

No. 772,468.

PATENTED OCT. 18, 1904.

L. F. MALTBY.
HANDCUFF.

APPLICATION FILED DEC. 29, 1903.

NO MODEL.

Fig. 1.

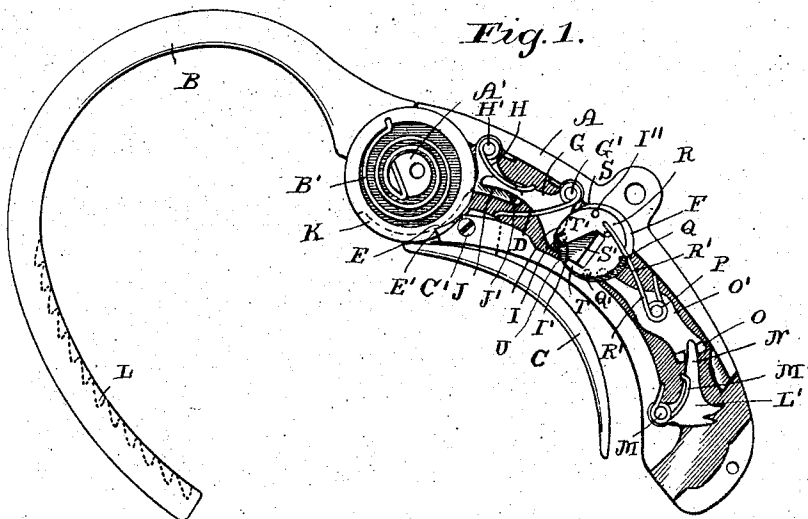


Fig. 2.

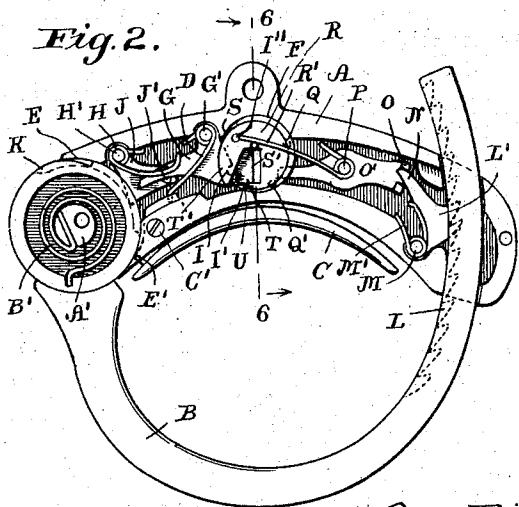


Fig. 3.

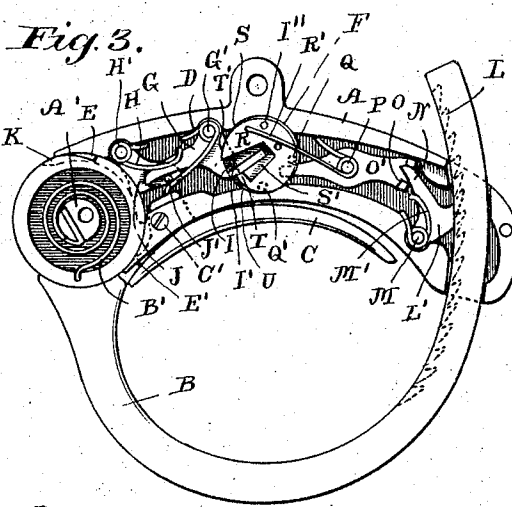


Fig. 5.

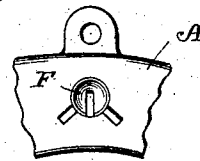


Fig. 4.

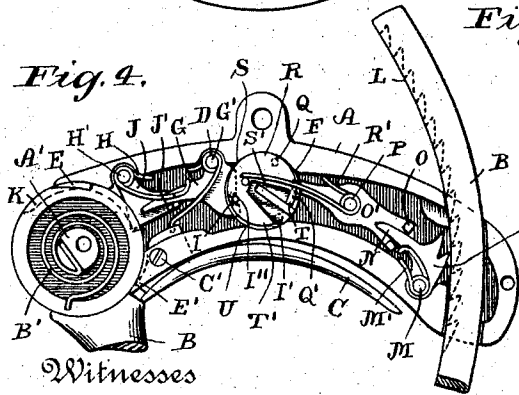
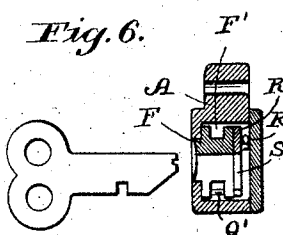


Fig. 6.



Witnesses

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HANDCUFF.

SPECIFICATION forming part of Letters Patent No. 772,468, dated October 18, 1904.

Application filed December 29, 1903. Serial No. 186,988. (No model.)

To all whom it may concern:

Be it known that I, LOUIS F. MALTBY, a citizen of the United States, and a resident of Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Handcuffs, of which the following is a specification.

This invention relates to new and useful improvements in handcuffs or shackles such as are used to secure prisoners, and is designed to be applied to the wrists of the wearer, but obviously can likewise be attached to the ankle, if desired.

It is the object of my invention to generally improve upon handcuffs of the above class and to provide a locking device which is especially adapted for use in connection with the construction shown in my former patent, No. 686,626, of November 12, 1901, or similar handcuffs containing one or more spring-actuated arms to encircle the limb of the prisoner.

The construction of the patent referred to, as well as the construction of several other patented handcuffs, comprises, in part, a body portion with one or more spring-actuated levers adapted to close to a greater or lesser degree, which in practice is determined only by the size of the wrist engaged thereby—that is to say, when the article is applied, the arm automatically closes against the wrist of the prisoner and is in that position held from opening by an engaging pawl. In practice I find that the action of the spring of the arm tends to crowd the same inward and that when in use and with the various movements and shifting positions of the prisoner, and especially when two are linked together, said arm will, as a matter of fact, crowd in a notch or two farther than what it originally was when first applied, and thus becomes so tight as to make it uncomfortable to the prisoner. Therefore it is the purpose of this invention to not only reserve to the handcuff the desirable automatic closing feature of the arm, but to provide a "double lock," so called, which not only locks the arm against outward movement, as formerly, but also against further inward movement.

With the above objects in view my invention

resides and consists in the novel construction and combination of parts shown upon the accompanying sheet of drawings, forming a part of this specification, upon which similar characters of reference denote like or corresponding parts throughout the several figures, and of which—

Figure 1 shows an open view of a single handcuff with side plate removed and constructed in accordance with my invention. Fig. 2 is a similar side view of a handcuff with plate removed, but in what I term a "closed" position, the arm being locked against outward movement, but not locked against inward movement. Fig. 3 is a similar view in all respects except that the arm is locked against both inward and outward movement. Fig. 4 is a further similar view, the arm, however, being closed to its extreme position, but with the arm unlocked and free to be drawn open and set, as shown in Fig. 1. Fig. 5 is a small detail of the opposite side of the casing, showing key held therein. Fig. 6 is a central vertical cross-section on line 6 6 of Fig. 2, showing a casing, key, barrel, and socket.

Referring in detail to the characters of reference marked upon the drawings, A indicates the casing as a whole, which bears a stud A', upon which is hung an arm B. A spiral spring B' is interposed between said stud and arm to normally hold the latter in a closed position. A trigger C is pivoted at C' to the casing and provided with a spring D, which tends to hold said trigger in an extended position, as shown in Fig. 1, when the notch E in the hub of the arm registers with the lug E' of the trigger.

Central of and journaled in the casing is a key-cylinder F, (shown in sectional view in Fig. 6,) bearing an annular recess F' and adapted to be turned to the left or right, (see Figs. 3 and 4,) in which position it is held by the dog G when the key is withdrawn. This dog is pivoted to a stud G' and is provided with a notch I to engage the pins of the cylinder by the action of a spring H, pivoted to the stud H'. Said dog engages the pin I', as shown in Fig. 3, to hold the cylinder and connecting parts, including the arm, in the locked

position and engages a similar pin I'', as shown in Fig. 4, to hold the parts in an unlocked or retracted position. A tumbler J is pivoted to the stud H' beneath the dog G and bears a pin J' to engage the edge of the dog in a manner to receive the thrust of its spring and have the free end of the tumbler normally extended into the recess K on the under side of the hub of the arm. When the arm is brought to an extreme open position, said tumbler, as shown in Fig. 1, will be forced back against the arm of the dog in a way to disengage its notch I from the pin, leaving the barrel free to be turned back to its normal position.

The arm B, as shown, contains a series of notches L on its inner side to be engaged by the twin teeth of the pawl L', pivoted to a stud M, bearing a spring M', to normally hold the teeth of said pawl in engagement with the arm, as shown in Figs. 2 and 3. This pawl is further provided with an arm N, which is engaged on two sides by lugs O of the lever O', pivoted to the stud P. The opposite end of this lever O' extends between the before-mentioned annular recess of the key-cylinder and is engaged by the pin Q when the article is in a locked position and by the pin Q', as shown in Fig. 4, when in an unlocked position.

To the inner end of the key-cylinder is pivoted a plate R, which serves as a safety device to prevent operating the lock with a false key. This plate is pivoted to the pin I'', which is located off of the center of the cylinder and bears a spring R', mounted on the stud P before mentioned, which spring engages a pin of the plate and normally tends to hold the plate off of the center or slightly to the left, as shown in Figs. 1, 2, and 3, and against the shoulder S of the casing. The central portion of this plate is cut out to form an enlarged recess S' to give ample room for the key as the cylinder assumes its different positions. This plate is further provided with an extension or overhang T, which in practice normally overlaps the key-socket of the cylinder when in the position shown in Figs. 1 and 2, but is adapted to properly register with the edge of said key-socket when the same is in a locked position, as shown in Fig. 3. It will thus be obvious that the key must be of a tapering design to engage, move back, and disengage the dog and hold the plate concentric with the cylinder in order to insure its positive rotation with the cylinder from the position shown in Fig. 3 to that shown in Fig. 2. A peripheral extension T' is also provided, which normally projects beyond the cylinder and strikes against the shoulder U of the casing in a way to prevent the cylinder from turning sufficiently to unlock, but is held in sufficiently to clear this shoulder when a key of a proper shape to engage the point T is employed. It will thus be seen that with the article in a locked position, as seen in Fig.

3, with the insertion of the key the dog would be raised out of engagement with the pin I. If the key is of proper shape, as shown in Fig. 6, its side will also engage the end of the point T. Thus when the key is turned it would not only carry with it the cylinder, but the plate pivoted thereon, insuring a free movement to the cylinder from the position shown in Fig. 3 to that shown in Fig. 4, where the key can be released. The dog will simultaneously engage the pin I'' of the cylinder and lock it, which in turn holds the pawl out of engagement from the arm. The arm is then free to be withdrawn to the position shown in Fig. 1, whereupon the tumbler would be raised from its recess in a way to withdraw the dog, thus allowing the spring M' through its lever connections to throw the cylinder to a central position, as shown in Fig. 2, which leaves the pawl free to engage the arm by the action of its spring in a way to hold said arm against withdrawal only. It is then necessary to insert the key a second time and turn the cylinder from said central position to the left, as shown in Fig. 3, which locks the cylinder, and it through the lever holds the pawl against movement, thus positively preventing a movement of the arm in either direction.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a handcuff of the class described, the combination with a casing, an arm hinged thereto, a key-cylinder, a dog to engage the key-cylinder, a pawl to engage the arm and hold it in a closed position, a lever interposed between the pawl and cylinder, pins in the cylinder for engaging the lever and holding it against movement, substantially as described.

2. In a handcuff, the combination with a casing of an arm, a pawl to engage the arm, a lever to engage the pawl and hold it in or out of engagement with said arm, a key-cylinder to engage the lever and hold it against movement when in certain positions, a dog to engage the cylinder, and lock it against rotatory movement, yet adapted to be disengaged by the key.

3. In a handcuff the combination with a casing, of an arm pivoted thereto, a pawl to engage the arm and hold it in various positions, a lever one end of which engages the pawl, a key-cylinder bearing pins to engage the opposite ends of the lever, one pin being adapted to hold the lever down, and the other to hold it up, a dog to engage the cylinder and hold it against rotatory movement in either of said rotated positions, means interposed between the dog and the arm whereby the cylinder is released, when the arm is opened.

4. In a handcuff, the combination with a casing of an arm pivoted thereto, a rotatable key-cylinder journaled in the casing, a lever pivoted adjacent thereto adapted to be engaged by the cylinder when the latter is moved either to the right or left in a way to hold the lever

against movement, a pawl engaged by the opposite end of the lever with teeth to engage the arm, the whole adapted to hold said pawl positively in or out of engagement with the arm preventing movement of the arm in either direction.

5. In a handcuff of the class described the combination with a casing and an arm pivoted thereto, of a spring-actuated pawl pivoted to automatically engage the arm, and hold it against withdrawal, a lever engaging the pawl a key-cylinder connected with the lever for operating the pawl, to withdraw it from the arm, and means for engaging the cylinder to hold it against movement and likewise to lock the pawl in an engaged position in a way to prevent movement of the arm in either direction.

6. The combination in a handcuff of the class described, of a casing and an arm hinged thereto, a key-cylinder, connections interposed between the cylinder and the arm whereby the latter may be engaged or disengaged with the rotation of said cylinder, means for positively locking such engaging parts in or out of engagement with the arm, a plate pivoted to the cylinder, bearing an extension to

cover a portion of the key-socket and a second extension adapted to impinge against the shoulder of the casing, with the rotation of the cylinder unless operated by a key adapted to engage the extension, and hold the plate central with the cylinder.

7. In a handcuff, the combination with a casing and an arm hinged thereto, of means for engaging and locking the arm in a closed position, a key-cylinder with connections for operating said locking mechanism, a plate pivoted to the key-socket with two extensions, and a spring to normally hold one of said extensions beyond the peripheral line of the cylinder, and the other across a portion of the key-socket, and a shoulder to be engaged by said outer extension, when said cylinder and plate are turned with the latter in such normal position.

Signed at Waterbury, in the county of New Haven and State of Connecticut, this 19th day of December, A. D. 1903.

LOUIS F. MALTBY.

Witnesses:

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