary to employ a key, because the inclined teeth of the notched segment-bar press back the swinging catches at the end of the bolt.

We claim as our invention—

The combination, with the radius-bar *c* and notched segment *a*, of the swinging catches *e e'*, pivoted to the sliding bar *h*, the tumbler *l*, cylinder *r*, and plate-key, substantially as set forth.

Signed by us this 12th day of May, A. D. 1877.

JOHN J. TOWER.
HENRY W. KAHLKE.

Witnesses:
GEO. T. PINCKNEY,
HAROLD SERRELL.