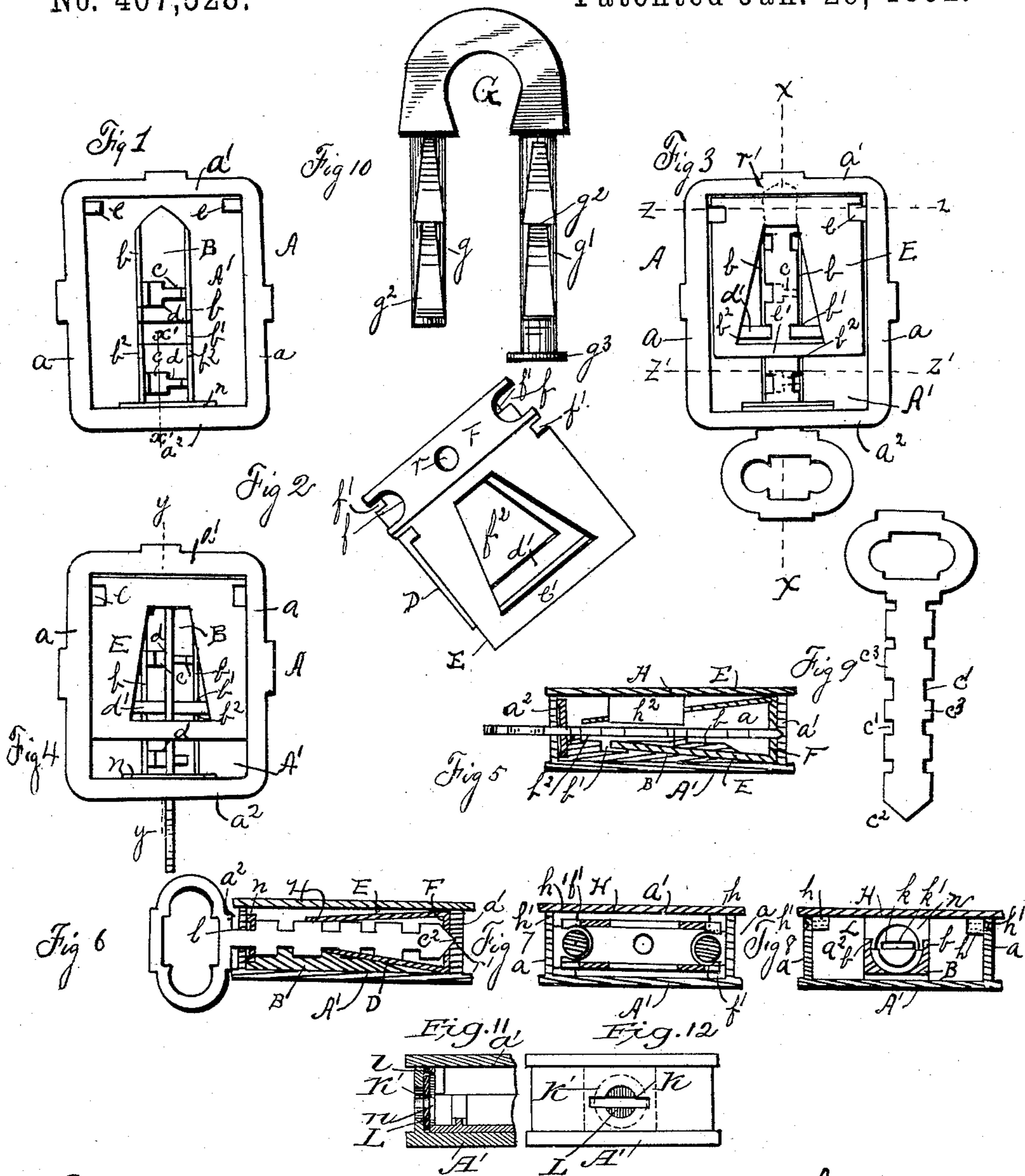


(Model.)

W. F. TROAST.
PADLOCK.

No. 467,528.

Patented Jan. 26, 1892.



Witnesses

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PADLOCK.

SPECIFICATION forming part of Letters Patent No. 467,528, dated January 26, 1892.

Application filed May 1, 1890. Serial No. 350,247. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM F. TROAST, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain Improvements in Padlocks, of which the following is a specification.

My invention relates to improvements in that class of padlocks in which a U-shaped hasp or shackle with notches cut in both arms thereof is held in place in the case by mechanism actuated to engage said notches; and it consists in the construction and combination of the various parts, as hereinafter fully described and claimed, and as illustrated in the accompanying drawings, which form a part of this specification, in which—

Figure 1 is a side elevation of the lock-case, the closing-plate and operating mechanism being removed to show the parts formed integral with the case. Fig. 2 is a perspective view of the spring-tumblers. Fig. 3 is a side elevation of the lock, the closing-plate being removed and the key in place preparatory to disengaging the tumblers from the shackle; and Fig. 4 a similar view, but showing the key holding the tumblers disengaged from the shackle. Fig. 5 is a transverse vertical section on the line $x x$, Fig. 3; and Fig. 6, a similar view on the line $y y$, Fig. 4, the closing-plate being shown in position in both Figs. 5 and 6. Fig. 7 is a horizontal section on the line $z z$, Fig. 3, the closing-plate being secured in position on the case; and Fig. 8, a similar section on the line $z' z'$. Fig. 9 is a side view of the key. Fig. 10 is a side view of the shackle shown detached from the case. Fig. 11 is a sectional view on the line $x' x'$, Fig. 1. Fig. 12 is an end view of the lock-casing.

Similar letters indicate like parts throughout the several views.

Referring to the details of the drawings, A represents a rectangular case composed of the back A' , the sides a , and the top and bottom ends $a' a^2$, respectively, the sides and ends being formed integral with the back A' . On the center of the interior face of the back A' there is formed a key-guide B, extending from the bottom plate a^2 upward toward the top plate a' of the case. From the sides of

the key-guide there project outwardly and longitudinally of the lock parallel flanges b , adapted to receive the key C between them and having a channel b' cut transversely thereof to admit the cross-bar of one of the tumblers, and a depression b^3 in their edges below and adjacent to said channel to receive the other tumbler when it is in engagement with the shackle. The surface of the key-guide between the flanges b is concave in cross-section, and has a rib c of similar shape extending across it on each side of the channel b' . One end of each of these ribs is adapted to engage corresponding wards c' in the key C as it is turned in the lock. The other half of the ribs is enlarged so as to be wider than said wards, and these enlarged portions form shoulders d in the center of the ribs which serve as stops to limit the rotation of the key in the case.

The tumblers are two in number, one D being shorter than the other E, and they, with the plate F connecting them, are formed from a single piece of spring metal, the tumblers having openings f^2 cut through them in the center, as shown in Fig. 2. The plate F has perforations f in it at the ends to permit the arms $g g'$ of the shackle G to pass through it and between the tumblers D and E, the metal forming the outer portions of the peripheries of the perforations being cut away to and through the ends of the plate F. In the edges of the tumblers, just below the plate F, are formed recesses f' . Near the top plate a' and in the angle made by the sides a and the back A' there are formed lugs e , adapted to engage the recesses f' in the tumbler D.

H represents the closing-plate, and is provided with lugs h on its inner face near the four corners similar to the lugs e , the lugs h at the upper end of the plate H engaging the recesses f in the tumbler E. The outer faces of the lugs h are flat and fit snugly up against the side plates a , and are secured thereto by rivets or screws h' to fasten the closing-plate to the case. On and to one side of the inner face of the closing-plate there is located a guide-rib h^2 , which passes through the opening f^2 in the tumbler E, and serves with the flange b of the key-guide B to hold the key in its proper position as it is introduced into

the lock. The connecting-plate F has a centrally-located opening r to permit the heel c^2 of the key to pass through it, and the inner face of the top plate a' is provided with a recess r' , which registers with the opening r and receives said heel c^2 .

The ward k of the bottom plate a^2 is a narrow slot having a centrally-located enlargement k' on each side to permit the key to turn. Upon the inner face of the bottom plate a^2 there is a plate l , provided with an opening somewhat greater in diameter than the length of the ward k , in which is placed a guard-plate L, having a slot m of the same length as said ward. The guard-plate is secured in place by a covering-plate n , having a circular opening equal in diameter to the length of the ward k . Normally the slot in the guard-plate registers with the ward k , so as to permit the passage of the key into the lock; but it turns with the key when it disengages the tumblers from the notches g^2 of shackle, the longer arm of which is provided with the usual cross-head g^3 to prevent the separation of the case and shackle.

When the parts of the lock are united, the shorter tumbler D rests therein adjacent to the back A' and the longer arm E adjacent to the closing-plate H. The recesses f' of the tumblers engage the lugs e of the back and the upper lugs h of the closing-plate, and the cross-bars $e' d'$ of the tumblers engage the two lowest notches g^2 on opposite sides of the shackle-arms $g g'$, the tumblers acting to close toward each other and the arms of the shackle being between them. The key is inserted edgewise through the key-guide B and between said guide and the guide-rib h^2 on the closing-plate, the heel c^2 passing through the opening r in the connecting-plate F and engaging the recess r' in the top of the case, whereby it is steadied in its movement as it is rotated in the lock. As the key is turned to disengage the tumblers from the arms of the shackle the wards c' engage the narrow portion of the ribs c of the key-guide B, and the movement is continued through a quarter of an entire revolution, when it is stopped by the shoulders d , the shoulders c^3 of the wards

at the same time disengaging the tumblers from the notches in the arms of the shackle.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a padlock, the combination, with the case having lugs, as e , formed on the back plate, of a closing-plate provided with similar lugs, as h , projecting from the face thereof, and tumblers formed from a single piece of spring metal and having recesses therein, as f' , adapted to engage the said lugs of the case and closing-plate, substantially as and for the purpose specified.

2. In a padlock, the combination, with the case, of a key-guide formed therein having parallel flanges, and ribs extending between said flanges adapted to be engaged by wards of the key, substantially as specified.

3. In a padlock, the combination, with the case, of a key-guide formed therein having flanges, ribs extending between said flanges adapted to be engaged by wards of the key, and shoulders formed on said ribs, substantially as and for the purpose specified.

4. In a padlock, the combination, with the case, of a key-guide formed therein having flanges, and ribs extending between said flanges adapted to be engaged by wards of the key, the said key-guide having a channel cut transversely thereof to receive the cross-bar of one of the tumblers and a depression in the flanges to receive the cross-bar of the other tumbler, substantially as and for the purpose specified.

5. In a padlock, the combination, with the case, of a key-guide formed therein having flanges, ribs extending between said flanges adapted to be engaged by wards of the key, and tumblers formed of a single piece of spring metal and having recesses in the upper edges thereof constructed to engage lugs projecting from the back of the case and the face of the closing-plate, substantially as and for the purpose specified.

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Witnesses:

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