

No. 711,648.

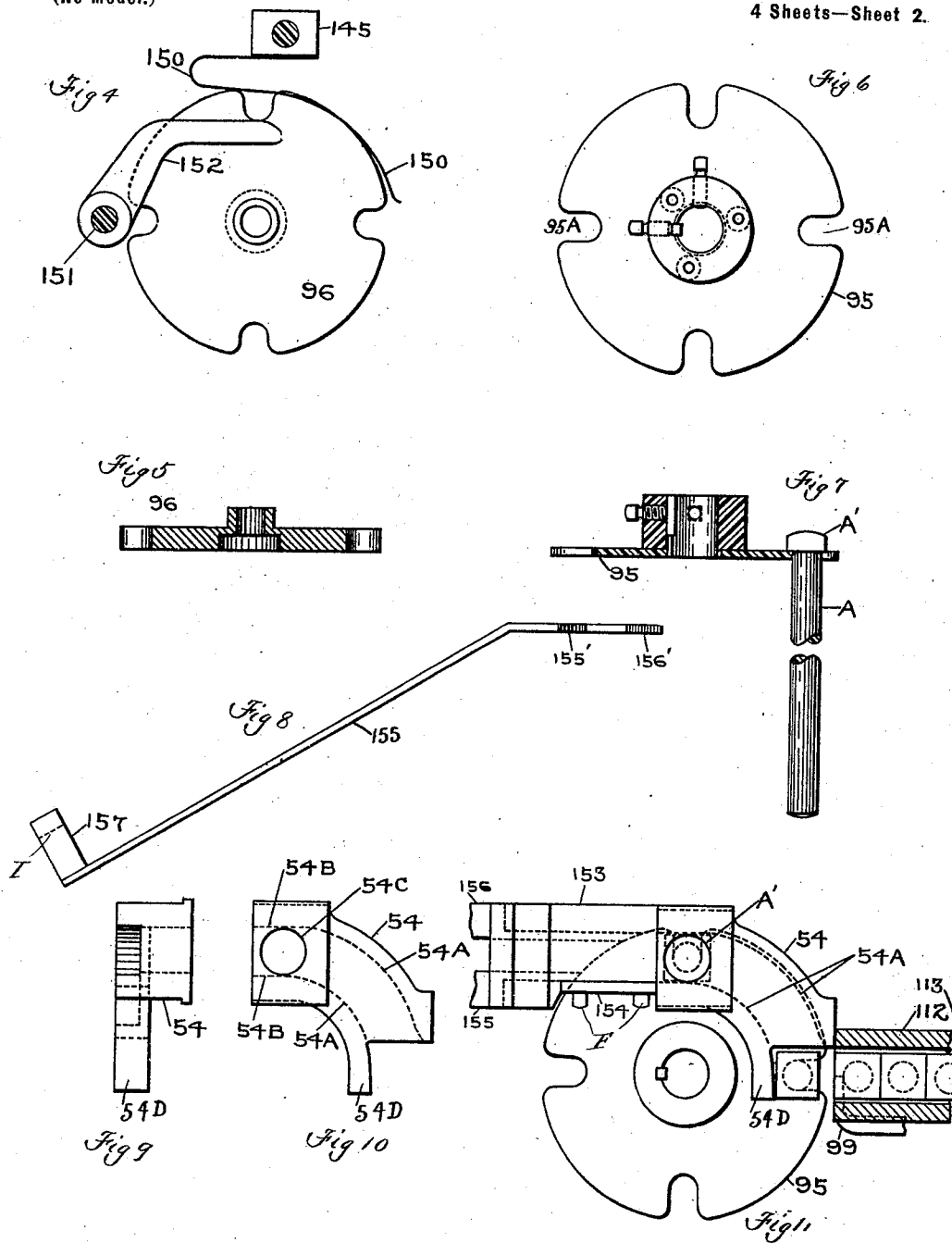
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F. P. STIKER & O. C. BURTON.
CARRIER FOR METAL DRESSING MACHINES.

(Application filed July 30, 1901.)

(No Model.)

4 Sheets—Sheet 2.



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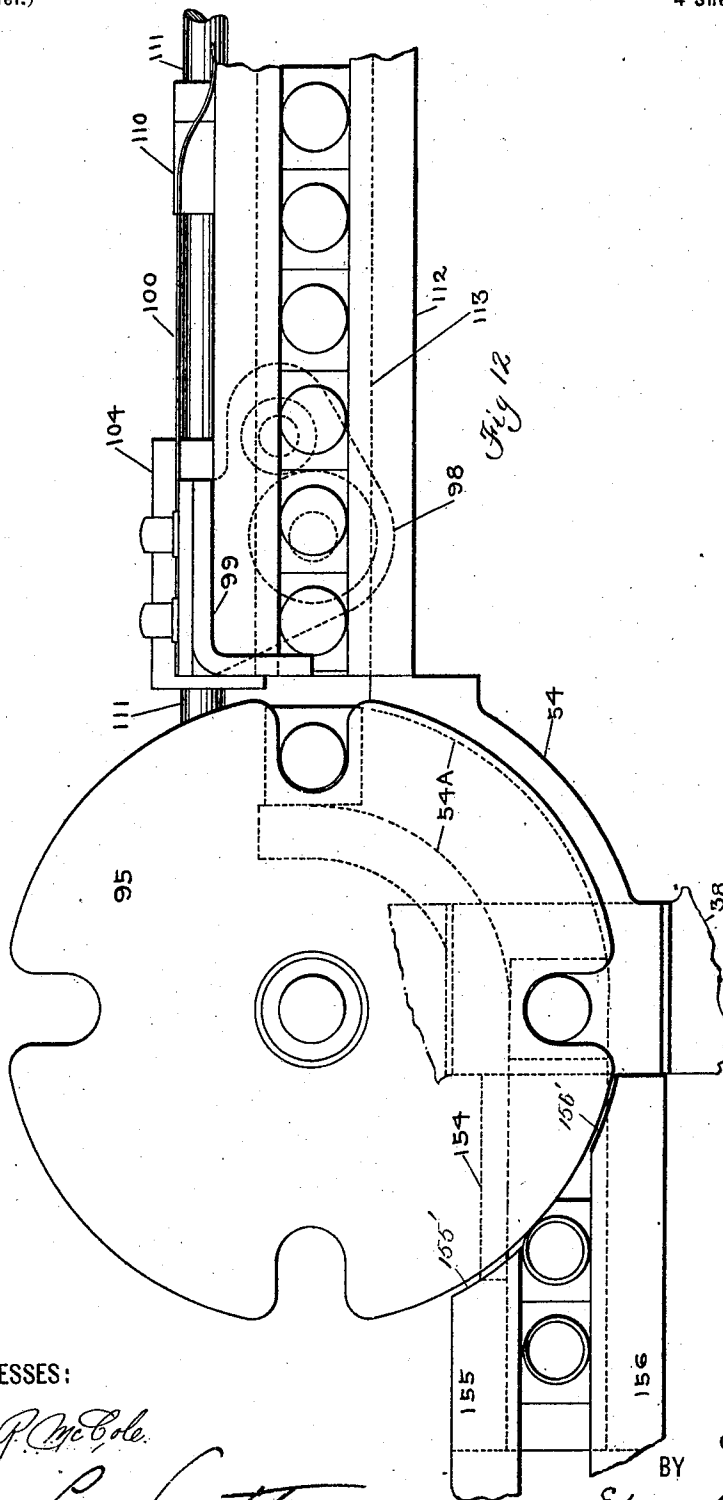
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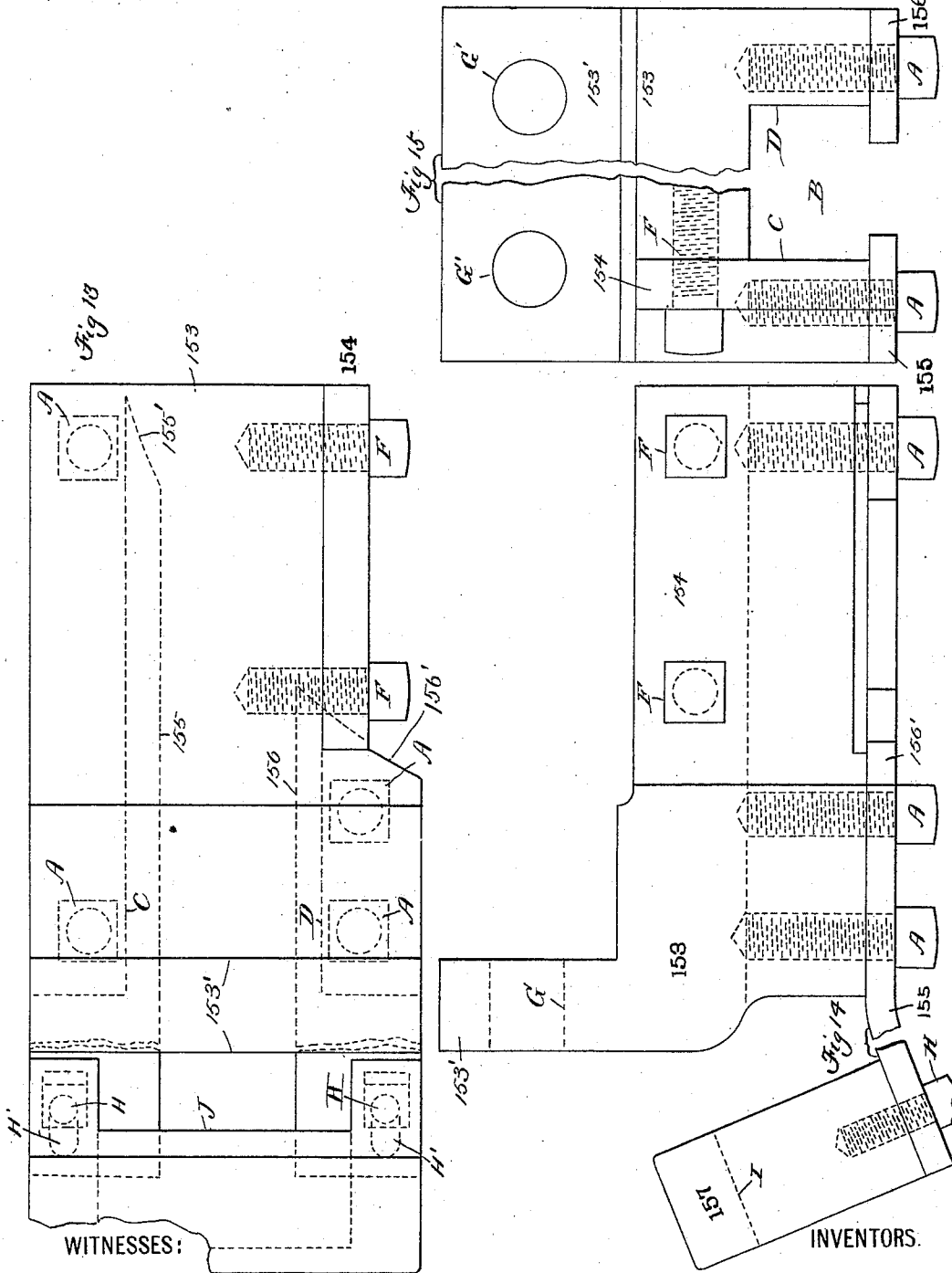
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UNITED STATES PATENT OFFICE.

FLAVIUS P. STIKER, OF BUFFALO, AND ORVILLE C. BURTON, OF NORTH
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CARRIER FOR METAL-DRESSING MACHINES.

SPECIFICATION forming part of Letters Patent No. 711,648, dated October 21, 1902.

Application filed July 30, 1901. Serial No. 70,211. (No model)

To all whom it may concern:

Be it known that we, FLAVIUS P. STIKER, a resident of Buffalo, in the county of Erie, and ORVILLE C. BURTON, a resident of North Tonawanda, in the county of Niagara, State of New York, citizens of the United States, have invented certain new and useful Improvements in Carriers for Metal-Dressing Machines, of which the following is a specification.

The invention relates to a carrier adapted to receive, hold, and discharge bolts, especially when long and therefore apt to swing away from the center of the dies when the thread is to be cut on the bolt.

The organization comprising our invention consists in detail of the combination of a notched carrier adapted to receive the shank of a bolt, so that the head rests upon the upper surface of said wheel, a second notched carrier substantially the same as the first and adapted to rotate therewith, but longitudinally adjustable relatively thereto because of a rod which telescopes into the hollow spindle of the first wheel and because of a feather provided between the rod and the spindle, a guide at the periphery of the lower or second carrier and reaching from the receiving-notch thereof to and past the next or threading and discharging notch, said guide extending beyond said second notch, and a second guide which extends from the inner periphery of the discharge-notch beyond the same. The guides beyond said second notch are for the same purpose as similar guides at the second notch of the first or upper carrier-wheel and are for the purpose of directing the lower end of the bolt out of the discharge-notch when said carrier rotates. Other cooperating elements and also the above are described in detail by reference to the accompanying drawings.

Figure 1 is a side elevation of that portion of a machine involving the invention. Fig. 2 is a front elevation of substantially what is included in Fig. 1. Upper and lower portions are broken away, so as not to show in the drawings anything not involved in the claims. Fig. 3 is a view by itself in a side elevation of a portion of the same construction with some of the parts in the foreground

omitted, so as to make visible some of the parts not shown in the other figures. Fig. 4 shows the lower part of the same construction in plan by taking a section at about a line X Y. Fig. 5 is a cross-section of the lower notched wheel for holding the lower end of the bolt. Fig. 6 is a plan of the upper notched wheel for supporting the heads of the bolt. Fig. 7 is a cross-section of the same, showing a bolt supported. Fig. 8 is a side elevation of the discharge-chute by itself. Figs. 9 and 10 are respectively a side view and a plan of a guide-piece for directing the heads of bolts in a proper manner. Fig. 11 is a plan, partly in section and partly as a diagram, of the bolt-carrier, the discharge-chute, the feeding-chute, and guides for the head of a bolt. Fig. 12 is an inverted plan somewhat in the nature of a diagram or outline of substantially what is shown in Fig. 11 with the addition of a few other elements, the scale being much larger. Fig. 13 is a view, on an enlarged scale, of the discharge-guide shown in Figs. 11 and 12 and a portion of the discharge-chute. Fig. 14 is a side view of what is shown in Fig. 13. Fig. 15 is an end view of the discharge-chute seen as looked at from the right-hand end of Fig. 14 with the part 157 omitted.

A bolt-machine to which the invention sought to be protected in the present application is adapted to be applied is shown in our former patent, granted August 19, 1902, No. 707,272. The means for giving intermittent motion to the rotary bolt-carrier is not shown in the present application; but it is fully described in said patent, which is accordingly made a part of this specification, especially in view of the difficulty of clearly describing a single feature without showing a whole machine.

The bolt-carrier consists of a notched disk, the notches being of a size slightly larger than the diameter of the bolt and all the notches being equally spaced around the periphery of the disk. These notches are numbered 95^A. They are small enough in width to permit the under surface of the head of a bolt to rest upon the disk. As a mere matter of convenience the disk 95 is provided with four equally-spaced notches. It is evident that a

greater or less number (but not less than two) of notches can be used by timing the other parts of the machine accordingly. The carrier-wheel 95, as hereinafter described, moves up and down, but in its uppermost position. One of the notches 95^A is directly opposite and close to the lower end of the tracks 113 of the chute 112 for the evident purpose of being ready to receive a bolt when it is released by the gate 99. The principal and substantially the only but important function of the rotary bolt-carrier 95 is for taking a bolt to a point over the center of the dies and substantially for feeding said bolt from the center to the discharge-chute. It also rides up and down with the slide in which its spindle has a bearing. We will assume that said carrier makes a quarter of a rotation and notice how the bolt A is prevented from turning on its axis when it arrives at its central position and is about to be fed to the dies. For this purpose we provide a stationary guide 54 for the head of the bolt just above and near the periphery of the bolt-carrier 95 and extending about quarter way around, beginning at about the lower end of the feeding-chute and reaching to the upper end of the discharge-chute 155 156. The guiding-tracks 54^A are curved to form an arc around the center of the carrier 95, except at the ends, where these tracks are not curved. At the discharge end the tracks are rectilinear and parallel, as shown at 54^B, and they are located at the end of the guide at the head A' of the bolt A. There is as close a fit as practical or as will serve to hold the head A', and therefore the whole bolt A, from turning. At the feeding end of these tracks the one near the center is directly opposite the mouth of the feed-chute 112, while a portion of the guide 54 is cut off for terminating one of the tracks, which would otherwise cover the end of the chute and prevent the exit of the bolts from the chute and their entrance to the carrier 95. The support for the guide 54 is the main slide 38; but the tracks 54^A terminate concentrically at the threading position under said slide, so that the vertical axis of the slide coincides with the vertical axis of the bolt while in a position for threading.

38^C is a barrel or guide in which the slide 38 may be moved up and down.

So much for the guiding and holding of the head of the bolt. We will now describe the construction for guiding the lower end of a long bolt, so that it will not jump out of line with the center of the dies after the carrier 95 has turned or while turning from the feeding-chute 112 to the position of threading the bolt.

To hold the lower end of a long bolt, we provide a practically exact duplicate of the carrier 95. Except as shown in the drawings it is thicker and numbered 96. It rotates synchronously with the upper carrier 95, because carried on the end of the rod 26, which telescopes into the spindle 25 of the carrier

95; but the rod 26 cannot rotate relatively to the spindle 25 on account of a suitable feather. A spring 150 extends around a little more than one-quarter of the lower carrier 96, beginning a little in advance of the receiving-notch for the bolt and ending beyond the next notch and lying at about the periphery of the carrier 96 and serving, therefore, during the rotation of said carrier to form a guide for holding the bolt in the notch; but beyond the second notch the spring 150 continues across the notch. Said bolt should be pushed away from the center of the carrier during rotation. For this purpose there is a finger or guide 152 extending beyond the notch and held on a rod 151, which rod in turn is held in a stationary bearing 40 by a set-screw 40^A, so that said rod 151 can be adjusted up and down, and also the finger 152 can be adjusted by a set-screw 152^A either up or down or circularly for bolts of different diameters and different lengths. Therefore the edge of the finger 152 serves to direct the bolt out of the notch and away from the carrier-wheel 96 when the latter rotates for discharging the bolt, and the carrier can continue to rotate for introducing and discharging other bolts in succession.

The tracks 155 and 156 of the discharge-chute are fastened by bolts A to the guide 153, having a notch B, with three sides, the opposite two, C and D, being vertical and plane to act as guiding-surfaces for the heads of bolts, which heads rest upon the tracks 155 and 156. To form one side surface C, there is a guide 154, fastened by bolts F to the guide 153. The surface C is on the piece 154 and the surface D is on the piece 153. The extra piece 154 is preferably made of steel, because the heads of the bolts strike the same one after the other and tend to produce a great deal of wear after long use. Bolts G pass through holes G' in a lug 153' on the guide 153, and these bolts fasten said guide to the barrel 38^C. The ends of the tracks 155 and 156 are rounded at 155' and 156' and all but touch the wheel 95, and the upper surfaces of these tracks and of said wheel are in the same plane, so that the bolt-heads may slide from the wheel to the tracks. The lower ends of the tracks 155 and 156 are held in place relatively to each other by a lock 157. Screws H, passing through slots H' in the track, hold the block 157 to the discharge-chute. This block is notched, as indicated by the dotted lines I, which is the top surface of the notch, so that the heads of the bolts may pass through the block 157 and drop from the chute. A perspective view of this notch may be seen in Fig. 13 at J.

The importance of the spring 150 should be noticed more particularly. No sooner does the bolt drop from the feeding-chute and the carrier 95 rotate than the lower end tends to swing more or less like a pendulum, and if it were not for the spring 150 and the lower notched wheel the lower end of the bolt would

not stop swinging; but the parts are so timed that the guide-spring 150 stops the swinging and brings the bolt to a vertical position, with the lower end thereof in a notch of the lower carrier-wheel. The guide-spring 150 therefore not only stops the swinging of the bolt, but also prevents it from swinging out of the notch in the lower wheel. Without the guide-spring 150 and lower wheel long bolts are swung through an arc of twenty degrees or more.

In practice we provide a suitable manner of mounting the rotary carrier 95 to prevent it from falling, and we provide means for operating the same up and down and to and fro circularly; but the present invention has nothing to do with these features, and therefore they are not shown, described, nor claimed; but for the purpose of a foundation of the operation of what is shown it may be assumed that the slide 38 and the carrier 95 are raised and lowered and the carrier turned entirely by hand. The essential features as brought out in the claims are, however, shown and described. Enough of the mounting is shown, however, to indicate that the weight of the carriers 95 and 96 and their adjuncts is supported by the slide 38. To this end there is a collar K fastened to the tube 25 by means of a set-screw K', which serves also to hold the rod 26 of the carrier 96 at any position desired. The collar K rests on the top surface of the slide 38.

The dies for cutting threads upon the bolt A are shown at the lower end of the bolt A at A".

We claim as our invention—

1. In a metal-dressing machine, the combination of an intermittently and unidirectional rotary bolt-carrier, movable up and down in the direction of its axis, and adapted to support a bolt at its head to hang freely vertical by gravity alone, and devices for acting on the head and lower portions of the bolt, for successively receiving, transporting, laterally loosely holding and ejecting the bolt.

2. In a metal-dressing machine, upper and lower peripherally-notched carrier-wheels jointly rotary and longitudinally relatively adjustable, and a guide adjustable up and down and extending circularly at the periphery of the lower wheel from one notch to the next, when said wheel is in its normal position, and beyond the second notch, and a second guide extending from the bottom of the second notch, and adjustable up and down, and the same guides remaining stationary during the rotating of said wheel.

3. In a metal-dressing machine, a rotating notched carrier-wheel adapted to receive, transport, hold and discharge a bolt, a feeding-chute terminating normally at one portion of the carrier, from which chute the bolts are adapted to drop by gravity into said carrier, a discharge-chute beginning near a second portion of the carrier, guides jointly acting with the rotating force of said carrier for

steering the bolts therefrom to said discharge-chute, and guides independent of the first, and located vertically below said bolt-carrier at the position of the lower end of said bolt, and a second notched wheel at the second-named guides and acting jointly with said second-named guides upon the lower end of said bolt, all of the above-named elements maintaining the bolt with its axis vertical from its entrance, to its exit from the machine.

4. In a metal-dressing machine, the combination of a bolt-carrier wheel, having notches in its periphery, a feeding-chute terminating normally at one notch, a discharge-chute beginning normally near the next notch, said notches being only large enough to receive the shanks of the bolts, the heads resting on top of the wheel around the notches, a guide-piece just above said wheel, and having a groove for the bolt-heads extending between said notches and shaped concentrically around the center of said wheel, the groove then becoming rectilinear instead of curved from the position of said second notch to said discharge-chute, a second carrier-wheel having notches, and adjustable up and down to and from the first wheel, a guide extending from the first notch of the lower wheel to the second notch thereof, following the periphery of the wheel, and extending beyond said second notch of the lower wheel, and a guide-finger extending from the bottom of the second notch of the lower wheel, and means for holding said guides at about the same height as said second wheel.

5. In a metal-dressing machine, the combination of a bolt-carrier for supporting one portion of a bolt, a second carrier for bearing upon another portion of the bolt, and guides independent of each other for retaining said bolt in the respective carriers, one of the guides being adjustable relatively to said carriers.

6. In a metal-dressing machine, a rotating bolt-carrier for supporting the head of a bolt in such a manner that the shank thereof is adapted to swing to and fro pendulum-like, during rotation of the carrier, means located at a distance from said carrier, and located in the path of the lower end of the bolt, for preventing the swinging and for bringing said bolt to that position in which its axis is vertical, said carrier having notches, and a second carrier having notches, respectively vertically below the notches of the first-named carrier, and guides acting in conjunction with said carrier for ejecting the bolt from said notches.

7. In a bolt-machine, the combination of a feeding-chute by which the bolts are adapted to be suspended by their heads with their shanks hanging vertically downward by gravity alone, a movable carrier at the exit of said chute for receiving bolts therefrom, and by which carrier the bolts are adapted to be suspended by their heads with their shanks hanging vertically downward by gravity alone,

means below said carrier for preventing the swinging of the bolts during the motion of said carrier, guides acting as stops only on the heads of the bolts without gripping or supporting the same, for preventing the bolts from turning on their axes, and a discharge-chute at the exit of the carrier, by which chute said bolts are adapted to be suspended by their heads to hang vertically downward by gravity alone, said feeding and discharge chutes having parallel tracks between which the shanks of the bolts hang, and on which the heads of the bolts rest.

8. In a bolt-machine, a carrier for the bolts, by which the bolts are adapted to be suspended by their heads, with their shanks hanging vertically downward, and guides below said carrier, two of said guides bearing upon opposite sides of the shank of a bolt, and being adjustable independently of each other and independently of said carrier, and a wheel, below said carrier, with a notch for receiving the lower end of a bolt.

9. In a bolt-machine, a carrier for the bolts, by which the bolts are adapted to be suspended by their heads, with their shanks hanging vertically downward, and guides below said carrier, two of said guides bearing upon opposite sides of the shank of a bolt, and being adjustable independently of each other and independently of said carrier, a wheel having

notches in its periphery, one of said guides being a spring extending circularly around said wheel the distance between two of the notches, and tangentially beyond that distance, and the other guide having its guiding-surface parallel to the tangentially-extended portion of the other guide. 35

10. In a bolt-machine, in which a bolt is loosely suspended by its head alone with the shank vertical, and free to swing, the combination of means for preventing the swinging of said bolt, independently of gripping or supporting the same, said means consisting of a rotary wheel having notches in its periphery, and a spring covering one notch and leaving the others open in the normal position of the wheel, and extending circularly about the distance between two notches, all of which are equally spaced around the periphery, and a second wheel with notches vertically above the first-named wheel and adapted to support the weight of the bolts independently of gripping the same. 40 45 50

In testimony whereof we have hereunto subscribed our names this 23d day of July, 1901. 55

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