No. 810,952. PATENTED JAN. 30, 1906.

DE LOS A. LAWTON & L. L. WITHEY.

PIN HOLDING AND DELIVERY DEVICE.

APPLICATION FILED JUNE 16, 1905.

Fig. 1.

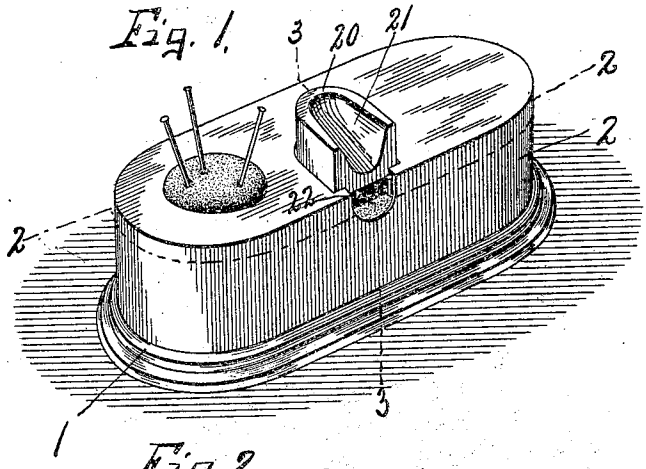


Fig. 2.

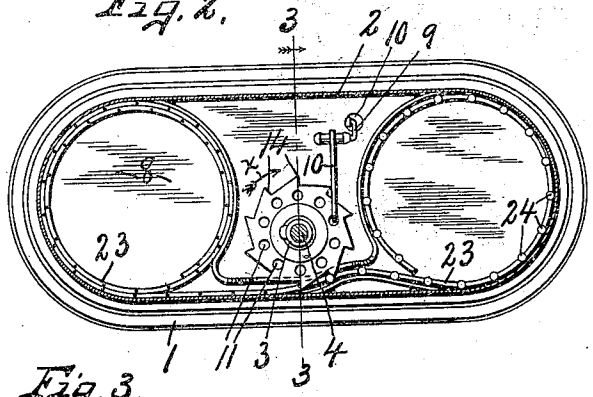


Fig. 3.

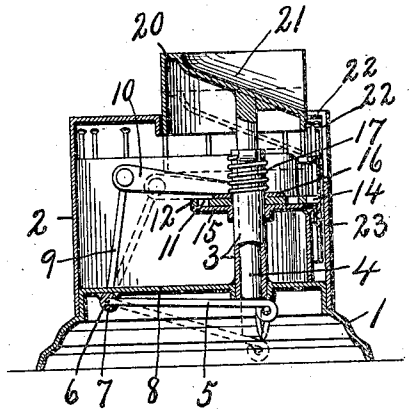
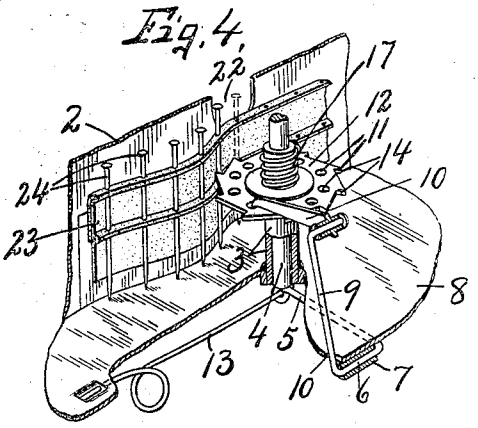


Fig. 4.



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PIN HOLDING AND DELIVERY DEVICE.

No. 810,952. Specification of Letters Patent. Patented Jan. 30, 1906.

Application filed June 16, 1905. Serial No. 265,627.

To all whom it may concern:

Be it known that we, DE LOS A. LAWTON and LOUIS L. WITHEY, of Rome, in the county of Oneida, in the State of New York, have invented new and useful Improvements in Pin Holding and Delivery Devices, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in pin holding and delivering devices adapted for use on office-desks, sewing-tables, and in other places where it is desired to keep a quantity of pins in readiness for use, and refers more particularly to the means by which the pins are fed and delivered one by one as may be needed.

Our object is to inclose within a suitable case a rolled strip in which the pins are inserted at regular intervals, thereby constituting a series of abutments, and to provide means controlled by the finger of the operator for engaging these pins or abutments and feeding the strip step by step, so that at each operation of the finger-piece a single pin is brought into registration with the finger and in such position that it may be withdrawn from the strip as the finger is withdrawn from the finger-piece.

We are aware that a strip of paper containing a series of pins rolled up and placed within a case to be fed to a delivery-opening is not new, such a device being shown in Patent No. 615,885, to Ormond, December 13, 1898. It will be seen, however, that the mechanism involved in this patent is quite complicated and is therefore expensive to manufacture and not easy of manipulation, aside from the liability of frequently getting out of repair by reason of its complicated nature.

One object of our invention is to produce a simple compact pin feeding and delivering device which may be operated by one hand and in which a pin is brought into position and removed by the natural operation of picking up a pin by the head.

Other objects and uses will appear in the following description.

In the drawings, Figure 1 is a perspective view of our improved pin holding and delivering device. Fig. 2 is a horizontal sectional view taken on line 2 2, Fig. 1. Fig. 3 is a transverse vertical sectional view taken on line 3 3, Fig. 1, or 3 3, Fig. 2. Fig. 4 is a perspective view of a portion of the case and the feeding mechanism for the pin-strip.

In carrying out the objects stated we provide an elongated case having semicircular ends and comprising, essentially, a base 1 and a cap 2, the latter having a removable telescopic fit upon the base and serves to inclose the pin-strip and greater part of its actuating mechanism.

Secured to and rising from the longitudinal center of the base at one side of its transverse center is a tubular post 3, in which is movable a vertically-reciprocatory plunger 4, having its lower end resting upon one arm 5 of a bell-crank lever, which is fulcrumed at 6 in a suitable bearing 7 on the under side of the top wall 8 of the base 1. This bell-crank lever is provided with an additional arm 9, extending upwardly through a slot 10 in the base-top 8, and upon the upper end of the arm 9 is pivotally mounted a pawl 10, which is adapted to successively engage a series of apertures 11 in a toothed ratchet-wheel 12 for rotating said ratchet-wheel step by step or one tooth at a time at each operation of the plunger 4. This plunger is held in its extreme up position by a suitable spring 13, having one end secured to the base-plate 8 and its other end bearing against the under side of the arm 5 of the bell-crank lever.

The ratchet-wheel 12 is journaled in a horizontal position upon the tubular post 3 above the base-plate 8 and is of such diameter that its teeth, as 14, which are formed upon the periphery, travel in close proximity to the front side of the inclosing case—that is, the side from which the pins are removed—it being understood that there are as many teeth 14 as there are apertures or ratchet-shoulders 11. This ratchet-wheel 12 is revolubly supported between two disks 15 and 16, the disk 15 being secured to the post 3 at the under side of the ratchet-wheel, and the disk 16 is loose upon the post and frictionally bears against the top face of the ratchet-wheel, thereby forming a frictional retarding-disk which is pressed against the adjacent face of the ratchet-wheel by a suitable coil-spring 17 to prevent retrograde movement of the ratchet-wheel upon the return movement of the pawl 10 and plunger 4 after each depression.

It will be observed that the bell-crank lever having the arms 5 and 9 is fulcrumed at 6 at the rear of the spindle or plunger 4 and that the arm 5 and pawl 10 extend horizontally in substantially the same direction from their pivots, so that as the plunger 4 is

depressed the underlying arm 5 is forced downwardly and the pawl 10 is correspondingly moved forwardly, thereby engaging one of the apertures 11 and moving the ratchet-wheel one step or in the direction indicated by arrow *x*, Fig. 2.

Secured the upper end of the plunger 4, above the ratchet-wheel 12, is an enlarged sheet-metal head 20, having a central finger-groove 21 open at the front side and having its bottom inclined downwardly and forwardly, the groove being of ample size to receive the finger, and the bottom of the groove forming a convenient presser-plate, whereby the plunger 4 may be readily depressed by the engagement of the finger with said presser-plate.

The cap or top 2 of the inclosing case is provided with an opening 22, in which the finger-head 20 is movable, said opening 22 extending through the upper portion of the front side of the cap 2 for a purpose presently described.

A strip of paper or equivalent material 23, containing a plurality of pins, as 24, is rolled upon itself in one of the circular ends of the case, so that the points of the pins rest upon the upper face of the base-plate 8, and the pins 24 are inserted vertically into the strip 23 and are spaced apart a distance substantially equal to the distance between adjacent teeth 14 of the ratchet-wheel 12.

As previously stated, the periphery of the ratchet-wheel travels close to the front side of the inclosing case or cap 2, and the pins 24, standing in an upright position, are caused to be exposed in line with the ratchet-wheel, so that each may form an abutment to be engaged by one of the teeth of the ratchet-wheel as the latter is rotated by each downward movement of the plunger 4.

In operation one end of the strip 23, containing the pins 24, is drawn forward between the front side of the case and adjacent side of the ratchet-wheel 12, bringing one of the pins 24 into position to be engaged by one of the teeth 14. Now by placing the finger in the groove 21 and depressing the plunger 4 against the action of the spring 13 the bell-crank lever is thereby operated to move the pawl 10 forwardly, which by reason of its engagement in one of the apertures 11 partially rotates the ratchet-wheel 12 the distance of one tooth, and thereby advances the pin-strip 23 a similar distance to bring the first pin into registration with the opening 22 in the front side of the cap 2, the pin-head of course being uppermost and directly in front of the open side of the groove 21 while the latter is depressed. It is now obvious that the mere act of withdrawing the finger from the groove 21 in the head 20 brings such finger into engagement with the head of the pin, and the operator intuitively grasps the pin between the finger and thumb and withdraws the same through the opening 22, after which the plunger is returned to its normal up position by the spring 13 and the pawl 10, and bell-crank lever is also returned by the same means, ready to repeat the operation just described. As the paper strip from which the pins have been removed continues to feed forwardly it is deflected by the circular end of the case or cap 2 and caused to coil itself in the opposite ends of the case. These strips with the pins inserted therein are made up in roll form and inserted in one end of the case with one end engaged by the ratchet-wheel 12, which feeds the strip step by step at each operation of the plunger, and therefore presents a single pin at the opening 22 at each depression of said plunger, the portion of the strip from which the pins have been removed being automatically coiled in the opposite end of the case, where it may be removed when the pins are exhausted and a new roll of pins reinserted.

It will be observed that the cap 2 may be readily removed and replaced without disturbing any of the other elements, and this therefore permits the interior mechanism to be readily inspected or repaired and also facilitates the work of placing and removing the pin-rolls and empty strips.

The parts herein described are particularly simple, durable, and efficient and may be manufactured at a comparatively small cost.

What we claim is—

1. In a pin holding and delivering device, the combination of a toothed wheel, a plunger, means for transmitting motion from the plunger to the toothed wheel, and a pin-strip actuated step by step by said toothed wheel.

2. In a pin holding and delivering device, the combination with a pin-supporting strip in which the pins are arranged at regular intervals, a ratchet-wheel rotatable and provided with teeth successively engaging said pins to feed the strip one pin-space at a time, a finger-operated plunger and means for transmitting motion from said plunger to the ratchet-wheel.

3. A pin-strip feeding device comprising a rotary toothed wheel and a reciprocatory plunger adapted to be operated by the pressure of the finger and operatively connected to rotate said wheel.

4. In a device of the class described, a vertically-movable plunger adapted to be operated by the finger, in combination with a ratchet-wheel encircling the plunger and means for transmitting motion from the plunger to the ratchet-wheel.

5. In a device of the class described, the combination of a vertically-movable finger-actuated plunger, a toothed wheel having its axis coincident with the center of the plunger, a bell-crank actuated by the plunger and a pawl mounted on the bell-crank and engag-

ing said wheel to rotate the latter one tooth at each operation of the plunger.

6. In a device of the class described, an inclosing case having a finger-opening and a pin-supporting strip movable across said opening to bring the heads of the pins in registration therewith, a toothed wheel rotatable step by step and operatively connected to feed said strip one pin-space at a time, and finger-operated means operatively connected to rotate said wheel one tooth-space at a time.

7. In a device of the class described, a finger-operated plunger having a finger-groove open at one side, a pin-strip and means brought into action by the depression of said plunger whereby the strip is fed one pin-space and one pin is brought into registration with the open side of the finger-groove as the plunger is depressed.

8. In a device of the class described, a pin-holding strip and feeding means therefor comprising a toothed wheel a plunger adapted to be operated by the finger and means brought into action by the depression of said plunger for rotating said wheel one tooth-space.

9. In a device of the class described, the combination of an inclosing case consisting of a base and a top portion telescoping with the base, a tubular post rising from the base, a plunger movable in said post, a rotary toothed wheel encircling said post, means for transmitting motion from the plunger to the wheel, and a pin-supporting strip actuated step by step at each movement of said wheel.

10. In a device of the class described, an inclosing case and pin-supporting strip having its pins spaced equidistant apart, said case having a finger-opening, a rotary wheel engaging and feeding the strip, a plunger movable through said wheel, and means for transmitting motion from the plunger to the wheel, whereby said wheel is caused to move the strip one pin-space to bring a pin into registration with the opening at each depression of the plunger.

In witness whereof we have hereunto set our hands this 13th day of June, 1905.

DE LOS A. LAWTON.
LOUIS L. WITHEY.

Witnesses:
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F. M. ORTON.