Aug. 1, 1967 W. P. MESSERSMITH 3,333,536

STAMP WITH AUTOMATIC INKING MEANS

Filed Oct. 29, 1964 2 Sheets-Sheet 1

Fig. 1

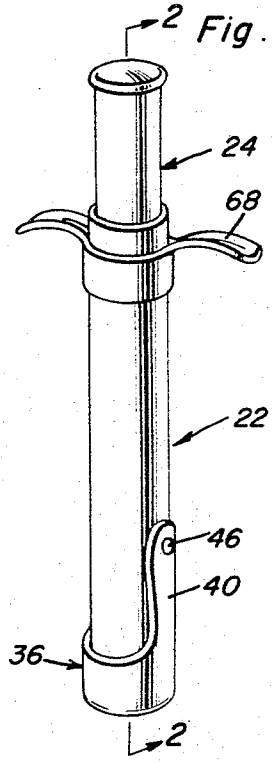


Fig. 5

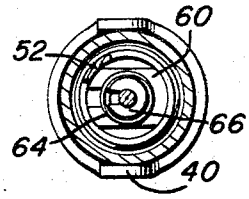


Fig. 6

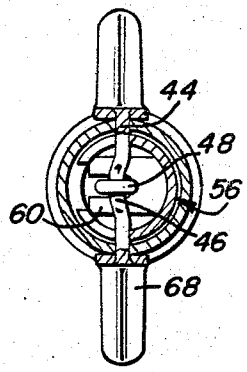


Fig. 7

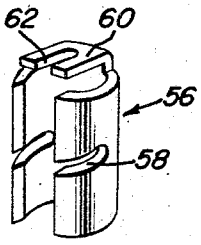


Fig. 8

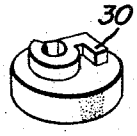


Fig. 9

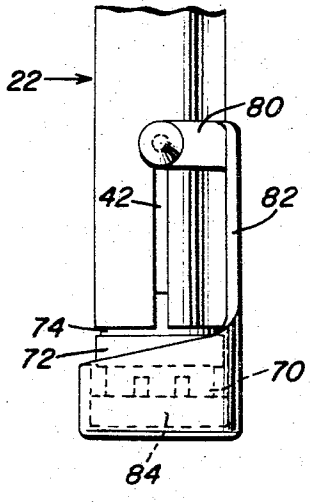
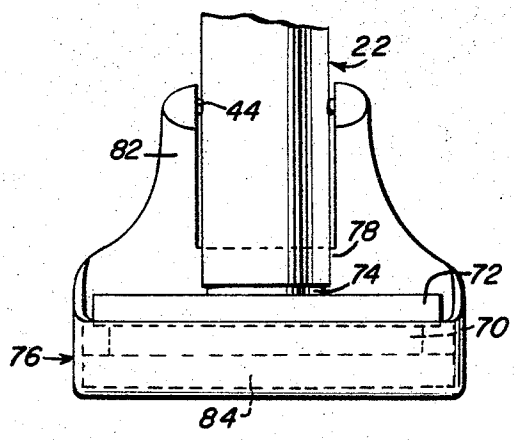


Fig. 10



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Aug. 1, 1967 W. P. MESSERSMITH 3,333,536

STAMP WITH AUTOMATIC INKING MEANS

Filed Oct. 29, 1964 2 Sheets-Sheet 2

Fig. 2

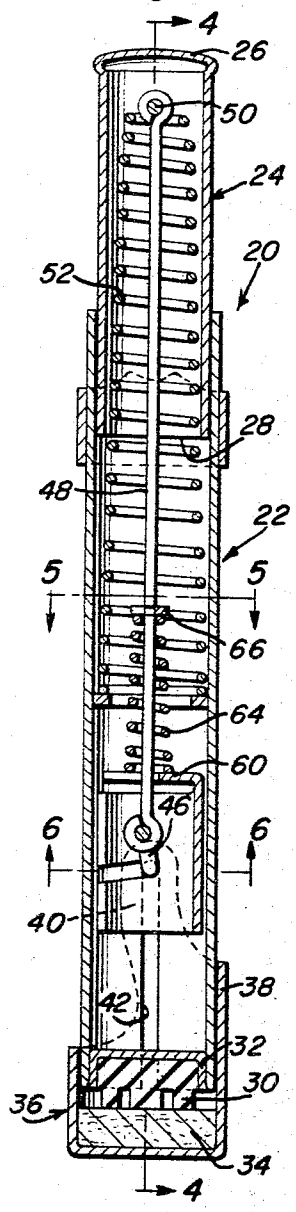


Fig. 3

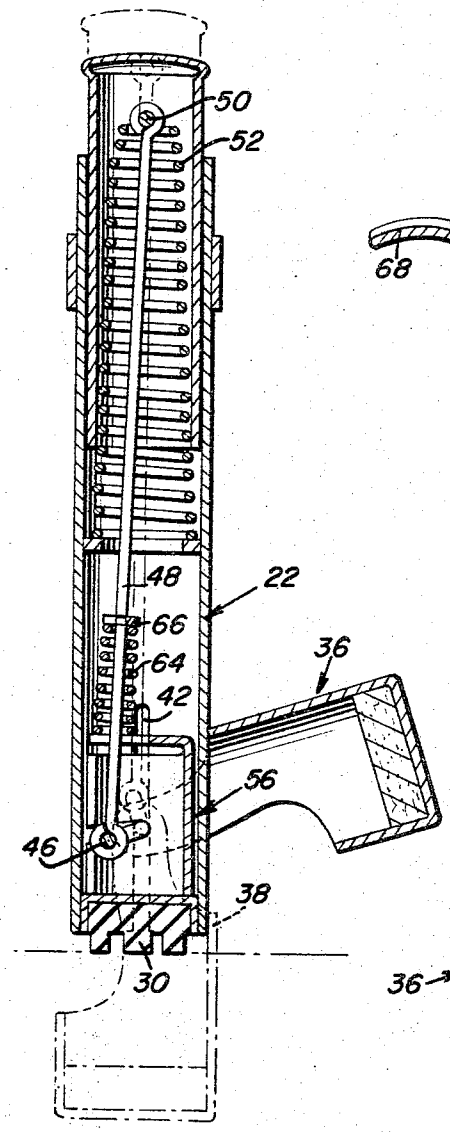
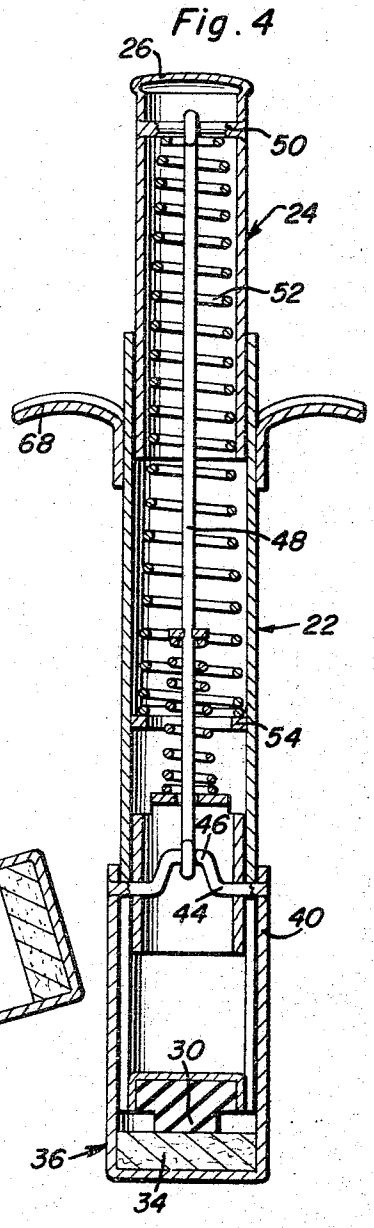


Fig. 4



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STAMP WITH AUTOMATIC INKING MEANS

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9 Claims. (Cl. 101—333)

The present invention is generally concerned with hand stamps, and more particularly relates to the provision of such a hand stamp incorporating an automatic self-inking means.

Basically, it is a primary intention of the instant invention to provide a hand stamp which incorporates an automatic inking means and can conveniently be manipulated by one hand.

In conjunction with the above object it is also a significant object of the instant invention to provide a stamp wherein the die, during non-use, is automatically telescopically received within a protective cap within which an inking pad is orientated.

In conjunction with the above object, it is also an object of the instant invention to provide a hand stamp wherein the ink pad containing cap is removed laterally away from the die by the actuation of a single plunger so as to expose the die for use in the conventional manner.

Further, it is an object of the instant invention to incorporate means within the stamp so as to automatically return the cap upon release of the plunger.

Furthermore, it is a significant object of the instant invention to provide for a unique arrangement of elements and mechanical movements wherein the entire device can be incorporated into a relatively slender tubular housing which can be carried in the manner of a conventional pocket pencil, the die and inking pad both being completely concealed.

Also, it is an object of the instant invention to provide a device which will insure, through the basically simple construction thereof, troublefree and consistent operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of the device of the instant invention;

FIGURE 2 is an enlarged cross-sectional view taken substantially on a plane passing along line 2—2 in FIGURE 1;

FIGURE 3 is a cross-sectional view similar to FIGURE 2 illustrating the pad containing cap pivoted out of the way of the die;

FIGURE 4 is a cross-sectional view taken substantially on a plane passing along line 4—4 in FIGURE 2;

FIGURE 5 is a transverse cross-sectional view taken substantially on a plane passing along line 5—5 in FIGURE 2;

FIGURE 6 is transverse cross-sectional view taken substantially on a plane passing along line 6—6 in FIGURE 2;

FIGURE 7 is a perspective view of the crank shaft cage or enclosing member;

FIGURE 8 is a perspective view of the die;

FIGURE 9 is a partial elevational view illustrating a modified form of the cap; and

FIGURE 10 is a partial front view of the modified cap of FIGURE 9.

Referring now more specifically to the drawings, reference numeral 20 is used to generally designate the combination stamp and self-inking means of the instant invention. This device 20 includes an elongated hollow tubular or cylindrical housing 22 having an elongated hollow

actuating plunger 24 telescopically received within the upper end thereof. The actuating plunger 24 includes a closed top or upper end 26 and an open lower end 28 communicating with the hollow interior of the housing 22. A suitable die 30, of for example rubber, is fixed within the lower or second open end of the housing 22 by means of a cup-like retainer 32 which, in addition to mounting the die 30 so as to project beyond the lower end of the housing 22, also closes off the lower end of the housing 22.

The ink pad 34 is positioned within the bottom of a circular cap 36 which in turn telescopically receives both the die 30 and the lower end of the housing 22 so as to provide a complete closure therefor. The cap 36 also includes an integral longitudinally projecting wall portion 38 which lies along that side of the housing 22 toward which the cap 36 is to be pivoted, as shall be explained presently. In addition, the cap 36 is provided with a pair of diametrically opposed longitudinally extending integral arms 40 which lie adjacent opposite sides of the housing 22 and in general alignment with a pair of diametrically opposed slots 42 extending longitudinally into the housing from the lower or second end thereof.

Extending transversely across the housing 22 and through both of the slots 42 is an elongated shaft 44 having a centrally located crank 46 therein, this shaft 44 having the opposite projecting ends thereof rigidly fixed to the upper ends of the arms 40 whereby movement of the shaft 44, whether longitudinally or rotationally, will effect a simultaneous movement of the cap 36. In addition, it will be noted, from FIGURE 2, that the crank 46 is angled slightly forward relative to the longitudinal center line of the housing 22 along the desired path of rotational movement. An elongated control rod 48 has the lower end thereof pivotally engaged with the crank 46 and projects therefrom longitudinally through the housing 22 and through the hollow plunger 24 for pivotal engagement, at its upper end, with a transverse shaft 50 fixed across the interior of the plunger 24 adjacent the upper end thereof, this rod 48 of course extending centrally through the housing 22 and the plunger 24.

The hollow plunger 24 is biased outwardly relative to the first or upper end of the housing 22 by means of an enlarged expanded coiled compression spring 52 received about the rod 48 and retained, at the upper end thereof, by the rod mounting shaft 50, and at the lower end thereof by an annular stop or ring 54 fixed peripherally about the interior of the housing 22. Upward or outward movement of the plunger 24 will of course be limited by engagement of the inking pad 34, within the cap 36, with the die 30, the cap 36, as noted supra, being fixed to the shaft 44 which is in turn pivotally engaged with the lower end of the rod 48.

In order to prevent a premature rotation of the shaft 44, through the pressure exerted on the crank 46 by a depression of the plunger 24, a crank enclosing member or cage 56 is slidably mounted within the housing 22. This member 56 is cylindrical in shape and includes transverse slots 58 extending inwardly from the opposite edges thereof to approximately the central plane of the unit 56, these slots 58 receiving the crank shaft 44 therethrough in a manner so as to provide for a simultaneous longitudinal movement of the shaft 44 and the member 56, while at the same time allowing for a rotational movement of the shaft 44 relative to the member 56. In addition, the member 56 includes an integral guide plate 60 projecting in parallel spaced relation to the upper end thereof and including the slot or recess 62 therein through which the rod 48 passes, the slot 62 guiding the rod during the lateral movement thereof resulting from a rotation of the shaft 44 and crank 46 thereon.

Further, it will be noted that another smaller, and preferably slightly stronger expanded coil compression spring **64** is received about the rod **48** and positioned between the upper surface of the plate **60** and a stop collar **66** fixed to the rod **48**. In this manner the member **56** is resiliently biased downwardly relative to the rod **48** in a manner so as to retain the crank **46** in its uppermost position until a resistance is encountered sufficient so as to overcome the biasing force of the spring **64**, this being achieved upon contact of the lower end of **56** with the upper surface of the die retainer **32**. However, as will be appreciated from a comparison of FIGURES 2 and 3, the relationship between the bottom of the member **56** and the top of the die retainer **32** is such so as to insure a positive orientation of the cap **36**, aside from the uppermost portion of the vertically projecting wall section, below the die **30** whereby a rotation of the cap **36**, effected through the crank **46**, will result in a rearward pivoting of the cap **36**.

In actual operation, when it becomes desirable to expose and use the die **30**, the housing **22** is grasped, for example by engaging two fingers under the outwardly projecting diametrically opposed arcuate fingergrips **68**, and the plunger **24** is depressed. Upon inward movement of the plunger **24** against the biasing force of the spring **52**, the rod, through the shaft **44** effects a longitudinal outward movement of the cap **36**, the spring **64** engaged between the sliding member **56** and the stop collar **66** on the rod **48** keeping the shaft **44** from rotating, the major amount of the pressure being transferred from the rod **48** to the shaft **44** outward from the crank **46** by the spring **64** and the member **56**. After the cap **36** has moved longitudinally beyond the die **30**, the member or shaft cage **56** engages with the upper surface of the die retainer **32**, thereby preventing further longitudinal movement of the member **56** and, upon the continued application of pressure to the plunger **24**, effects a compression of the spring **64** and a consequent rotation of the shaft **44** through the crank **46**, resulting in a rearward pivoting of the cap **36** upwardly from the lower end of the housing **22** so as to completely expose the die **30** for use in a conventional manner. Upon release of the plunger **24**, the crank **46** will initially return to its original upwardly angled position, thereby returning the cap **36** to longitudinal alignment with the lower end of the housing **22**, with the cap **36** then being quickly snapped into enclosing relationship to the die **30** and lower end of the housing **22**. Incidentally, it will be appreciated that the alignment of the cap **36** with the lower end of the housing **22** is effected by engagement of the upper end of the vertically projecting wall portion **38** with the side of the housing as illustrated in phantom lines in FIGURE 3. The shaft **44** is at all times received within the inner ends of the member slots **58**, the slots **58** extending through the vertical edges of the member **56** so as to allow for a simple assembly of the entire device.

FIGURES 9 and 10 illustrate a slightly modified form of the device wherein a transversely elongated die **70** is provided, along with a suitable mounting block **72** and adapter **74** for engagement within the lower end of the housing **22**. To accommodate this elongated die **70**, an elongated cap **76** is provided, this cap **76** also including a raised rear wall portion **78** for alignment of the cap **76** upon a subsequent enclosing of the die member **70**. The arms **80**, which in the modified form are also rigidly fixed to the opposite ends of the shaft **44**, project forwardly along opposite sides of the housing **22** in alignment with the vertical slots **42** therein, these arms **80** being integral with integral rear extensions **82** projecting vertically beyond the vertical rear wall portions **78**. This cap **76** is, along with the inking pad **84** therein, of course moved in the same manner as the cap **36**.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous

modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A hand stamp comprising an elongated tubular housing, a hollow actuating plunger telescoped in one end of the housing, a die fixed in and projecting from the second end of the housing, an elongated rod projecting longitudinally through said housing and into said hollow plunger, means pivotally fixing one end of the rod within the plunger, a pair of diametrically opposed longitudinally extending slots in said housing adjacent the second end thereof, a shaft extending transversely across the housing with the opposite ends thereof projecting through said slots, a centrally located crank in said shaft, the second end of the rod being pivotally fixed to said crank, a cap loosely telescoped over the second end of the housing, said cap including a pair of opposed arms positioned on opposite sides of the housing and rigidly fixed, adjacent their ends, to the opposite ends of the shaft, ink pad means in the inner end of the cap, means resiliently biasing said plunger outwardly of said one end of the housing and, through the rod, the ink pad into engagement with the die, said slots being of a length sufficient so as to allow, through pressure on the plunger, movement of the cap longitudinally beyond the second end of the housing, means restricting movement of said cap to solely a longitudinal direction until a movement thereof beyond the second end of the housing, and means limiting the longitudinal movement of said cap beyond the second end of the housing, said crank effecting a lateral pivoting of the cap subsequent to a longitudinal movement of the cap beyond the second end of the housing.

2. A hand stamp comprising an elongated tubular housing, a hollow actuating plunger telescoped in one end of the housing, a die fixed in and projecting from the second end of the housing, an elongated rod projecting longitudinally through said housing and into said hollow plunger, means pivotally fixing one end of the rod within the plunger, a pair of diametrically opposed longitudinally extending slots in said housing adjacent the second end thereof, a shaft extending transversely across the housing with the opposite ends thereof projecting through said slots, a centrally located crank in said shaft, the second end of the rod being pivotally fixed to said crank, a cap loosely telescoped over the second end of the housing, said cap including a pair of opposed arms positioned on opposite sides of the housing and rigidly fixed, adjacent their ends, to the opposite ends of the shaft, ink pad means in the inner end of the cap, means resiliently biasing said plunger outwardly of said one end of the housing and, through the rod, the ink pad into engagement with the die, said slots being of a length sufficient so as to allow, through pressure on the plunger, movement of the cap longitudinally beyond the second end of the housing, stop means fixed within said housing, said means biasing said plunger comprising an elongated spring engaged between said stop means and said plunger, a member slidably mounted in the housing adjacent the second end thereof, said shaft being rotatably received through said member so as to effect a movement of the member longitudinally in said housing in response to movement of the shaft through the rod and plunger, a stop fixed to the rod inward of said member, a spring engaged between said member and said rod stop biasing said member and said rod stop apart, means limiting the outward movement of said member and the shaft relative to the second end of the housing, said second spring resisting movement of the rod stop toward the member and consequently rotation of the shaft prior to engagement of the member with the means limiting outward movement thereof, said crank effecting a lateral pivoting of the cap subsequent to a longi-

tudinal movement of the cap beyond the second end of the housing and an overcoming of the resistance of said second spring.

3. The device of claim 2 wherein the means limiting outward movement of the member is orientated so as to allow a projection of the cap beyond the second end of the housing prior to engagement of the member.

4. The device of claim 3 wherein said crank is angled forwardly, relative to the longitudinal axis of the housing, in the direction of desired rotation.

5. The device of claim 4 including means for aligning said cap with the second end of the housing upon release of pressure on the plunger.

6. The device of claim 5 wherein said last-mentioned means includes an integral extension on said cap engageable with the housing.

7. The device of claim 2 including means for aligning said cap with the second end of the housing upon release of pressure on the plunger, said last-mentioned means including an integral extension on said cap engageable with the housing.

8. A hand stamp comprising an elongated tubular housing, an actuating plunger telescoped in one end of the housing, a die fixed in and projecting from the second end of the housing, an elongated rod fixed to the plunger and extending longitudinally through said housing, a cap telescopically enclosing the second end of the housing and the die projecting therefrom, and means engaged between the rod and the cap for effecting an initial longitudinal movement of the cap beyond the die, for an exposing of the die, and a subsequent lateral swinging of the cap upon a longitudinal movement of the rod through an inward movement of the plunger, said means engaged between the rod and cap including a single shaft extending transversely across the housing and rotatable through at least one longitudinally extending slot therein, said cap having at least one arm fixed to the outer end of the shaft, a crank defined on an intermediate portion of said shaft, said rod being pivotally engaged directly with the crank, and means for preventing rotational movement of the shaft prior to longitudinal movement of the cap beyond the die.

9. A hand stamp comprising an elongated tubular housing, a hollow actuating plunger telescoped in one end of the housing, a die fixed in and projecting from the second end of the housing, an elongated rod projecting longitudinally through said housing and into said hollow plunger,

means pivotally fixing one end of the rod within the plunger, a pair of diametrically opposed longitudinally extending slots in said housing adjacent the second end thereof, a shaft extending transversely across the housing with the opposite ends thereof projecting through said slots, a centrally located crank in said shaft, the second end of the rod being pivotally fixed to said crank, a cap loosely telescoped over the second end of the housing, said cap including a pair of opposed arms positioned on opposite sides of the housing and rigidly fixed, adjacent their ends, to the opposite ends of the shaft, ink pad means in the inner end of the cap, means resiliently biasing said plunger outwardly of said one end of the housing and, through the rod, the ink pad into engagement with the die, said slots being of a length sufficient so as to allow, through pressure on the plunger, movement of the cap longitudinally beyond the second end of the housing, a member slidably mounted in the housing adjacent the second end thereof, said shaft being rotatably received through said member so as to effect a movement of the member longitudinally in said housing in response to movement of the shaft through the rod and plunger, means engaged between said member and said rod inward of said member for biasing said member and said rod relatively away from each other, means limiting the outward movement of said member and the shaft relative to the second end of the housing, said biasing means between said member and said rod resisting movement of the rod toward the member and consequently resisting rotation of the shaft prior to engagement of the member with the means limiting outward movement thereof, said crank effecting a lateral pivoting of the cap subsequent to a longitudinal movement of the cap beyond the second end of the housing and an overcoming of the biasing force of the biasing means engaged between the rod and member.

References Cited

UNITED STATES PATENTS

681,554	8/1901	Jamieson	101—333
1,627,132	6/1925	Wendel	107—48
2,008,725	7/1935	Parker	107—47

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