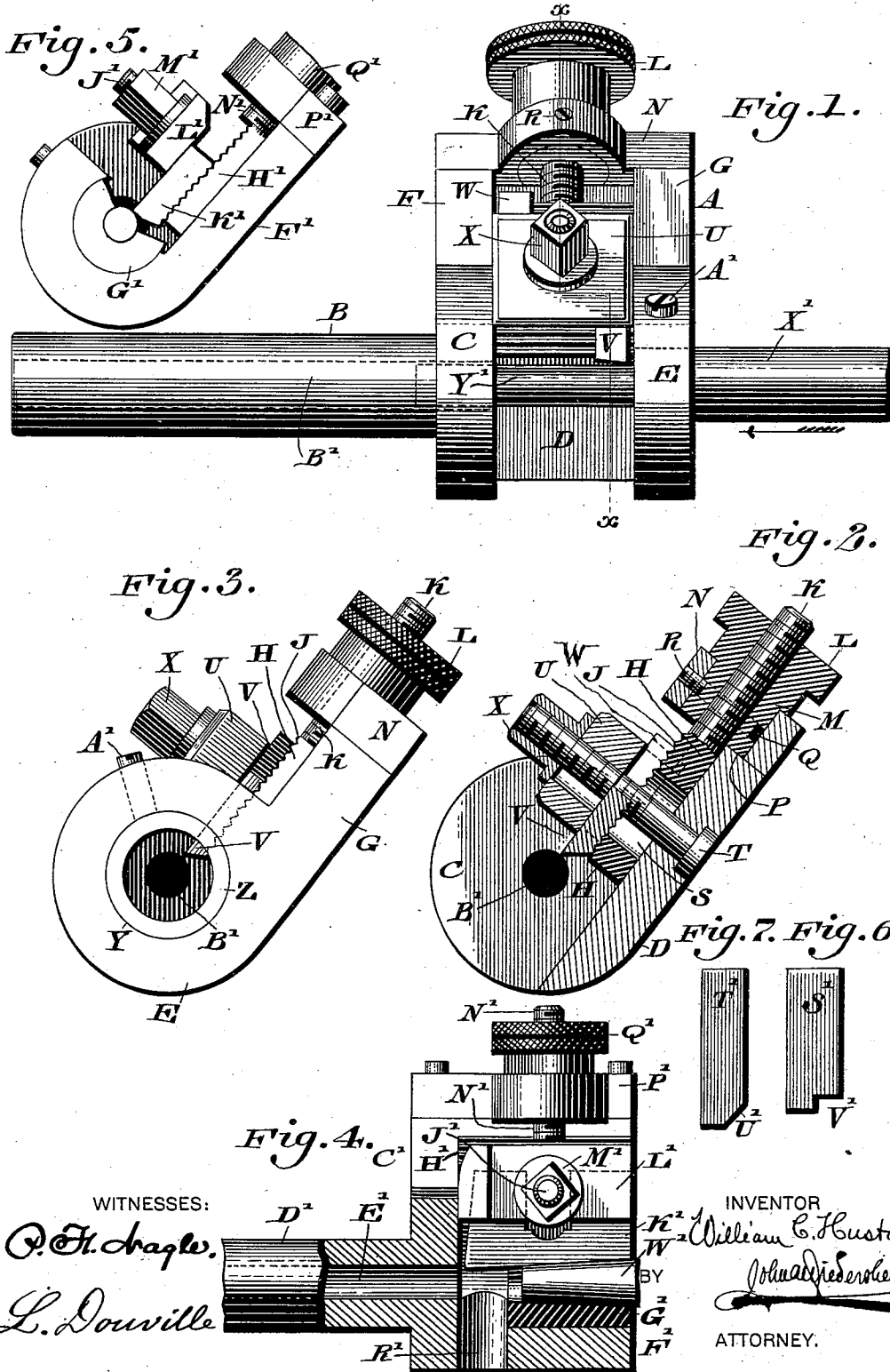


(No Model.)

W. C. HUSTON.
BOX TOOL.

No. 563,377.

Patented July 7, 1896.



WITNESSES:

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WILLIAM C. HUSTON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF
ONE-HALF TO BERTHOLD STERNBERG, OF SAME PLACE.

BOX-TOOL.

SPECIFICATION forming part of Letters Patent No. 563,377, dated July 7, 1896.

Application filed September 12, 1895. Serial No. 562,239. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. HUSTON, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Box-Tools, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to box-tools, and consists of a novel construction of device which is adapted to be mounted upon any desired support, and is especially applicable for the manufacture of bolts and similar articles, provision being made for effectively and expeditiously reducing the diameter of the rod or bar from which the bolt or other article is produced, and means being also provided for quickly and positively adjusting the cutting-tool, so as to reduce the stock or material employed to the desired diameter.

It also consists of novel means for effectively and rigidly holding the cutting-tool in the desired position.

It also consists of novel means for adjusting said cutting-tool.

It further consists of novel details of construction, all as will be hereinafter set forth.

Figure 1 represents a front elevation of a box-tool embodying my invention. Fig. 2 represents a vertical sectional view of the same, the section being taken on line *a a*, Fig. 1. Fig. 3 represents an end elevation of said tool. Fig. 4 represents a front elevation, partly in section, showing a modified form of tool which is especially applicable for manufacturing taper-bolts, &c. Fig. 5 represents a side elevation of Fig. 4. Figs. 6 and 7 represent different forms of tools employed for manufacturing bolts or similar articles having a beveled or recessed shoulder.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates the tool complete, the same consisting of a shank B, which is adapted to be held in a chuck or any other suitable support, said shank having attached thereto the plate or disk C, from which extends the body portion D, to which latter is attached the plate or disk E.

F and G designate, respectively, extensions of said portions C and E, the same being

joined throughout their length by means of the said back or body portion D, as will be understood from Fig. 2, the inner face of said portion D, taken in conjunction with the inner edges of the extensions F and G, forming bearings for the tool-carrier H, which is capable of movement relative to said body D, and has its upper surface provided with a serrated or roughened face J, the purpose of which will be hereinafter set forth, said tool-carrier also having a threaded stem K attached thereto and projecting outwardly therefrom.

L designates a nut or adjusting device, which has a portion milled or knurled, so as to be readily manipulated with the fingers, said nut having a neck M, which enters the cap N, which latter is supported and secured upon the upper face of the portions F, D, and G, the extremity P of said neck being adapted to rest upon a suitable shoulder on said back or body portion D, as will be understood from Fig. 2. The said nut or adjusting device L is interiorly threaded, so as to be engaged by the threaded stem K, said nut being swiveled in said cap N in any suitable manner, the means in the present instance being the annular groove Q, the walls of which are engaged by the extremity of the stud or pin R, which enters the cap N, whereupon it will be seen that upon rotation of the nut or adjusting device L in the desired direction a corresponding movement will be imparted to the tool-carrier H by reason of the engagement of the threaded stem K with said nut.

The tool-carrier is provided with an elongated slot S, through which passes the threaded stem or stud T, which is secured in said body D in any convenient manner, said stem passing through the slotted plate U, which, when the parts are in assembled position, is adapted to have one edge rest upon the cutting-tool V, while its other edge is supported upon the filling-piece W, which in the present instance is rigidly attached to the tool-carrier H, it being noted that the under side of said cutting-tool V, which is in contact with the serrated or roughened face J of the tool-carrier H, is provided with corrugations or serrations corresponding to said tool-carrier, so that when the parts are in assembled position, and are

held rigid or locked by the nut X, the cutting-tool V will be positively and effectively held rigid with respect to the article which is being manufactured, as will be explained.

5 The portion E is provided with a hole or passage Y therethrough, within which is located a bushing Z, the latter being held in position by means of the screw or pin A' or similar devices, it being noticed that the center
10 of said bushing is in alinement with the center of the hole or passage B', which extends in the present instance throughout the length of the shank B.

In the construction shown in Figs. 4 and 5
15 the principle of my invention is not departed from, C' designating the tool complete, the same having the shank D', within which is a passage E', which latter extends through to the body portion F'.

20 G' designates a bushing which is inserted in the lower portion of said body, said bushing and body being cut away or recessed adjacent to the edge of the cutting-tool, as will be understood from Fig. 5.

25 H' designates a roughened plate or tool-carrier which is suitably guided and supported, and corresponds to the plate H in the other figures, upon which is placed the cutting-tool K', the same having its cutting edge
30 out of alinement with the axis of the shank D', and being held in position by means of the slotted plate L', through which passes the stud J', a nut M' engaging said stud, and serving to lock and hold the parts firmly in position
35 when desired.

N' designates a threaded stem, which is attached to said plate H', which stem is engaged by the swiveled nut or adjusting device Q', which passes through the cap P', the function
40 of said adjusting device relative to said stem being the same as already described with respect to the other figures, and being best seen in Fig. 2, it being noted that the contacting-surfaces of the cutting-tool K' and the carrier
45 H' are serrated or roughened, as has been described with respect to the other figures. R' designates a passage within said tool, through which the chips formed in the operation of making the bolt or other article escape.

50 S' and T' designate different cutting-tools which may be employed, the same being provided with the angular or beveled shoulders V' U', respectively, which may be employed for different kinds of work, as desired.

55 W' designates a portion of a taper-bolt, the same being shown in the process of manufacture, and being operated upon by the cutting-tool K'.

60 X' designates a rod or bar in the act of being operated upon by the tool shown in Fig. 1, the portion Y' having been reduced to the desired diameter, as will be hereinafter explained.

65 The operation is as follows: The parts are best seen in assembled position in Fig. 2, it being evident that the cutting-tool V is immovably held with respect to the tool-carrier

H by means of the plate U and the nut X, and it will be seen that a very delicate adjustment can be given to said tool-carrier by loosening
70 the nut X and rotating in the proper direction the nut or adjusting device L, the parts being locked in the desired position, when the proper adjustment has been effected, by means of said nut X. The stock X', which may be
75 a rod or bar, is rotated and inserted within the bushing Z, and caused to advance in the direction of the arrow in Fig. 1, and as the same is rapidly rotated, and the cutting-tool V being held stationary, it will be evident
80 that the contact of said cutting-tool with the advancing stock or material X' will cause the same to be quickly and effectively reduced to the desired diameter, as at Y', the bolt, after
85 having been operated upon in the manner described, being afterward cut off at the desired length, the operation being repeated in the manufacture of successive bolts.

In Fig. 4 the manner of assembling and operating the parts is substantially the same as
90 already described, the cutting-tool K' and the bushing G', however, converging toward each other, whereby it will be seen that a taper-bolt or similar article can be readily produced, the
95 manner of adjusting and locking the parts being the same as already described.

When desired, the cutting-tools T' or S' may be employed, the function of the same being as already described.

It will of course be apparent that changes
100 may be made in the manner of assembling the parts by those skilled in the art that will come within the scope of my invention, since other means than the adjusting device L may be employed, and other means may also be
105 utilized for locking the parts in desired position according to requirements, and I do not therefore desire to be limited in every instance to the exact construction I have herein shown and described.

110 The serrated or roughened contacting faces of the cutting-tool and the tool-carrier cause the same to be held rigidly in juxtaposition when the nut X is tightened, and when the same is loosened delicate and exact adjustment can be given to said tool-carrier and
115 cutting-tool by the proper manipulation of the adjusting device L, as is evident.

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

1. A box-tool consisting of a hollow shank, with disks having lateral extensions and connecting-body, a tool-carrier adjustable on said
125 body, and a clamping device for said carrier and tool, said disks having openings in line with the center of the bore of said shaft, and said carrier being guided on the inner face of said disks, said parts being combined, substantially as described.

2. In a device of the character described, a shank with disks having a connecting-body, a nut swiveled in a cap on said body, a tool-carrier with threaded shank working in said
130

nut, and a clamping device for said carrier, said disks having openings therein, said parts being combined substantially as described.

3. A box-tool, consisting of the hollow shank B, the disks or plates C and E, with openings therein the centers of which are in alinement with the center of the bore of said shank, the body D connecting said disks, the slotted tool-carrier H guided between said disks, and having the screw-stem K, the cap N secured to said body and disks, the nut L swiveled in said cap and engaging said stem K, and means for clamping said carrier to said body, said parts being combined, substantially as described.

4. In a box-tool, a body portion consisting of the shank B, the portions C, D, E, F, and G, located substantially as shown, the cap N, a slotted tool-carrier H, a threaded stem K passing therethrough, an adjusting device L mounted in said cap N, and incapable of longitudinal movement therein, the tool V having a serrated face in contact with said tool-carrier, a filling-piece W, a slotted plate U adapted to rest upon said filling-piece and cutting-tool, and a nut X adapted to lock said parts in position, substantially as described.

5. In a device of the character described, a shank having a passage therethrough, a suitable body portion, disks connected with said body, a bushing supported in said disks, a taper cutting-tool mounted adjacent to said bushing, a threaded stem attached to the support of said cutting-tool, and an adjusting device therefor, substantially as described.

6. A box-tool, consisting of a body with a shank, a tool-carrier movable transversely on said body, and a stem, a nut swiveled on said body and a bolt and nut for clamping said carrier in place, said parts being combined substantially as described.

7. In a box-tool, a body, a shank connected therewith, a tool-carrier movably mounted on said body, a clamping device for said carrier, means for adjusting both the carrier and the clamping device, and a bushing in said body, having a cut-away portion, adjacent to the cutting-tool, said parts being combined, substantially as described.

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Witnesses:

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