Nov. 2, 1954 W. MASON ET AL 2,693,146

PRINT ROLLER AND IDENTIFICATION TOKEN

Filed May 22, 1952 2 Sheets-Sheet 1

FIG. 1

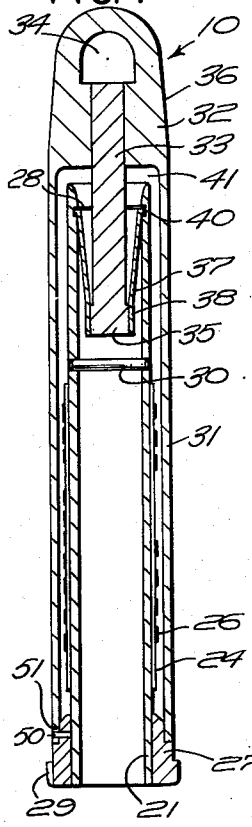


FIG. 2

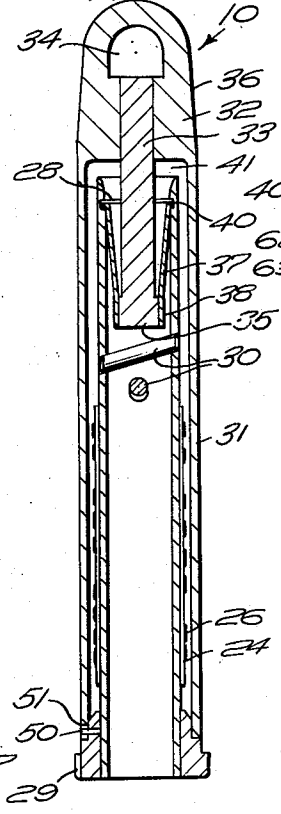


FIG. 3

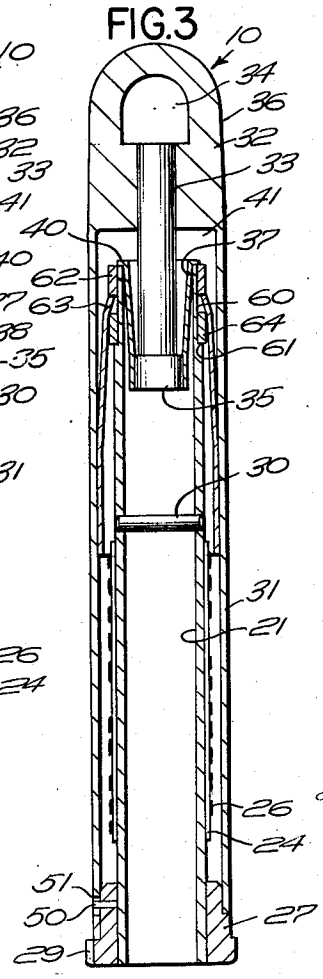
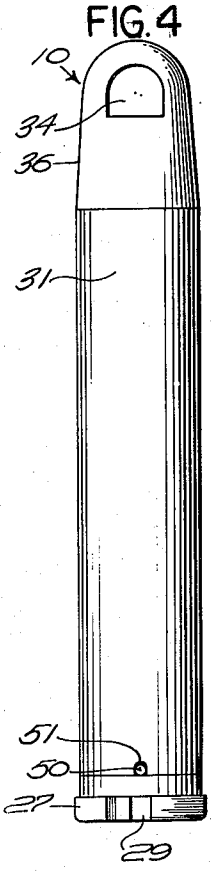


FIG. 4



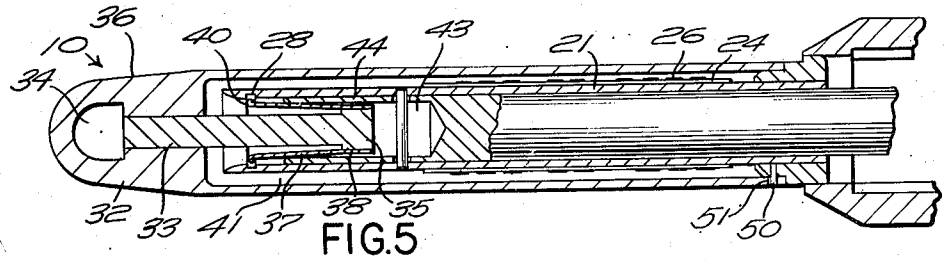


FIG. 5

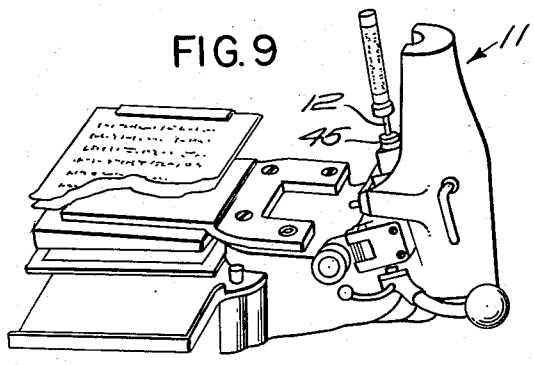
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PRINT ROLLER AND IDENTIFICATION TOKEN

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FIG. 9



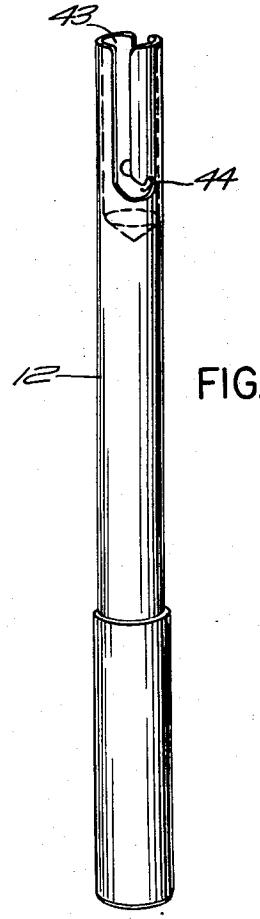


FIG. 6

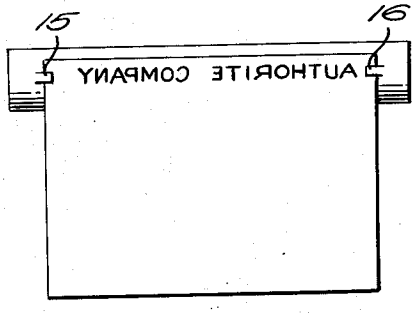


FIG. 7

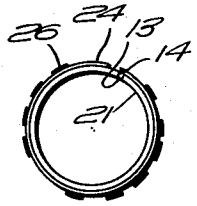


FIG. 10

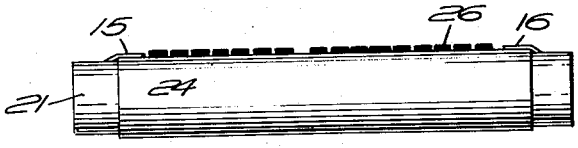


FIG. 8

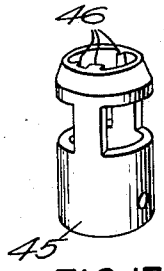


FIG. 13

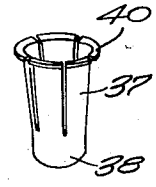


FIG. 11



FIG. 12

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PRINT ROLLER AND IDENTIFICATION TOKEN

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Application May 22, 1952, Serial No. 289,401

14 Claims. (Cl. 101—375)

This invention relates to an identification token which when cooperating with a machine containing a spindle clutch key, prints the information contained on a plate secured in the identification token and more particularly to improvements in the mechanism operated by the spindle clutch key and the means for retaining the plate within the token.

The present invention is an improvement over United States Patent Number 2,204,577, issued to E. W. Davis et al., on June 18, 1940, and United States Patent Number 2,599,279, issued June 3, 1952, to Walter P. Osgood.

This invention relates to a token of the type, indicated in the patents identified above, which comprises a printing roller sheathed and locked in a protective casing.

One of the objects of the present invention is to provide a locking mechanism in which no amount of tampering, less than total destruction, can be employed to separate the printing roller from the protective casing, unless the proper spindle clutch key is employed.

Another object of the present invention is to provide a locking mechanism for retaining the printing roller within the protective casing which is less costly to manufacture than the mechanisms shown in said patents.

Still another object of the present invention is to have the recording device identify the identification token as one of a given class.

And still another object of the present invention is to provide improved means for securing the sheath containing the identifying type to the printing roll.

Further objects of the invention are set forth in the following specification which describes a preferred form of construction of the token by way of example, as illustrated by the accompanying drawings.

In the past, the mechanisms employed to retain a printing roller locked in a protective casing have not been completely tamper proof. It is axiomatic, that an identification token must not permit unauthorized persons to surreptitiously obtain the information on the printing roller and then pass themselves off as the person identified by the token. Especially is this true where credit is extended by mercantile establishments including department stores and gas stations. And in the case where unauthorized personnel can harm the national defense and gain access to secret information such as when the identification token is the pass to atomic energy plants, military departments and establishments, defense plants and factories. The present invention encompasses mechanism sturdy in construction, tamper proof in operation and economical to manufacture.

Like reference numerals refer to like parts in the accompanying drawing, in which:

Figure 1 is a longitudinal cross section of the new and improved identification token showing a single five prong spring finger and a single dowel pin locking mechanism.

Figure 2 is a longitudinal cross section, similar to Figure 1 showing a multiple dowel arrangement.

Figure 3 is a longitudinal cross section of a modified form of Figure 1, showing two five prong spring fingers and a single dowel pin locking mechanism.

Figure 4 is a side elevational view of the new and improved identification token.

Figure 5 is a longitudinal cross section, showing the spindle clutch key after it has released the protective casing from the five prong spring finger locking mechanism.

Figure 6 is a perspective view of the spindle clutch key which forms part of the printing and recording machine.

Figure 7 is a plan view of a new way of securing the sheath, containing the identifying type, to the printing roll.

Figure 8 is a side elevational view of the mechanism shown in Figure 7.

Figure 9 is a perspective view of the printing and recording machine adapted to receive and utilize the identification token which comprises the present invention.

Figure 10 is a transverse sectional view through a printing roll showing a modified form of means to secure a sheath containing identifying type to the printing roll.

Figure 11 is a perspective view of the five prong spring finger locking mechanism.

Figure 12 is a bottom plan view of the printing roll showing the drive and acceptance notches.

Figure 13 is a perspective view of the drive sleeve which forms part of the printing and recording machine showing the acceptance and drive projections.

Patent #2,204,577 uses the term "key." Patent #2,599,279 uses the term "spindle." The trade uses the term "clutch." This application will use the term, "spindle clutch key" to describe that particular part.

Referring to the drawings wherein reference character **10**, generally designates the new and improved identification token and reference character **11** generally designates the recording device containing the spindle clutch key **12**.

The identification token **10** comprises a tube **21** having a sheet **24** wrapped around it and secured to it by means of a slot **13** provided therein. Sheet **24** is provided with a right angle bend **14** which is crimped and thereby secured in slot **13**.

Another method of securing sheet **24** to tube **21** is to have ears **15**, **16** raised in tube **21**; the ears crimping and thereby securing sheet **24** to tube **21**. The thickness of ears **15**, **16** is preferably less than the height of the letters in the identifying type **26**.

Sheet **24** has type **26** impressed into it, which extends outwardly from its outer face. A collar **27** is secured to one end of tube **21**. A groove **28** is provided in the other end of tube **21**. A dowel pin **30** is horizontally secured in tube **21**. A multiple number of notches **29** are provided for purposes later to be described.

A protective casing **31** open at one end and having a closure **32** at its other end with a stud **33** secured axially therein, is provided with a chain orifice **34**. Stud **33** is provided with a head **35**. Closure **32** is tapered on its upper end as at **36**. A five prong spring finger **37** having a collar or band **38** which is spot welded to head **35**, tapers openly away from collar or band **38** into a seat **40**. A chamber **41** is formed in cylindrical casing **31** from its open end to closure **32**.

Spindle clutch key **12** is a solid shaft with a bore **43** in one end. A bayonet slot **44** is adapted to cooperate with said bore **43**. The other end of spindle clutch key **12** is secured in recording device **11**. A drive sleeve **45** surrounds the spindle clutch key **12**. Drive sleeve **45** is fastened to spindle clutch key **12**. Drive sleeve **45** is provided with a multiple number of projections **46**, at least one of which serves a dual function.

The type **26** on sheet **24** is aligned in the machine for printing by means of one notch **29** engaging one projection **46**. Drive sleeve **45** will cause type **26** to roll over the surface to be printed through projection **46**. The notch **29** and projection **46** serve another function. By locating the projection **46** in a selected portion of the periphery of drive sleeve **45** it becomes obvious that unless the type **26** is properly aligned with notch **29** and projection **46** the type will not print in the desired sequence.

The identification token **10** will be carried by a credit customer of a single department store in a community. All credit stores in that community will have recording machines **11**. A credit customer presenting identification token **10** to a store in which her credit is not established will be found out immediately, as the notch **29** aligning with projection **46** will cause type **26** to print out of sequence.

In addition notches **29**, which may be called "acceptance notches" may be many in number, and selectively located in collar **27**. If acceptance notches **29** do not

match projections 46 in the drive sleeve 45 of the recording machine 11 in a given store, the sales personnel will know the carrier of that particular identification token is not properly identified. Similarly, in a factory, an employee going from one department to another can be kept out of a department where his identification token 10 does not align with recording machine 11, through notches 29 and projections 46.

Collar 27 is provided with a pin 50 secured therein. Protective casing 31 is provided with a groove 51 adapted to cooperate with pin 50 so that protective casing 31 cannot loosely revolve on collar 27 when they are in engagement. The operation of the invention will explain why it is desirable to secure the casing 31 to collar 27.

Dowel pin 30 serves the dual purpose of cooperating with bayonet slot 44 and in preventing tampering with five prong spring finger 37.

Figure 2 shows a modified form of dowel pin 30 arrangement which can be adapted to cooperate with a double bayonet slot in the spindle clutch key and to further hinder tampering with the five prong spring finger 37.

Figure 3 shows a modified form for locking protective casing 31 to tube 21. Tube 21 is provided with rim 60 which is smaller in diameter than the outside diameter of the tube 21. A shoulder 61 is therefore formed between the different diameters. A collar 62 is secured to rim 60 at its outer extremity. A five prong spring finger 63 is secured to protective casing 31 so that the bitter ends of the five prong spring finger 63 abut the end of collar 62 when the protective casing 31 is in operative or locked position. A second collar 64 is provided on rim 60 in such a manner as to be freely slidable between fixed collar 62 and shoulder 61.

Except for the addition of five prong spring finger 63, shown in Figure 3, protective casing 31 is identical in construction with Figure 1, as previously described.

In operation, identification token 10, as shown in Figure 4, will be secured to a conventional key chain by means of chain orifice 34. The identification token 10 will be presented to the operative of recording device 11. Along with the presentation the holder of token 10 will give his or her name, number or other identifying information contained in type 26 on sheet 24.

The operative will insert tube 21 over spindle clutch key 12 causing dowel pin 30 to pass into bayonet slot 44 while at the same time notches 29 on collar 27 will engage projections 46 in drive sleeve 45. Dowel pin 30 passes into the base of bayonet slot 44 as protective casing 31 is turned by the hand of the operative. Pin 50 engages groove 51. Without pin 50 and groove 51 the operative would fruitlessly turn protective casing 31 in its relation to tube 21, hence dowel pin 30 without producing coaction between them. The result is that dowel 30 would not engage the base of bayonet slot 44. Any other simple mechanical expedient may be devised to perform the same result now that the way is shown by the present illustration.

The pressure exerted on protective casing 31 in forcing dowel pin 30 into bayonet slot 44 will cause bore 43 to slide over five prong spring finger 37, thereby compressing the five prongs at once and withdrawing seat 40 from groove 28. See Figures 1, 5 and 7. It is the engagement of seat 40 in groove 28 which locks protective casing 31 to tube 21 hence to sheet 24 having identification type 26. The separation of seat 40 from groove 28 allows protective casing 31 to be withdrawn from tube 21.

Type 26 will now engage an inking roll in recording device 11 and be caused to rotate through drive sleeve 45, thereby printing on a paper sheet. If notches 29 have been properly received by projections 46 the operative can verify the information spoken by the holder of identification token 10.

In the modified form shown in Figure 3, the operative will insert tube 21 over spindle clutch key 12 causing dowel pin 30 to pass into bayonet slot 44 as previously described, but in addition, as bore 43 slides over five prong spring finger 37, tube 21, through shoulder 61, will force collar 64 to expand the ends of five prong spring finger 63, so that they will slide over collar 62, thereby allowing protective casing 31 to be withdrawn from tube 21, hence plate 24 carrying identification type 26.

It will be seen that each individual prong of five prong spring finger 37 must be compressed in order to separate seat 40 in its entirety from groove 28. A wrong doer may push a pin, clip, knife or instrument into tube 21 but first the instrument must pass dowel pin 30 and secondly it must compress all five prongs of five prong spring finger at one time. In addition the multiple dowel arrangement shown in Figure 2 permits different spindle clutch keys to be used, secure in the knowledge that a machine containing a multiple dowel spindle will not accept an identifying token acceptable to a single dowel machine. Thus classes of identification are made possible and error proof.

Attention is drawn to the fact that it is the bayonet part of the slot which permits the spindle clutch key bore to compress all five prongs of the five prong spring finger at one time. See Figure 5.

Having shown and described preferred embodiments of the present invention, by way of example, but realizing that structural changes could be made and other examples given without departing from either the spirit or scope of this invention.

What we claim is:

1. An identification token comprising a tube having identification media thereon, a groove provided in one end and a collar secured to the other end of said tube, a notch provided in the periphery of said collar, a dowel pin secured in said tube, a tubular casing open at one end provided with a stud having resilient locking means secured thereon in the closed end, a spindle clutch key forming part of a separate but co-operating machine, said casing being adapted to receive said tube with said resilient locking means engageable with said groove in one end of said tube, said collar being adapted to engage the open end of said tubular casing, means to prevent said tube from rotation in relation to said tubular casing, said dowel pin co-acting with said spindle clutch key to permit said casing to receive said tube and said notch in said collar co-acting with a projection on said spindle clutch key to align said tube with said spindle clutch key.

2. An identification token comprising a tube having a slot therein, a sheet provided with printing and having one end bent at right angles which is adapted to be secured in said slot, one end of said tube being bell mouthed, a first groove provided in said tube below the end of said bell mouth, a first collar provided with a multiple number of notches and a first pin in its periphery secured to the other end of said tube, a dowel pin secured in said tube below said first groove, a tubular casing open at one end having a stud secured in the closed end, resilient means comprising spring fingers secured to said stud and adapted to engage said first groove in said tube, a second groove in the open end of said tubular casing adapted to engage said first pin, said first collar engageable with the open end of said tubular casing, a spindle clutch key forming part of a separate but co-operating machine having means on one end to receive said dowel pin and a clutch collar on the other end provided with a multiple number of projections adapted to receive the multiple number of said notches to permit said tubular casing to engage said tube with said spring fingers engaging said first groove.

3. An identification token comprising a tube having ears raised therein, a sheet provided with printing secured to said tube by means of said ears, a first groove provided in one end of said tube, a collar provided with a multiple number of notches and a pin in its periphery secured to the other end of said tube, a dowel secured in said tube, a tubular casing open at one end having a stud provided with a head secured in the closed end thereof, a five prong spring finger having a band secured to said head and a seat formed in the end of said five prong spring fingers, said seat engageable with said first groove, a second groove in the end of said tubular casing, said collar engageable with the open end of said tubular casing with said pin engageable with said second groove, a spindle clutch key forming part of a separate but co-operating machine having means on one end to receive said dowel and a clutch collar on the other end provided with a multiple number of projections adapted to receive the multiple number of said notches.

4. An identification token comprising a tube having identification media thereon, a groove provided in one end and a collar secured to the other end of said tube, a multiple number of notches and a pin provided in the

periphery of said collar, a multiple number of dowel pins secured in said tube, a tubular casing open at one end, provided with a stud having a head secured in the closed end, a five prong spring finger provided with a seat in the ends of said fingers and a band at the base of said fingers, said band being secured to said head, said seat being adapted to engage and disengage said groove by means which must bypass said multiple number of dowel pins, a second groove in the open end of said tubular casing, said collar being adapted to engage and disengage said open end of said tubular casing when said pin is in alignment with said second groove, a spindle clutch key forming part of a separate but co-operating machine having means on one end to receive said multiple number of dowel pins and a clutch collar on the other end provided with a multiple number of projections adapted to receive the multiple number of said notches.

5. An identification token comprising a tube having identification media thereon, a groove provided in one end and a collar secured to the other end of said tube, a multiple number of notches and a pin provided in the periphery of said collar, a dowel pin secured in said tube, a tubular casing open at one end, provided with a stud having a head secured in the closed end, a five prong spring finger provided with a seat in the ends of said fingers and a collar at the base of said fingers, a spindle clutch key forming part of a separate but co-operating machine said collar being adapted to be secured to said head, said seat being adapted to engage and disengage said groove by means of said spindle clutch key which is adapted to pass through said collar and receive said dowel pin, said collar being adapted to engage and disengage said open end of said tubular casing when said pin is in alignment with said second groove.

6. An identification token comprising a tube having identification media thereon, a groove provided in one end and a collar secured to the other end of said tube, a multiple number of notches and a pin provided in the periphery of said collar, a dowel pin secured in said tube, a tubular casing open at one end, provided with a stud secured in the closed end, a five prong spring finger provided with a seat in the ends of said spring fingers secured to said stud, a notch in the open end of said tubular casing adapted to engage said pin in said collar fixed in said tube, said seat engageable with said groove, a spindle clutch key having a bore and a bayonet slot in one end, a drive sleeve having projections associated with said spindle clutch key, said projections engageable with said notches, said bayonet slot engageable with said dowel pin and said bore engageable with said five prong spring fingers.

7. An identification token comprising a tube having identification media thereon, a groove provided in one end and a collar secured to the other end of said tube, a multiple number of notches and a pin provided in the periphery of said collar, dowel pins secured in said tube, a tubular casing open at one end, provided with a stud secured in the closed end, a five prong spring finger provided with a seat in the ends of said spring fingers secured to said stud, a notch in the open end of said tubular casing adapted to engage said pin in said collar fixed in said tube, said seat engageable with said groove, a spindle clutch key having a bore and a bayonet slot in one end, a drive sleeve having projections associated with said spindle clutch key, said projections engageable with said notches, said bayonet slots engageable with said dowel pins and said bore engageable with said five prong spring fingers.

8. An identification token comprising a tube having identification media thereon, a groove provided in one end and a collar secured to the other end of said tube, means provided in said collar to be selective, means provided in said tube to be selective, a tubular casing open at one end provided with a stud secured in its closed end, a head on said stud, resilient means including spring fingers provided with a seat in the ends of said fingers and a collar at the base of said fingers, said seat engageable with said groove, means to secure said collar to said head, means to engage and disengage said collar fixed in said tube to said casing, a spindle clutch key associated with a drive sleeve, said spindle clutch key having means to disengage said seat from said groove, said drive sleeve having means to selectively engage said collar having selective means, and said spindle clutch key having selective means to engage said selective means in said tube.

9. An identification token comprising a tube having identification media thereon, a groove provided in one end and a collar secured to the other end of said tube, means provided in said collar to be selective, means provided in said tube to be selective, a tubular casing open at one end provided with a stud secured in its closed end, a head on said stud, means including spring fingers provided with a seat in the ends of said spring fingers, means to secure said collar to said head, said seat engageable with said groove, means to prevent said tube from rotation in relation to said casing, a spindle clutch key, a drive sleeve, said key and said sleeve associated in a machine, said spindle clutch key having selective means to engage said selective means in said tube and provided with means to disengage said seat from said groove and said drive sleeve having means to selectively engage said selective means on said collar secured to said tube.

10. An identification token comprising a tube having identification media thereon, a collar fixed to said tube on one end and a second collar fixed to said tube on its other end, a tubular casing open at one end having a stud fixed in its closed end, resilient means secured to said stud engageable with said tube, a second resilient means secured to said tubular casing engageable with said collar fixed to said tube and a third collar slidably mounted on said tube and engageable with said second resilient means.

11. An identification token comprising a tube having identification media thereon, a rim formed in one end of said tube, a collar provided with a notch, fixed to the other end of said tube, a second collar fixed on said rim, a tubular casing open at one end having a stud fixed in its closed end, resilient means comprising spring fingers fixed to said stud and engageable with said tube, a second resilient means comprising spring fingers fixed to said tubular casing and engageable with said second collar, a third collar slidably mounted on said rim and engageable with the spring fingers of said second resilient means and means provided to secure said collar to said tubular casing in rotative position.

12. An identification token comprising a tube having identification media thereon, a rim formed in one end of said tube, a collar provided with a series of notches and a pin secured to the other end of said tube, a second collar fixed on said rim, a tubular casing open at one end having a stud provided with a head fixed in its closed end, a five prong spring finger comprising a seat and a collar, said collar fixed to said head, said seat engageable with said tube, a second five prong spring finger comprising a seat and a collar, said collar fixed to said tubular casing, said seat engageable with said collar fixed to said rim, another collar slidably mounted on said rim, adapted to engage the seat on said second collar, a dowel pin secured in said tube and a notch in said tubular casing engageable with said pin.

13. An identification token comprising a tube having identification media thereon, a rim in one end, a shoulder formed between said rim and the outside diameter of said tube, a collar fixed to said rim at its outer extremity, a dowel pin fixed in said tube, a collar provided with a notch and a pin secured to the end opposite the rim, a tubular casing open at one end having a stud secured to the closed end, a five prong spring finger fixed to said stud adapted to engage the end of said fixed collar, a five prong spring finger fixed to the inside of said tubular casing adapted to have the ends of the five prong spring fingers abut the end of said collar fixed to said rim, a notch in the end of said casing adapted to engage the pin in said collar, said collar engageable with the end of said tubular casing, a second collar slidably mounted on said rim between said shoulder and said collar fixed to said rim.

14. An identification token comprising a tube having identification media thereon, a rim formed in one end of said tube, a collar provided with means to be selective, a second collar fixed on said rim, a tubular casing open at one end having a stud provided with a head fixed in its closed end, a five prong spring finger comprising a seat and a collar, said collar fixed to said head, said seat engageable with said tube, a second five prong spring finger comprising a seat and a collar, said collar fixed to said tubular casing, said seat engageable with

said collar fixed to said rim, another collar slidably mounted on said rim, adapted to engage the seat on said second collar, means to prevent said tube from rotation in relation to said casing, means within said tube to be selective, a spindle clutch key, a drive sleeve, said spindle clutch key having selective means to engage said selective means in said tube and provided with means to disengage said seat from said tube, said drive sleeve having means to selectively engage said selective means on said collar secured to said tube, the relative movement of said tube with said tubular casing permitted by the removal of said seat from said tube, allowing said collar slidably mounted on said rim to engage said seat in said

second five prong spring finger thereby separating said tube from said tubular casing.

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2,599,278	Osgood	June 3, 1952
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