M. KATZMAREK.

SNAP FASTENER.

APPLICATION FILED APR. 9, 1918. RENEWED FEB. 12, 1920.

**1,350,314.** **Patented Aug. 24, 1920.**

Fig. 2.

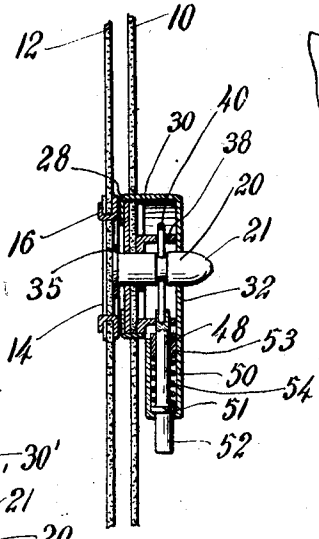



Fig. 1.

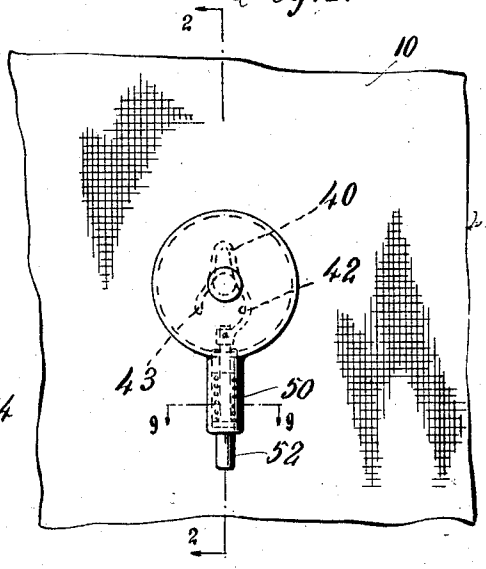



Fig. 10.

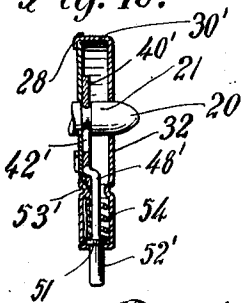



Fig. 9.




Fig. 3.

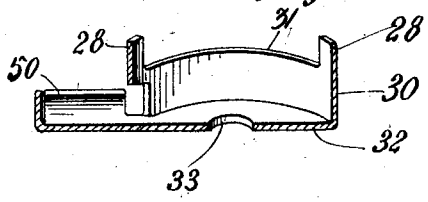



Fig. 4.

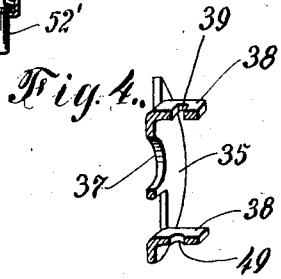



Fig. 5.




Fig. 8.

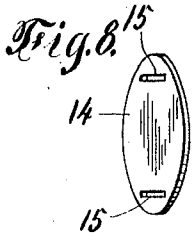



Fig. 7.

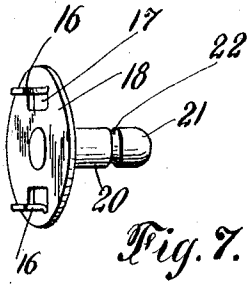
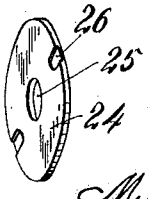



Fig. 6.




INVENTOR

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# UNITED STATES PATENT OFFICE.

MICHAEL KATZMAREK, OF DULUTH, MINNESOTA.

## SNAP-FASTENER.

1,350,314. Specification of Letters Patent. Patented Aug. 24, 1920.

Application filed April 9, 1918, Serial No. 227,589. Renewed February 12, 1920. Serial No. 358,128.

*To all whom it may concern:*

Be it known that I, MICHAEL KATZMAREK, a citizen of the United States, residing at Duluth, county of St. Louis, State of Minnesota, have invented a certain new and useful Improvement in Snap-Fasteners, of which the following is a specification.

This invention relates to improvements in snap-fasteners, and particularly to types adapted to positively engage sheets or plates of material, one with another, in such manner that the same can be readily separated when desired.

The principal object of the invention is to provide a fastener, of the type described, having means readily operable from the exterior for disengaging the parts, all of which are of strong and durable construction, adapted for any service.

These, and other like objects, are attained by the novel construction and combination of parts hereinafter described, and shown in the accompanying drawing forming a material part of this disclosure, and in which:—

Figure 1 is a plan view of a fastener made in accordance with the invention and indicating its application;

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

Fig. 3 is a perspective view of the outer shell or casing, the same being shown partially in section;

Fig. 4 is a like perspective view of a flanged element used to guide the spring engaging means;

Fig. 5 is a perspective view of the engaging spring loop;

Fig. 6 is a perspective view of the inner securing disk;

Fig. 7 is a similar view of the support plate and tubular post;

Fig. 8 is a perspective view of the lower disk, by means of which the device is attached to the material; and

Fig. 9 is a transverse sectional view taken on line 9—9 of Fig. 1.

Fig. 10 is a sectional view of a modified form.

Throughout the drawing the numeral 10, represents the upper sheet or plate of material, and 12, the lower. On the outer surface of the lower sheet is secured a disk 14, having spaced longitudinal slots 15 formed therethrough, receptive of prongs 16, formed with a plate 18, by pressing out the material, leaving openings 17. The prongs 16 are passed through the material and the openings 15 in the lower disk 14, after which they are bent laterally outward so as to hold the two plates rigidly upon opposite sides of the material 12.

Rigidly secured centrally of the plate 18, is an extending tubular post 20, having an oval head 21, and formed with a circumferential depressed groove 22, between its longitudinal extremities.

A disk 24, formed with a central opening 25, adapted to be passed over the post 20, is secured to the lower side of the material 10, the disk having opposed recesses 26, engageable with which are prongs 28, formed with a cylindrical casing 30, the prongs extending beyond the edge 31, the casing having an integral cover 32, through which is a central opening 33, permitting the post to enter.

A circular guide plate 35, is secured to the upper side of the second sheet of material 10, by reason of the contacting edges 31 of the shell 30, resting upon the marginal periphery of the plate 35, and has a central opening 37 through which the post 20, passes, and has also oppositely raised lugs 38, containing openings 39 and 49, the lugs being pressed from the material of the plate 35. The opening 39 in one of said lugs is receptive of the extended reduced end 40 of a wire loop 42, the latter being formed to pass over the post 20, while the reduced end 40 is engageable with the post 20, within the circumferential groove 22 of the post. One end 43 of the spring wire is left free, while the other end 44, is provided with suitable securing means, by which it is attached to the outer end of a spindle 48, which is adapted to slidably engage and be guided in the opening, 49, formed in the other lug 38, which obviously is positioned more closely to the side of the shell 30 than the opposite lug in order to receive said spindle.

Extending outward from the shell 30, is a tubular casing 50, through which the spindle 48 extends, the latter being provided with a fixed collar 51, and terminating in an outstanding knob or projection 52. In the interior of the tubular casing 50 is a collar 53, through which the spindle 48 passes, and between the collars 51 and 53, en-

circling the spindle, is a coiled compression spring 54, adapted to maintain the knob 52, in an extended position.

In operation, the parts being assembled as indicated in Figs. 1 and 2, and it being desired to connect the plates or sheets of material, it is merely necessary to place the alined openings 25, 33 and 37, over the extending post 20, and press the casing 30 into position, which action causes the spring loop to be moved against the action of the spring 54 so as to allow the post to pass through the loop 42 and the opening 53, whereupon the spring 54, will draw the spring loop 42 rearwardly, extending the knob 52 and causing the extended reduced end 40 of the loop to enter into the recess 22 of the post, locking the parts securely together.

Obviously, when it is necessary to disconnect the plates or sheets, it is readily accomplished by pressure applied to the knob 52, overcoming the spring 54, pressing the spring loop 42 outwardly, whereupon the post 20 may be withdrawn from the reduced end 40 and the plates or sheets can be separated.

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

1. A snap-fastener comprising two separable parts adapted to be secured to material, one of said parts having a post projecting therefrom provided with a circumferential recess, the other of said parts having a spring wire loop engageable in said recess to hold said post, a spring controlled spindle for operating said loop, and a guide-plate, supported in the last named part, having openings to receive said spindle and loop.

2. A snap-fastener comprising two separable parts adapted to be secured to material, one of said parts having a post projecting therefrom provided with a circumferential recess, the other of said parts having a spring wire loop engageable in said recess to hold said post, a spring controlled spindle for operating said loop, and a guide-plate having lugs with openings therein to receive said spindle and loop.

3. A snap-fastener comprising a pair of plates adapted to be disposed upon opposite sides of material, means for rigidly engaging said plates together, a post formed with one of said plates said post extending outwardly from the center thereof, a second pair of plates adapted to be engaged with other material, a hollow casing covering one of said second pair of plates, means formed with said casing whereby said plates are held in rigid relation to the material, said casing having a central opening through which said post may extend, a spring loop slidably mounted in said casing, said loop being engageable with a circumferential recess formed in said post, a tubular extension projecting laterally outward from said casing, a plunger mounted therein, said plunger being connected with said spring loop, means in said extension suited to retain said loop in contact with the recess in said post, and a knob extending from plunger whereby said loop may be released.

4. A snap-fastener, comprising a pair of plates adapted to be rigidly engaged upon opposite surfaces of one piece of material, and a second pair of plates adapted to be engaged with another piece of material, a cylindrical casing covering one of said plates, means formed with said casing for holding said plates in position, a tubular post engaged with one of the first named plates, said post being enterable within an opening formed in the second named plate and said casing, a spring loop slidably mounted in said casing, lugs formed in one of said plates whereby said loop is guided, means for holding said loop normally in connection with said post, and means of releasing said loop therefrom.

5. A snap-fastener comprising two separable parts, one of said parts having a post provided with a circumferential recess, the other of said parts having a spring wire loop provided with a reduced extended end engageable in said recess to hold said post, a spring controlled spindle secured to said loop to operate the same, and a guide-plate engaging and controlling the end of said loop and said spindle.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 21st day of December, 1917.

MICHAEL KATZMAREK.

Witnesses:

WILLIAM E. RICHARDS,

JEWEL O. CAMERON.