No. 647,735. Patented Apr. 17, 1900.

F. B. WIDMAYER.

HANDCUFF.

(Application filed Dec. 8, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

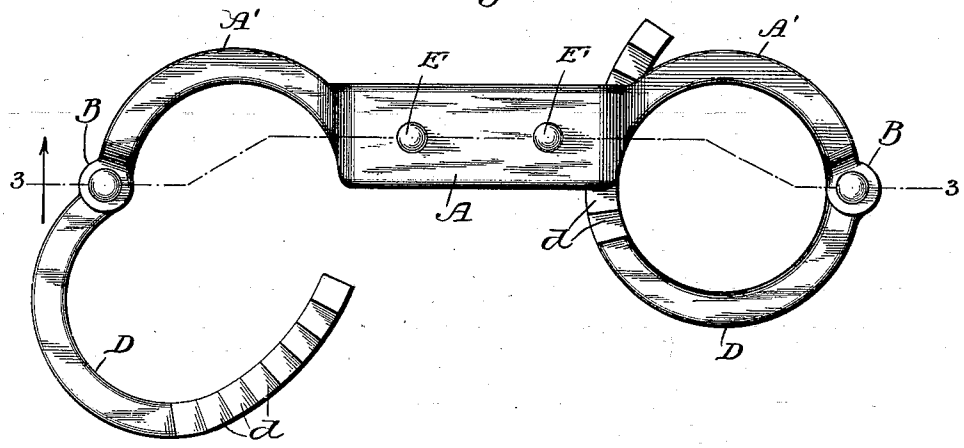
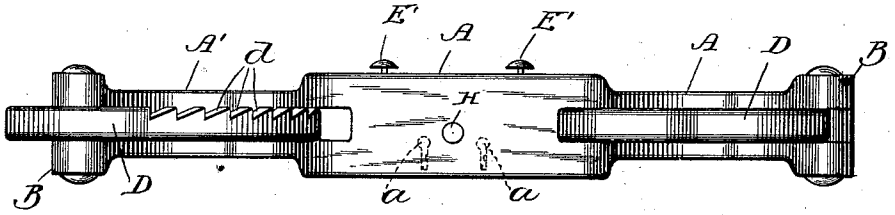


Fig. 2.



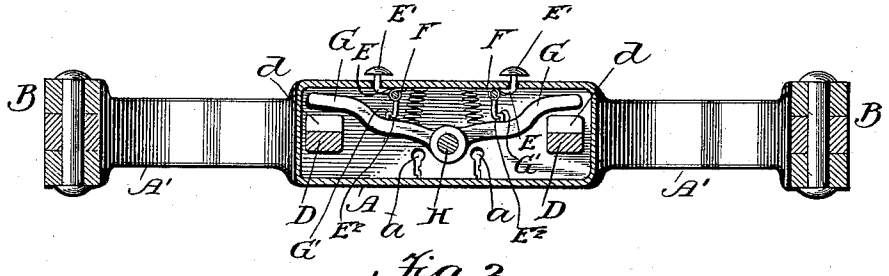


Fig. 3.

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Fig. 4.

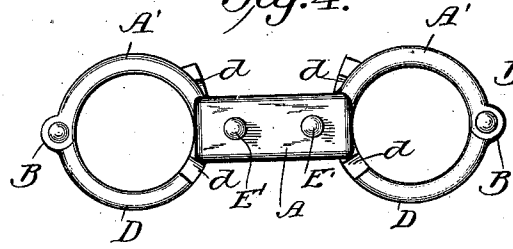


Fig. 6.

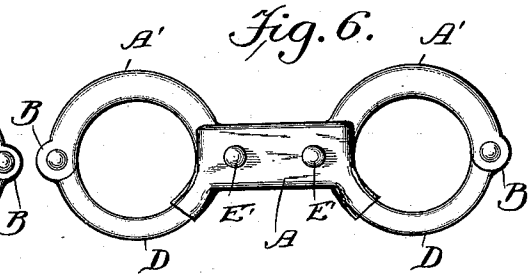


Fig. 5.

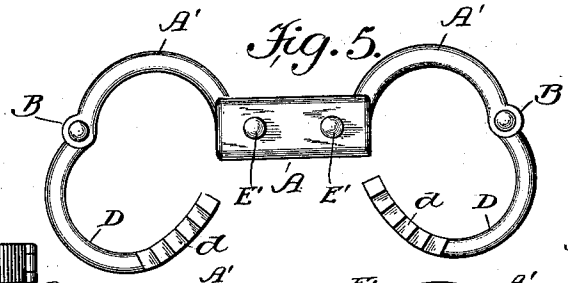
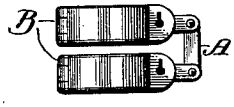


Fig. 8.



Fig. 10.



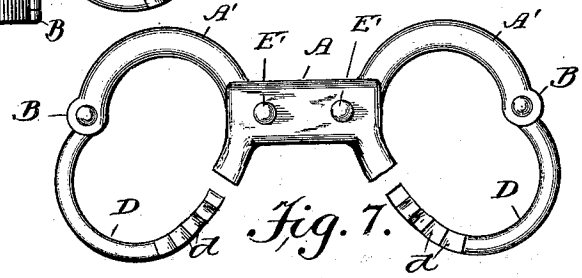


Fig. 7.

Fig. 9.

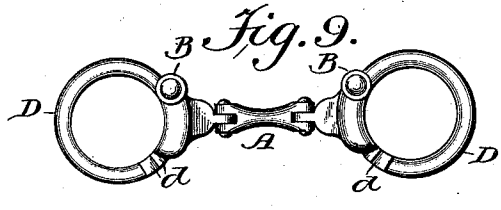
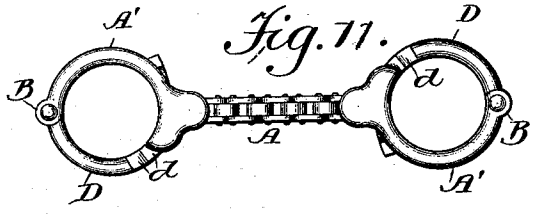


Fig. 11.



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UNITED STATES PATENT OFFICE.

FRANK B. WIDMAYER, OF NEW YORK, N. Y.

HANDCUFF.

SPECIFICATION forming part of Letters Patent No. 647,735, dated April 17, 1900.

Application filed December 8, 1899. Serial No. 739,602. (No model.)

To all whom it may concern:

Be it known that I, FRANK B. WIDMAYER, a citizen of the United States, and a resident of the borough of Manhattan, in the city of New York and State of New York, have invented certain new and useful Improvements in Handcuffs, of which the following is a specification.

My invention consists in the improved construction and combination of parts hereinafter set forth. I use in the preferable form a rigid connection between the two cuffs and provide it with either one or two locks located so that the keyholes are inaccessible to the prisoner while his wrists are in the embrace of the handcuffs. This construction makes it impossible for the prisoner to open the handcuffs unaided, even if possessed by any means of the proper key. In the previous approximations, so far as I am advised, the keyholes have been located in the top—that face from which the prisoner's hands extend. While such construction was adapted to hold the prisoner's hands so that the fingers of either hand could not be moved sufficiently near to permit the insertion and turning of the proper key should the prisoner secure possession of the same, yet the fact that the keyhole was at the same side as one of the hands permitted a wire or analogous device to be so manipulated as to pick the lock. Sometimes the handcuffs could be surreptitiously unlocked by placing the loop of the proper key in the slotted end of a stick, which would enable the key to be inserted in the keyhole and the lock unlocked and the hands released, notwithstanding the distance of the fingers from said keyhole.

In my improved handcuffs I have rearranged the parts and located the key hole or holes in the side of the "lock-case," by which is meant the face or faces parallel with the direction in which the wrists extend, greatly increasing the difficulty of the introduction by the prisoner of any object into such hole for the purpose of picking the lock.

The accompanying drawings form a part of this specification and represent several forms in which my invention may be successfully carried out.

Figure 1 is a plan view showing one of the hasp-bows in the locked and the other in the unlocked position. Fig. 2 is a corresponding side elevation. Fig. 3 is a section on the line 3 3 in Fig. 1. The remaining figures show modifications. Fig. 4 is a plan view with the hasp-bows closed. Fig. 5 is a corresponding view with the hasp-bows open. Fig. 6 is a plan view with the hasp-bow closed, and Fig. 7 is a corresponding view with the hasp-bows open. Fig. 8 is a side view of one of my modifications; Fig. 9, a corresponding plan view showing a modification extended; Fig. 10, an elevation showing the same folded for the pocket, and Fig. 11 is a top view showing a further modification.

Similar letters of reference indicate like parts in all the figures where they appear.

Referring to Figs. 1, 2, and 3, A is the rigid central casing, and A′ A′ curved arms thereof.

B are knuckle-joints, and D are hasp-bows equipped each with a series of notches *d* on the upper side for receiving the lock-levers which serve as bolts.

H is a stout central pin on which turn the two locking-levers G, extending in opposite directions. The series of notches *d* allow the hasp-bow to be closed to different extents to accommodate different wrists. The bevel of the end of each hasp-bow and the form of the notches allow the handcuff to be closed by a simple pressure the same as ordinary handcuffs. In common with other approved forms of handcuffs my improved construction has spring-locks which engage automatically when the hasp is closed around the wrist of a prisoner, and also in common with others is provided with easily-operated stops which prevent the action of the spring-locks while the handcuffs are carried in the pocket in a closed condition, but can be instantly set free by pressing a button when the handcuffs are open for use.

Two keyholes *a a* are provided, one on each side of the center. The same key may be used successively in the two keyholes, each when properly turned moving the corresponding lever or bolt G, so as to liberate the corresponding hasp-bow D.

From small openings in the top of the rigid case A protrude the buttons E′, each of which carries a bell-crank lever E, extending within the case, turning on a pivot in the casing, and having a hook E^2 at its opposite end. A

slight spring F, wound around the pivot, tends to turn this slight lever E, so that the hook E^2 on the inner end will engage this corresponding hook G′, so as to hold the bolt G unlocked in any position. Upon pressing on the button to turn the lever E the hook E^2 is moved out of engagement with the hook G′, and the bolt G is released to permit it to automatically engage and hold the bow-hasp when it is next closed. After such engagement the hasp can only be liberated by the proper key inserted in key hole or holes *a a*.

The form of the casing A and the arrangement of the arms A′ and the hasp-bows D are more especially intended to receive the wrists of the prisoner with the hands in reversed or crossed position; but the hands may, if preferred, be secured parallel. In either position the prisoner is not pained or seriously discommoded by the irons, except for the necessary restraint on the movements of the hands and arms, and in either position he finds the keyholes inaccessible by reason of their being on the sides instead of, as usual, on the top of the casing.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention.

I can use tumbler-locks, providing a corresponding key. It is important to have two locks, and especially essential to have the keyholes (or keyhole, if there is but one lock) on the side instead of the top of the casing A.

I have made the notches *d* on the top instead of on the inner or outer faces of the hasp-bows; but some of the advantages may be attained by other arrangements of these notches, taking care to correspondingly change the arrangement of the locking-bolt G G and of the other parts.

Figs. 4 and 5 show a construction in which the hasp-bows extend through the casing A and protrude to variable extents, according to the size of the wrist on which they are fitted.

Figs. 6 and 7 show another modification in which there may be the same range of adjustment, with the ends of the hasps covered and protected when closed. This construction makes a particularly-neat appearance.

Figs. 8 to 11, inclusive, show the invention applied to forms in which the single central casing is dispensed with and a sufficient casing with proper lock and stops carried on each cuff, and the two casings are shackled together so as to allow some motion to ease the wearer; but in all these forms the keyholes are in the sides, and the arrangement presents substantially the same quality of preventing the prisoner from ever reaching to the vicinity of either keyhole. Figs. 8, 9, and 10 show a single link pivoted to each casing. Fig. 11 is a plan view with a construction of proper strength made in links like what is sometimes termed a "pitch-chain," the general style much used in bicycles. In all the locks are arranged to receive the key laterally and the keyhole is inaccessible to the wearer of the handcuffs. With any of these forms my handcuffs, made larger, will satisfactorily serve as leg-irons.

By using the pitch-chain in connection shown the prisoner has a little freedom only in one direction, but his wrists and arms are always at right angles to the keyholes, so he cannot reach them to unlock them, even if he has the proper key, or he cannot reach the key hole or holes even with a special bent wire to pick said locks.

I claim as my invention—

1. In a handcuff, the combination of two pivoted hasp-bows, means for connecting the two, each hasp-bow provided with notches on a face in a plane at right angles to the axis of their pivots with locking mechanism for each hasp-bow located in said connecting means, said handcuff provided with a keyhole for each locking mechanism located on a surface the plane of which is parallel to the direction in which the wrists extend, substantially as herein specified.

2. In a handcuff, the combination with a central case, and pivoted hasp-bows, of locking mechanism within the case for engaging the hasp-bows, said central case provided with a keyhole on a face parallel with the axis of the hasp-bow pivots, substantially as set forth.

3. In a handcuff, the combination with a central lock-case, and pivoted hasp-bows connected to said case, of separate locking mechanism within the case for each hasp-bow, said lock-case provided with an independent keyhole for each locking mechanism on a face parallel to the direction in which the wrists extend, substantially as specified.

Signed at Manhattan borough, in the city of New York and State of New York, this 29th day of November, A. D. 1899.

FRANK B. WIDMAYER.

Witnesses:
ARTHUR WALTON,
W. F. WIDMAYER, JR.