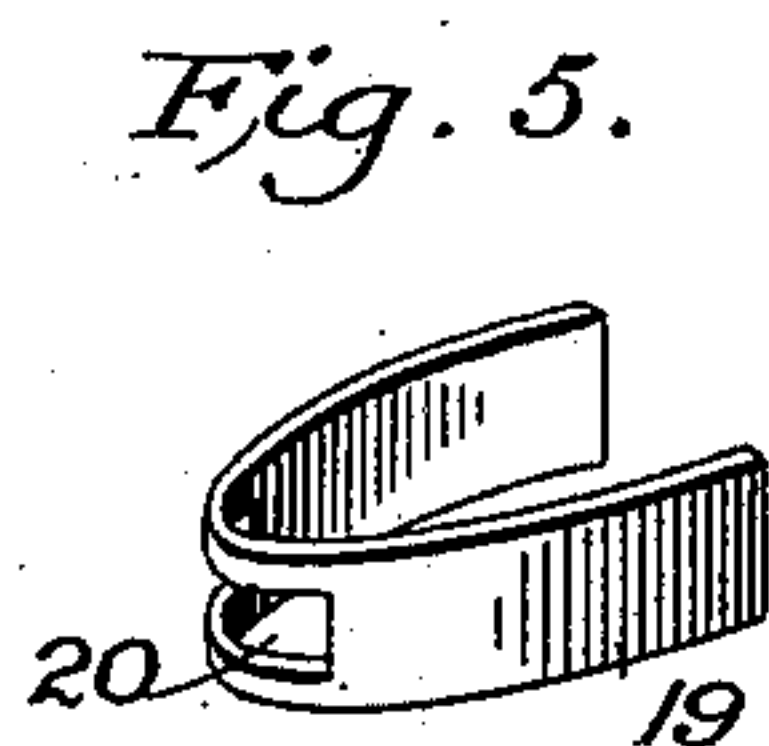
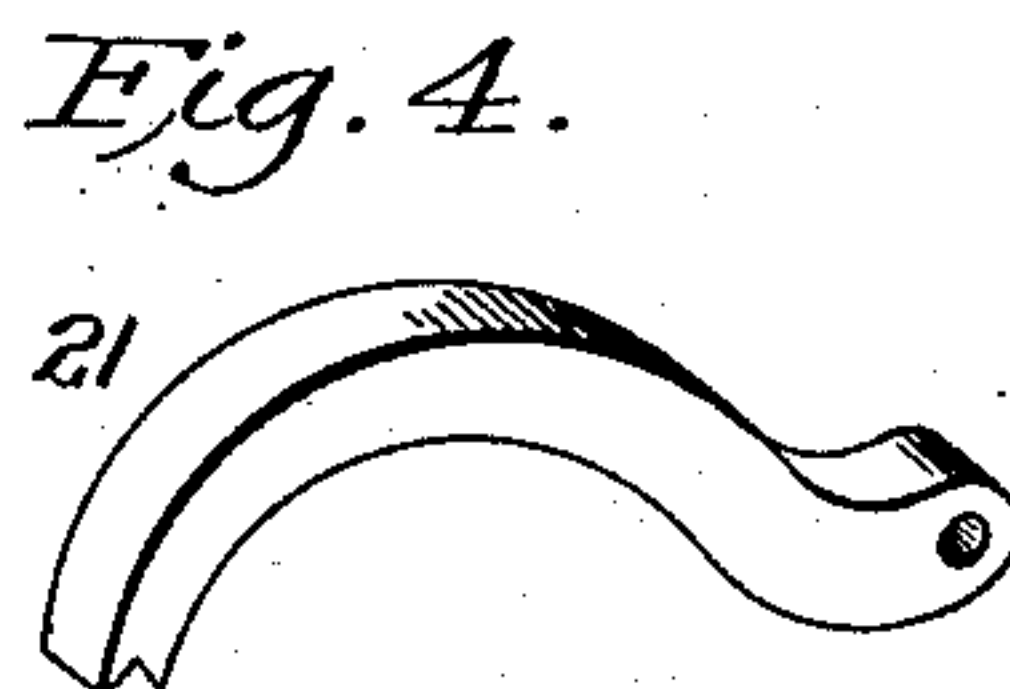
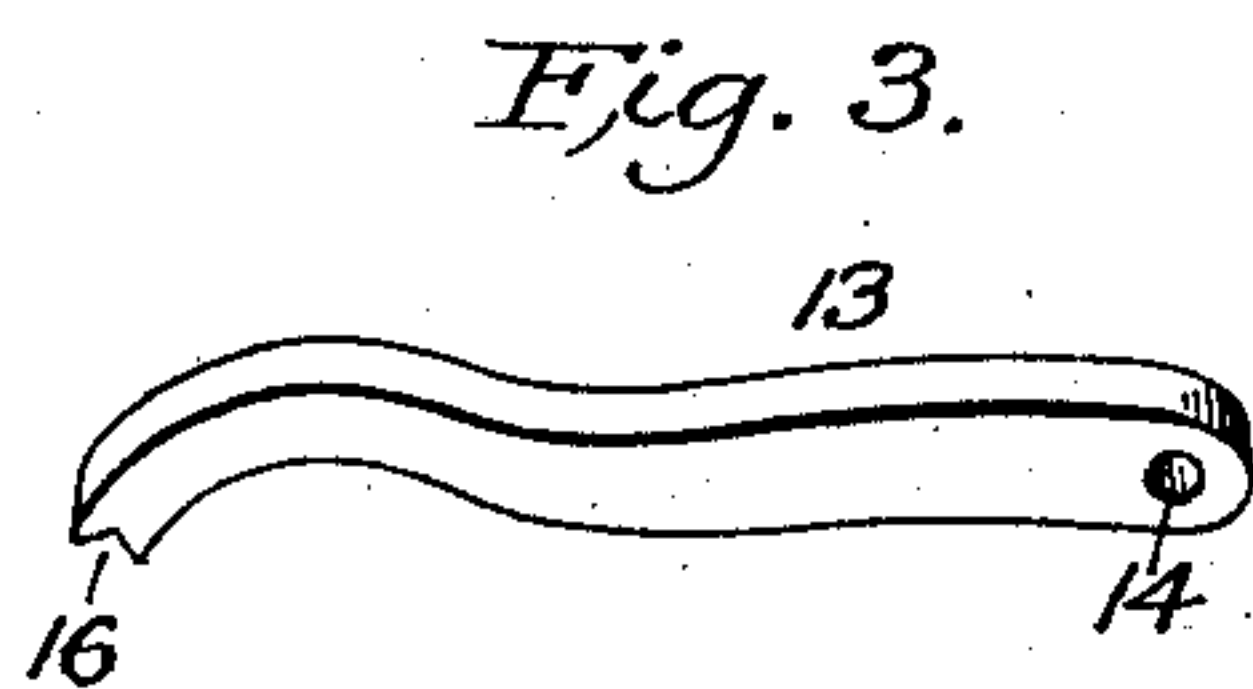
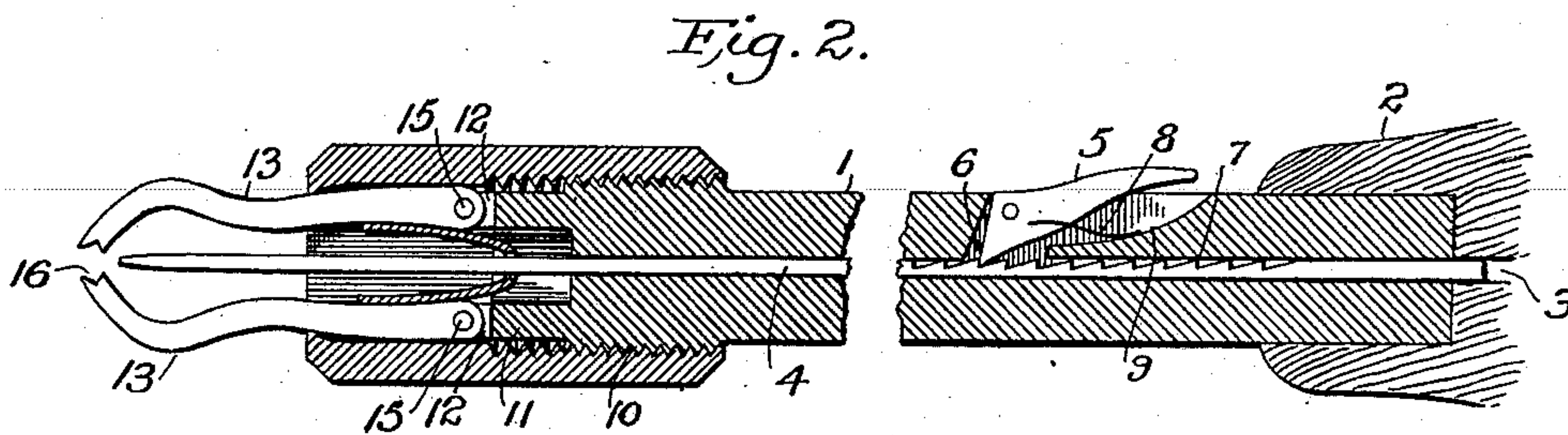
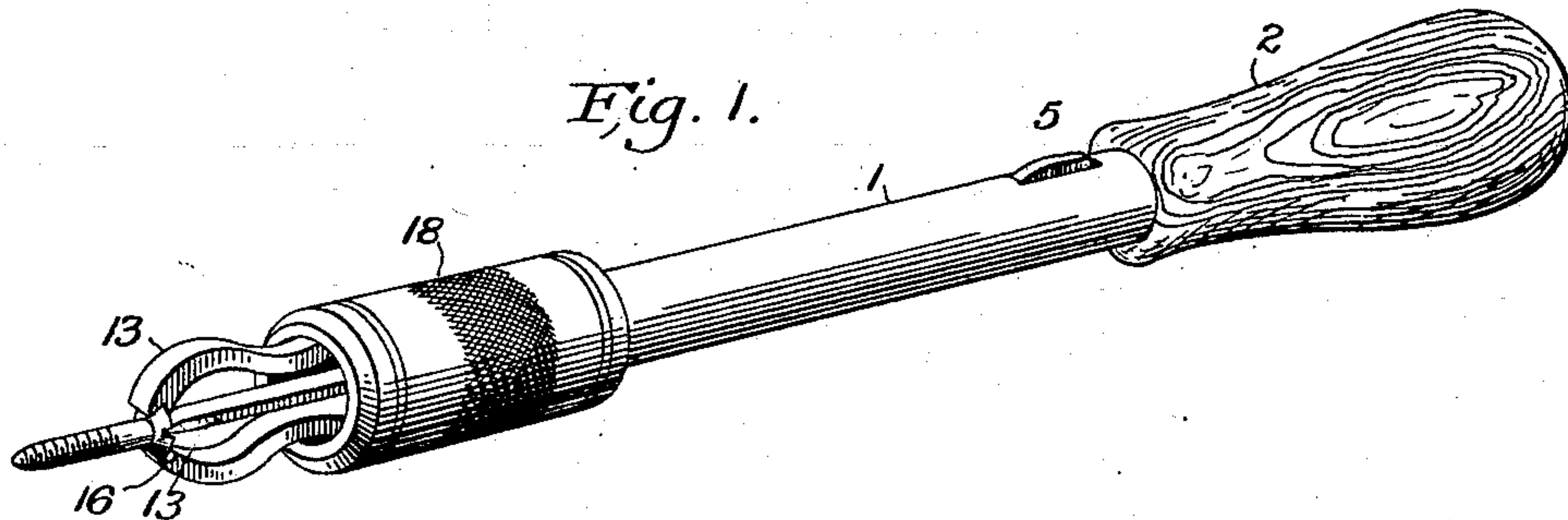


(No Model.)

G. B. JOCELYN.  
SCREW DRIVER AND DRAWER.

No. 604,250.

Patented May 17, 1898.



Witnesses

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# UNITED STATES PATENT OFFICE.

GEORGE B. JOCELYN, OF ARTHUR, ILLINOIS, ASSIGNOR OF ONE-HALF TO  
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## SCREW DRIVER AND DRAWER.

SPECIFICATION forming part of Letters Patent No. 604,250, dated May 17, 1898.

Application filed December 31, 1896. Serial No. 617,579. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE B. JOCELYN, a citizen of the United States, residing at Arthur, in the county of Moultrie and State of Illinois, have invented certain new and useful Improvements in Screw-Drivers and Screw-Drawers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in combined screw drivers and extractors.

The object of the invention is to provide a device of the character described which is adapted for use as a screw-driver for the purpose of driving the screws into wood or other material, and, further, the invention is designed to provide a tool which, while embodying in the construction thereof the essential features of a screw-driver is also adapted to provide improved, simple, and efficient means for extracting screws or the like.

With these objects in view the invention consists in the construction, combination, and novel arrangement of parts, as will be hereinafter fully described, illustrated in the drawings, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a tool constructed in accordance with the present invention. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a detail perspective view of one of the jaws for extracting the screws or the like. Fig. 4 is a similar view of a modified form of jaw. Fig. 5 is a detail perspective view of the spring for expanding the clamping-jaws.

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

Referring to the drawings, 1 designates the handle of the herein-described tool, which may be formed of any suitable material adapted for the purpose, and, if desired, said handle may be formed of a single piece or in lieu thereof may be provided with a cap 2, securely attached to one end of the handle 1 for the purpose of more effectually operating the tool.

The handle 1 is provided with a longitudinal bore 3, in which is adapted to be inserted

a driving-blade 4, the latter being slidably mounted within the bore 3 and adapted to be held adjusted at any point therein by means of a locking-pawl 5, pivoted in an opening 6, formed in one side of the handle 1. To effect the proper adjustment of the driving-blade 4, the same is provided at one of its faces with a series of serrations 7, and the inner end of the pawl 5 is adapted to engage the serrations 7 for adjusting the blade 4 within the bore 3. The outer end of the pawl 5 projects beyond the exterior of the handle 1 for the purpose of permitting said pawl being readily manipulated, and in order that the pawl 5 may be retained in engagement with the serrations 7 a leaf-spring 8 is connected to the pawl 5, the end of the spring 8 opposite to that which is connected to the pawl 5 being seated in a depression 9, formed in the outer side of the handle 1 immediately adjacent to the opening 6. By reason of the spring 8 it will be seen that the inner end of the pawl 5 normally engages the serrations 7 of the driving-blade 4, and when pressure is applied to the outer end of the pawl 5 to press the same into the depression 9 the inner end of said pawl will be disengaged from the serrations 7 and permit free movement of the driving-blade 4 in the bore 3. The pawl 5 will immediately become engaged with the serrations 7 when pressure on the outer end of said pawl is removed, and it will be noted that the serrations 7 incline in such direction that when the driving-blade 4 is withdrawn from the handle 1 for application to a screw or the like the necessary pressure on said handle for causing the screw entering the surface in which the same is placed will not cause the driving-blade 4 to enter the handle 1, as it is obvious that the serrations will impinge against the inner end of the pawl 5; but when the pawl 5 is released from said serrations the driving-blade 4 may be easily passed into the bore 3.

One end of the handle 1 is provided with a series of screw-threads 10, and said handle at its extremity is also provided with a portion (indicated at 11) which is entirely free of threads and formed in which at diametrically opposite points are notches 12, which are adapted to receive a plurality of oppositely-



disposed clamping-jaws 13, said jaws being provided in one of their ends with transverse openings 14, through which pins 15 or their equivalent are adapted to pass for pivotally securing the jaws 13 in the notches 12 of the handle 1. The outer ends of the jaws 13 are curved and notched, as at 16, said notches being adapted to receive a screw or the like when it is desired to insert or extract the same, and it will be noted that said jaws 13 are further provided at the portion adjacent to the openings 14 thereof with offsets 17.

Mounted upon the threads 10 of the handle 1 is a collar 18, which collar may be formed of any suitable material, and is internally threaded, so as to engage with the threads 10, and said collar 18 is concaved longitudinally at its inner face, so as to readily receive and pass over the offsets 17 of the jaws 13. By reason of the concaved inner face of the collar 18 it is clearly obvious that when said collar is moved longitudinally of the jaws 13 the offsets 17 thereof will slide throughout the length of the collar 18 as the latter is moved along said jaws, and thereby compress said jaws or permit the same expanding, as the case may be. In order to provide for the expanding of the jaws 13 when the collar 18 has been moved in position to allow the same, a leaf-spring 19, substantially U-shaped, is interposed between the jaws 13 at a point adjacent to the openings 14 thereof, and the resiliency of said spring will force said jaws apart when the collar 18 has been moved to allow the same, the spring 19 being provided in its inner end with an opening 20, adapted to permit the passage of the driving-blade 4 when the latter is slid in and out of the handle 1, and it will be noted that the end of the spring 19 in which the opening 20 is formed is disposed in the outer end of the bore 3 of the handle 1.

In Fig. 4 I have illustrated a modified form of the clamping-jaws 13, and in this form it will be noted that the offsets 17 of said jaws are dispensed with, the entire length of the jaws being curved, as at 21, and by this construction it is evident that the collar 18 may act as effectually thereon as upon the form of jaws illustrated in the other figures of the drawings.

The operation and advantages of the herein-described tool will be readily seen by those skilled in the art.

In practice when it is desired to insert a screw, the collar 18 is operated so as to allow of the spring 19 spreading the jaws 13 apart, when a screw or the like may be placed between said jaws and the collar 18 moved in order to compress the same on said screw, the latter fitting in the notches 16 of the jaws. The driving-blade 4 is then moved outwardly from the bore 3 so that the outer end of said blade may enter the groove in the head of the screw, when the pawl 5 engages with the serrations of the blade 4, thereby locking the blade 4 in its adjusted position. Upon operation of

the handle 1 after the foregoing step has been taken the screw contained between the jaws 13 may be inserted into the wood without any difficulty whatever, and after such has been accomplished it is simply necessary to rotate the collar 18, and thereby permit the jaws 13 expanding, when the tool may be freed from the screw.

If desired to employ the tool as an ordinary screw-driver, the blade 4 is first moved outwardly from the bore 3 and the collar 18 rotated upon the threads 10, so that the inner concaved face of said collar may cause the offsets 17 of the jaws 13 to move toward each other, which movement causes the extreme outer ends of said jaws binding upon the sides of the blade 4, thus reinforcing the hold of the handle 1 upon said blade, and in this position it is evident that the tool may be employed as an ordinary driver. If, however, it is necessary to extract a screw—as, for instance, when a screw has a broken head—the blade 4 is forced into the bore 3 and retained therein by the pawl 5. The collar 18 is now rotated so as to compress the jaws 13 after the outer ends of the latter have been caused to grasp the head of the screw it is desired to extract, and by reason of the collar 18 having compressed the jaws 13 it will be seen that said jaws are secured firmly upon the screw, and when the handle 1 is rotated said screw may be easily extracted.

From the foregoing description it is apparent that I have provided a tool which is exceedingly simple in its construction, and yet embodying therein points which are highly desirable from the fact that the tool is not only adapted for inserting screws, but, on the other hand, may be employed for extracting the same. This latter feature is especially desirable when it is necessary to remove broken screws or the like. Furthermore, the invention may be employed for a variety of uses by those working in wood, leather, and, in fact, any other work where a tool of the character described is necessary, and in constructing the tool it is preferable to cast the jaws so that the same may freely perform their respective functions.

Having thus described the invention, what is claimed as new is—

1. In a tool of the class described, the combination with a suitable handle provided with a bore, of a plurality of clamping-jaws hinged to said handle and adapted to retain therein a screw or the like for inserting or extracting the same, a driving-blade disposed in the bore of the handle, means for retaining said blade in said bore at different points throughout the length thereof, and means for compressing the jaws to retain the screw or the like therein, substantially as set forth.

2. In a tool of the class described, the combination with a suitable handle provided with a bore, of a plurality of oppositely-disposed clamping-jaws hinged to said handle and adapted to retain therein a screw or the like



for inserting or extracting the same, a driving-blade disposed in the bore of the handle, a pawl for retaining said blade in said bore, and means for compressing the jaws to retain the screw or the like therein, substantially as set forth.

3. In a tool of the class described, the combination with a suitable handle provided with a bore, of a plurality of oppositely-disposed clamping-jaws hinged to said handle and adapted to retain therein a screw or the like for inserting or extracting the same, a driving-blade disposed in the bore of the handle, a pawl for retaining said blade in said bore, and a collar mounted on the handle and adapted to compress the jaws to retain the screw or the like therein, substantially as set forth.

4. In a tool of the class described, the combination with a suitable handle provided with a bore and having a series of screw-threads, of a plurality of clamping-jaws hinged to said handle and adapted to retain therein a screw or the like for inserting or extracting the same, a driving-blade disposed in the bore of the handle, means for retaining said blade in said bore, and a collar mounted on the threads of the handle and adapted to compress the jaws to retain therein the screw or the like, substantially as set forth.

5. In a tool of the class described, the combination with a suitable handle provided with a bore, of a plurality of clamping-jaws carried by said handle, said jaws being provided in their outer ends with notches adapted to receive a screw or the like for retaining the same in said jaws when inserting or extracting, said jaws being further provided with offsets, a driving-blade disposed within the bore of the handle and adjustable therein, means for retaining said blade at different points throughout said bore, and a collar mounted upon the handle and having its inner face concaved longitudinally, the concaved inner face of the collar being adapted to contact with the offsets of the jaws for compressing the latter to retain therein a screw or the like, substantially as described.

6. In a tool of the class described, the combination with a suitable handle provided with a bore and also having a series of screw-threads, of a plurality of clamping-jaws hinged to said handle, said jaws being provided in their outer ends with notches adapted to receive a screw or the like for retaining the screw in the jaws, said jaws being further provided with offsets, a driving-blade disposed in the bore of the handle, means for retaining said driving-blade at different points in said bore, a collar mounted upon the threads of the handle and provided with a longitudinal concaved inner face, the con-

caved inner face of said handle being adapted to contact with the offsets of the clamping-jaws to compress the latter, and means for expanding said jaws when pressure thereon is removed, substantially as set forth.

7. In a tool of the class described, the combination with a suitable handle provided with a bore and also having a series of screw-threads, of a plurality of clamping-jaws hinged to said handle, said jaws being provided in their outer ends with notches adapted to receive a screw or the like for retaining the screw in the jaws, said jaws being further provided with offsets, a driving-blade disposed in the bore of the handle, and having one of its sides provided with a series of serrations, a pawl pivoted in one side of the handle and adapted to engage the serrations of the driving-blade for retaining the latter at different points in said bore, a collar mounted upon the threads of the handle and provided with a longitudinal concaved inner face, the concaved inner face of said handle being adapted to contact with the offsets of the clamping-jaws to compress the latter, and means for expanding said jaws when pressure thereon is removed, substantially as set forth.

8. In a tool of the class described, the combination with a suitable handle provided with a bore and also having a series of screw-threads, said handle being further provided in one of its sides with an opening, of a plurality of clamping-jaws hinged to said handle, said jaws being provided in their outer ends with notches adapted to receive a screw or the like for retaining the screw in the jaws, said jaws being further provided with offsets, a driving-blade disposed in the bore of the handle and having one of its sides provided with a series of serrations, a pawl pivoted in the opening of the handle, a spring connected to said pawl and seated in a depression formed in the handle adjacent to the opening thereof, said pawl being adapted to engage the serrations of the driving-blade to retain the latter at different points in the bore of the handle, a collar mounted upon the threads of the handle and provided with a longitudinal concaved inner face, the concaved inner face of said handle being adapted to contact with the offsets of the clamping-jaws to compress the latter, and means for expanding said jaws when pressure thereon is removed, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE B. JOCELYN.

Witnesses:

G. W. BALLIRD,  
W. C. HOLTON.