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J. MALCOLM.

POLICE LEADER.

APPLICATION FILED MAR. 1, 1907.

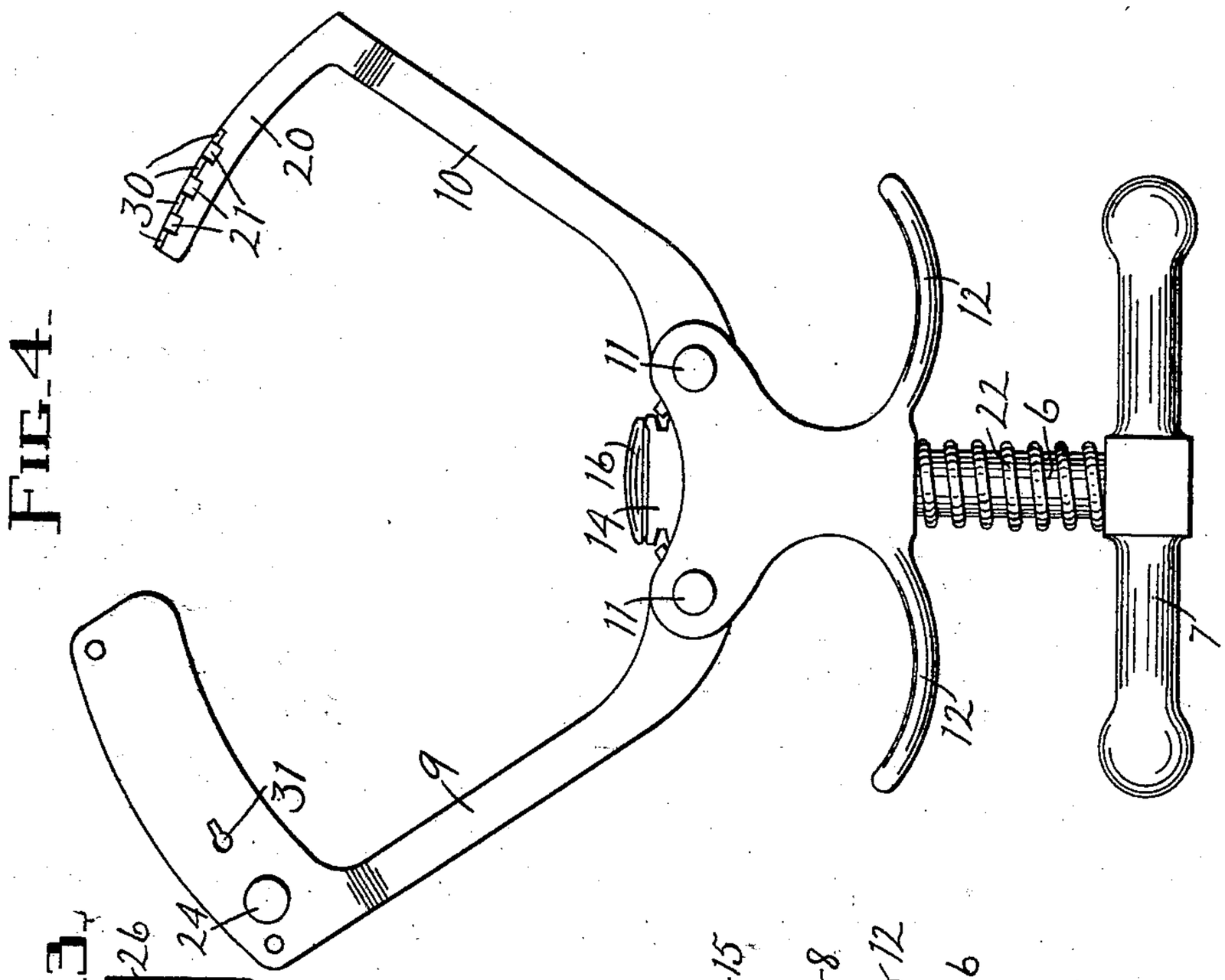

FIG. 4.

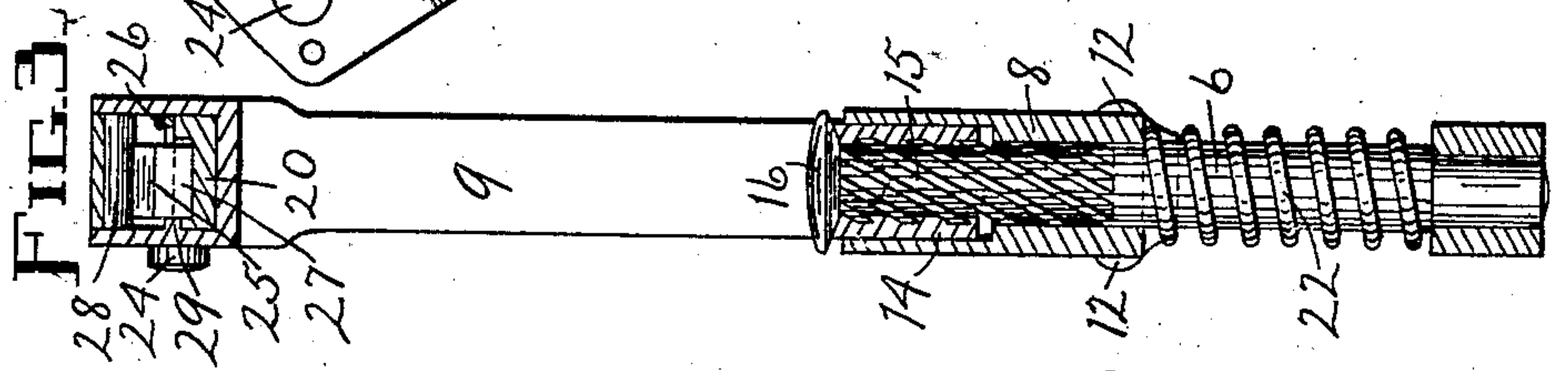

FIG. 3.

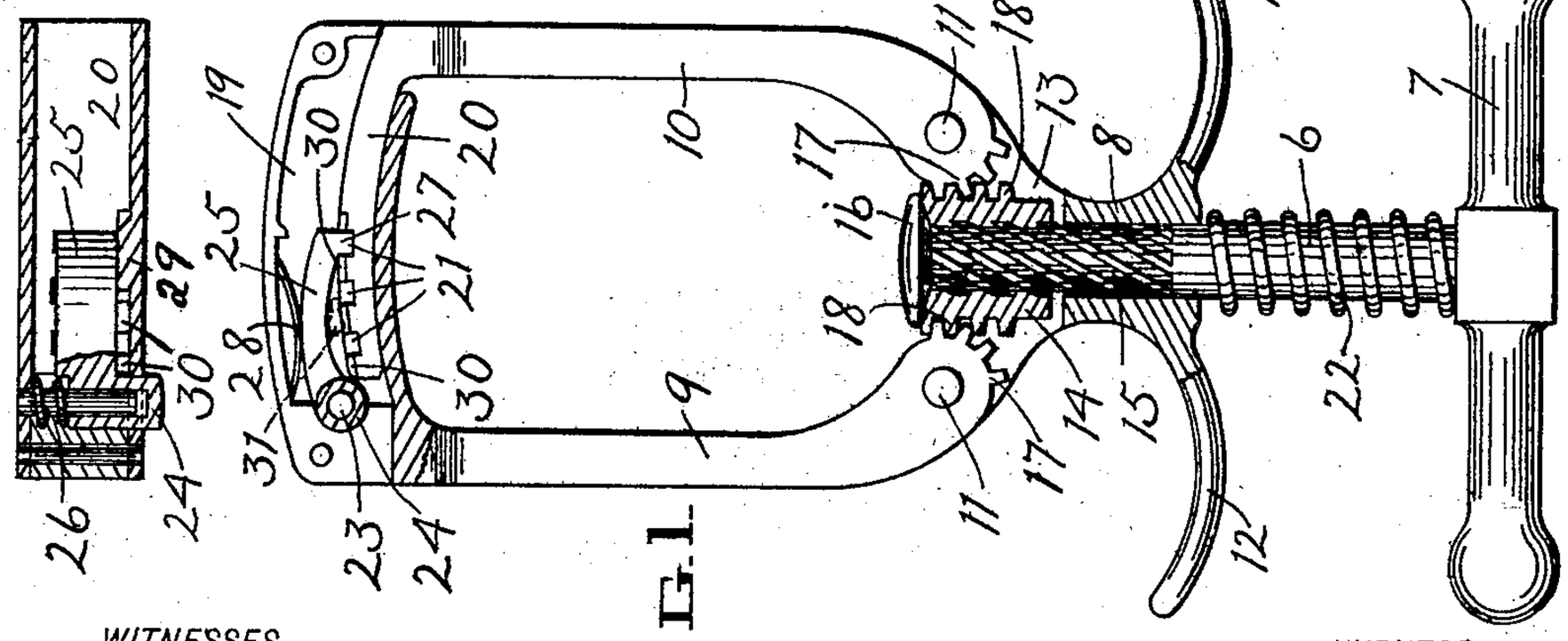

FIG. 2.

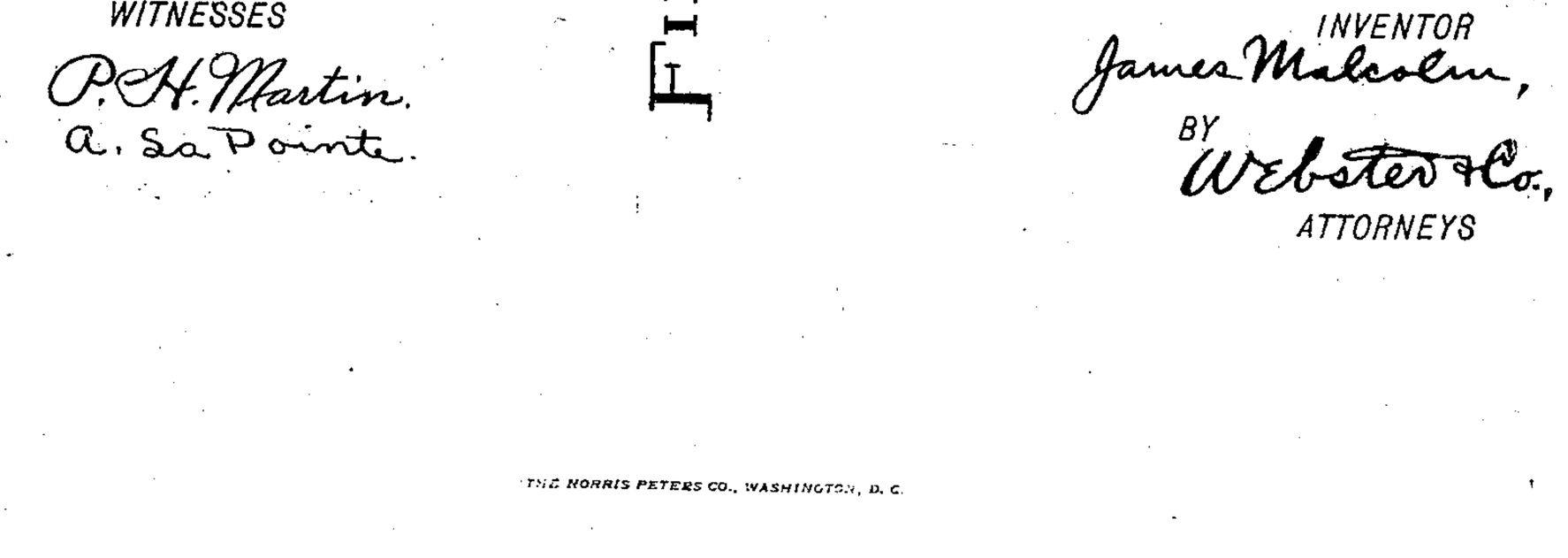

FIG. 1.

WITNESSES

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POLICE-LEADER.

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To all whom it may concern:

Be it known that I, JAMES MALCOLM, a citizen of the United States of America, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented a new and useful Police-Leader, of which the following is a specification.

My invention relates to improvements in leaders or nippers used by police officers to grasp and hold the wrists of prisoners for the purpose of conducting them from place to place and to apply pressure to the wrists in case the prisoners prove refractory, and consists of certain peculiar mechanisms for operating the jaws of the device, for locking said jaws upon the wrist, and for applying pressure to the latter, together with such subsidiary and auxiliary parts and members as may be required in making said invention practicable and efficient, all as hereinafter set forth.

The objects of my invention are, first, to produce a strong, durable and quick-acting device, of the class specified, which can be easily and quickly applied to a wrist of any size and, when locked, will securely hold the wrist; second, to provide simple and convenient locking and unlocking mechanism for such a device, mechanism which when locked is safe and secure; third, to afford means whereby the accidental locking of the jaws, or the locking of the same before they have been closed as tightly upon the wrist as may be desired, is obviated, and, fourth, to furnish the leader with a positive and powerful pressure appliance. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation in partial section of my leader, the jaws being shown closed to their fullest extent; Fig. 2, a longitudinal horizontal section through the lock-case, the parts shown being disposed as in the preceding view; Fig. 3, a transverse vertical section of said leader as shown in the first view, and, Fig. 4, a side elevation of the leader as it appears when open or with the jaws separated.

Similar figures refer to similar parts throughout the several views.

Referring now to the drawings, it will be observed that I provide a spindle 6 having a cross-bar or handle 7 at its outer end, and that I loosely mount on this spindle a sliding member 8 to which two jaws 9 and 10 are pivoted at 11—11. The spindle 6 and the slide 8 are arranged in mutual reciprocal relation to each other, that is, the former can slide in the latter and the latter can slide on the former; furthermore, said spindle is permitted to rotate in said slide. At the lower end of the slide 8 are two laterally extending finger-pieces, horns or grips 12, and within the upper part of said slide is a slot 13 into which the contiguous terminals of the jaws 9 and 10 are received, also a double-rack sleeve 14. The upper portion of the spindle 6 is screw-threaded at 15 and the rack sleeve 14 is mounted on such screw-threaded portion in threaded engagement therewith. On the upper or inner end of the spindle is a cap or presser-piece 16 designed to bear against the wrist when brought into use in the manner presently to be described. The inner ends of the jaws 9 and 10 are in the form of segment-gears 17—17 the teeth of which mesh with the teeth of the racks 18—18 on opposite sides of the sleeve 14.

At the free terminal of the jaw 9 is a lock-chamber or -case 19 and at the free terminal of the jaw 10 is a tongue 20 having three notches 21, more or less, in its upper edge. The arrangement of parts is such that when the jaws 9 and 10 approach each other the tongue 20 enters the lock-case 19. A spiral-spring 22 encircles the spindle 6 between the handle 7 and the adjacent end of the slide 8. The tendency of the spring 22 is to force the handle 7 and the slide 8 away from each other and so cause the jaws to turn inward on their pivots 11 and approach each other at their free or locking terminals and retain said jaws in this their closed position, owing to the fact that the members 6 and 8 slide freely one upon or in the other while the sleeve 14 is longitudinally movable with the spindle and has its racks 18 in engagement with the segment-gears 17.

The lock mechanism is described as follows: Within the case 19 is a pin 23 fixed in the back side thereof and extending forward across the opening in said case. Slidingly and revolubly mounted on this pin 23 is a push-piece or head 24 of a latch 25. A spiral-spring 26 encircles the pin 23 between the rear end of the head 24 and the adjacent side of the case 19 and tends to force said head with its latch 25 forward. The front end of the head 24 protrudes from the front face of the lock-case. The free end of the latch 25 is provided with a downwardly extending hook or projection 27 which is adapted to enter either of the notches 21 in the tongue 20. A flat spring 28 is interposed between the upper edge of the latch 25 and the top of the lock-case to press said latch downward. On the inside face of the front wall of the case 19 is a ledge or lug 29 which is adapted to receive the latch projection 27 and hold it up out of the path of the tongue 20. The tongue 20 is cut away along the front side near the top between the notches 21, as shown at 30, to enable said tongue to pass the lug 29. A key-hole 31 is made in the back side of the case 19 for the insertion of a key (not shown) for the purpose of unlocking the jaws, as will be presently explained.

The leader mechanism, when ready for use, is disposed very much as it appears in the first view, except that the latch 25 is in its forward position against the front wall of the lock-case with its locking projection 27 resting on top of the lug 29, and when the parts are thus arranged the operation is as follows: With the handle 7 and the grips 12 in one hand press said handle

and the slide 8 toward each other, against the resiliency of the springs 22, until the jaws 9 and 10 are spread apart or opened, substantially as shown in Fig. 4, slip them onto the wrist of the prisoner, release the sliding members to said spring, which latter immediately acts to close said jaw upon said wrist, and finally with the thumb or finger of the other hand press inward the head 24, against the resiliency of the spring 26, to force the latch 25 backward and thus disengage the projection 27 from the lug 29 when said projection rides on the upper edge of the tongue 20, under the downward pressure exerted by the spring 28 on said latch, and enters one of the notches 21, a sufficient amount of play between the lock-case and the tongue being produced during this time, as will be more fully explained hereinafter, to bring about such engagement except when the projection enters a notch immediately upon being forced off of said lug.

The several operations just described occur very quickly on account of the peculiar construction and arrangement of the parts, and the prisoner's wrist is securely and tightly held by the leader which is now locked and remains locked until the latch is raised out of engagement with the tongue by means of a key inserted in the key-hole 31. When unlocked the latch is pushed forward by the spring 26 and the projection 27 comes to rest on the lug 29, thus leaving the leader in readiness for subsequent use without further manipulation except that by which the spring 22 is compressed.

It should be stated, perhaps, in connection with the preceding paragraph, that there is sufficient power in the spring 28 to overcome the frictional resistance offered by the spring 26 to the downward movement of the latch 25 after being forced back to enable its projection 27 to clear the lug 29, so that said spring 25 instantly rocks said latch down into operative position.

It will be understood from the foregoing that there is no liability of the leader becoming locked by accident at a critical moment, as would be apt to be the case were no provision made for keeping the latch out of the way of the tongue except when released by the operator, an occurrence which would be fatal in many instances to the utility of the device. This is an important and valuable feature of my invention.

Should a prisoner become refractory while his wrist is in the grasp of the leader, the presser-piece 16 can be applied to the wrist with whatever force may be necessary by simply turning the handle 7 to the right which action causes the spindle 6 to move upward in the sleeve 14 which is now held stationary by the locked jaws and the engaging toothed members. The nature of the engaging screw-threads on the spindle 6 and in the sleeve 14 provides for all the travel necessary of the former in the latter within about one-fourth turn of the handle 7, so that any required thrust of the spindle and the presser-piece 16 is within the range of movement of the hand holding the leader without letting go thereof. Pressure on the wrist is released by simply turning the handle in the opposite direction to screw the upper threaded terminal of the handle into the sleeve.

After unlocking the leader it is opened in the same manner as before, that is, by forcing toward each other the parts separated by the spring 22, and removed from the wrist; then said spring is permitted to close the jaws again so that the leader can be conveniently carried in the pocket, but it is not locked. Thus it will be seen that the leader is normally compact and of suitable shape to be carried upon the person of the policeman or other officer.

The jaws are enabled to be spread wide apart at their upper ends with very little movement on the part of the sleeve owing to the shortness of the radii of the segment-gears, and to the same thing is due the rapidity with which said jaws are oscillated when the sleeve is reciprocated.

In locking the device the tongue penetrates the locking-case and receives in one of the notches 21 the projection 27, after the head 24 and latch 25 have been pushed back, but unless such projection drops directly into a notch, it falls on said tongue at the right of some one of the notches, according to the size of the prisoner's wrist and the consequent nearness of approach of the free ends of the jaws, when it becomes necessary in order to effect the complete locking of the device, in case the jaws are not spread sufficiently during the operation of placing the leader on the wrist to bring the adjacent notch at the left of the projection 27 beneath the latter, to complete the locking operation by pressing the members separated by the spring 22 again, slightly; immediately this is done said projection drops into place under the influence of the spring 28 into such formerly adjacent notch. Usually this last operation, however, is not called for, but the locking engagement between the tongue and latch is brought about through the unwitting efforts of the prisoner himself.

It is obvious that changes in shape, size and arrangement in some or all of the parts of this device may be made without violating the spirit of my invention, and I desire to include in and cover by my claims whatever structural departures from the leader herein shown and described that may be said to justly fall within the scope of said claims.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a leader, of a spindle having a handle at its outer end, a slide mounted on such spindle, a spring encircling said slide and arranged to thrust apart normally said handle and slide, a rack sleeve in the slide arranged on the spindle to reciprocate therewith, and jaws each having one end pivoted to the slide and provided with a segment-gear meshing with the associated rack on said sleeve.

2. The combination, in a leader, of a spindle having a handle at its outer terminal, a slide mounted on such spindle, a spring encircling said spindle and arranged to thrust apart normally said handle and slide, a rack sleeve in the slide arranged on the spindle to reciprocate therewith, jaws each having one end pivoted to the slide and provided with a segment-gear meshing with the associated rack on said sleeve, and means to positively lock the jaws when closed.

3. The combination, in a leader, with suitable jaw-supporting and -operating means, of jaws operatively connected with such means, one of such jaws having a lock-case at its free end and the other jaw having a tongue at its free end adapted to enter said lock-case, a laterally-slidable latch pivotally mounted in the lock-case and adapted to lock and release said tongue, and means of support for the latch whereby it may be retained out of the path of the tongue.

4. The combination, in a leader, with suitable jaw-supporting and -operating means, of jaws operatively connected with such means, one of such jaws having a lock-case

at its free end and the other jaw having a tongue at its free end adapted to enter said lock-case, a spring-pressed latch pivotally mounted in the lock-case and arranged to slide laterally therein, said latch being adapted to lock and release said tongue, and means of support for the latch whereby it may be held out of the path of the tongue.

5. The combination, in a leader, with suitable jaw-supporting and -operating means, of jaws operatively connected with such means, one of such jaws having a lock-case at its free end and the other jaw having a tongue at its free end adapted to enter said lock-case, a spring-pressed latch pivotally mounted in the lock-case and arranged to slide laterally therein, said latch being adapted to lock and release said tongue, and a lug within the lock-case to receive and support the latch out of the path of the tongue when the latch is actuated out of said path and moves on its axis longitudinally thereof into position for engagement with the supporting edge of said lug.

6. The combination, in a leader, with suitable jaw-supporting and -operating means, of jaws operatively connected with such means, one of such jaws having a lock-case at its free end and the other jaw having a tongue at its free end adapted to enter said lock-case, a pin transversely located in the lock-case, a lug at one side of the lock-case, a latch provided with a head which is revolubly and slidingly mounted on said pin and protruded through one side of the lock-case, such latch being adapted to lock and release such tongue, a spring arranged to tension said latch into engagement with said tongue, and a second spring arranged to tension the latch toward the side of the lock-case where said lug is located, the lug being adapted to receive and support the latch out of the path of the tongue when the latch is actuated against the resiliency of said first-mentioned spring and released to the action of said second spring.

7. The combination, in a leader, with a mutually reciprocating spindle and slide, the latter being mounted on the former, and a handle on said spindle, of jaws each having one end pivoted to the slide, a non-rotary reciprocating sleeve in the slide in threaded engagement with the spindle, oscillating means for said jaws between the slide and the adjacent terminals of the jaws, and locking means for the free ends of the jaws, such arrangement providing for a reciprocating movement on the part of the spindle independent of the slide when the jaws are locked and the spindle is rotated.

8. The combination, in a leader, with a mutually reciprocating spindle and slide, the latter being mounted on the former, a handle on such spindle, and a spring between such handle and such slide, of jaws each having one end pivoted to said slide and provided with a segment-gear, a non-rotary reciprocating rack sleeve in the slide in threaded engagement with said spindle and meshing with such segment-gears, and locking means for the free ends of said jaws, such arrangement providing for a reciprocating movement on the part of the spindle independent of the slide when the jaws are locked and the spindle is rotated.

JAMES MALCOLM.

Witnesses:
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