

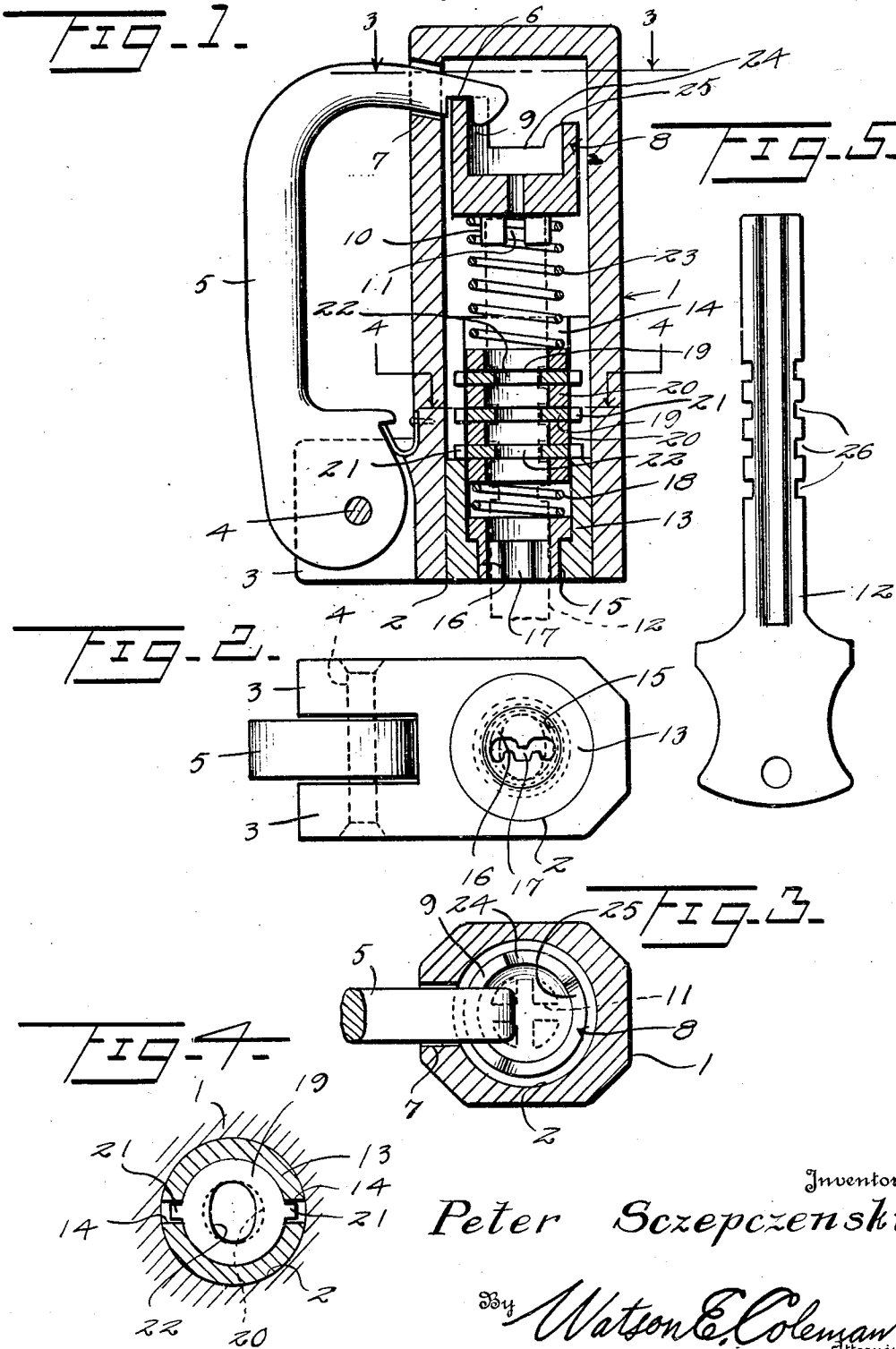
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P. SCZEPCZENSKI

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PADLOCK

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PADLOCK

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This invention relates to the class of locks and pertains particularly to improvements in padlocks.

The primary object of the present invention is to generally improve upon the type of padlocks employing a pivoted shackle member and more particularly to improve upon the structure forming the subject matter of my Patent No. 1,661,777, dated March 6, 1928.

In my former patent a longitudinally fluted key is employed for actuating the shackle secured tumbler of the lock and one of the improved features of the present structure is to provide a key operated lock wherein a plurality of guide plates are employed through which the lock operating key must pass, which plates engage in slots formed transversely of the edge of the key when the same is rotated. By this means the employment of an ordinary straight fluted member for picking the lock is prevented, as it is necessary that the combination of apertured guide plates be properly represented in transverse slots upon the key before the key can be actuated for the rotation of the lock tumbler.

Other objects and advantages of the present invention will become apparent as a description of the same proceeds and the invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming a part of the present invention with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:—

Figure 1 is a longitudinal sectional view through the padlock embodying the present invention.

Figure 2 is a view in bottom plan of the same.

Figure 3 is a sectional view taken substantially upon the line 3—3 of Figure 1.

Figure 4 is a sectional view taken substantially upon the line 4—4 of Figure 1.

Figure 5 is an elevational view of a key designed for use in the lock.

Referring to the drawing in detail wherein like numerals of reference indicate corresponding parts throughout the several views, the numeral 1 indicates the shell of the lock body, the same being cast in a single piece, as shown, and being preferably of elongated tubular formation having an open end 2 through which the working parts of the lock may be inserted into the interior thereof.

At the bottom or open end of the shell there is formed a pair of lateral ears 3 between which is pivotally mounted upon a suitable pin 4 one end of a shackle 5, the other or free end of which is turned inwardly at substantially right angles and transversely slotted upon its underside, as indicated at 6, to extend through the upper end of the shell at the point 7, to bring the slotted portion into position in the interior thereof.

Within the shell at the upper end is a rotatable tumbler 8 the inner end of which is formed to provide an arcuate finger 9 adapted, when the tumbler is rotated to slip into the slot 6 of the shackle. The underside of the tumbler 8 is provided with a central raised portion 10 which has formed transversely thereof the crossed key slots 11 into which the forward end of an operating key 12 is adapted to position when inserted into the lock, as hereinafter described.

Inserted into the shell 1 is a fixed key guide plate carrying cylinder 13, this cylinder being relatively long and having formed in the wall thereof, from the inner end through a substantial portion of its length, the diametrically opposite longitudinally extending slots 14. The outer end of the cylinder is open but is reduced slightly, as indicated at 15, and rotatably arranged in this outer end is a key receiving collar 16, a portion of which is reduced, as shown, to snugly fit into the reduced portion 15 of the cylinder, the larger inner end portion bearing against the shoulder formed in the cylinder at the inner end of the reduced portion thereof by which means this collar is held in place. The collar is

provided with the transverse slot 17 which is formed to snugly receive the longitudinally fluted portion of the key 12.

Within the cylinder 13 and bearing against the inner end of the collar 16 is a coil spring 18 and arranged in alternate layers upon the spring 18 are key guide plates 19 and spacing rings 20. Each of the plates 19 has, at diametrically opposite points on the peripheral edge, ears 21, which position in the slots 14 by which means they are prevented from rotating in the cylinder and each of the plates further has an oval aperture 22 formed therethrough through which the fluted end of the key 12 passes.

Maintaining the tumbler 8 in spaced relation to the inner end of the cylinder 13 is a relatively heavy coiled spring 23, this spring normally urging the tumbler forwardly in the lock shell.

The forward end of the tumbler 8, in addition to having the arcuate shackle slot engaging finger 9, has an open side 24 upon one side of which the finger 9 is placed while upon the opposite side an arcuate wall 25 is formed which extends a slight distance above the end of the tumbler but which is lower than the finger 9. With this structure, when the shackle is open and the tumbler forced forwardly against the closed end of the shell by the spring 23, upon insertion of the key into the collar 16 and through the aperture guide plates 19 until the forward end of the key positions in one of the transverse slots and upon the underside of the tumbler, the tumbler may be rotated until the open side 24 is brought into alignment with the aperture 7 after which the slotted end of the shackle may be extended into the shell. A further rotation of the tumbler in the proper direction will cause the lower wall 25 to ride under the shackle in the slot 6 forcing the tumbler down against the spring 23 and bringing the higher part of the wall of the finger portion 9 into the slot which action, as will be readily seen, will force the tumbler further down against the tension of the spring 23. In this manner the shackle is engaged by the tumbler and the tumbler is held in tight frictional engagement therewith by the spring therebeneath.

To insure the use of the proper key in the operation of this padlock the fluted tongue portion thereof is provided at its edges with a series of transverse slots 26, the distance between the slots transversely of the key being equal to the length of the short axis of the oval apertures 22 in the plates 19.

The long axis of these apertures is equal to the overall width of the fluted portion of the key. From this it will be readily apparent that unless a key of the proper width and having the slots 26 properly spaced both longitudinally and transversely of the fluted portion thereof, is selected it cannot be in-

serted into the shell and consequently the tumbler 8 cannot be engaged and rotated.

Having thus described my invention, what I claim is:—

1. In a padlock, a shell, a shackle pivotally attached to the shell and having a slotted inturned end adapted to extend through the wall thereof, a rotatable body within the shell having a portion adapted to engage in said slot, means for resiliently forcing the body longitudinally of the shell against the inserted end of the shackle into the slot therein, and a key receiving structure adjacent the shackle engaging body and formed to engage in certain recesses of a key when the same is turned therein, said shackle engaging body being formed for connection with an inserted key.

2. A padlock of the character described, comprising an elongated shell having a cylindrical bore therein and having an aperture through the wall thereof at one end of the shell and opening into the bore, a shackle pivotally attached to the shell adjacent the other end and having a transversely slotted inturned end adapted to enter said aperture, a sleeve in said bore remote from said aperture and having a pair of longitudinally extending diametrically opposed slots formed therein and extending from the inner end thereof, said sleeve being designed to receive a key in its other end, a plurality of spaced members within the sleeve each having a pair of diametrically oppositely positioned lugs engaging in said slots and each further having an elliptical aperture therethrough, said members being designed to receive a key having notches therein designed to receive the edges of the apertures when the key is turned to extend transversely thereof, a rotatable tumbler within the shell formed for engagement in the notch of said shackle, and an expansible spring normally maintaining said tumbler and said members in spaced relation, said tumbler being formed to receive the inserted end of a key extended through the members.

3. A padlock of the character described, comprising an elongated shell having a cylindrical bore therein and having an aperture through the wall thereof at one end of the shell and opening into the bore, a shackle pivotally attached to the shell adjacent the other end and having a transversely slotted inturned end adapted to enter said aperture, a sleeve in said bore remote from said aperture and having a pair of longitudinally extending diametrically opposed slots formed therein and extending from the inner end thereof, said sleeve being designed to receive a key in its other end, a plurality of spaced members within the sleeve each having a pair of diametrically oppositely positioned lugs engaging in said slots and each further having an elliptical aperture therethrough, said

members being designed to receive a key having notches therein designed to receive the edges of the apertures when the key is turned to extend transversely thereof, a rotatable tumbler within the shell formed for engagement in the notch of said shackle, an expansive spring supporting said members in said sleeve, a second expansible spring inserted between said members and said tumbler and normally urging the tumbler longitudinally in the shell for engagement with the inserted end of said shackle, and an extension formed upon said tumbler extending into the last mentioned spring for maintaining the tumbler in position, said extension being slotted to receive the inserted end of a key extending through the members.

In testimony whereof I hereunto affix my signature.

PETER SCZEPCHENSKI.