No. 614,312. Patented Nov. 15, 1898.

H. G. VOIGHT.

PADLOCK.

(Application filed Feb. 24, 1898.)

(No Model.)

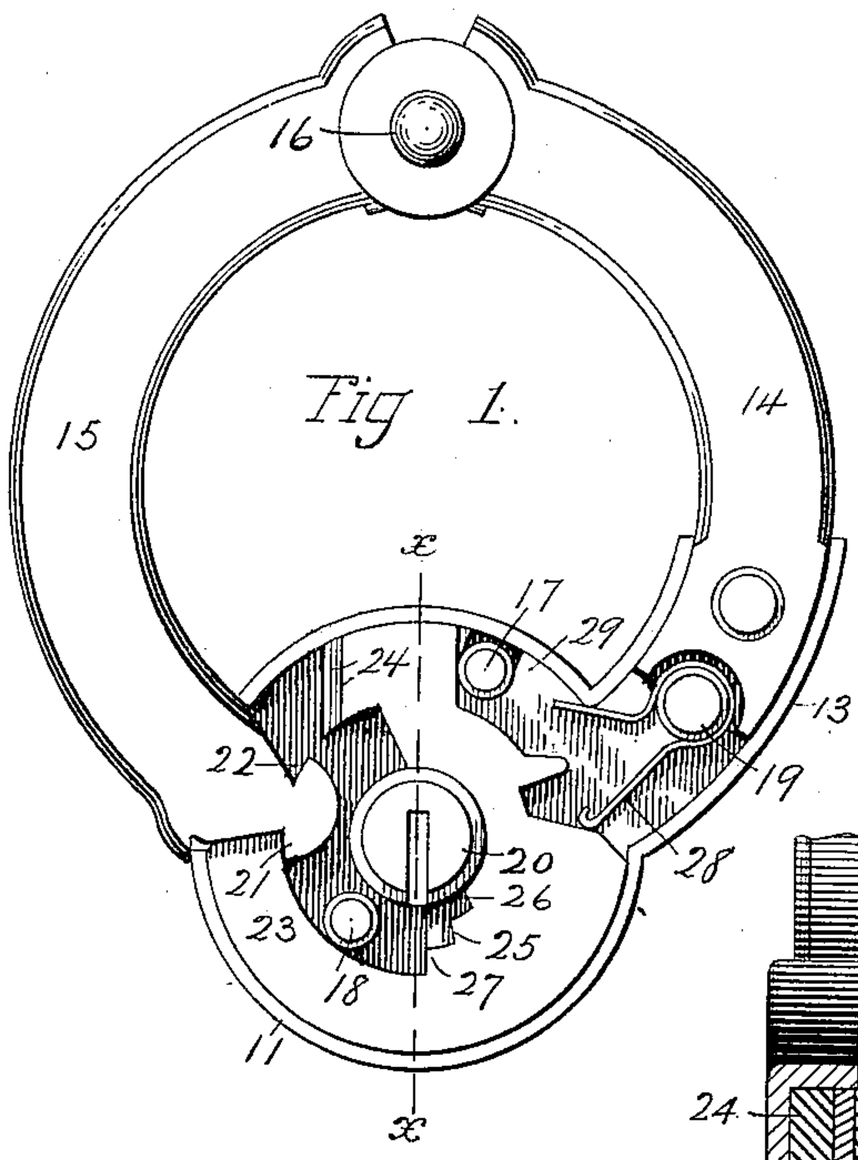


Fig. 1.

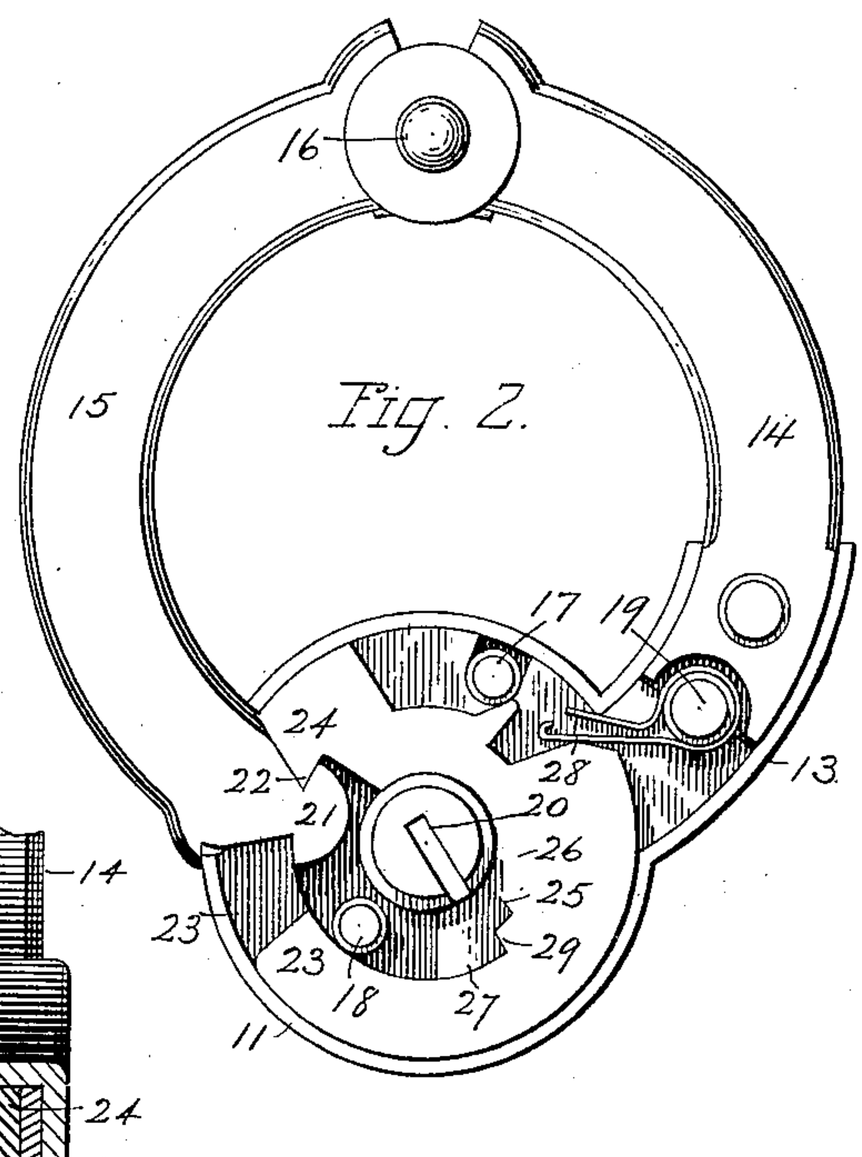


Fig. 2.

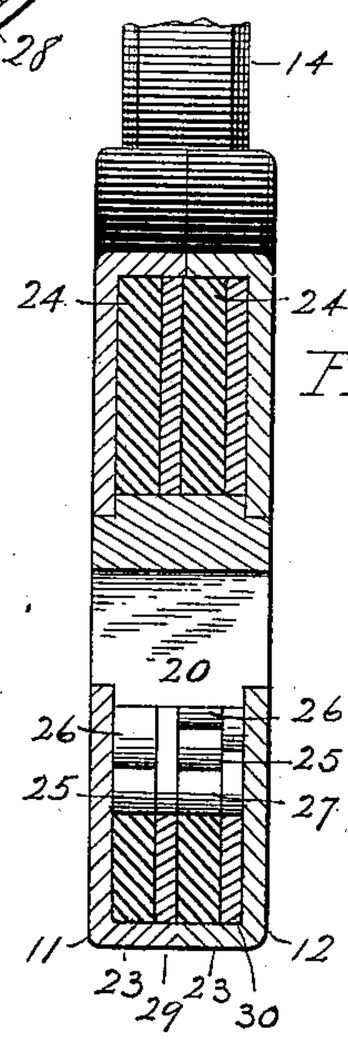


Fig. 3.

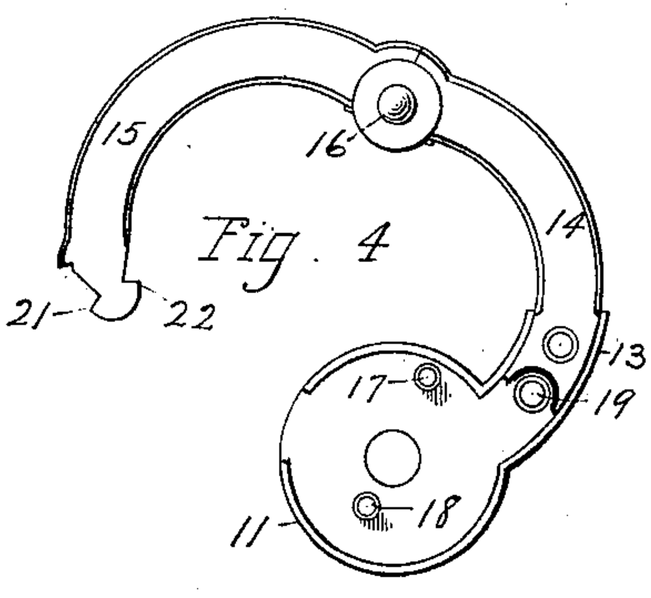
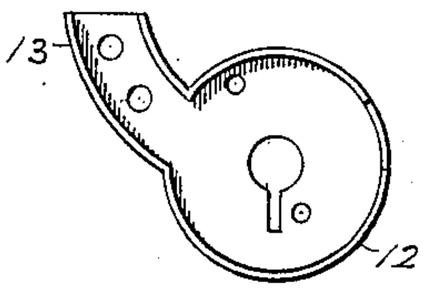


Fig. 4.

Fig. 5.



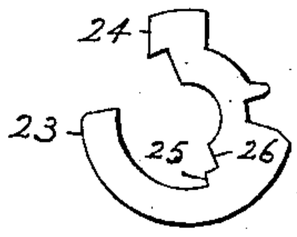


Fig. 6.

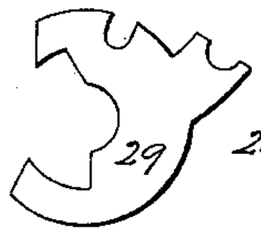


Fig. 7.

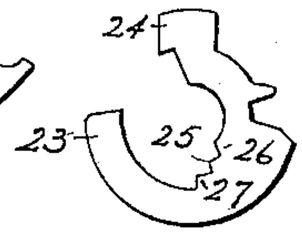


Fig. 8.

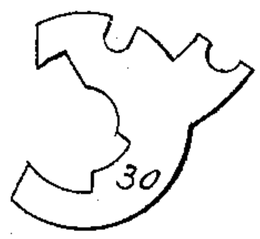
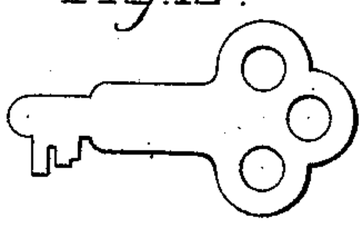


Fig. 9.

Fig. 10.



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UNITED STATES PATENT OFFICE.

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PADLOCK.

SPECIFICATION forming part of Letters Patent No. 614,312, dated November 15, 1898.

Application filed February 24, 1898. Serial No. 671,435. (No model.)

To all whom it may concern:

Be it known that I, HENRY G. VOIGHT, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Bicycle-Sprocket Padlocks, of which the following is a specification.

My invention relates to improvements in bicycle-sprocket padlocks; and the objects of my improvement are simplicity and economy in construction and efficiency in use, especially with reference to security in a padlock of simple construction.

In the accompanying drawings, Figure 1 is a front elevation of my padlock with half of the case and one ward-plate removed. Fig. 2 is a like view of the same with the tumblers in such a position as they would have if one should attempt to use a false key. Fig. 3 is an enlarged sectional view of the principal parts on the line *x x* of Fig. 1. Fig. 4 is a front view, on a smaller scale than Fig. 1, of a part of the case and shackle. Fig. 5 is an inside view of the opposite half of the case. Fig. 6 is a detached view of the first tumbler; Fig. 7, a detached view of the adjacent ward-plate; Fig. 8, a detached view of the second tumbler; Fig. 9, of the second ward-plate, and Fig. 10 of the key.

The main portion of the case is formed in two like parts 11 and 12, the flanged body portion of which is of a circular form and is provided with a hollow extension 13, both side flanges of which extension extend from the side flange of the body portion for receiving and holding the shackle-bracket 14. These two parts of the case are or may be struck up from sheet metal. The circular body is of very small diameter for a padlock-case, and the inner walls of its circular sides are made to serve as the bearings in which the circular tumblers revolve and by which they are centered. The shackle-bracket may be riveted or otherwise fastened within the extension 13 of the case, which extension when the two parts of the case are together embraces the said bracket on all four sides thereof. At the outer end of the bracket 14 I pivot the shackle 15, as at 16, and I provide the shackle-joint with a spring which tends to hold the shackle in its open position, as shown in Fig. 4. There being nothing peculiar to my invention in a spring-actuated shackle, I consider it unnecessary to illustrate or further describe the said spring. The two parts 11 and 12 of the case are partly held together by the studs or posts 17 and 18. The post 19 may also serve to assist in securing said parts together. The central portion of the case is provided with the usual key-hub 20 for a flat key. The tumblers in the main are of disk form with portions cut away, the central portion being cut away sufficiently to allow the tumblers to pass over the hub 20 and also to receive a key for acting upon edge faces of the tumblers. The nose of the shackle is doubly beveled and provided with locking-shoulders upon opposite sides, the shoulder 21 being for locking the shackle normally, while the shoulder 22 is for locking the shackle in case a false key is attempted to be used. The outer rim of the tumblers, as at 23, engages the shoulder 21 of the shackle to lock it within the case, as shown in Fig. 1, while the confronting end portion 24 of the rim is for engaging the opposing shoulder 22 of the shackle when a false key is used, as shown in Fig. 2. The first tumbler (shown separately in Fig. 6) is provided with a radial edge face 25, which is designed to be acted upon by the flat side of the key-bit as centered in the key-hub 20, and adjacent to said edge face the metal is cut away to form a second or false radial face 26, which would be acted upon by a key whose bit was so short as not to reach the face 25. The second tumbler (shown separately in Fig. 8) is provided with a similarly-located edge radial face 25 for being acted upon by the flat side of the key, and upon the outer and inner side of said edge face 25 there are false radial faces, the inner radial face 26 being substantially the same as in the first tumbler, while the outer radial face 27 stands upon the opposite side of the face 25. It will thus be seen that the key-bit at the portion which acts upon the second tumbler must be shorter than that which acts upon the first tumbler. The tumblers are held in their normal posi-

tion by springs 28, which springs extend around the post 19, with one end bearing on the inner wall of the case and the other end bearing upon a shoulder of the tumbler. The tumblers are limited in their movement as actuated by said spring by coming in contact with the post 17, the tumblers being cut away sufficiently to give them the proper rotary movement without otherwise interfering with said post. A ward-plate 29 is placed between the first and second tumblers, and a second ward-plate 30 is placed over the first tumbler, said plates being held in place by the case and the key of course being bitted to permit it to pass said ward-plates. A portion of each tumbler-spring and a portion of each ward-plate extend into the hollow extension 13 of the case.

The tumbler-springs normally hold the tumblers in the position for locking. Upon forcing the shackle into place the beveled nose strikes the end 23 of the tumbler-rims and forces the tumblers back with a rotary motion to permit the nose of the shackle to pass the tumblers, after which the tumblers return to their normal position and engage the shoulder 21, as shown in Fig. 1. In unlocking the shackle with the proper key the flat sides of the key strike the radial edge faces 25 of both tumblers and carry them together into the position to release the shackle. In striking the face 25 of the second tumbler the key-bit must be short enough to pass the false face 27 without acting on the tumblers. The space between the opposing ends of the tumbler-rim, as at 23 and 24, is but a little wider than is barely necessary to permit the nose of the shackle to pass between them. In case a false key should be employed in an attempt to open the lock and was long enough to engage the false face 27 of the first tumbler then said first tumbler would be thrown far enough to lock the shackle on the back shoulder 22 before the other tumbler would be released from the shoulder 21, as illustrated in Fig. 2. If a key should be inserted which properly engages one only of the edge faces 25 of either tumbler and either false face of the other tumbler, the result would be the same. Various changes may be made in the radial edge faces of the tumblers for different keys, and the number of tumblers may be increased as desired.

It is apparent that some changes from the specific construction herein disclosed may be made, and therefore I do not wish to be understood as limiting myself to the precise form of construction shown and described, but desire the liberty to make such changes in working my invention as may fairly come within the spirit and scope of the same.

I claim as my invention—

1. A fixed inner circular bearing for the rotary tumblers, in combination with the circular tumblers having the rim portion with opposing ends 23 and 24, and inside of the said rim a central opening for a key-hub and key with the true and false edge bearing radial faces formed on the walls of the said tumbler-opening, substantially as described.

2. The combination of the flanged circular case-body with the hollow extension 13 correspondingly flanged on two side edges and the shackle-bracket secured within the said extension and embraced thereby on its four sides, substantially as described.

3. The combination of the case having the circular body and hollow extension, the tumblers, ward-plates, and tumbler-springs, said springs and ward-plates being partly extended into said hollow extension of the case, substantially as described.

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Witnesses:
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