

No. 666,492.

Patented Jan. 22, 1901.

D. M. CAMPBELL.

TURNING TOOL FOR BALE BAND FASTENERS.

(Application filed June 9, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

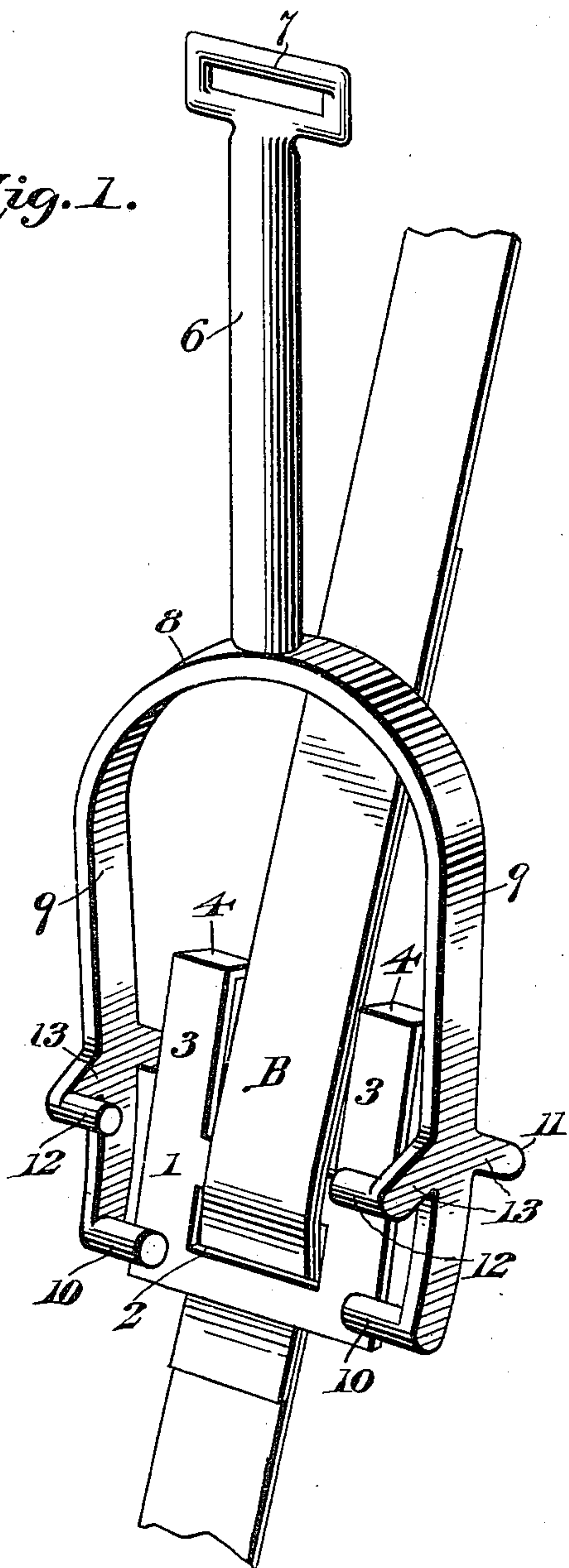
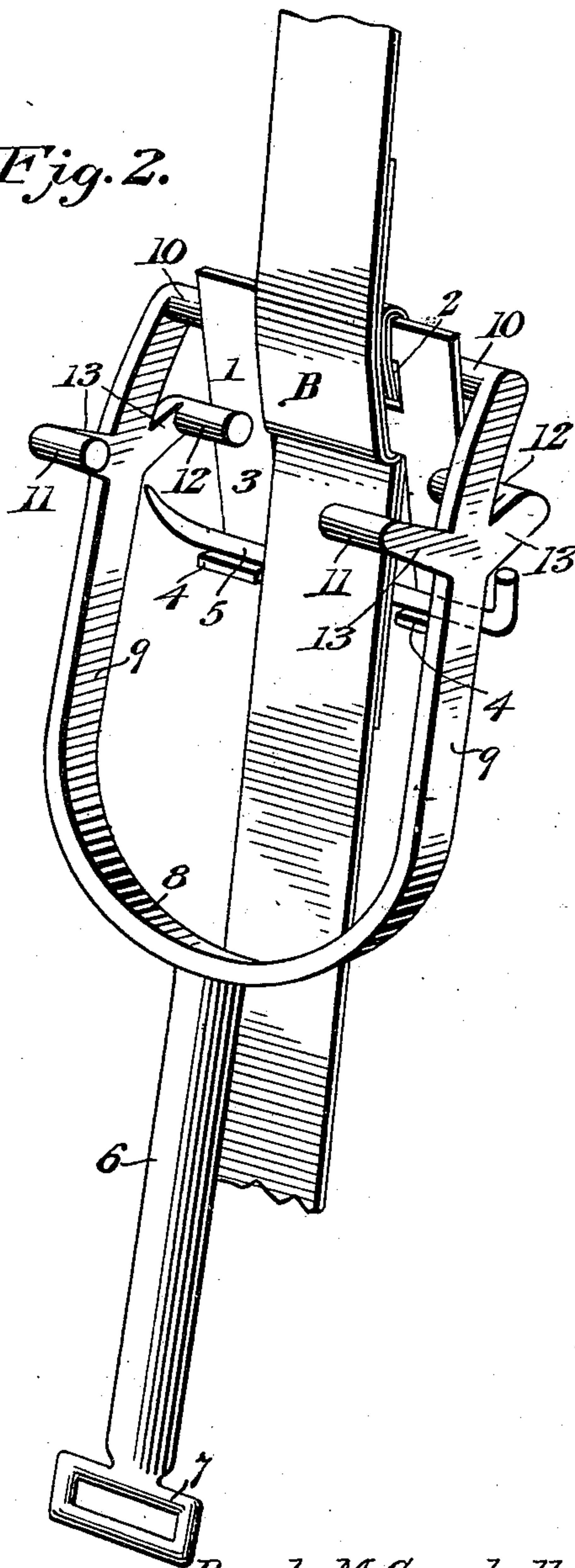


Fig. 2.



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Fig. 3.

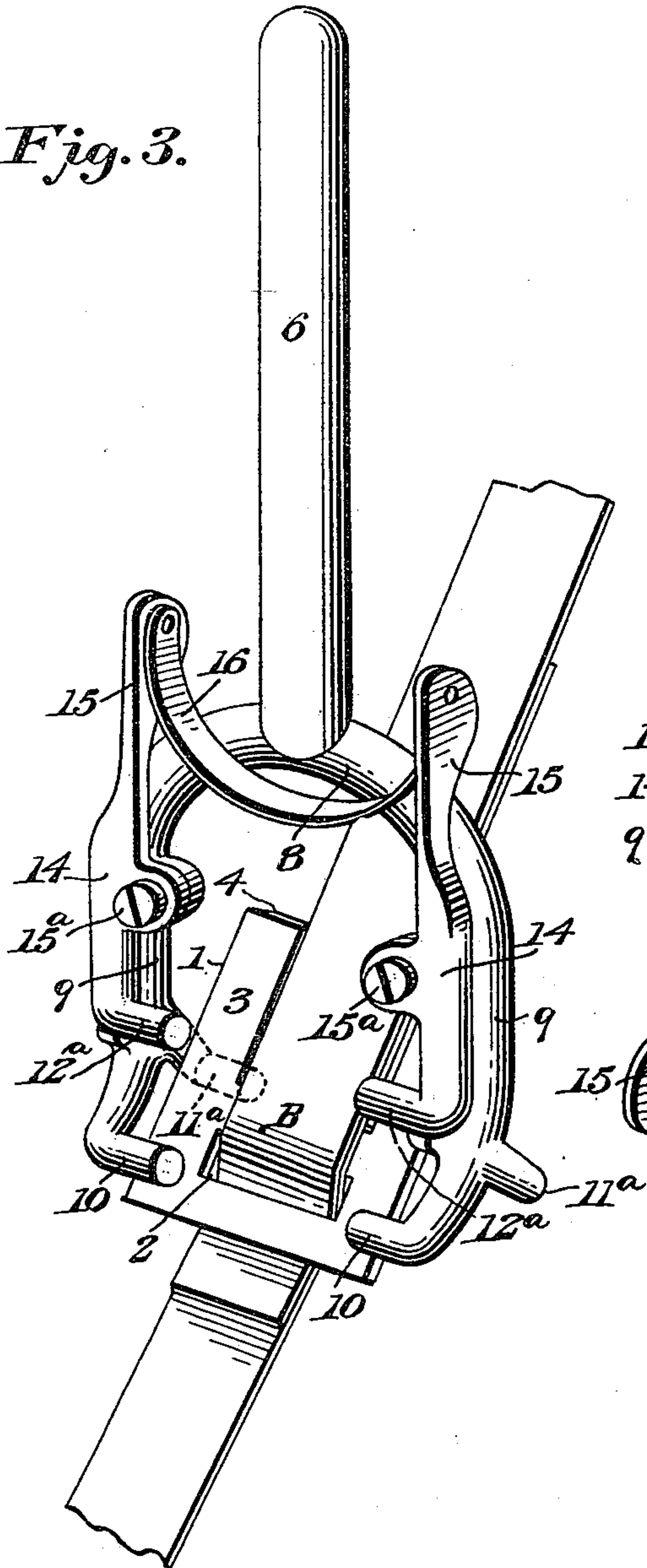
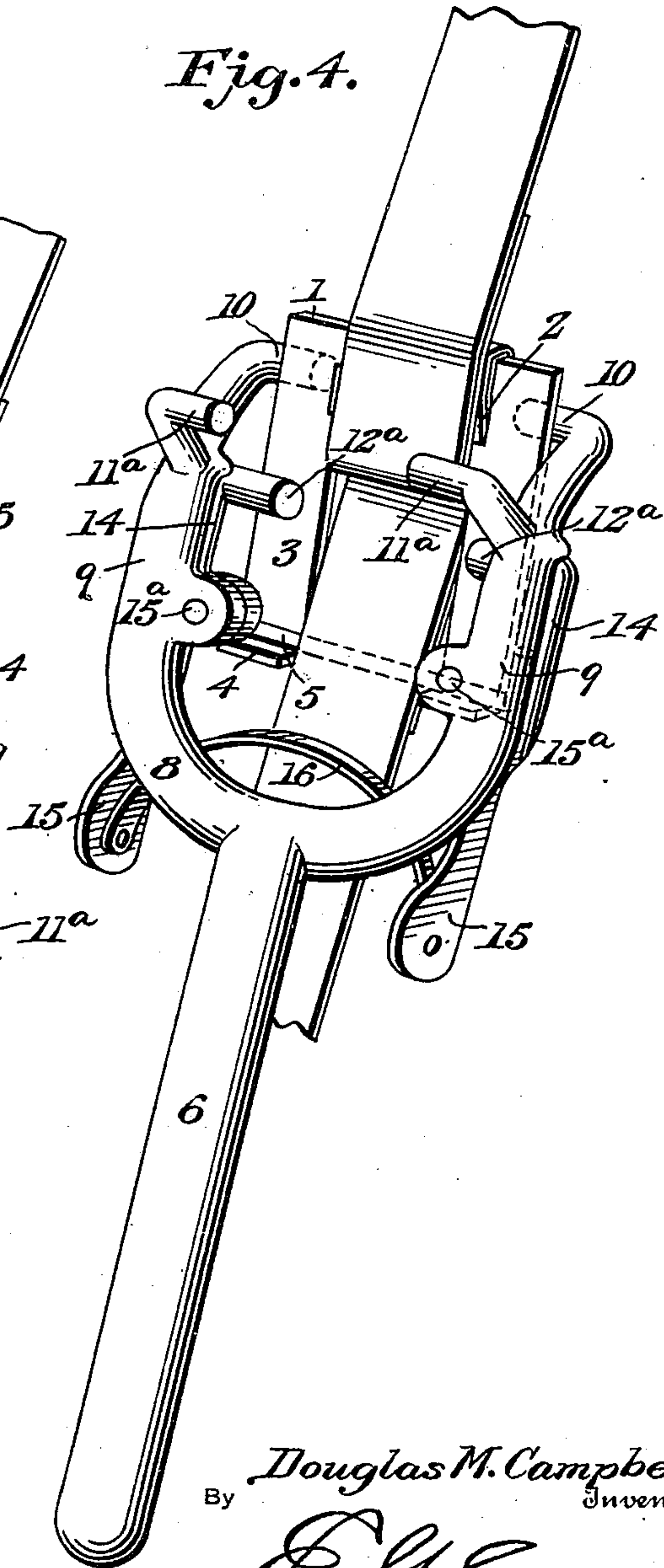


Fig. 4.



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UNITED STATES PATENT OFFICE.

DOUGLAS M. CAMPBELL, OF HOUSTON, TEXAS, ASSIGNOR OF ONE-HALF TO
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TURNING-TOOL FOR BALE-BAND FASTENERS.

SPECIFICATION forming part of Letters Patent No. 666,492, dated January 22, 1901.

Application filed June 9, 1900. Serial No. 19,742. (No model.)

To all whom it may concern:

Be it known that I, DOUGLAS M. CAMPBELL, a citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented a new and useful Turning-Tool for Bale-Band Fasteners, of which the following is a specification.

This invention relates to turning-tools for bale-band fasteners; and it has special reference to an improved tool of this character designed for use in connection with that type of bale-band fasteners involving the use of an element adapted to have the slack of the band wound thereon.

To this end the invention primarily contemplates a novel construction of turning-tool having simple and efficient means for exerting a powerful leverage upon the turning or winding element of the fastener, whereby all of the slack in the bale-band may be readily taken up and drawn very tight, thus insuring the manipulation of the bale-band fastener in a way to provide for taking up a maximum amount of slack with a minimum movement.

A further object of the invention is to provide a turning-tool which is an indispensable auxiliary of that class of bale-band fasteners shown in my former patent, No. 639,695, and particularly in my pending application, Serial No. 15,792, filed May 7, 1900, which forms of fasteners embody as essential parts thereof flat rotatable buckle-plates adapted to turn bodily upon one edge as a fulcrum and arranged to have the ends of the band threaded therethrough. In this class of fasteners provision has heretofore been made for the turning-tool to grip or engage one edge or side of the rotatable buckle-plate, thus placing all of the turning strain upon such edge or side of the plate, whereas the present invention contemplates an improved tool having means for distributing the leverage or turning strain uniformly throughout the entire plate or winding element.

A further object of the invention is to provide an improved construction of turning-tool having simple and efficient means for readily shifting the positions thereof upon the buckle-plate or winding element of the fastening during the operation of turning the same into position for being locked upon the tightened band.

With these and many other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts herein-after more fully described, illustrated, and claimed.

The essential features of the invention involved in the construction of the tool are necessarily susceptible to a variety of modifications without departing from the spirit or scope of the invention; but the preferred embodiment of the improvements is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of the preferred form of the tool in its initial position when the turning of the buckle or winding element is to be started. Fig. 2 is a perspective view of the same form of tool, showing the same in its initial position after it has forced the buckle-plate or winding element to a position for being locked upon the tightened band. Fig. 3 is a detail in perspective of a modified form of the tool shown in its initial position. Fig. 4 is a perspective view of the same tool in its final position.

Like numerals of reference designate corresponding parts in the several figures of the drawings.

In carrying out the present invention the tool is necessarily capable of general application to that type of bale-band fasteners involving a flat winding element about which the lapped bale ends are wound, although it possesses special utility in connection with rotatable bale-band buckles of the type shown in my former patent, No. 639,695, and the aforesaid pending application, Serial No. 15,729. As the tool is really a necessary appurtenance of the preferred form of winding element or buckle shown in the said application, the same is disclosed in the present application for illustrative purposes to show the manner of using the tool.

In order that the action of the tool and the function of its several elements may be readily understood, reference will be made in the first place to the form of bale-band fastener with which it is specially useful, said form of bale-band fastener being disclosed in the aforesaid application. The said bale-band fastener essentially comprises a flat buckle-plate 1, adapted to turn bodily upon one edge

as a fulcrum and provided with a band-receiving eye or opening 2, which receives the lapped ends of the bale-band B, said plate being further provided with a pair of parallel holding-arm extensions 3, having terminal hooks 4 projecting laterally from the same side of the plate and cooperating with a locking-key 5, adapted to be passed transversely beneath the band after the plate has been turned bodily upon itself, and the hooks 4 thereof forced beneath the plane of the inner side of the band. With this explanation of the special type of bale-band fastener, in connection with which the turning-tool possesses special utility, a comprehensive understanding of the said tool may be readily obtained.

The tool in its general organization comprises a lever-handle 6, preferably provided at one end with a loop 7, affording convenient means whereby the tool may be suspended from a suitable hanger, if desired. At its opposite end the said lever-handle 6 is extended into an engaging yoke 8, adapted to stride the buckle-plate or winding element 1 of the fastener and to suitably engage therewith for the purpose of turning it bodily, so as to wind the slack of the band thereon. The engaging yoke 8 is preferably formed integral with the lever handle or shank portion 6 and is usually of a U form to facilitate the proper engagement thereof with the bale-band fastener and the handling of the tool in shifting it from one position to another.

To provide for the bodily turning of the flat buckle-plate or winding element of the fastener upon one edge as a fulcrum, it is of course necessary to provide the tool with suitable fulcrum-points, and this is effected by constructing the engaging yoke 8 at the terminals or extremities of the opposite side arms 9 thereof with inturned fulcrum projections or pins 10, which are disposed in the same transverse plane and are adapted to take over one side of the buckle-plate or winding element 1 contiguous to the edge thereof, constituting the fulcrum-point of the same in its initial turning movement, and in the operation of the tool the said transversely-aligned fulcrum projections or pins 10 are designed to maintain substantially the same position at all times until the fastening is effected.

In addition to the terminal fulcrum projections or pins 10 each side arm 9 of the engaging yoke is provided at an intermediate point, preferably somewhat contiguous to the plane of the fulcrum projections or pins, with a pair of spaced inwardly-projecting bearing-studs 11 and 12, respectively, disposed at opposite sides of the plane of the arm from which they project, and in the preferred construction of the tool (shown in Figs. 1 and 2 of the drawings) the studs 11 and 12 of each side arm are preferably formed at the terminals of short cross-pieces 13, formed integrally with the side arms 9 and extending short distances at opposite sides thereof in order to space the

studs 11 and 12 of each pair a suitable distance apart to secure the desired operation of the tool. The oppositely-located pins 11 and 12 are arranged in transverse alignment, so as to bear upon the same side of the buckle-plate or winding element 1 at the same time, thus securing a uniform engagement of the tool with the buckle-plate or winding element at opposite sides thereof, whereby the turning strain is evenly distributed throughout the plate or element and an even winding up of the slack provided for.

In the use of the preferred form of the tool it will be understood that the buckle-plate or winding element 1 of the bale-band fastener first has the lapped ends of the bale-band B threaded therethrough, with the laterally-projecting terminal hooks 4 thereof disposed next to the bale. To effect the proper winding up of the slack, it is necessary to turn the said buckle-plate or winding element 1 bodily fully half of a revolution and slightly more to permit of the insertion of the locking-key 5 beneath the band. To secure this result, the winding-tool is applied and manipulated in the following manner: First, with the buckle-plate or winding element 1 of the fastener in the initial position (shown in Fig. 1 of the drawings) the fulcrum projections or pins 10 are engaged over the outer side of the buckle-plate, contiguous to one edge thereof, and the transverse bearing-studs 11, located at one side of the yoke, are engaged beneath the opposite side of the plate. By now drawing upon the lever-handle 6, usually in a downward direction on account of the position of the fastener, the hook ends 4 of the buckle-plate are swung away from the bale and carried toward the portion of the band at the opposite side of or beneath the plate. By this time the lever-handle 6 will have moved through nearly the arc of a half-circle, and it is necessary to move the same farther away from the bale to effect the final turning of the buckle-plate. To accomplish this, the pressure is lightened on the tool, so that the primary bearing-studs 11 may be relieved from the buckle-plate and the other or secondary bearing-studs 12 passed over the hook ends 4 of the plate and engaged with the then outer side of the plate, as shown in Fig. 2 of the drawings. This will throw the lever-handle 6 out from the band or bale and will permit of the further inward or downward pressure thereof to complete the turning of the buckle-plate and cause the forcing of the hook ends 4 thereof beneath the plane of the band, so as to admit of the insertion of the locking-key 5. After this has been done the tool is raised and slipped off from the buckle-plate at the edge thereof opposite the hook extremities 4.

Modifications of the construction may be resorted to without disturbing the novel relation of the fulcrum projections 10 and the two pairs of bearing-studs 11 and 12. One of these modifications is shown in Figs. 3 and

4 of the drawings and simply consists in having the secondary bearing-studs laterally movable to facilitate a quick engagement with the outer side of the buckle-plate for the final movement. Referring particularly to Figs. 3 and 4 of the drawings, the same reference characters designate the lever-handle, the yoke, and the fulcrum projections or pins, and the opposite pairs of bearing-studs on the side arms 9 of the yoke are designated, respectively, by the reference characters 11^a and 12^a, the studs 11^a being the primary studs to engage beneath the buckle-plate during the initial movement and the studs 12^a being the secondary studs to engage on the outer side of the buckle-plate during the final movement. In the modification described the studs 11^a and 12^a maintain the same spaced relation, respectively, at opposite sides of the yoke-arms as they do in the construction already described; but the secondary studs 12^a are laterally movable, the same being preferably formed at one end of pivotal carrying-levers 14, arranged at one side of the engaging yoke 8 and pivotally held thereto intermediate their ends by suitable pivots 15^a. The ends of the carrying-levers 14 opposite the studs 12^a are extended into handle portions 15, and between the handle portions 15 of the oppositely-located levers 14 is interposed a bowed holding-spring 16, the extremities of which are rigidly fastened, respectively, to the opposite handle portions 15 to provide means for normally separating said handle portions, and consequently normally holding the secondary bearing-studs 12^a in their inwardly-projected positions.

The manner of using the modified form of tool is substantially the same as that already described, excepting that when it is necessary to shift the bearing-studs to move the secondary studs upon the outer side of the buckle-plate the operator simply presses the handle portions 15 together, thereby withdrawing the secondary studs 12^a to a non-interfering position, so that the lever-handle may be swung outwardly to carry the yoke into a plane permitting the studs 12 to spring inwardly over the other side of the buckle-plate into the position shown in Fig. 4.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described turning-tool will be readily apparent to those familiar with the art without further description, and it will be understood that various changes in the form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A turning-tool of the class described comprising a lever having an engaging member provided with fulcrum elements, and at a point spaced from said fulcrum elements, with

separate bearing elements disposed respectively at opposite sides of the plane of the engaging member, substantially as set forth. 70

2. In a turning-tool of the class described, a lever having an engaging member provided with opposite transversely-aligned fulcrum-points, and oppositely-located pairs of bearing-studs, substantially as set forth. 75

3. A turning-tool of the class described comprising an engaging member provided with terminal transversely-aligned fulcrum projections, and at an intermediate point provided with bearing-studs disposed respectively at opposite sides of the plane thereof, substantially as set forth. 80

4. A turning-tool of the class described comprising a lever having an open engaging yoke provided at the terminals of its side arms with inwardly-projecting fulcrum projections, and at an intermediate point of such arms with pairs of inwardly-projecting bearing-studs, substantially as set forth. 85

5. A turning-tool of the class described comprising a lever having a U-shaped engaging yoke provided at the terminals of its side arms with inwardly-projecting fulcrum-points, and each side arm of the yoke being further provided at an intermediate point with a pair of inwardly-projecting spaced bearing-studs disposed respectively at opposite sides of the arm, substantially as set forth. 90

6. In a turning-tool of the class described, a lever having an open engaging yoke provided with oppositely-arranged fulcrum projections, and at an intermediate point with pairs of spaced bearing-studs, certain of said studs being movable with relation to the yoke, substantially as set forth. 100

7. A turning-tool comprising a lever having an open engaging yoke provided with oppositely-arranged fulcrum projections, the side arms of said yoke being further provided with pairs of bearing-studs disposed respectively at opposite sides of the plane thereof, certain of said studs being laterally movable, and means for normally pressing the movable studs inwardly, substantially as described. 110

8. A turning-tool of the class described, comprising a lever having an open engaging yoke provided with terminal inwardly-projecting fulcrum-points, said yoke being further provided at one side of the plane thereof with inwardly-projecting rigid primary bearing-studs, and spring-separated carrying-levers pivotally mounted at the opposite side of the yoke, and provided with inwardly-projecting secondary bearing-studs paired with the rigid studs, substantially as set forth. 120

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

DOUGLAS M. CAMPBELL.

Witnesses:

R. M. DAVIS,
FRANK GUILD.