No. 721,028. PATENTED FEB. 17, 1903.

G. W. M. DELFS.

COOPER'S CROZE.

APPLICATION FILED MAR. 7, 1902.

NO MODEL.

Fig. 1.

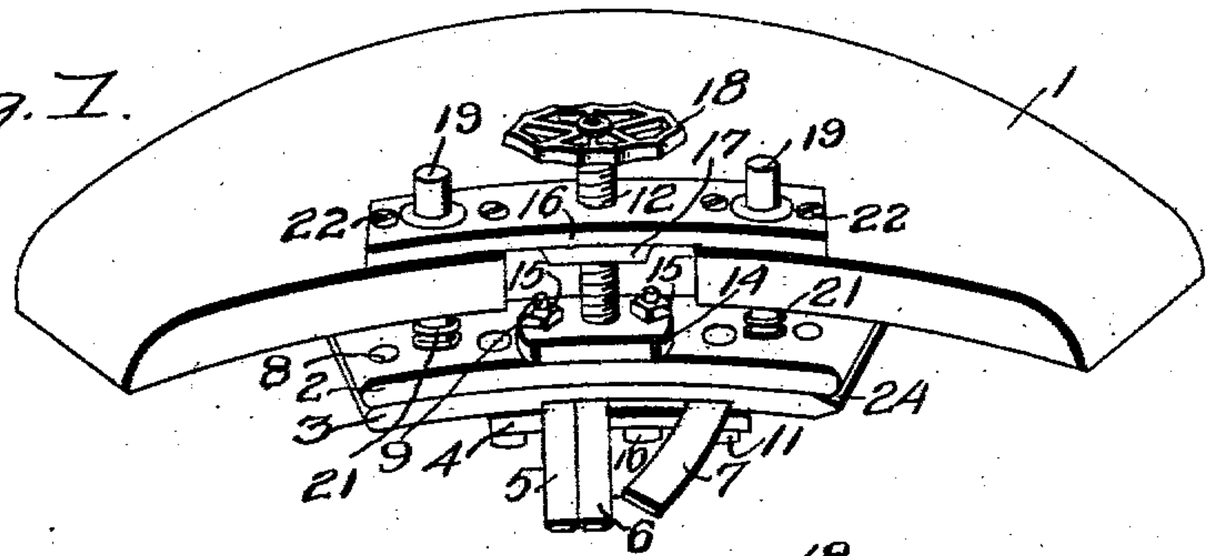


Fig. 2.

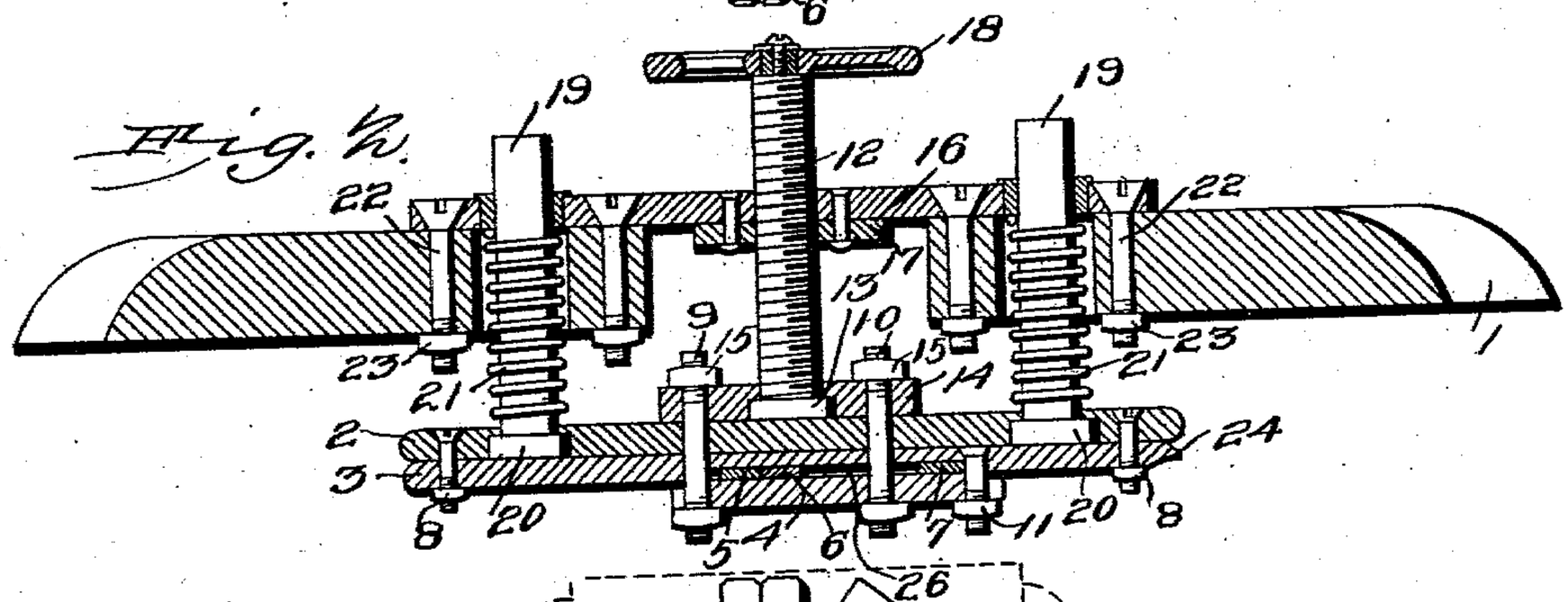


Fig. 3.

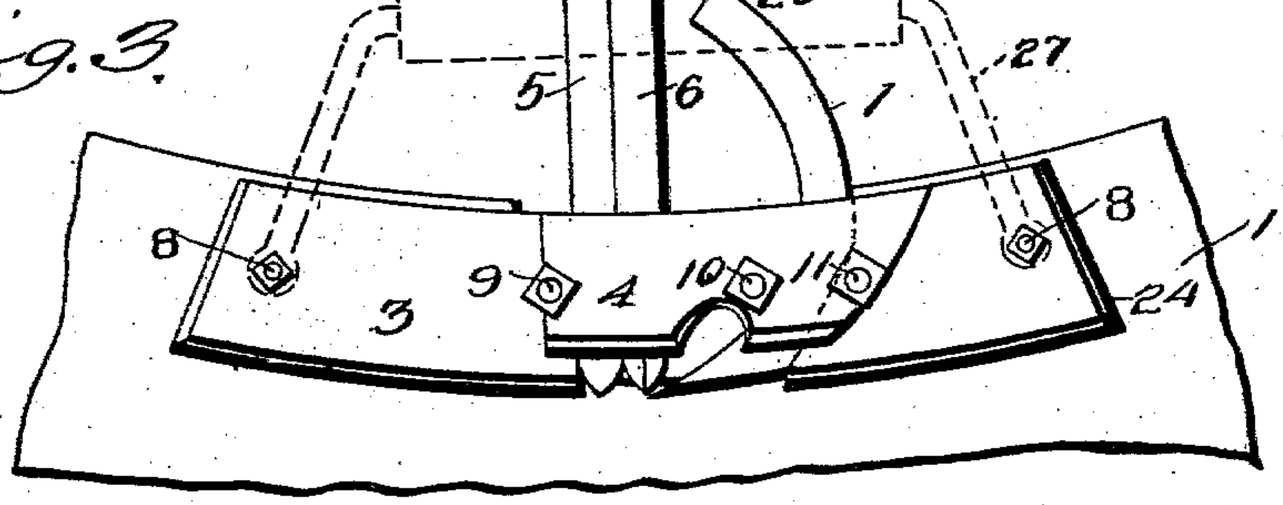


Fig. 4.

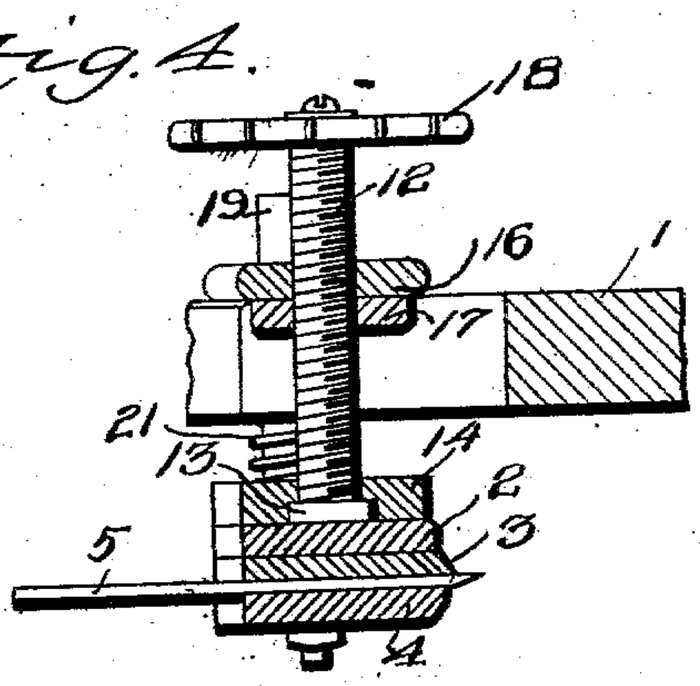
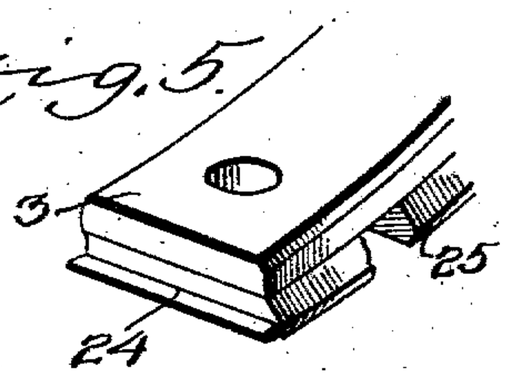


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE W. M. DELFS, OF OLEAN, NEW YORK.

COOPER'S CROZE.

SPECIFICATION forming part of Letters Patent No. 721,028, dated February 17, 1903.

Application filed March 7, 1902. Serial No. 97,193. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. M. DELFS, a citizen of the United States, residing at Olean, in the county of Cattaraugus and State of New York, have invented a new and useful Cooper's Croze, of which the following is a specification.

This invention relates to coopers' crozes.

The object of the invention is to present a croze which shall be thoroughly efficient for performing the functions of an ordinary croze and which shall have the added function of being peculiarly adapted for doing repair-work—that is, adjustable to cut crozes arranged at different distances from the rim irrespective of the depth of the howel.

A further object is to provide a novel form of router of a construction that will permit of its being used as long as it can be clamped to position on the cutter-guide and which shall be of a configuration to permit of its being readily sharpened when necessary.

A further object of the invention is to provide a novel form of cutter-guide which will enable the operator with accuracy to set the cutters and router with relation to the croze.

With these and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a cooper's croze, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like numerals of reference indicate corresponding parts, there is illustrated one form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit thereof.

In the drawings, Figure 1 is a view in perspective of the completed implement. Fig. 2 is a view in vertical longitudinal section. Fig. 3 is a view in inverted plan, showing more particularly the arrangement of the cutter-guide, router, and croze-cutters. Fig. 4 is a view in transverse section, showing more particularly the manner in which the croze-cutters are clamped to position. Fig. 5 is a fragmentary detail view of a portion of the cutter-head, showing more particularly the croze-depth gage associated with the cutter-guide.

Referring to the drawings, 1 designates the stock, which may be of the usual or any preferred construction and to which is connected the croze-cutting mechanism. The cutter-head, which is adapted for adjustment to and from the stock, according to the distance of the croze from the rim of the barrel, comprises a head-plate 2, a cutter-guide 3, and a throat-plate 4, between which and the cutter-guide are clamped the croze-cutters 5 and 6 and the router 7. Both the head-plate and the cutter-guide are segmental in form, the degree of curvature of the convex edge to be determined by the size of the barrel. The croze-cutters 5 and 6 are of the ordinary lancet type; but the router 7 is of a novel construction and is designed to have a range of usefulness not heretofore possible with routers as constructed. The said router is made from a strip of steel bent in the arc of a circle, and it will thus be seen that it may be used by being resharpened as long as there is sufficient length left to permit of its being clamped in position. This will be found highly advantageous in use not only on account of its cheapness, but on account of the readiness with which it may be sharpened, as it will only be necessary to grind off its lower edge, as shown in Fig. 3, to bring the point to the desired cutting condition. The head-plate and cutter-guide are held assembled by bolts or screws 8, disposed near the terminals thereof, and the throat-plate by three bolts 9, 10, and 11, the latter in this instance having its head seated in a recess in the upper side of the cutter-guide, each of the bolts being provided with nuts, by loosening which the croze-cutters and router may readily be removed when necessary. The cutter-head is moved to and from the stock by an adjusting-screw 12, the lower end of which is provided with a head 13, seated in a recess formed in the plate 14, which is clamped upon the upper side of the head-plate 2 by nuts 15, carried by the bolts 9 and 10. The screw 12 works in a threaded opening formed partly in a guide-plate 16 and in a boss or lug 17, riveted or otherwise rigidly secured thereto, and carries at its upper end a hand-wheel 18, by which the screw may be rotated. Instead of having

the boss 17 a separate structure assembled with the guide-plate it may be integral therewith, and as this will be readily understood detailed illustration thereof is deemed unnecessary. The cutter-head is held against rotation under the movement of the adjusting-screw and in proper operative relation with regard to the stock by two guide-rods 19, the lower ends of which are provided with heads 20, working in sockets formed in the under side of the head-plate 2. Upon each of these guide-rods is mounted a coiled spring 21, one end of which bears against the head-plate and the other end against the under side of the guide-plate 2, these springs exerting a tension normally to hold the cutter-head away from the stock, the openings in the stock in which the springs are housed being of sufficient size to permit of their free and effective operation. The springs above referred to perform a very important function in that they obviate the necessity of the employment of two screws to effect adjustment of the cutter-head with relation to the stock, and also the exercise of great care in such adjustment to keep the cutter-head exactly parallel with the stock, thus to cause the croze-cutters and router properly to perform their functions. The manner of securement of the results above named will be readily understood, it being evident that when the screw is turned in either direction the springs operate positively and automatically to maintain the cutter-head in positive parallelism with the stock, whereas if two adjusting-screws were employed aside from the time required to effect adjustment measurements would have to be taken in order to determine when the cutter-head is parallel with the stock. As shown more particularly in Fig. 2, the guide-plate is held associated with the stock by bolts 22, the nuts 23 of which bear against the under side of the stock; but any other means may be employed for holding the said plate on the stock if found necessary or desirable. In order that the cutter-head may have an extended range of movement toward the stock, the latter is cut away in alinement with the plate 14 to permit the latter to move up close to the guide-plate, thus to adapt the tool for crozing barrels of any size.

As stated at the outset of the specification, a salient object of this invention is to adapt it for repair or what is known in the trade as "piecing" work—that is, taking out one or more staves of a barrel and replacing them with new ones—and inasmuch as the cutters are hidden from view by the stock it is often difficult to bring into proper operative relation with the croze. This objection is overcome in this invention in a thoroughly practical and simple manner by providing the cutter-guide at one end with a rib 24, constituting a croze-depth gage, disposed in exact alinement with the router. Thus by placing the tool against the inside of the barrel, with the guide 24 bearing against a stave, and operating the hand-wheel 18 the operator will be enabled to ascertain when the cutters are in alinement with the croze by the said gage slipping therein. The disposition of the guide-rods 19 will operate positively to prevent any rocking motion of the cutter-head, and the employment of a single adjusting-screw disposed intermediate of the ends of the guide-plate, and thus between the guide-rods, renders the tool readily adjustable by the operator, as by placing the stock upon the chime of a barrel and holding it there by one hand his other hand will be free to turn the adjusting-screw, thus to bring the croze-depth gage into the croze. As shown in Fig. 5, the operative edge of the cutter-guide is sharpened or beveled, as at 25, and projects some distance beyond the corresponding edge of the head-plate in order to travel in the croze, and thus positively guide the cutters in their operation. As clearly shown in Figs. 1, 2, and 3, the under side of the cutter-guide is provided with a recess 26, one wall of which is curved to conform to the contour of the router and the other wall is straight to present a solid bearing-surface for the cutter 5. If desired, a handle 27 may be associated with the cutter-head, as indicated by dotted lines in Fig. 3.

While not herein shown, it is to be understood that the parts comprising this invention may be associated with a cooper's howel, thereby presenting a combination-tool.

It is to be understood that the head-plate 2, guide-plate 16, adjusting-screw 12, rods 19, and springs 21 may be supplied as an article of manufacture irrespective of the other parts of the device and by being made in different sizes may be applied to any howel or croze on the market. It is also to be understood that the novel form of router herein shown is not to be limited in its use in connection with a hand-croze alone, as it may be used with machine-crozes and still be within the scope of the invention.

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

1. A cooper's croze comprising a stock, a cutter-head, guide-rods carried by the cutter-head adjacent to its terminals and projecting through the stock, springs mounted upon the rods and operating normally to hold the cutter-head away from the stock, and an adjusting-screw carried by the cutter-head intermediate of its ends and projecting upward above the stock.

2. A cooper's croze comprising a stock carrying a guide-plate, a cutter-head, guide-rods carried by the cutter-head adjacent to its terminals and projecting through the said plate, springs mounted upon the rods and bearing against the under side of the guide-plate, and an adjusting-screw having a swiveled connection with the cutter-head and engaging a threaded opening in the guide-plate.

3. A cooper's croze embodying a stock carrying a guide-plate, a cutter-head comprising

a head-plate, cutter-guide and throat-plate, the cutter-guide being provided at one end with a croze-depth gage, guide-rods carried by the cutter-head near its terminals and projecting upward through the stock, springs mounted upon the rods and operating normally to hold the cutter-head away from the stock, and an adjusting-screw having a swiveled connection with the cutter-head and working in an opening in the guide-plate, the upper end of the screw being provided with a hand-wheel.

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

GEORGE W. M. DELFS.

Witnesses:
F. W. HAYS,
JNO. L. HAYS.