

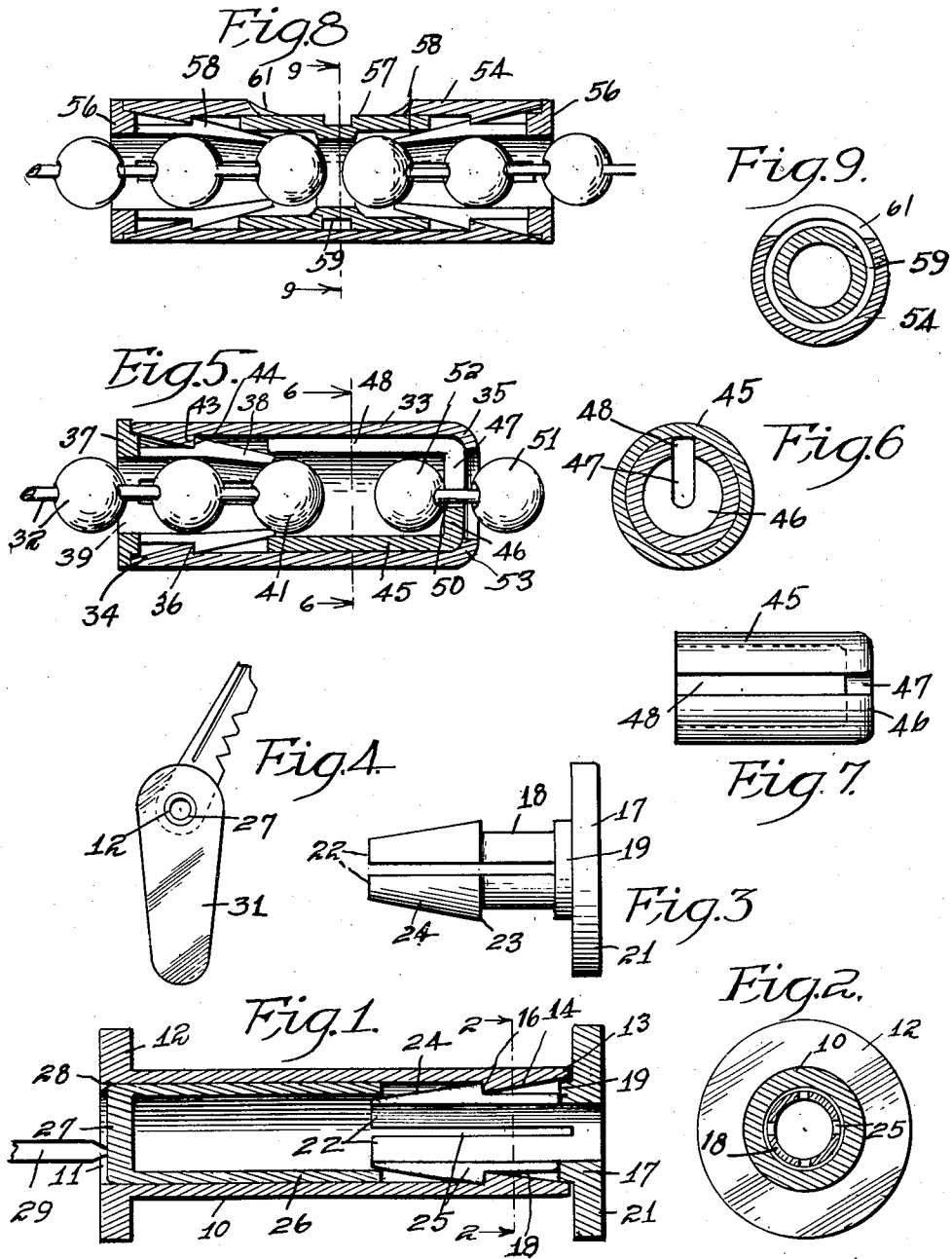
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A. W. MOLENE

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KEY POST

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Inventor
Arthur W. Molene
by Alfred S. Haque, Att'y

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KEY POST

Arthur W. Molene, Des Moines, Iowa

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This invention relates to detachable fastener devices of the type adapted to serve as a pivot post for a key post holder or as a detachable coupler for key chains, wrist bracelets, etc.

I am aware that a number of such fasteners have been patented, manufactured and sold some of which are in commercial use and are objectionable in that they become accidentally released too easily; in others it is almost impossible to release the coupled elements without damage to the device.

It is therefore the object of my invention to provide a detachable fastener or key post of simple, durable, and inexpensive construction which may be easily applied to a key holder, key chain, or bracelet; and when so applied provides means whereby the free ends of the chain or bracelet to which it is applied may be easily united; and when so united be positively locked against being accidentally released by force tending to separate said united ends.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, in which,

Fig. 1 is a longitudinal sectional view of a key post embodying my invention.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a side elevation of one of the locking studs of my key post.

Fig. 4 is a side elevation of a key holder illustrating the manner in which my improved key post is applied thereto.

Fig. 5 is a longitudinal sectional view of a slightly modified form of my key post adapted to detachably secure the ends of a key chain together.

Fig. 6 is a sectional view taken on the line 6—6 of Fig. 5.

Fig. 7 is a side elevation of the unlocking element forming a part of the modified form illustrated in Fig. 5.

Fig. 8 is a longitudinal sectional view of a modified form of Fig. 5.

Fig. 9 is a transverse sectional taken on the line 9—9 of Fig. 8.

Referring to Figs. 1, 2, and 3 of the drawings the numeral 10 indicates the cylindrical body of my improved key post having its outer end 11 provided with a flange 12 and its inner end 13 formed with a tapered bore 14 to form an annular shoulder 16 to form one of the locking elements.

Detachably mounted in the inner end of the body 10 I have provided a locking stud 17 including cylindrical portions 18 and 19, the portion 19 being formed with a flange 21, the inner end of the portion 18 terminating in a truncated conical portion 22 providing an annular shoulder 23 and a tapered surface 24. The portions 18 and 22 are provided with longitudinal slots 25 to form yieldably locking fingers with the shoulders 23 co-acting with the

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annular shoulder 16 when the locking stud 17 is in operative position as illustrated in Fig. 1. The stud 17 is placed in locking position by simply inserting its tapered faces 24 into the tapered bore 14, in the inner end of the body 10, then forcing the stud 17 longitudinally into the body 10 with the shoulders 23 locked against the shoulder 16, thus firmly locking the stud against outward movement.

To release the stud 17 I have provided a sleeve 26 slidably mounted in the body 10 and supported normally with its inner open end engaging the inner ends of the tapered surfaces 24, said sleeve 26 being provided with a closed end 27 terminating near the outer end of said body. A small lug 28 provides means for retaining the sleeve in the body against accidental falling out.

The stud 17 may be easily removed by placing the end of a small instrument 29 against the outer end of the closed end 27 and moving it inwardly causing the inner end of the sleeve 26 to engage the tapered surface 24 to cause the members 22 to be squeezed together, thus releasing the shoulders 23 from the shoulder 16, after which the stud 17 may be easily removed from the body 10.

Thus is provided an improved detachable fastener adapted to be used as a key post, to be applied to a key holder 31 as illustrated in Fig. 4 thus providing means for detachably securing the keys in the holder in such a manner that accidental release of the locking stud 17 is greatly decreased.

In Fig. 5 I have illustrated a slightly modified form of my invention adapted to be used to secure detachably together the ends of a key chain 32 which comprises a cylindrical body 33 having one end 35 open and the other provided with a tapered bore 34 having at its inner end an annular shoulder 36, said bore being adapted to receive a locking stud 37, similar to the stud 17 with the exception that the tapered ends 38 are bent inwardly so that the distance between the free ends of said tapered portions 38 is less than the diameter of the opening 39 and of the balls 41 of the key chain 32 when the shoulders 43 and 44 are in their normal closed position as illustrated in Fig. 5. For releasing the shoulders 43 from the shoulders 44 I have provided a sleeve 45 slidably mounted in the body 33 and having its outer end 46 closed with the exception of a radial slot 47 terminating in a longitudinal slot 48 formed in one side of the sleeve 45. The said slots 47 and 48 provide means for receiving the link 50 of the opposite end of the chain 32 with the end member 46 between balls 51 and 52, thus providing means for locking one end of the chain to the corresponding end of the body 33. The sleeve 45 also provides means for releasing the shoulders 43 and 44, by applying inward hand pressure to the ball 51, causing the inner end of the sleeve to be moved inward and to engage the tapered faces 38 to force them inward and release the shoulders 43 and 44, after which the locking stud 37 may be removed and with it the end of the chain. The chain may be removed from the stud by forcing the inner ball outwardly causing the members 38 to be moved outwardly from their longitudinal common center. The open end 35 of the body 33 is provided with an inwardly turned flange 53 formed after the sleeve 43 has been inserted in the body 33 to retain the sleeve against removal.

The modified form illustrated in Figs. 8 and 9 is similar to that shown in Fig. 5 both open ends of the body 54 being provided with locking studs 56 similar to the stud 37. A releasing sleeve 57 is slidably mounted in the body 54 between the tapered portions 58 to release the corresponding stud 56. The sleeve 57 is provided with an annular groove 59 to be engaged by a pointed instrument inserted through a slot 61 in the body 54 by means of which the sleeve 57 may be actuated to release either stud.

Thus it will be seen that I have provided an improved key post or chain coupler of simple and durable construction by means of which keys may be positively secured in a key holder against accidental release or by means of which the ends of a key chain or bracelet may be easily and quickly secured together and at the same time be easily released when so desired. Other modification of this invention might be made without departing from the spirit of my invention.

I claim:

1. In a device of the class described; a tubular body having formed in one end a tapered bore, the other end being open, the diameter of the inner end of the tapered bore of said tubular body being less than the bore of the balance of said tubular body to form a locking shoulder; a stud of tubular formation and of less diameter than the bore of said body locking shoulder; a truncated cone formed on one end of said stud with its base larger in diameter than the diameter of said stud to form a co-acting locking shoulder; said truncated cone and the corresponding end of said stud being slotted longitudinally to form yielding locking fingers adapted to enter the tapered bore of said tubular body with their locking shoulders in operative contact with the locking shoulder of said tubular body and with the free ends of said fingers extending innermost; a sleeve slidably mounted in the open end of said tubular body and having its inner end open to receive the cone end of said stud fingers and move them toward each other upon axial movement of said sleeve; the outer end of said sleeve being closed and having a radial slot therein that joins a longitudinal slot through one side of said sleeve and extending the entire length thereof; and means for securing said sleeve within said tubular body.

2. In a device of the class described; a tubular body having in each end a tapered bore, the inner end of each bore being less than the bore of the balance of said tubular body to form locking shoulders; a stud for each of said bores and each of said studs of a less diameter than the smallest diameter of said tubular body tapered bores; a truncated cone formed at one end of each stud; said truncated cones having a base larger in diameter than the diameter of said stud; said truncated cones and the corresponding ends of said studs being slotted longi-

tudinally to form yieldable locking fingers adapted to enter one of the tapered bores of said tubular body with the locking shoulders of said cones in operative contact with the locking shoulders of said tubular body; a sleeve slidably mounted in the central portion of said body having its ends open each to receive the tapered ends of corresponding fingers upon axial movement of said sleeve toward the fingers of said studs alternately; said sleeve having an external lateral slot therein; said tubular body having a longitudinal slot therein exposing a portion of the slot of said sleeve.

3. In a device of the class described; a hollow body having an internal locking flange; a sleeve member movably contained within said hollow body; a bored stud insertable within said body and having a spring finger carrying a locking shoulder for engaging the locking flange of said body to lock said stud and said hollow body together; said stud having means formed thereon adjacent said locking shoulder which, when said stud is within said hollow body, is engageable by said sleeve upon axial movement thereof to produce unlocking motion of the spring finger of said stud; a ball chain having balls smaller than the bore of said bored stud when said stud is removed from said sleeve and larger than the bore of said bored stud when said bored spring finger is engaging the locking flange of said hollow body; whereby a ball of said ball chain inserted through said bore before said stud is inserted into said hollow body is secured to said stud so long as the spring finger of said stud is engaged to the locking shoulder of said hollow body.

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