

H. F. RICHTER.  
 VARIABLE CHAIN LOCK.  
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1,069,646.

Patented Aug. 5, 1913.

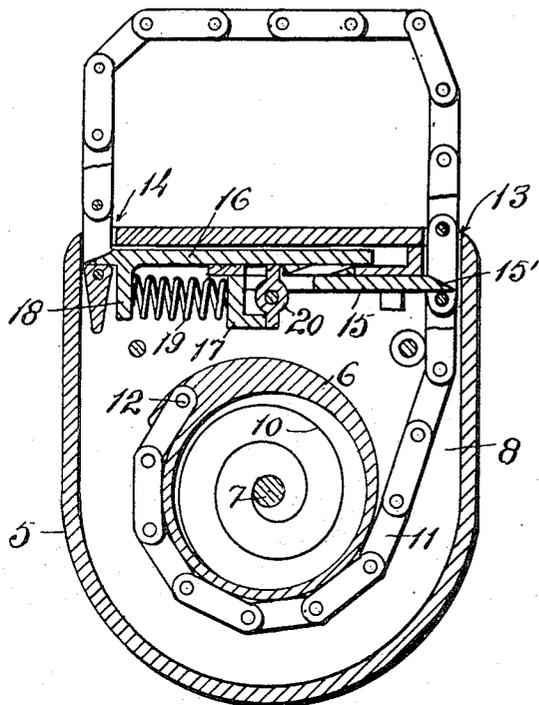


Fig. 1.

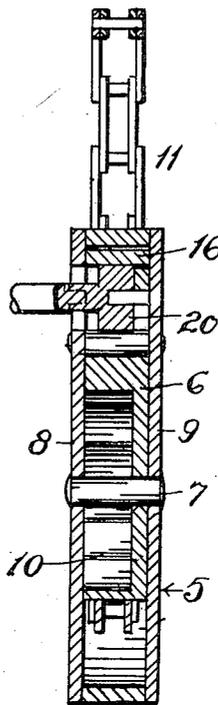


Fig. 2.

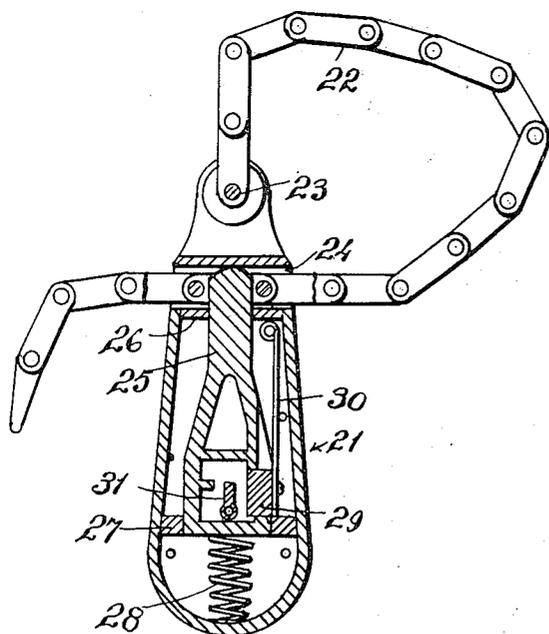


Fig. 3.

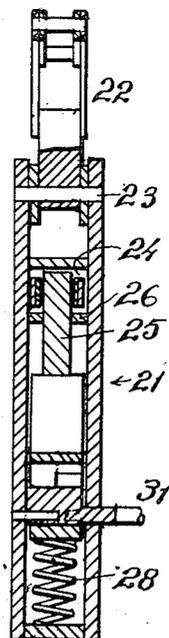


Fig. 4.

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# UNITED STATES PATENT OFFICE.

HERMAN F. RICHTER, OF PASADENA, CALIFORNIA.

## VARIABLE CHAIN LOCK.

1,069,646.

Specification of Letters Patent.

Patented Aug. 5, 1913.

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To all whom it may concern:

Be it known that I, HERMAN F. RICHTER, a citizen of the United States, and resident of Pasadena, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Variable Chain Locks, of which the following is a specification.

My invention pertains to locks, and it has special reference to a lock for bicycles, or other uses, wherein the shackle, instead of being rigid, is in the form of a chain, whereby the chain may be wrapped around the object or objects to be held together and locked in position, all of which will now be set forth in detail.

In the accompanying drawing, Figure 1 is a central, vertical section of my improved type of chain lock. Fig. 2 is a vertical cross section of the lock. Fig. 3 is a central, vertical section of a modified type of the lock, and Fig. 4 is a vertical cross section of the modified structure.

In carrying out my invention, I prepare a case or shell, 5, of any desired size or shape, within which is mounted a drum, 6, on a shaft, 7, which is fixed to the side walls, 8, 9, of the case. The preferred form shown in Fig. 1, which has two free ends, provides a means whereby no portion of the chain is exposed, except that part which surrounds the article clasped, since both ends are within the casing. As the chain is of the type which has openings between the link bars, the ends of the bolts may freely enter the spaces between the bars, and thus serve the purpose of locking the chain at any point. Within this drum is a coiled spring, 10, one end of which is secured to the shaft, 7, and the other end to the drum. The exterior of the drum has attached thereto the end of a sprocket chain, 11, as at 12, and the object of the spring, 10, is to normally wind up the sprocket chain on the drum. One end of the chain, 11, passes through an opening, 13, formed in the upper end of the case, 5, and the other side or edge of the case has a similar opening, 14, which is also designed to receive the other end of chain, 11. Within the case, and intermediate these two openings, 13, 14, I mount the locking mechanism, which in this instance comprises two bolts, 15, 16, the bolt, 15, of which has a beveled end 15', and is adapted to engage with the links of the sprocket chain, 11, where it passes out of the opening, 13, and the beveled end of

the other bolt, 16, has its end adapted to engage the links of the chain at the other side of the case where it enters the opening, 14. The bolt, 15, has a head, 17, at its inner end, and the bolt, 16, has a right angled finger, 18, at or near its angled end, and a spiral spring, 19, is mounted within the shell between the head, 17, and finger, 18, so as to normally move the bolts outwardly to engage with the links of the chain. An operating piece, 20, with its ends in engagement with the two bolts, and designed to be turned by a key, serves as a means for moving the two bolts inwardly against the outwardly acting motion of the spring, thereby unlocking the chain.

It will be seen that the bevels of the bolt ends are such that the chain may be moved inwardly without use of the key, but it is necessary to use the key to draw out the chain.

In Figs. 3 and 4 I show a modified form of constructing the lock, so as to utilize a chain as a shackle. In this case the containing shell, 21, has one end of a sprocket chain, 22, attached thereto at the apex of the shell, as shown at 23. The upper end of the case has an aperture, 24, of such size that the chain will readily pass through, and within the lower part of the shell is the locking mechanism. This comprises a vertically movable bolt, 25, the upper end of which passes through an opening in the upper wall, 26, of the shell, and its lower end slides in suitable guides, 27, attached to the shell. A spiral spring, 28, mounted between the end of this bolt and the wall of the shell serves to normally keep the bolt to its highest limit and in engagement with the chain, 22, which passes through the opening, 24. At one side of the bolt is a recess to receive therein a block, 29, this block being secured to the lower end of a flat spring, 30. This block is in such a position that when it is normally held within the recess of the bolt, the latter is prevented from moving downwardly, but when a key, 31, is applied and turned so that the block is forced outwardly and thus disengaged from the recess of the bolt, the bolt can be moved downwardly by the key; and when the key is withdrawn from the shell, the spring, 28, will at once cause the bolt to move upwardly and thus lock the chain.

It will thus be seen that in both structures the chain becomes the shackle, with the ad-

vantage that it may be adjusted as to length, and it is also susceptible of being applied to different shaped objects or articles, irrespective of size.

5 I do not desire to claim the locking portion of the device, except in so far as the lock is applicable to a chain shackle, and its adaptability to be connected up and used  
10 anism.

What I claim as new, is:

1. In a lock, a case, locking mechanism therein, a chain shackle, one end of which is secured within the case in such a manner  
15 that the body of the chain may be drawn outwardly, the body of the case having an opening to receive the projecting end of the chain, and means for locking and unlocking the chain at two points within the case.

2. In a lock, a case, a revoluble drum 20 therein, a spring within the drum to normally rotate the drum in one direction, a sprocket chain, with one end secured to the drum, the case having an opening through which the end of the sprocket chain emerges, 25 and an opening to receive the projecting end of the chain, and means within the case for simultaneously locking the chain at the points where the chain emerges from and enters the case. 30

Signed at the city of Los Angeles, county of Los Angeles, State of California, this 20th day of September, 1912, in the presence of witnesses.

HERMAN F. RICHTER.

Witnesses:

J. S. ZERBE,  
M. RUDHOLM.