

Aug. 10, 1943.

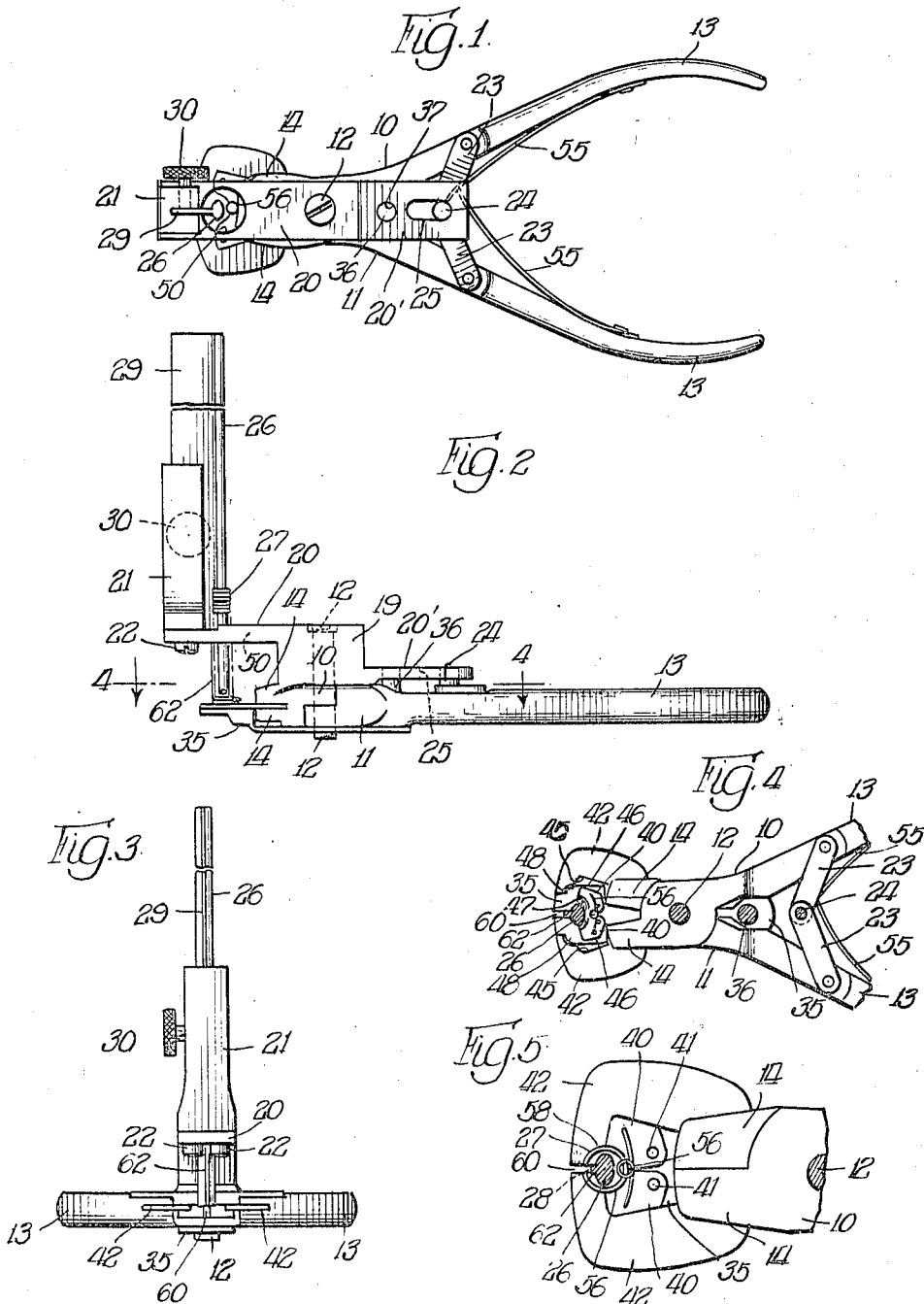
W. U. WATSON

2,326,709

TOOL

Filed July 23, 1941

2 Sheets-Sheet 1



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Fig. 6.

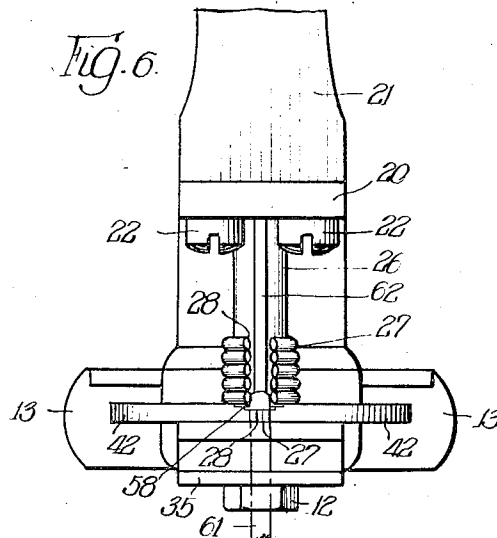


Fig. 7.

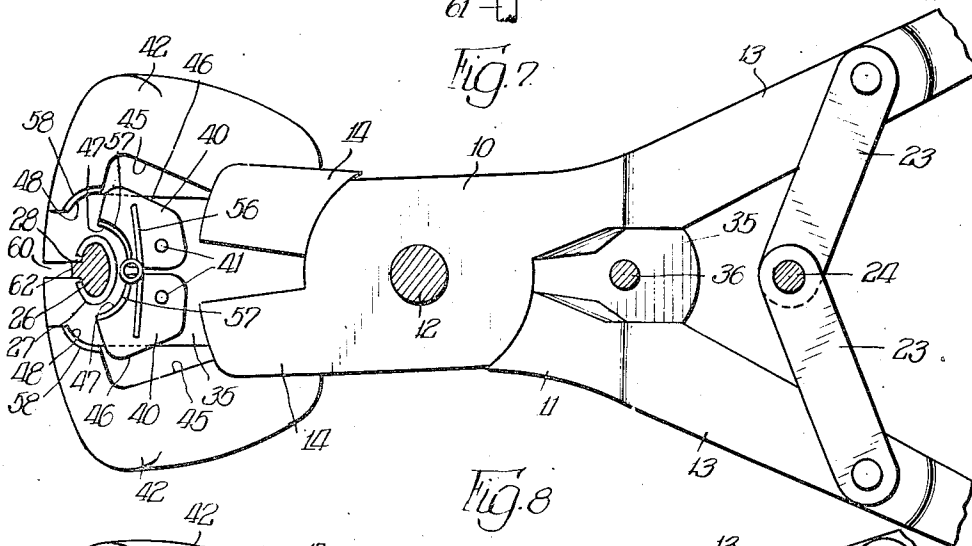
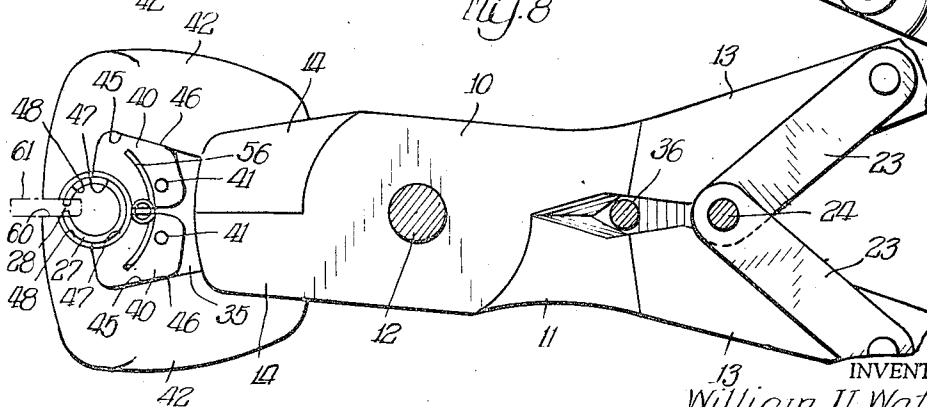


Fig. 8.



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UNITED STATES PATENT OFFICE

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TOOL

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17 Claims. (Cl. 140—55)

The present invention relates to tools and more particularly to a tool for applying metallic rings to eyelets in medals, keys, badges and the like.

A primary object of the invention is the provision of a simple and inexpensive tool for rapidly, easily and semi-automatically applying metallic supporting rings of even very small sizes to medals or the like.

A further object is the provision of a tool for greatly facilitating the application of supporting rings to such articles.

A further object is to provide a tool for attaching rings to medals and the like which avoids the necessity for individually handling the rings and holding the rings by hand during the attaching operation.

A further object is the provision of such tool which provides for automatically feeding a plurality of successive rings into the tool for attachment to a medal or the like.

A still further object is the provision of such tool which can be readily and quickly reloaded with a plurality of rings for attachment to medals or the like and in which the reloading means provides for supporting and storing the rings prior to application to the tool.

A further object is the provision of such tool which applies substantially circular supporting rings to a medal or the like and provides for forming rings having their mating ends closed and lying in substantially the same plane.

These and other objects will be apparent from the following description, the appended claims, and the accompanying drawings in which:

Fig. 1 is a top plan view of a tool embodying the invention;

Fig. 2 is a side elevation of the tool shown in Fig. 1;

Fig. 3 is a front end elevation of the tool of Fig. 1;

Fig. 4 is a detail plan view with a portion of the structure in Fig. 1 removed, as indicated by the line 4—4 of Fig. 2;

Fig. 5 is a view similar to Fig. 4 with the parts in a different operative position;

Fig. 6 is an enlarged detail of the lower portion of Fig. 3;

Fig. 7 is an enlarged detail of the structure shown in Fig. 4; and

Fig. 8 is an enlarged detail similar to Fig. 5.

Referring to the drawings which illustrate a selected embodiment of the invention, there is shown a pair of members 10 and 11 pivotally connected together by the bolt 12 and having the general shape of a pair of pliers or the like. Each of the members 10 and 11 comprises a body portion having a handle 13 and a forwardly extending jaw portion 14. Upon squeezing the handles 13 together the forwardly extending jaw portions 14 are adapted to move towards each other in the

manner of the well known pliers and as shown in Figs. 5 and 8.

A member 19 having a forwardly extending plate 20 is mounted on top of the plier-like members 10 and 11 by means of the bolt 12 and at its forward end supports an upwardly extending supporting block 21. The block 21 is attached to plate 20 by bolts 22. The plate 20 is maintained in proper alignment with the plier-like members 10 and 11 by means of a pair of links 23 pivotally connected to handles 13 and a pin and slot connection 24—25. The pin 24 is carried by one of the links 23, pivotally extends through the other link and is received in the slot 25 which is provided in a rearwardly extending portion 20¹ of the member 19.

The upwardly extending block 21 provides for detachably supporting a rod 26 having a plurality of open ended metallic ring-like members 27 carried thereby. The ring-like members 27 are substantially oval shaped and have open ends 28 spaced a predetermined distance apart. The members 27 are so constructed as to have all portions thereof in substantially a single plane and are arranged one on top of the other on the rod 26. The rod 26 is substantially oval shaped in transverse cross-section to accommodate the shape of the ring-like members 27 and is provided with a longitudinally extending fin or projection 29 adapted to extend between the spaced apart ends 28 of the ring members 27 and maintain the ring members in predetermined positioning on the rod 26.

The supporting block 21 is provided with a slot for receiving the outer portion of the fin or projection 29 of the rod 26 and a set screw 30 provides for detachably maintaining the fin in position within this slot. The rod 26 is thus normally supported vertically with respect to the plier-like members 10 and 11 but can be readily detached for replacement by another rod 26 with a new supply of ring-like members on the tool.

A second plate member 35 is supported beneath the plier-like members 10 and 11 by the bolt 12 and extends forwardly to directly underlie the forwardly extending jaw portions 14 of said members. A pin 36 is fixed to the rear portion of this lower plate 35 and extends upwardly through an aperture 37 in the portion 20¹ of the upper member 19 to maintain the lower plate 35 in proper alignment with the plier-like members 10 and 11.

A pair of anvils 40 are pivotally mounted on the lower plate 35 as indicated at 41 and are positioned between cooperating outer anvil portions 42 attached to and extending forwardly of the jaw portions 14 of the plier-like members. The outer anvil members 42 are provided with inner cam portions 45 adapted to engage and cooperate with cam portions 46 on the inner

anvil members about the pivots 41 upon closing anvil members 40 to effect closing of the inner of the outer anvil members by squeezing the handles 13 of plier-like members 10 and 11 together. Each of the anvil members 40 and 42 is provided with suitably curved inner portions 47 and 48, respectively, adapted to engage around the outer circumference of the ring-like members 27 upon closing of the anvil members. The arrangement of the several parts is such that when one of the open ended substantially oval shaped ring-like members 27 is received on the lower plate member 35 the ring-like member will be pressed by the curved portions 47 and 48 of the inner and outer anvil members into substantially circular shape and the formerly open ends of the ring-like member will be substantially closed with the mating ends thereof lying in substantially the same plane, as shown in Figs. 5, 6 and 8. This operation of the anvils is particularly illustrated in Figs. 7 and 8. Fig. 7 shows an open-ended oval shaped ring-like member 27 as it is received on the lower plate 35 prior to the operation of the tool while Fig. 8 shows the ring member 27 after operation of the anvils 40 and 42 to press the member into substantially circular form with its mating ends substantially closed.

To provide for successively and automatically feeding a new ring-like member 27 to the anvils 40 and 42 after each pressing operation, the upper plate member 20 is provided with an aperture 50 (Figs. 1 and 2) and the rod 25 is adapted to extend downwardly through this aperture into close juxtaposition to the top of the anvil portions 40 and 42. As soon as one ring-like member 27 has been pressed closed and removed another directly on top of it falls by gravity onto lower plate 35 and is in position for pressing by the anvil members. The bottom rod 25 terminates sufficiently far above plate 35 to permit the pressing operation of the anvils and removal of the closed ring. When the complete supply of ring members 27 on one rod 25 has been used up the rod can be readily and quickly removed by releasing set screw 34 and a new rod with another supply of the ring members substituted in its place.

A pair of cooperating spring members 55 attached to handles 13 provide for spreading the handles and outer anvil members 42 after each squeezing or pressing operation. A coiled spring member 56 attached to the inner anvil members 40 normally provides for swinging these members about their pivots into open position as shown in Figs. 1, 4 and 7. Bevels 57 and 58 are provided on the inner and outer anvil members, respectively, to assist in positioning a new ring member 27 on the lower plate 35.

The tool as thus described is particularly adapted for applying supporting rings to medals, badges and the like having an aperture or eyelet for receiving the ring. For this purpose the lower plate 35 is provided with a slot 60 for receiving the apertured medal or the like 61 endwise therein (see Figs. 1 and 8). The medal 61 is so positioned in the slot 60 that the aperture or eyelet of the medal is in position to receive the ends of a ring member 27 and operation of the tool causes the ring to be inserted through the aperture and closed therein. The portion 52 of the guide fin or projection 29 on rod 25 which extends downwardly through the aperture 50 in upper plate 20 is also reduced in width as clearly shown in Fig. 2 to provide for insertion of the medal 61 or the like.

A tool is thus provided which is simple in construction and operation, which provides for readily and rapidly applying metallic rings to the eyelets of medals and the like, which is easily and quickly reloaded to automatically and successively supply a large number of rings to the tool, and which provides for applying the rings without handling of the rings by the operator. The applied rings are substantially circular in form and are securely closed within the eyelet of the medal. The guide rod 25 and fin 29 which support the ring-like members on the tool and feed them to the anvils also serve as a rack for supporting, storing and carrying the rings prior to loading them on the tool, and a rod having a large number of rings carried thereby is quickly and readily attached to the tool and detached from the tool when the supply of rings thereon is exhausted. The application of the rings to the medal eyelets is, accordingly, greatly facilitated and the rings are rapidly, easily and simply applied.

Changes may be made in the form, construction, and arrangement of the parts without departing from the spirit of the invention or sacrificing any of its advantages, and the right is hereby reserved to make all such changes as fairly fall within the scope of the following claims.

I claim:

1. In a tool of the character described for applying rings to eyelets of medals and the like, a stationary plate member for receiving and supporting a ring-like member having spaced apart ends, anvil means including a pair of members pivoted together and pivotally mounted on said plate member for movement about an axis substantially normal to the supporting surface of the plate member to operate over the surface of said plate member for engaging said ring-like member and substantially closing said spaced apart ends, said ring-like member being supported on said stationary plate member during operation of said anvil means, and means for effecting operation of said anvil means.

2. In a tool of the character described for applying rings to eyelets of medals and the like, a stationary plate member for receiving and supporting a ring-like member having spaced apart ends, anvil means pivotally mounted on said plate member and operable over the surface of said plate member for engaging said ring-like member and substantially closing said spaced apart ends, said ring-like member being supported on said stationary plate member during operation of said anvil means, means for effecting operation of said anvil means, and means for successive feeding ring-like members to said stationary supporting plate member in a position to be directly operated upon by pivotal movement of the anvil means.

3. In a tool of the character described for applying rings to eyelets of medals and the like, a stationary plate member for receiving and supporting a ring-like member having spaced apart ends, anvil means pivotally mounted on said plate member and operable over the surface of said plate member for engaging said ring-like member and substantially closing said spaced apart ends, said ring-like member being supported on said stationary plate member during operation of said anvil means, means for effecting operation of said anvil means, magazine means for successively feeding ring-like members

to said supporting plate member in a position to be directly operated upon by pivotal movement of the anvil means, and guide means cooperating with said magazine means for arranging the spaced apart ends of said ring-like members in predetermined positioning on said plate member and with respect to said anvil means.

4. In a tool of the character described for applying rings to eyelets of medals and the like, a plate member for receiving and supporting a ring-like member having spaced apart ends, said supporting plate member being provided with a slot for receiving an apertured medal or the like endwise therein, feeding and guide means for successively feeding ring-like members to said supporting plate member with said spaced apart ends arranged in predetermined positioning with respect to said slot, anvil means operable over the surface of said plate member for engaging said ring-like member and substantially closing said spaced apart ends within the aperture of said medal or the like, and means for effecting operation of said anvil means.

5. In a tool of the character described for applying rings to eyelets of medals and the like, a stationary plate member for receiving and supporting a ring-like member having spaced apart ends, a pair of pivotally connected anvil members having a pivotal connection with said stationary supporting plate member, a second pair of anvil members pivotally connected to said stationary supporting plate member, said anvil members being operable over the surface of said plate member to engage said ring-like member and press said spaced apart ends into substantially closed relationship, said ring-like member being supported on said stationary plate member during operation of said anvil means, and means for effecting operation of said anvil members to effect closing of the ring-like member.

6. In a tool of the character described for applying rings to eyelets of medals and the like, a plate member for receiving and supporting a ring-like member having spaced apart ends, a pair of pivotally connected anvil members having a pivotal connection with said supporting plate member, a second pair of anvil members pivotally connected to said supporting plate member and mounted for movement solely about their pivot axes, said anvil member having complementary curved surfaces providing for engaging said ring-like member and pressing the member into substantially closed form, and means for effecting operation of said anvil members to effect closing of the ring-like member.

7. In a tool of the character described for applying rings to eyelets of medals and the like, a plate member for receiving and supporting a ring-like member having spaced apart ends, a pair of pivotally connected outer anvil members having a pivotal connection with said supporting plate member, a second pair of anvil members arranged inwardly of said outer members and pivotally connected to said supporting plate member, means for effecting operation of said outer anvil members, and means cooperating between said outer and inner anvil members for effecting operation of the inner anvil members in response to operation of the outer members.

8. In a tool of the character described for applying rings to eyelets of medals and the like, a plate member for receiving and supporting a ring-like member having spaced apart ends, a pair of pivotally connected outer anvil members having a pivotal connection with said supporting

plate member, a second pair of anvil members arranged inwardly of said outer members and pivotally connected to said supporting plate member, means for effecting operation of said outer anvil members, and cooperating cam surfaces on said outer and inner anvil members for effecting operation of the inner anvil members in response to operation of the outer members.

9. In a tool of the character described for applying rings to eyelets of medals and the like, a plate member for receiving and supporting a ring-like member having spaced apart ends, a pair of pivotally connected outer anvil members having a pivotal connection with said supporting plate member, a second pair of anvil members arranged inwardly of said outer members and pivotally connected to said supporting plate member, means for effecting operation of said outer anvil members, means cooperating between said outer and inner anvil members for effecting operation of the inner anvil members in response to operation of the outer members, and spring means for effecting return of said anvil members to a normal open position after operation thereof.

10. In a tool of the character described for applying rings to eyelets of medals and the like, a plate member for receiving and supporting a ring-like member having spaced apart ends, a pair of pivotally connected outer anvil members having a pivotal connection with said supporting plate member, a second pair of anvil members arranged inwardly of said outer members and pivotally connected to said supporting plate member, means cooperating between said outer and inner anvil members for effecting operation of the inner anvil members in response to operation of the outer members, handle means connected to said outer anvil members for effecting operation thereof, spring means connected to said handle means for normally maintaining said outer anvil members in an open position, and spring means connected to said inner anvil members for normally maintaining said inner members in an open position.

11. A tool of the character described for applying rings to eyelets of medals and the like comprising a plate member for receiving and supporting a ring-like member having spaced apart ends, anvil means operable over the surface of said plate member for engaging said ring-like member and substantially closing said spaced apart ends, means including a pair of pivotally connected handles for effecting operation of said anvil means, a second plate member mounted on the pivot of said handles, a rod for supporting a plurality of said ring-like members and successively feeding the ring-like members to said supporting plate member, means for detachably connecting said rod to said second plate member, and means cooperating between said handles and said second plate member for maintaining said rod in direct alignment with said supporting plate member.

12. A tool of the character described for applying rings to eyelets of medals and the like comprising a plate member for receiving and supporting a ring-like member having spaced apart ends, anvil means operable over the surface of said plate member for engaging said ring-like member and substantially closing said spaced apart ends, means including a pair of pivotally connected handles for effecting operation of said anvil means, a second plate member mounted on the pivot of said handles, a rod for supporting a plurality of said ring-like members and successively feeding the ring-like members to said

supporting plate member, means for detachably mounting said rod on said second plate member in operative positioning with respect to said supporting plate member and said anvil means, and means cooperating between said handles and said second plate member for maintaining said rod in said operative positioning, said last named means including a pair of members pivotally connected to said handles and a pin and slot connection between said members and said second plate member.

13. A tool of the character described for applying rings to eyelets of medals and the like comprising a plate member for receiving and supporting a ring-like member having spaced apart ends, anvil means operable over the surface of said plate member for engaging said ring-like member and substantially closing said spaced apart ends, means including a pair of pivotally connected handles for effecting operation of said anvil means, a second plate member mounted on the pivot of said handles, a rod for supporting a plurality of said ring-like members and successively feeding the ring-like members to said supporting plate member, projecting means on said rod adapted to extend between said spaced apart ends of the ring-like members to maintain the ring-like members in predetermined angular alignment on the rod, means for detachably mounting said rod on said second plate member in operative positioning with respect to said supporting plate member and said anvil means, and means cooperating between said handles and said second plate member for maintaining said rod in said operative positioning, said last named means including a pair of members pivotally connected to said handles, a pin and slot connection between said members and said second plate member, and a pin interconnecting said supporting plate member and said second plate member.

14. A tool of the character described for applying rings to eyelets of medals and the like comprising a plate member for receiving and supporting a ring-like member having spaced apart ends, anvil means operable over the surface of said plate member for engaging said ring-like member and substantially closing said spaced apart ends, means for effecting operation of said anvil means, a rod for supporting a plurality of said ring-like members, projecting means on said rod adapted to extend between said spaced apart ends of the ring-like members to maintain the ring-like members in predetermined angular alignment on the rod, and means for mounting said rod and projecting means on said tool to effect gravity feeding of said ring-like members to said supporting plate member with said spaced apart ends of the ring-like members arranged in predetermined positioning with respect to said anvil means.

15. A tool of the character described for applying rings to eyelets of medals and the like comprising a plate member for receiving and supporting a ring-like member having spaced apart ends, said supporting plate member being provided with a slot for receiving an apertured medal or the like endwise therein, anvil means operable over the surface of said plate member for engaging said ring-like member and substantially closing said spaced apart ends within the aperture of said medal or the like, means for effecting operation of said anvil means, a rod for supporting a plurality of said ring-like members, projecting means on said rod adapted to extend between said spaced apart ends of the ring-

like members to maintain the ring-like members in predetermined angular alignment on the rod, means for detachably mounting said rod and projecting means on said tool to effect gravity feeding of said ring-like member with said spaced apart ends of the ring-like members arranged in predetermined positioning with respect to said anvil means and slot, and said rod and projecting means terminating in spaced relation with respect to said supporting plate member to provide for closing of the ring-like members and removal thereof from the tool.

16. In a tool of the character described for applying rings to eyelets of medals and the like, a pair of pivotally connected plier-like members having relatively elongated handles, outer anvil members attached to said plier-like members, a plate member carried by said plier-like members for receiving and supporting a ring-like member having spaced apart ends in operative relationship with respect to said anvil members, inner anvil members pivotally mounted on said supporting plate member and adapted to cooperate with said outer anvil members to engage said ring-like member and press said spaced apart ends into substantially closed relationship, means for effecting operation of said inner anvil members upon operation of said outer members by squeezing said handles together, a rod for supporting a plurality of said ring-like members detachably mounted on said plier-like members in position to successively feed the ring-like members to said supporting plate member, and guide means on said rod for arranging the spaced apart ends of the ring-like members in predetermined positioning with respect to said anvil members.

17. In a tool of the character described for applying rings to eyelets of medals and the like, a pair of pivotally connected plier-like members having relatively elongated handles, outer anvil members attached to said plier-like members, a plate member carried by said plier-like members for receiving and supporting a ring-like member having spaced apart ends in operative relationship with respect to said anvil members, inner anvil members pivotally mounted on said supporting plate member and adapted to cooperate with said outer anvil members to engage said ring-like member and press said spaced apart ends into substantially closed relationship, cooperating cam surfaces on said outer and inner anvil members for effecting operation of said inner anvil members upon operation of said outer members by squeezing said handles together, said anvil members having curved surfaces providing for forming said ring-like members into substantially circular shape while pressing said spaced apart ends together, spring means for effecting return of said anvil members to a normal open position after operation thereof, said supporting plate member being provided with a slot for receiving an apertured medal or the like endwise therein, a rod adapted to extend substantially vertically detachably mounted on said plier-like members for supporting a plurality of said ring-like members and providing for feed of the ring-like members to said supporting plate member, and guide means on said rod for arranging the spaced apart ends of the ring-like members in predetermined positioning with respect to said slot to effect entry of said ends into said aperture of the medal or the like upon operation of said anvil members.