N. RAPTIAS.

WASHER HOLDER RIVET SET.

APPLICATION FILED MAR. 22, 1915.

1,156,434. Patented Oct. 12, 1915.

FIG. 1

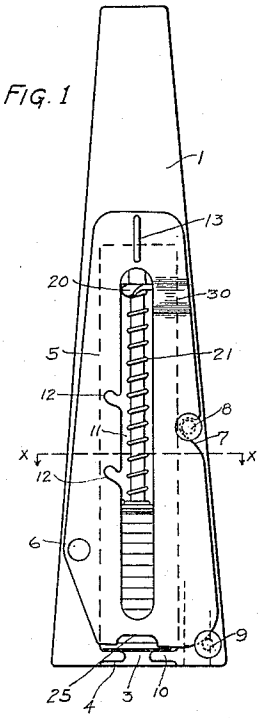


FIG. 2

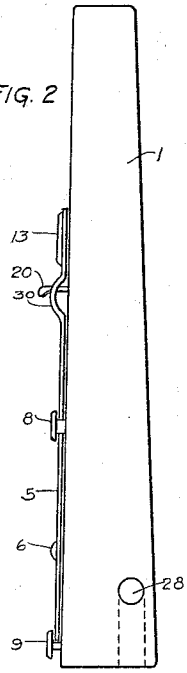
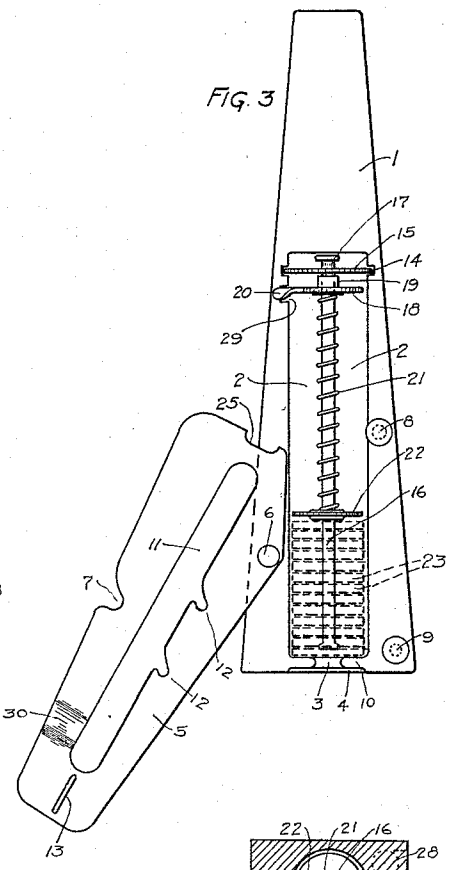


FIG. 3



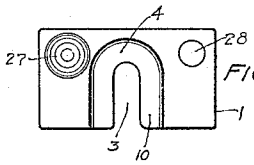


FIG. 4

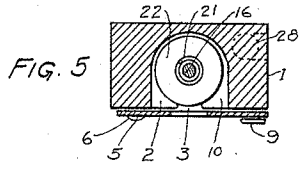


FIG. 5

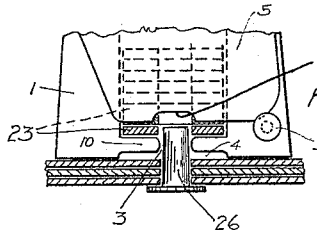


FIG. 6

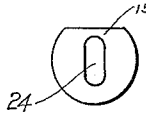


FIG. 7

NICK RAPTIAS, Inventor

Witnesses

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WASHER-HOLDER RIVET-SET.

1,156,434. Specification of Letters Patent. Patented Oct. 12, 1915.

Application filed March 22, 1915. Serial No. 16,257.

To all whom it may concern:

Be it known that I, NICK RAPTIAS, a citizen of the United States of America, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Washer-Holder Rivet-Sets, of which the following is a specification.

My invention relates to an improvement in rivet sets, my object being to adapt the rivet set to hold and deliver washers to the rivets so that it will be unnecessary for the operator to lay down either his hammer or rivet set to mount the washer on the rivet.

According to the present practice a very large portion of the labor cost in certain riveting operations such as the riveting of metal roofs and light sheet metal articles, arises from the delay incident to the number of unnecessary movements required of the operator in connection with each riveting operation. The riveting tool is held in the left hand, the hammer in the right, and the washers must be carried in the pocket or in some suitable container. After each rivet has been forced through the metal layers, one or the other of the tools in hand must be laid aside, a washer picked up and placed over the exposed end of the rivet, and the tool that was laid aside must be taken in hand again before the riveting operation can be performed.

The object of my invention is to enable the washers to be applied to the rivets without the delay incident to these varied movements on the part of the operator, the rivet set being adapted to contain the washers and to expose them in such manner that they can be easily mounted upon the rivet without appreciable loss of time.

A further object of my invention is to so design the washer retaining means that their presence in the rivet set will not interfere with its normal use.

Further objects of my invention are to simplify the means for controlling by a thumb operated slide the release of washers; the means for maintaining a tension on the washers to feed them and hold them firmly in the tool against rattling; and in various other novel details of construction and arrangements of parts which are hereinafter claimed, and which in their preferred embodiment are illustrated in the accompanying drawings forming a part of this specification and in which:—

Figure 1 is a side elevation of a rivet set with the guard cap in locked position to prevent the removal of washers. Fig. 2 is a side elevation of Fig. 1. Fig. 3 is a view similar to Fig. 2 showing the cover opened wide and exposing the internal mechanism for mounting and feeding the washers. Fig. 4 is a bottom view of Fig. 1. Fig. 5 is a transverse cross sectional view on the line *x*—*x* of Fig. 1. Fig. 6 is an enlarged detail view showing the rivet set in position for delivering a washer to a rivet. Fig. 7 is a detail view of the slotted plate holder for the washer rod.

Similar reference numerals refer to similar parts throughout the drawings.

In the preferred embodiment of my invention illustrated, the rivet set is made slightly longer and wider than the present standard type of steel rivet set and it is provided with a longitudinal washer pocket 2 in a wider side face thereof, which pocket extends from a point adjacent to its bottom end well up into the body of the tool, and is made slightly wider than the diameter of the washers with a bottom cylindrical in cross section.

The lower end wall of the pocket has a slot 3 which opens therethrough into a countersunk recess 4 in the bottom end of the rivet set. The open side of the pocket is normally closed by a swinging cover plate 5 which is so shaped that when in operating position it lies flat upon the side face of the rivet set and covers all but the extreme bottom end of the pocket 2. It is pivotally mounted on the tool by a pin 6 near one side edge thereof and at its other side edge the cover has a notch 7 at an intermediate point adapted to swing under the head of a stop pin 8 on the opposite side of the pocket on the same side. The lower end of the cover is also adapted to catch under the head of a second headed stop pin 9 near the lower corner of the rivet set. When the cover has been swung on its pivot to engage the two stop pins 8 and 9, its lower edge, as seen in Fig. 1 will lie diagonally of the lower end of the pocket 2 and approach the bottom end wall 10 thereof so closely as to prevent the passage of a washer under it.

The cover is provided with a longitudi-

nal central slot 11 which is practically coextensive with the pocket and I provide a pair of notches 12 in one side edge of the slot for the purposes hereinafter described. Also the upper end of the cover, where the operator's thumb would engage it, is struck up at 13 to furnish a finger hold for swinging it about its pivot pin 6.

In the upper end of the pocket I provide a pair of opposite side notches 14 which receive a transverse slotted plate rod 15 and detachably hold it in position across the upper end of the pocket.

A rod 16 for the washers projects with a loose fit through the slot 24 in this plate 15 and is provided with a head 17 to prevent its becoming disengaged therefrom while the plate remains seated in the pocket. I mount on this rod 16 a slide plate 18 having a collar 19 to prevent it cocking when it is grasped by its handle portion 20 and adjusted longitudinally of the pin to increase the tension upon a coiled spring 21 that surrounds the rod 16 and is interposed between the plate 18 and a presser plate 22 which is adapted to force a series of washers 23 strung upon the lower end of the rod 16 against the end wall 10.

The slot 24 permits the rod 16 to be swung up out of the pocket so that the washers can be conveniently mounted thereon until the presser plate 22 is forced up and the spring 21 is put under considerable tension. In this position, when the rod 16 is returned to the recess 2 the spring will hold the washers pressed against the bottom wall 10 of the recess while the rod 16 clears the lower washer and holds its opening in line with the inner end of the slot 3. This lower washer however is held against the removal of the recess by the bottom edge of the cover plate 5 when in the position shown in Fig. 1. The bottom edge of the cover above the slot 3 is provided with a notch 25 so that its side edges only serve as the rivet retaining means. If the upper end of the cover plate however is swung slightly to the left, its lower end clears the lower washer and thereupon the tool is placed over the exposed end 25 of a rivet 26, upon which it is desired to mount a washer, so that the rivet will pass up through the opening 3 and into the central opening of the bottom washer. By shifting the rivet set so that the rivet will draw the washer out from the pocket by passing it under the cover 5, the washer will be left mounted on the rivet and the spring 21 will force the next washer behind it into position for removal in the same manner. The notch 25 is provided to permit the end of the rivet to more easily clear the bottom edge of the cover should it happen to project slightly above the top of the washer. The rivet set is provided with the customary riveting socket 27 and punch hole 28, so that the rivet can be swaged or headed after the washer is mounted thereon.

The handle 20 on the rear slide plate is adapted to drop into a notch 29 provided in the pocket wall on the side on which the cover is pivoted and the side of the cover that swings over this handle as the cover is moved into position over the pocket is pressed up at 30 so that it will clear the handle. The cover on the other side of the slot will strike the handle and raise it up from the notch 29 so that it will project up through the slot in the cover plate. This makes it convenient to grasp the handle and advance the rear slide plate along the slot to engage the handle in one or the other of the notches 12 to take up the slack in the spring 21 as washers are fed from the pocket.

The countersunk recess 4 in the bottom of the rivet set protects the thin walls 10 from liability to fracture in the ordinary use of the tool.

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

1. A hand riveting tool comprising a rivet set and having a washer holding receptacle provided with a rivet receiving slot and a washer discharge slot which merge into each other, as and for the purposes described.

2. A hand riveting tool comprising a rivet set and having a holding pocket therein, the pocket bottom having a radial bottom slot and a side washer discharge slot, which slots join at the side edge of the pocket to permit a rivet to engage and remove a washer with it, and means to control the delivery of washers therefrom.

3. A hand riveting tool comprising a rivet set and having a washer holding pocket therein, said pocket having a side washer discharging slot and a bottom which has a rivet receiving slot therein leading from an intermediate point to and connecting with said side slot, means to center and successively present a number of washers against said bottom with their center openings alining with said bottom slot, and a movable closure for said side slot, substantially as described.

4. A hand riveting tool comprising a rivet set and having a washer holding chamber therein, and a movable cover for said chamber, there being a slot in the bottom of said chamber adapted to receive and guide a rivet end thereinto to engage and withdraw therefrom a washer.

5. A hand riveting tool comprising a rivet set and having a washer holding pocket having an open side, a movable cover over said side opening, a bottom wall of the pocket having an opening extending from its center through its open side edge, and means to guide and center washers over said bottom opening, substantially as described.

6. A hand riveting tool comprising a rivet set and having a longitudinal chamber, a washer holder seated in said chamber and adapted to have strung thereon a series of washers, spring means to force said washers against the bottom end wall of said chamber, there being a washer delivery opening in the chamber side and communicating therewith a slot in the chamber bottom extending from its center through a side edge thereof, which slot is adapted to receive a rivet and guide it through a washer, and a movable closure for the washer delivery opening which when open permits the rivet to pass through said slot and draw out through said delivery opening the bottom washer in the chamber, substantially as described.

7. A hand riveting tool comprising a rivet set and having a longitudinal washer pocket formed therein, the bottom end of the pocket having a side opening and a radial slot extending through the bottom wall to said side opening, a movable guide pin in said chamber adapted to receive a plurality of washers, spring means on the guide pin to force the washers against the bottom end wall of the chamber, and a manually controllable cover for said side opening, substantially as described.

8. A hand riveting tool comprising a rivet set and having a washer chamber opening through a side wall of the tool and extending to a point near the bottom wall, a countersunk recess in the bottom face of the rivet set opposite the bottom wall of the chamber, said bottom wall having a radial slot extending from its center through the open side of said chamber, a detachable bearing plate mounted in the upper end of said chamber, a guide pin loosely mounted in said plate and having a head to hold it connected therewith, a spring surrounding said pin, adjustable plates on the rod between which the spring is interposed, a swinging cover plate for the pocket, said plate being slotted to give access to the rear slide plate for adjusting it, and means on the cover plate to hold the slide plate in adjusted positions, said cover plate being adapted when laterally shifted to clear the bottom washer and permit its lateral withdrawal from the pockets, substantially as described.

9. A hand riveting tool comprising a rivet set and a washer holder, said holder having a bottom in which is a rivet receiving slot, said bottom being adapted to support a stack of washers with their holes over said slot and to permit the rivet end to project therethrough and into said holder, there being a side washer discharge slot connecting with the bottom slot and designed to permit the lower washer to be stripped therethrough from the holder by the tool's movement relatively to the rivet, substantially as described.

In testimony whereof I affix my signature in presence of one witness.

NICK RAPTIAS.

Witness:
NOMIE WELSH.

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