J. H. M. MICHON.

DEVICE FOR APPLYING RIVET FASTENERS.

APPLICATION FILED MAR. 11, 1914. RENEWED JULY 13, 1917.

1,257,724. Patented Feb. 26, 1918.

2 SHEETS—SHEET 1.

FIG. 1.

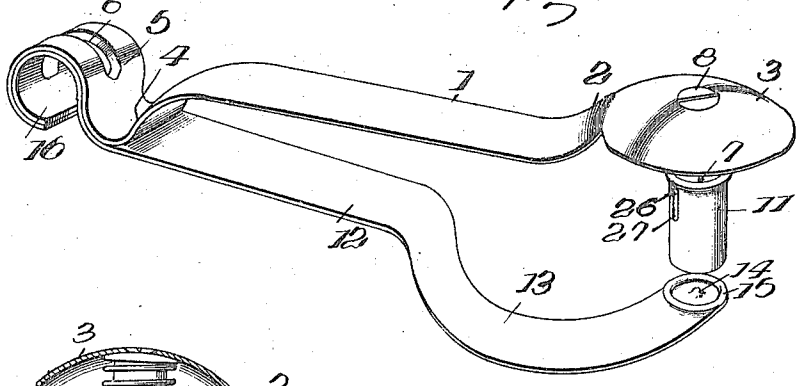


FIG. 2.

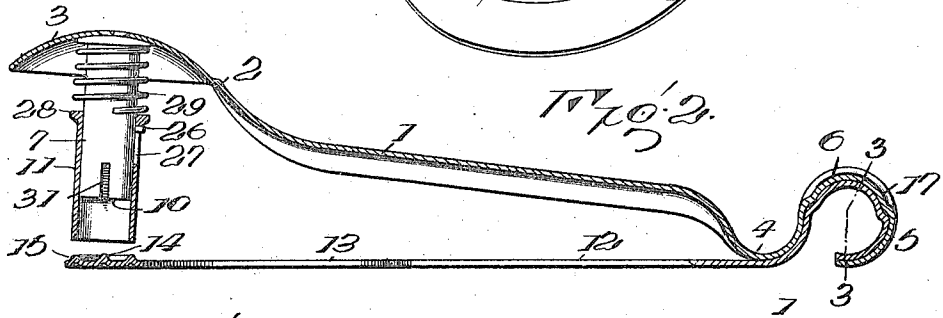


FIG. 11.

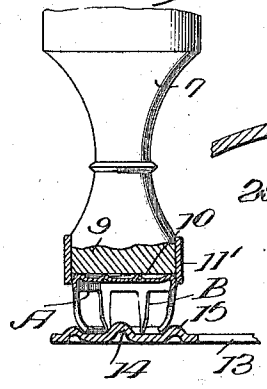
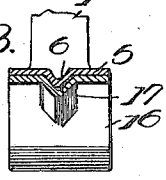


FIG. 3.



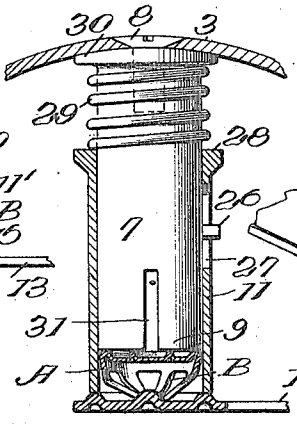


FIG. 4.

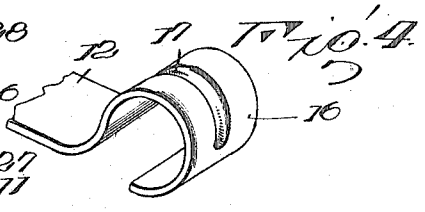


FIG. 5.

Witnesses

J. E. Smith.

Chas. W. Adams

Inventor

J. H. M. Michon

By Howard Howard, Attorneys.

J. H. M. MICHON.

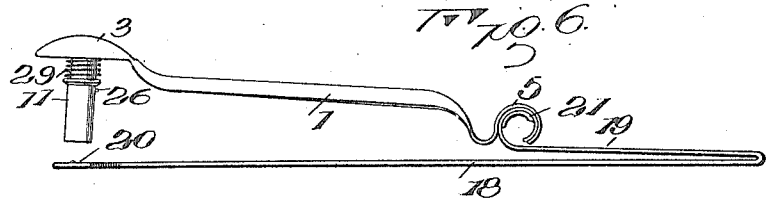
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2 SHEETS—SHEET 2.

FIG. 6.



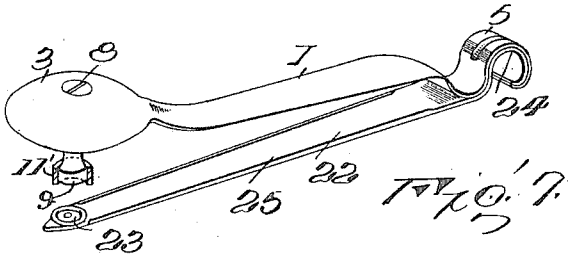


FIG. 7.

FIG. 9.

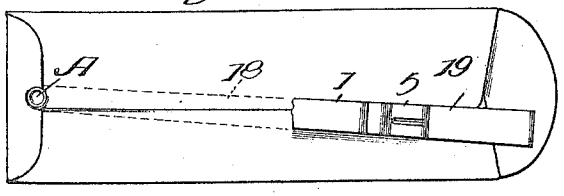


FIG. 10.

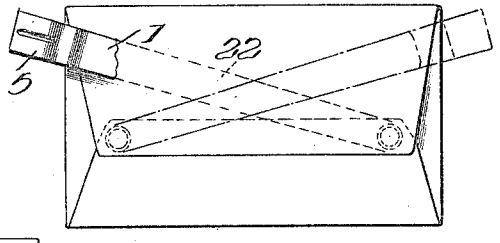
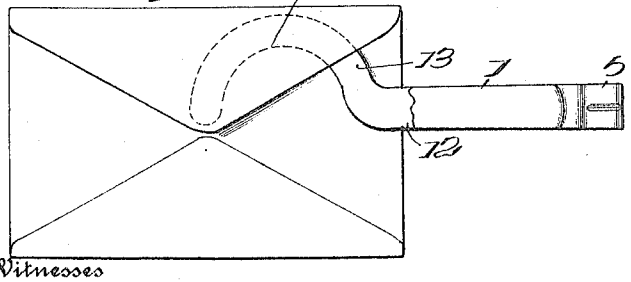


FIG. 8.



Witnesses

O. E. Smith

Chas. W. Adams

Inventor

J. H. M. Michon

By [illegible] Attorneys.

UNITED STATES PATENT OFFICE.

JOSEPH H. M. MICHON, OF WASHINGTON, DISTRICT OF COLUMBIA.

DEVICE FOR APPLYING RIVET-FASTENERS.

1,257,724. Specification of Letters Patent. Patented Feb. 26, 1918.

Application filed March 11, 1914, Serial No. 823,960. Renewed July 13, 1917. Serial No. 180,485.

To all whom it may concern:

Be it known that I, JOSEPH H. M. MICHON, subject of the King of Great Britain, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Devices for Applying Rivet-Fasteners, of which the following is a specification.

This invention relates to devices for applying fastening rivets and has as its object to provide a simple hand operated device of this class adapted particularly for use in applying such rivet fasteners to envelops, in such manner as to more effectually seal the same.

More specifically, the invention aims to provide a rivet applying device of this class so constructed that the hammer member thereof may be readily assembled with anvil members of different forms adapted for use in applying the rivets to envelops of different sizes and different types.

Another aim of the invention is to so construct the hammer of the device that it will be adapted to automatically grip and hold the rivet applied thereagainst by magnetism and will automatically act to center the rivet upon the working face of the hammer.

In the accompanying drawings:

Figure 1 is a perspective view of the device embodying the present invention, the view illustrating one form of the anvil member.

Fig. 2 is a vertical longitudinal sectional view through the structure shown in Fig. 1.

Fig. 3 is a vertically transverse sectional view on the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of the head end of the anvil member.

Fig. 5 is a view partly in elevation and partly in section, illustrating in detail the hammer member.

Fig. 6 is a side elevation, illustrating another form of anvil member adapted especially for use in sealing long envelops.

Fig. 7 is a perspective view, illustrating another form of anvil member.

Fig. 8 is a view illustrating the manner of using the device when arranged as shown in Fig. 1 of the drawings:

Fig. 9 is a view similar to Fig. 8, illustrating the manner of using the device when arranged as shown in Fig. 6.

Fig. 10 is a view similar to Fig. 9, illustrating the manner of using the device when arranged as shown in Fig. 7.

Fig. 11 is a view partly in elevation and partly in section, illustrating a modified form of hammer member.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

In connection with the several forms of anvil members, but a single hammer member is provided, which member is adapted to be readily and quickly applied to and removed from the several anvil members. This hammer member comprises a shank 1 which is preferably transversely curved to a slight degree so as to reinforce it and impart to it the desired resiliency, and this shank at its forward end is curved upwardly, as at 2, and provided with an integral knob 3, which is preferably concavo-convex and which has its convex side presented upward, the said knob being of a form to fit the hollow of the palm when the knob is struck by the hand in the act of operating the device. Adjacent its rear end the shank 1 is curved sharply downwardly, as indicated at 4, and is thence bent to form a head 5 which is cylindrical, the head, however, being open at its under side. For a purpose to be presently explained, the head 5 is stamped-in to form a rib 6 extending circumferentially of its inner face, and this rib terminates short of the open side of the head at one end and at its other end short of the bend 4. The shank of the hammer is indicated by the numeral 7 and is disposed at its upper end against the concaved side of the knob 3 and is secured in place preferably by a screw 8 fitted through an opening in the knob and threaded into the said end of the shank 7. The lower end of the shank 7 is provided with a working head 9 having a plane under face 10 and having applied to it a collar 11 which is preferably of aluminum, although it may be of any other non-magnetic material, the head itself being preferably of steel in order that it may be magnetized. By reference to Figs. 2 and 5 of the drawings, it will be observed that the lower edge of the collar 11 projects a short distance below the plane face 10 of the hammer head 9 and by reference to the said Fig. 5, it will be ap-

parent that a rivet disposed against the working face of the hammer head will be attracted thereto by magnetism, and being more or less rounded at its periphery, and being strongly attracted by the hammer head, will be automatically centered against the head as its rounded periphery rides over the projecting edge of the collar 11.

The anvil member shown in Figs. 1 and 2 of the drawings is adapted particularly for use in connection with an envelop in which the upper or free edge of the back is located relatively close to the fold between the front and closure flap of the envelop, and this member comprises a shank 12, the forward end portion of which is curved laterally, as at 13, the extremity of its curved portion terminating in the direct line of the shank portion 12. The said terminal portion of the shank constitutes the anvil proper and is formed with an upstanding central portion 14 and an upstanding rib 15 which is concentric to the portion 14. It will be apparent by reference to Fig. 5 of the drawings that the rivet to be applied, which rivet comprises a head A and prongs B, will, when disposed in the position shown in the said figure and a blow is struck the knob 3 of the hammer member, have its prongs driven through the sheets of paper or plies of an envelop disposed upon the anvil, the ends of the prongs being turned inwardly by the rib 15 and struck up by the central projection 14. At its inner or rear end, the shank 12 of the anvil member is provided with a head 16 which corresponds in form to the head 5, the stamping up of the head 5, however, as in the formation of the rib 6, resulting in a circumferential groove 17 in the outer surface of the said head 16. It will now be apparent that the heads 5 and 16 may be disposed with the free end of the head 5 projecting into the open side of the head 16, and the members comprising the device may then be relatively swung so as to cause the head 16 to enter the head 6, the rib 6 seating in the groove 17, whereby to prevent accidental separation of the members, although not interfering with their ready separation when intended. If reference will now be had to Fig. 8 of the drawings, it will be apparent that in using this form of the invention, the curved portion 13 of the shank of the anvil is inserted within the mouth of the envelop to be sealed with the upper edge of the back of the envelop received within the concavity of the said curved portion of the shank, as indicated at C in the said figure. After the anvil member has been thus engaged with the envelop, the closure flap of the envelop is moistened and folded over to closed position and one of the rivets is disposed against the hammer of the device and the knob 3 is struck a sharp blow, thereby driving the rivet through the closure flap at the middle thereof and through the said back of the envelop. The curved portion of the anvil shank may then be worked out of engagement with the envelop and the sealing of the flap completed by pressing, as in the usual manner.

The anvil member in Fig. 6 of the drawings, comprises a straight shank 18 bent back upon itself adjacent its rear end to form a forwardly projecting portion 19 spaced from the body portion of the shank. The shank 18 at its forward end is provided with an anvil head 20 of the same form as that previously described, and the forward end of the returned portion 19 of the shank 18 is provided with a head 21 corresponding to the head 16. By reference to the said Fig. 6 it will be apparent that the head 5 of the hammer member is to be engaged with the head 21 in the same manner as the said head 5 is engaged with the said head 16, after which engagement the shank 1 of the hammer member will extend above the forward portion of the anvil 18. This form of the anvil member is used principally in sealing relatively long envelops, which have their closure flaps located at one end. In using this form of the device, the shank 18 is first inserted in the mouth of the envelop until the anvil 20 is located near the bottom or closed end of the envelop, whereupon one of the rivets is applied in the manner previously described. The device is then shifted in a manner as if withdrawing it from the envelop, and one or several more of the rivets are applied along the seam of the back of the envelop. In riveting the closure flap of the envelop in place, the anvil member just described is separated from the hammer member and the first described anvil member is substituted therefor, and the closure flap is riveted in the manner explained in connection with Fig. 8.

In that form of the invention shown in Fig. 7 of the drawings, the anvil member comprises a shank 22 having an anvil 23 at one end and a head 24 at its other end, the shank being straight and of any desired length and having its anvil 23 and head 24 corresponding in form to the anvil and head of the first described form of the anvil member. By reference to the said Fig. 7 it will be readily understood how the hammer member is to be assembled with this type of anvil member. This form of the invention is designed particularly for use in sealing an envelop of the form shown in Fig. 10. In this form of envelop, the upper edge of the back may be more or less remote from the fold between the front and closure flap of the envelop and the closure flap is more nearly rectangular than triangular. Consequently, it is desirable to apply a rivet at each lower corner of the closure flap. In so applying the rivets, the anvil member has its

shank inserted beneath the closure flap to extend diagonally beneath the back of the envelop in the manner indicated in the said Fig. 10, and the rivets are applied in the manner previously explained.

By reference to the several figures of the drawings, it will be understood that the bend 4 in the shank of the hammer member is adapted to rest upon the shank of the anvil member, and by its resiliency be yieldably supported, the said shank of the hammer member being spaced above the shank of the anvil member.

If desired the shanks of the several forms of anvil members may be employed for the purpose of opening envelops, and to facilitate this use of the said shanks, their edges may be beveled as indicated at 25.

The collar or sleeve 11 is preferably loosely fitted about the hammer shank and held against disengagement therefrom by a pin 26 slidable in a vertically formed slot 27 in the sleeve, this slot being so arranged that in the raised position of the sleeve its lower edge will be substantially flush with the plane lower face of the hammer head. The upper end of the sleeve is bulged to provide a stop shoulder 28, and a helical spring 29 surrounding the upper portion of the hammer shank, bears between this head and a head 30 formed upon the upper end of the shank 7 and supporting the knob 3 of the hammer shank. This spring 29 normally holds the sleeve in lowered position, that is, with its free end spaced below the lower end of the hammer head 9 to form a retaining flange or guide to insure proper seating of the fastener A. The operation of the sleeve will be readily understood by reference to Fig. 5, as it will be clear that depression of the hammer, the sleeve resting upon the anvil, will merely force the hammer from the sleeve to secure the fastener, the spring returning the sleeve to normal position upon the release of the pressure.

Although the above is the preferred construction, a relatively short sleeve firmly fixed about the lower end of the hammer and extending but a comparatively short distance below its working face may be employed. Such a construction is shown in Fig. 11, in which the sleeve is indicated by the numeral 11′.

In order to permit of more effective magnetization of the hammer head, this head is preferably provided with a diametrically formed slot or cleft 31, thereby providing two magnetic poles, the free ends of which form the working face of the hammer.

Having thus described my invention what I claim is:

1. In a device of the class described, an anvil member having a shank provided with an anvil portion and with an arcuate open sided head, and a hammer member having a shank provided with a head separably connected with the first mentioned head, the shank of the hammer member being provided with a hammer located for coöperation with the anvil portion, the said heads being provided, one with a circumscribing rib and the other with a circumscribing groove, the rib and the groove constituting locking means for the heads.

2. In a device of the class described, an anvil member and a hammer member for cooperation therewith, the hammer member having a magnetized hammer head, said head being provided with a collar rigidly fixed thereon and having an edge projecting beyond the working face of the head and being of non-magnetic material.

3. In a device of the class described, an anvil member, having a shank provided with a portion returned upon itself and spaced therefrom, the said shank being provided with an anvil portion and said returned portion being provided with a head, and a hammer member including a shank having a head separably connected with the first mentioned head, said shank of the hammer member being provided with a hammer for coöperation with the said anvil portion.

4. In a device of the class described, an anvil member having a shank provided with an arcuate head and a hammer member including a shank provided with an arcuate head rotatably and separably fitting the head of the anvil member, the said shank of the hammer member being resilient and the said shanks of the anvil and hammer members being provided with contacting portions adjacent their said heads so arranged that the shank of the hammer member will be yieldably held in elevated position, and means upon the heads of the hammer and anvil members for preventing lateral displacement of their said heads.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH H. M. MICHON. [L. S.]

Witnesses:

SAMUEL A. ACKER,

JOSEPH C. ZIRKLE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."