# PATENT SPECIFICATION

629,119

Application Date : March 7, 1947. No. 6418/47

Complete Specification Accepted: Sept. 13, 1949.

Index at Acceptance:—Class 44, A(2b1b:4a2).

## COMPLETE SPECIFICATION

## Improvements in or connected with Locking Devices

We, TRIX LIMITED, of 91, Regent Street, London, W.1, a British Company, H. J. THORMANN ENGINEERING COMPANY, LIMITED, of 5, Elstree Way, Boreham Wood, Hertfordshire, a British Company, FRANCIS JOHN PRIOR, of 38, Burwood Road, North-

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By a direction given under Section 17(1) of the Patents Act 1949 this application proceeded in the name of, Trix Limited, a British Company of 91, Regent Street, London, W.1, and H. J. Thormann Engineering Co. Limited, a British Company of 5, Elstree Way, Balham Wood, Hertfordshire.

THE PATENT OFFICE,
*11th March, 1950.*

DS 28610/1(31)/3538 150 3/50 R

gates, and other purposes, and has for its object to construct such type of fastening device in an improved manner.

It has been proposed in a cycle lock in which the lock is a permutation lock to connect the two members of the lock together by a length of chain. In this case one member carries a sleeve having a slot at its lower side and several lettered rings rotatable around the sleeve, each ring being indented in its inside edge. The other member carried a stem with teeth adapted to be slid into the sleeve of the first member when the indentions of the rings are in line with the slot and for the rings to be turned to engage the teeth and lock the members together.

According to this invention, the fastening device comprises a code or letter lock of two members, one member carrying the locking or letter rings and secured directly to one end of a length of chain, cable or connector, and the other member carrying the locking bar for engaging in the first member and secured to the other end of the length of chain, cable or connector, wherein the locking or letter rings are so constructed and means provided that the aligning of the letters on turning the rings is indicated by the sense of touch.

The invention will be clearly understood from the following description aided by the accompanying drawings, in which:—

Figure 1 is a view of a lock with the chain broken away. Figure 2 is another view with part in section on the line II—II of Figure 1. Figure 3 is a section on the line III—III of Figure 1, and Figure 4 is a perspective view of the various parts of the lock in

main longitudinal slot 5 having an enlarged base 6 and two spring receiving longitudinal slots 7 positioned one on each side of the base 6 of the slot 7.

The other member of the lock comprises a head 8 formed with a slot 9 in which the other end of the chain 1 is secured by a rivet 9*a* and a projecting lock bar 10 shaped to slide in the main slot 5 of the other member. The lock bar 10 is formed with teeth 11 which project outside the slot when the bar 10 is inserted in the slot 5.

On the stem 4 are rotatably mounted locking or letter rings 12, each ring 12 being formed with a knurled head 13 on one outside edge. Each ring 12 is formed at one end with a wall in which is formed a hole 14 of a diameter to have a rotatable fit on the stem 4, a slot 15 leading from the hole 14 being formed at one point in the wall. Each ring 12 has an enlarged bore 16 in which is formed a number of half circular recesses 17, in the example six are shown, and on the outside of each ring 12 is formed a letter 18, i.e. one for each recess 17. One of the recesses 17 in each ring 12 coincides with the slot 15.

Vee-shaped springs 19 having inturned flanges 20 and washers 21 having a bore to fit on the stem 4 are employed, the bore of each washer 21 having a slot 22 and inwardly directed lugs 23.

[*Price*

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## Improvements in or connected with Locking Devices

We, TRIX LIMITED, of 91, Regent Street, London, W.1, a British Company, H. J. THORMANN ENGINEERING COMPANY, LIMITED, of 5, Elstree Way, Boreham Wood, Hertfordshire, a British Company, FRANCIS JOHN PRIOR, of 38, Burwood Road, Northampton, a British Subject, and CHARLES BRINKWORTH, of 5 Elstree Way, Boreham Wood, Hertfordshire, a British Subject, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to locking devices of the type in which the ends of a length of chain or cable are secured together by a permutation lock for use in locking cycles, gates, and other purposes, and has for its object to construct such type of fastening device in an improved manner.

It has been proposed in a cycle lock in which the lock is a permutation lock to connect the two members of the lock together by a length of chain. In this case one member carries a sleeve having a slot at its lower side and several lettered rings rotatable around the sleeve, each ring being indented in its inside edge. The other member carried a stem with teeth adapted to be slid into the sleeve of the first member when the indentions of the rings are in line with the slot and for the rings to be turned to engage the teeth and lock the members together.

According to this invention, the fastening device comprises a code or letter lock of two members, one member carrying the locking or letter rings and secured directly to one end of a length of chain, cable or connector, and the other member carrying the locking bar for engaging in the first member and secured to the other end of the length of chain, cable or connector, wherein the locking or letter rings are so constructed and means provided that the aligning of the letters on turning the rings is indicated by the sense of touch.

The invention will be clearly understood from the following description aided by the accompanying drawings, in which:—

Figure 1 is a view of a lock with the chain broken away. Figure 2 is another view with part in section on the line II—II of Figure 1. Figure 3 is a section on the line III—III of Figure 1, and Figure 4 is a perspective view of the various parts of the lock in separated condition.

In the example shown on the accompanying drawings, the fastening device comprises a chain 1 to one end of which is connected one member of a code or letter lock and to the other end of the chain 1 the other member of the lock.

The code lock comprises a body 2 formed with a slot 3 in which one end of the chain 1 is secured by a rivet 3*a* said body having stem 4 of less diameter than the diameter of the body 2. In the stem 4 are formed a main longitudinal slot 5 having an enlarged base 6 and two spring receiving longitudinal slots 7 positioned one on each side of the base 6 of the slot 7.

The other member of the lock comprises a head 8 formed with a slot 9 in which the other end of the chain 1 is secured by a rivet 9*a* and a projecting lock bar 10 shaped to slide in the main slot 5 of the other member. The lock bar 10 is formed with teeth 11 which project outside the slot when the bar 10 is inserted in the slot 5.

On the stem 4 are rotatably mounted locking or letter rings 12, each ring 12 being formed with a knurled head 13 on one outside edge. Each ring 12 is formed at one end with a wall in which is formed a hole 14 of a diameter to have a rotatable fit on the stem 4, a slot 15 leading from the hole 14 being formed at one point in the wall. Each ring 12 has an enlarged bore 16 in which is formed a number of half circular recesses 17, in the example six are shown, and on the outside of each ring 12 is formed a letter 18, i.e. one for each recess 17. One of the recesses 17 in each ring 12 coincides with the slot 15.

Vee-shaped springs 19 having inturned flanges 20 and washers 21 having a bore to fit on the stem 4 are employed, the bore of each washer 21 having a slot 22 and inwardly directed lugs 23.

[*Price*

The springs 19 are positioned on the stem 4 with the flanges 20 engaging in the slots 7 and a ring 12 positioned over each spring 19 so that the bow of the spring engages with the bore 16 of their respective rings 12, a washer 21 being interposed between each ring 12 with the lugs 23 engaging in the slots 7 to prevent the washers 21 rotating on the stem 4. The assembled rings 12, springs 20 and washers 21 being retained on the stem 4 by burring over the end of the stem 4, as at 24, or otherwise.

An arrow 25 or indicator mark is made on the body 2 in line with the main slot 5 in the stem 4.

The letters 18 on the rings 12 coincide with the slots 15 are arranged as a code word, in the example the word is "LESS," so that when the rings 12 are turned for the word "LESS" to be in line with the arrow 25 the slots 15 in the rings 12 coincide with the slots 22 in the washers 21 and the main slot 5 in the stem 4 so that the locking bar 10 can be inserted in the main slot 5 in the stem 4 and on turning the rings 12 the walls will engage in the slots between the teeth 11 in the locking bar 10 and hold the two members with the ends of the chain 1 in locked position and can only be again released by aligning the rings 12 so that the word "LESS" coincides with the arrow 25.

The springs 19 and recesses 17 are so arranged that the bows of the springs 19 engage in a recess 17 in each ring 12 when the letters are in alignment with the arrow 25 so that when the letters are positioned for removal of the locking bar 10 the rings 12 remain in this position ready for re-inserting the locking bar 10 when desired which is very convenient for a user especially in the dark, further as the rings are turned it is possible to ascertain by the sense of touch when the letters are in alignment thereby assisting in lining the letters in regard to the arrow 25.

It will be understood that any suitable number of rings 12 can be employed, and other symbols than letters can be used.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. Fastening devices of the type set forth comprising a code or letter lock of two members, one member carrying the locking or letter rings and secured directly to one end of a length of chain, cable, or connector, and the other member carrying the locking bar for engaging the first member and secured directly to the other end of the chain, cable or connector, wherein the locking or letter rings are so constructed and means provided whereby the aligning of the letters on turning the rings is indicated by the sense of touch.

2. Fastening devices comprising a code or letter lock of two members, one member consisting of a body attached to one end of a length of chain, said body being provided with a slotted stem, lettered locking rings rotatably mounted on said stem and formed internally with a slot coinciding with one of the letters and recesses coinciding with each of the letters, spring detents co-acting with the recesses carried by the stem and located in the rings, non-rotatable washers positioned between the rings and each formed with a slot coinciding with the slot in the stem, the other member consisting of a head connected to the other end of the length of chain and carrying a notched locking bar adapted to be passed into the slots in the rings, washers and stem of the other member, whereby when the rings are arranged in code letter position the locking bar can be inserted or removed and on turning the rings the locking bar is locked in the first member, substantially as set forth.

3. Fastening devices constructed substantially as described with reference to the accompanying drawings.

Dated this 7th day of March, 1947.

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Agents for the Applicants.

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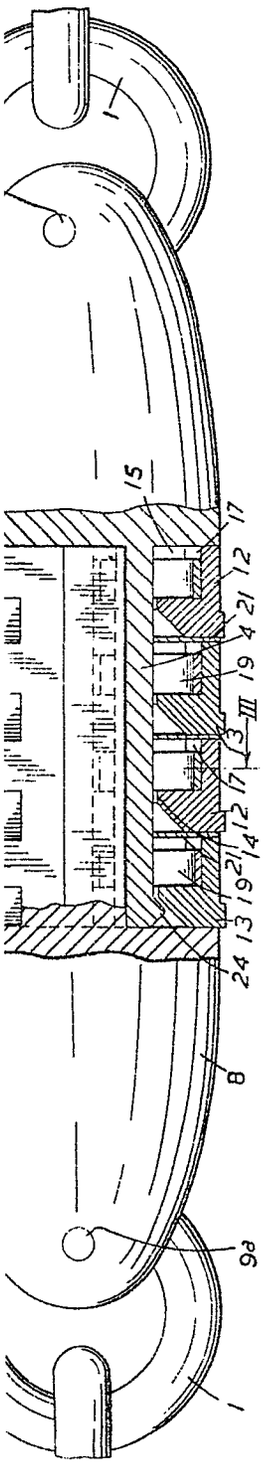

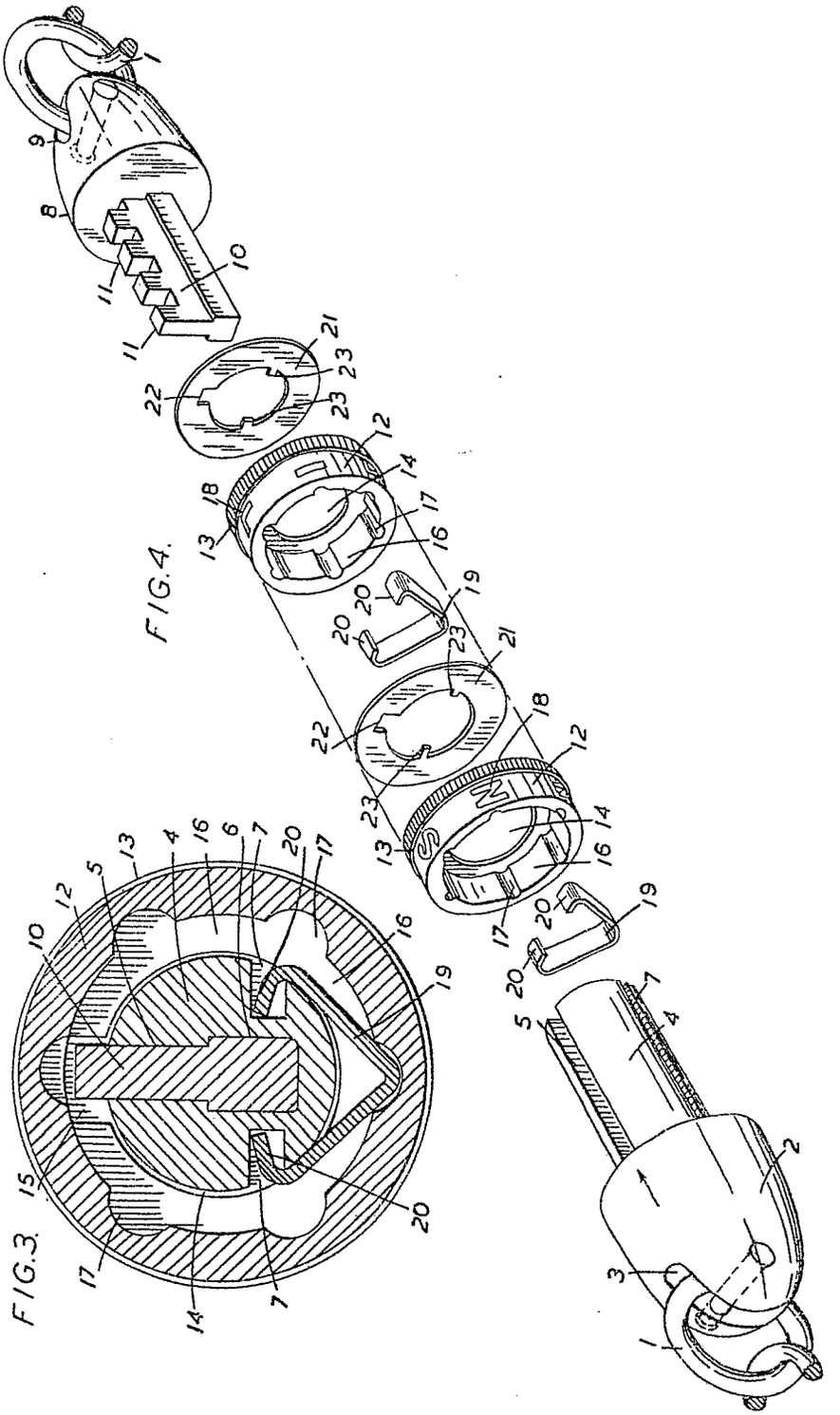

FIG.4.



FIG.3.

*[This Drawing is a reproduction of the Original on a reduced scale.]*

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SHEET 1

FIG. 1.

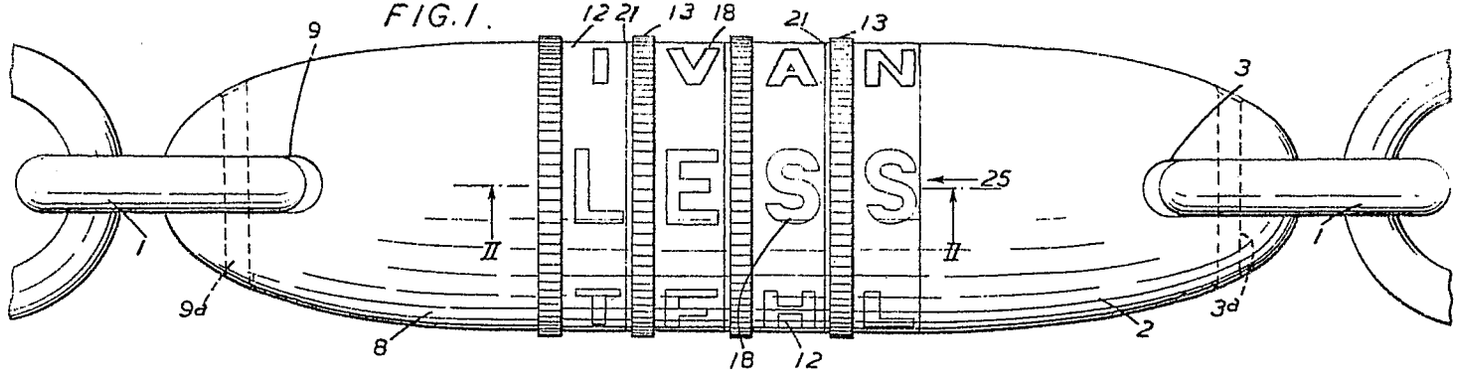


FIG. 2.

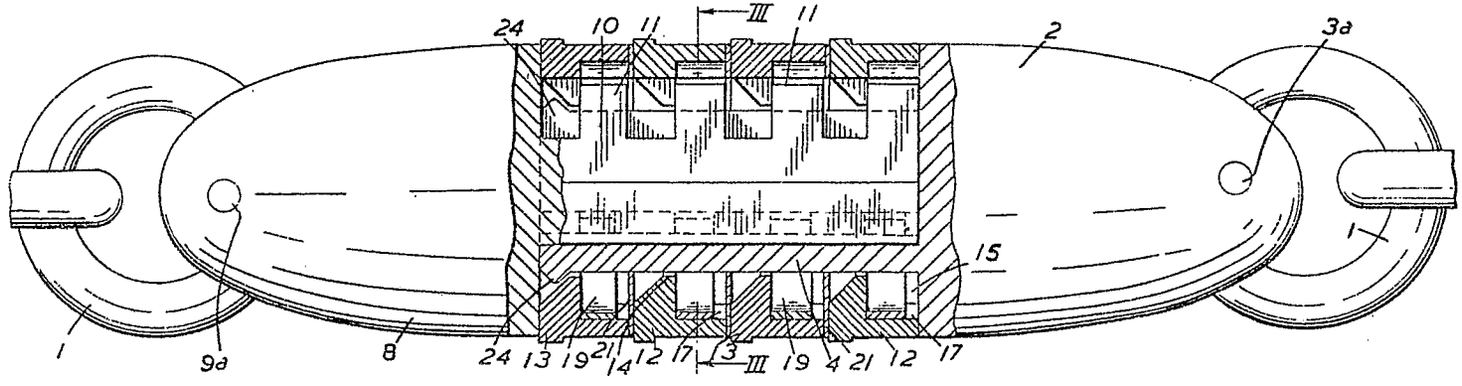


FIG. 3.


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SHEET 1




FIG. 1.



FIG. 2.

2 SHEETS

SHEET 2



FIG. 3.



FIG. 4.

H.M.S.O.(Ty.P)

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