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C. F. RABB.

TOOL HEAD AND FASTENING DEVICE THEREFOR.

APPLICATION FILED OCT. 5, 1904.

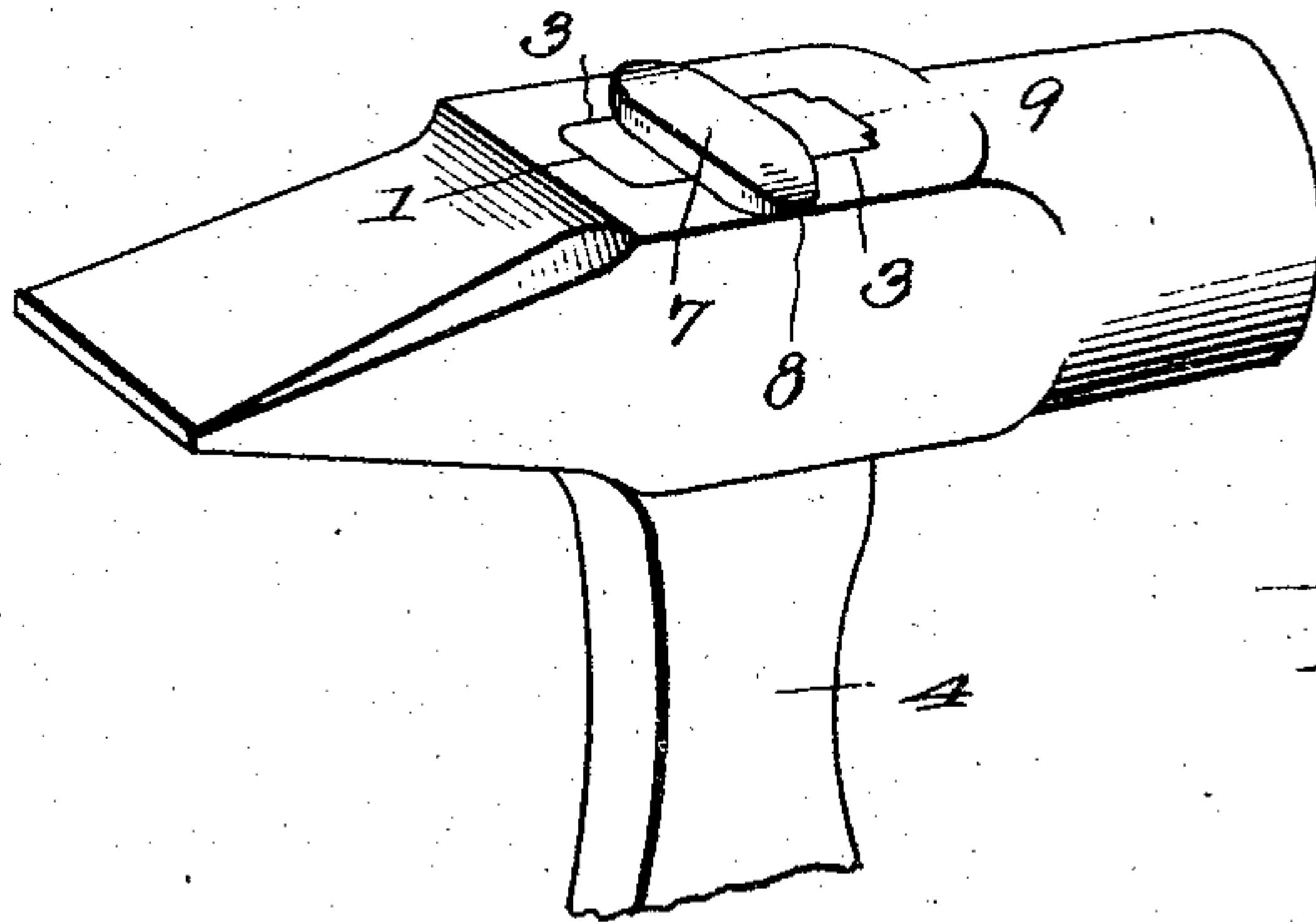


Fig. 1.

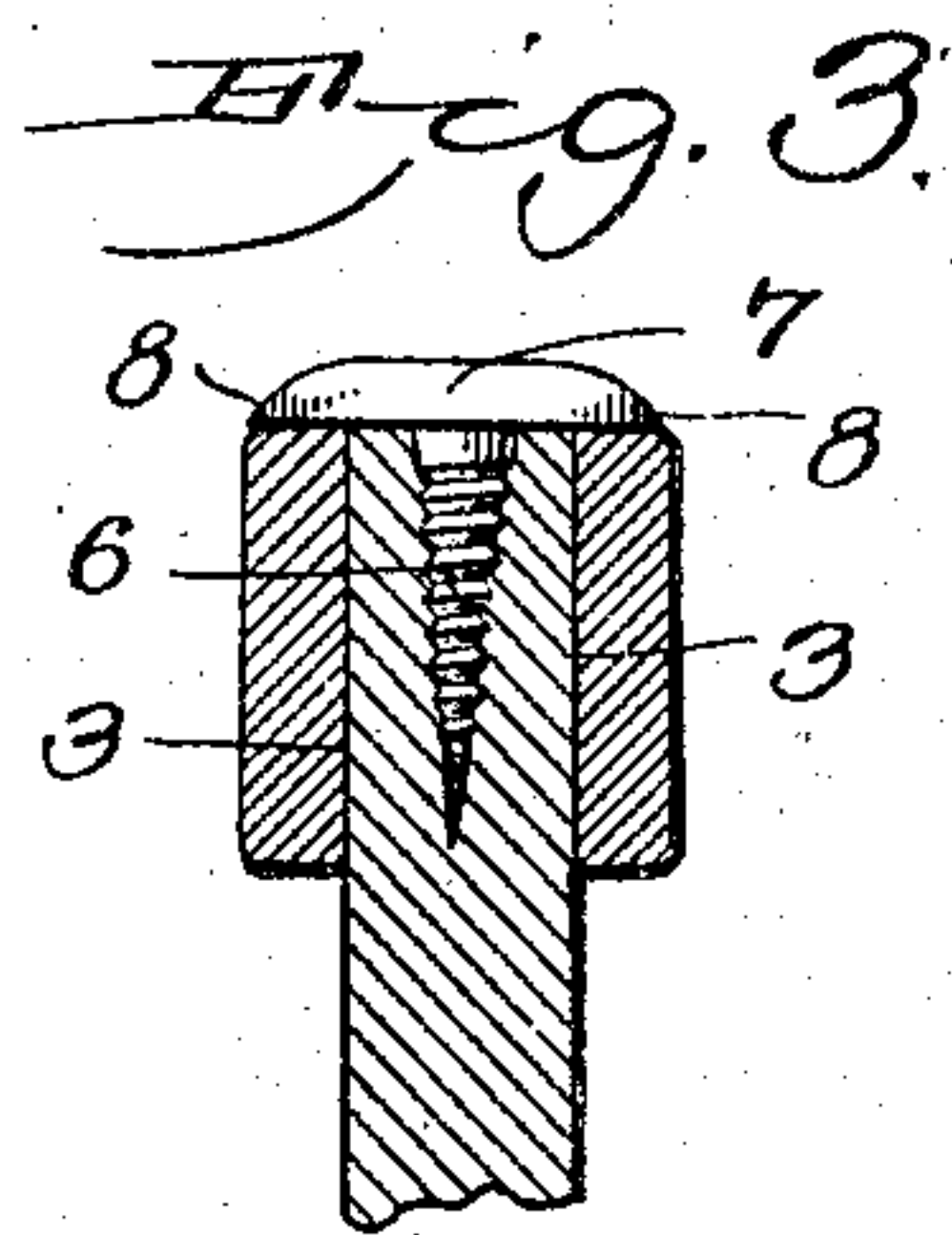


Fig. 3.

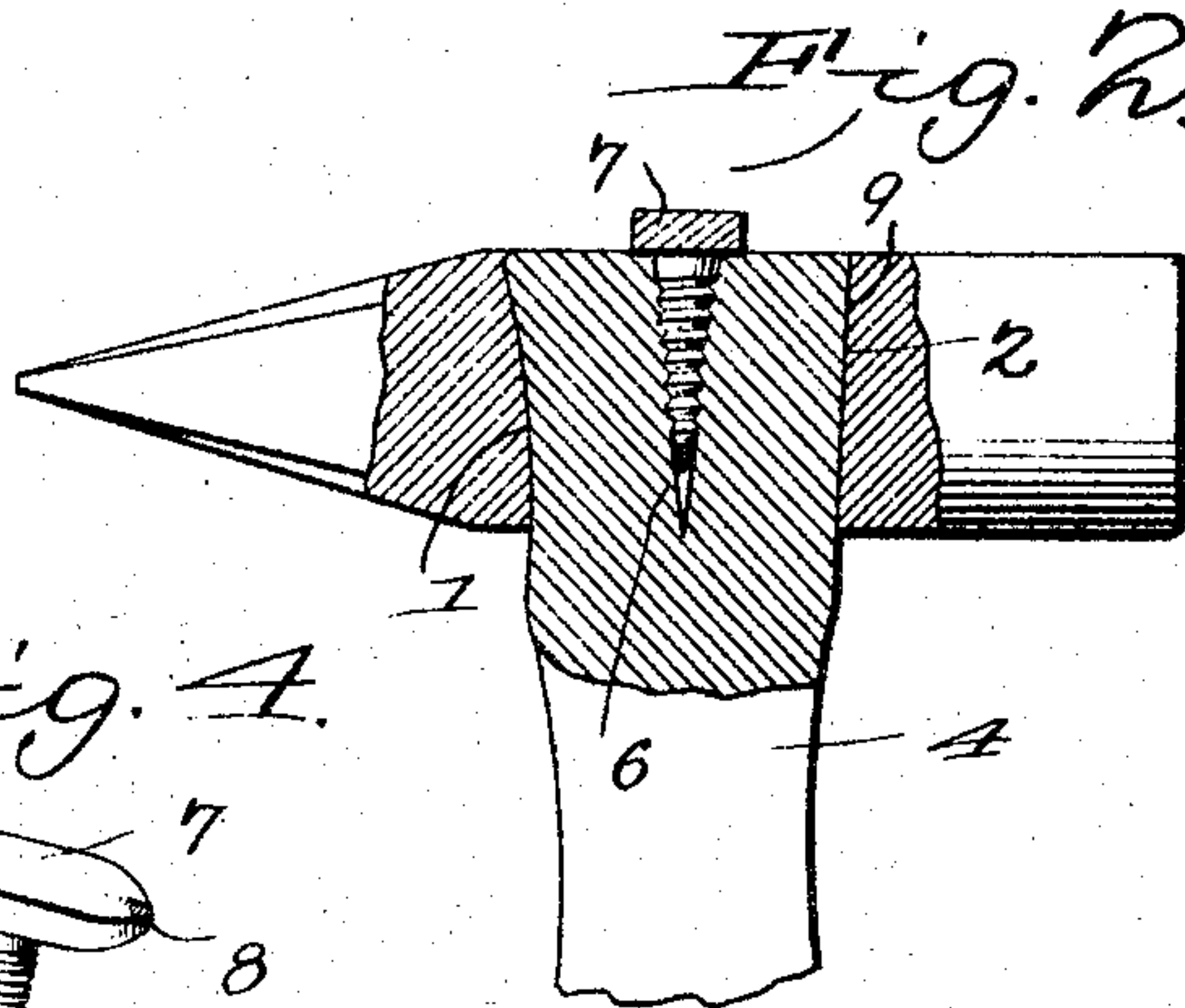


Fig. 2.

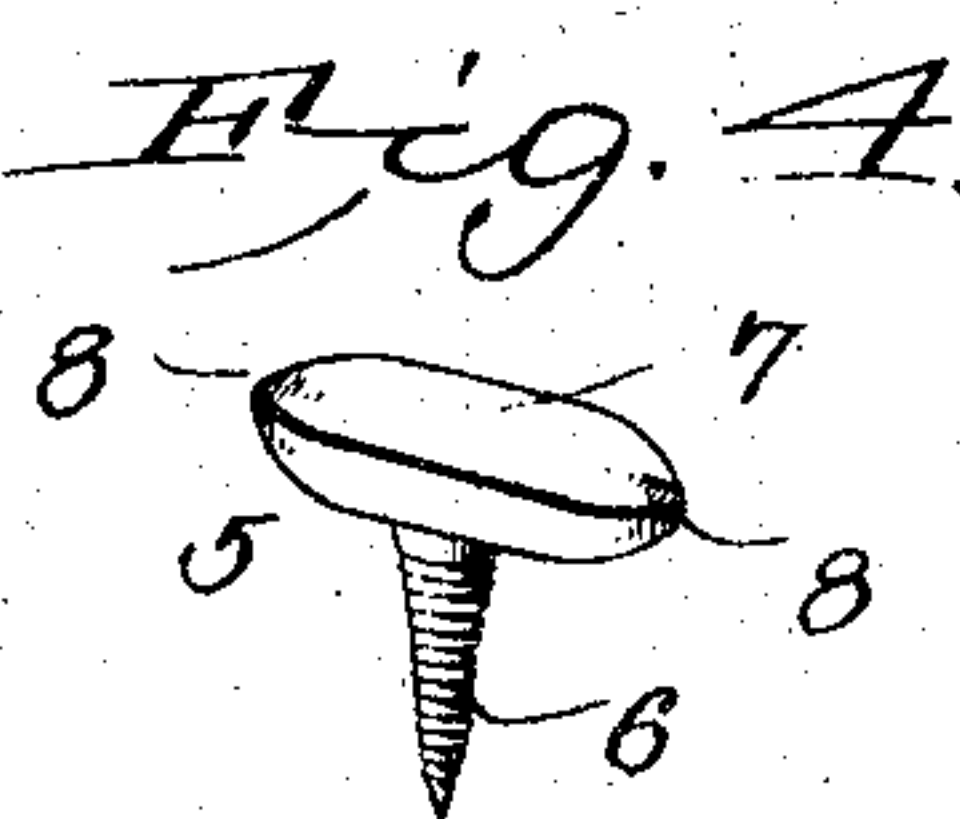


Fig. 4.

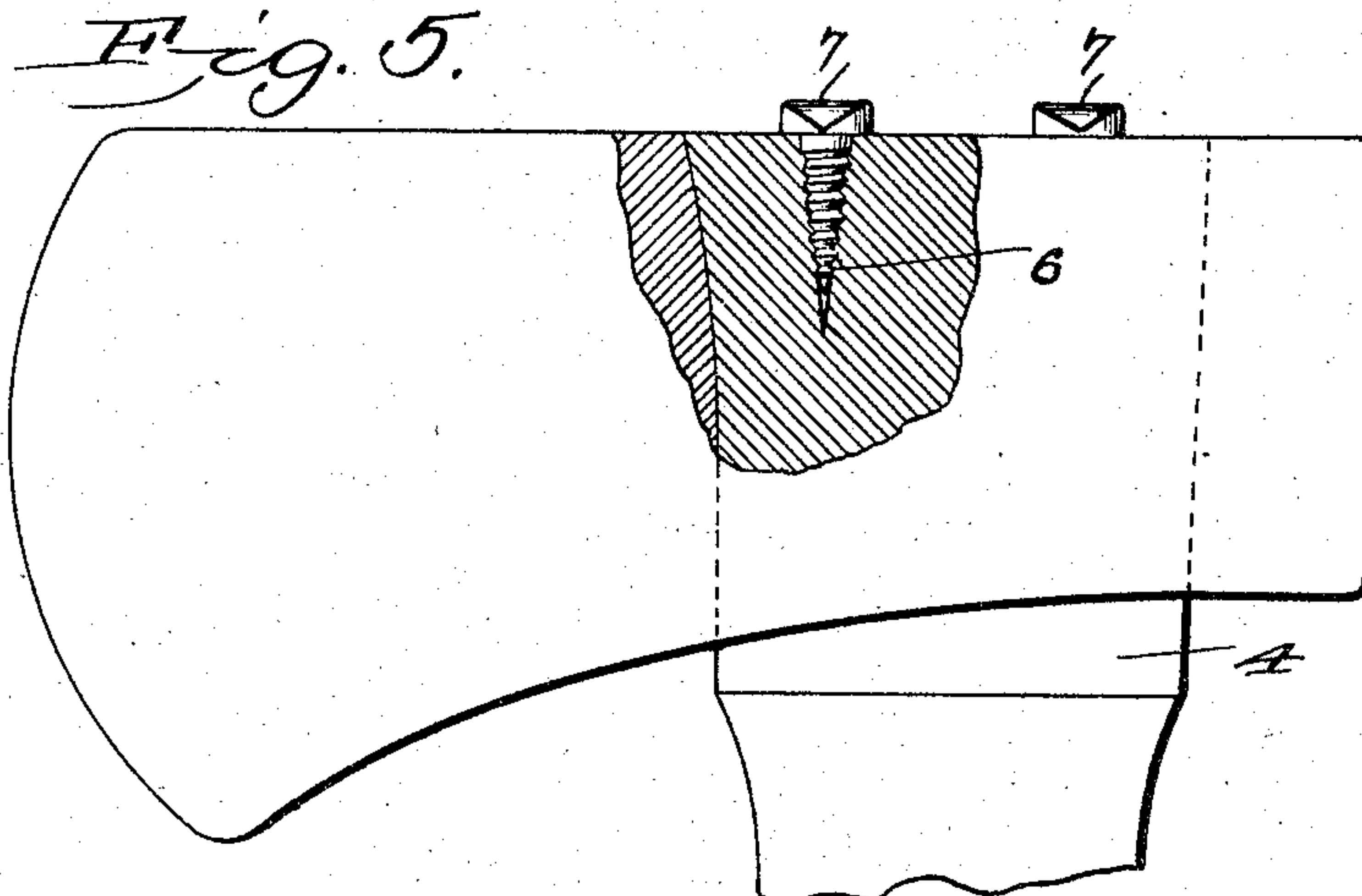


Fig. 5.

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UNITED STATES PATENT OFFICE.

CHARLES F. RABB, OF BLOOMSBURG, PENNSYLVANIA.

TOOL-HEAD AND FASTENING DEVICE THEREFOR.

SPECIFICATION forming part of Letters Patent No. 782,466, dated February 14, 1905.

Application filed October 5, 1904. Serial No. 227,299.

To all whom it may concern:

Be it known that I, CHARLES F. RABB, a citizen of the United States, residing at Bloomsburg, in the county of Columbia and State of Pennsylvania, have invented a new and useful Tool-Head and Fastening Device Therefor, of which the following is a specification.

This invention relates to tool-heads and fastening devices therefor.

The object of the invention is to dispense with the employment of wedges in securing a tool-head upon its handle; to obviate necessity of boring or splitting the handle, such as is necessary where ordinary wedges are employed; to facilitate removal of the handle when broken and its substitution by a new one; to preclude the possibility of the head flying from the handle even when the connection between the parts is loose; to improve the eye of the tool-head so as to render the coaction between it and the handle of such character as to secure a positive wedging and locking action between the parts, and generally to improve and simplify tool-heads and fastening devices therefor.

Generally stated, the invention embodies a novel form of tool-eye and a novel form of fastening device for securing the handle within the eye. The eye is constructed with one of its end walls curved, the pitch of the curve being such as to cause the end of the eye at the top face of the tool to be of greater width than that of the bottom, thereby, in conjunction with the other end wall, presenting an approximately wedge-shaped eye, and, further, in providing the end wall of the eye opposite the curved portion with a rabbet which will operate when the handle is driven into position to accentuate the frictional coaction between the parts and in a measurable degree reduce liability of loosening.

The fastening device is of novel construction and performs the double function of a wedge and of a retainer. To secure these results, the shank of the fastener is cone or wedge shaped and is threaded throughout practically its entire length, and the head of the device is approximately rectangular in form and is of a length practically to span the width of the tool-head, so that should the han-

dle work loose in the head the latter will be positively held from disconnection from the former in use.

The invention consists, further, in the various novel details of construction of the parts, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, there are illustrated two forms of embodiment of the invention, each 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 a hammer head and a portion of a handle, showing the fastening device combined therewith. Fig. 2 is a view in side elevation, partly in section, of the hammer head, handle, and fastener. Fig. 3 is a view in transverse section through the hammer head and handle. Fig. 4 is a perspective detail view of the fastener. Fig. 5 is a view in elevation, partly in section, showing the fastener applied to an ordinary ax.

The feature of the improvement of the eye of the tool-head is applicable to a hammer or an ax, as shown, or to any other tool-head where it could be used to advantage.

As clearly shown in Figs. 2 and 5, one wall, 1, of the eye, which may be either the front or the rear wall, is curved, the curve of the wall being such that the eye at the upper side of the tool-head is of greater width than that of its under side, and forms, in conjunction with the wall 2, an approximately wedge-shaped eye, the side walls 3 of the eye being parallel, as shown in Figs. 1 and 3. The handle 4 will be of the usual or any preferred construction in each embodiment of the invention shown and is made to fit tightly the smaller part or the entering end of the eye, thereby leaving its upper portion out of contact with the curved wall, and to force this latter part of the handle into engagement with the latter wall, thus positively to assem-

ble the handle and the head, a fastener 5 is employed, which embodies a threaded cone-shaped shank 6 and a rectangular head 7, integral therewith and preferably curved and pointed at its ends 8 to obviate the presentation of obstructions, which would be objectionable where the tool is used close up against work. The taper of the shank is to be such that it will form a wedge to spread or split the wood of the handle, thus positively to force it against the curved wall of the eye, and the seating of the fastener is secured by a wrench. In order to accentuate the coactive relation between the handle and the head, the wall 2 is provided with a rabbet 9, into which the wood of the handle will be forced, and will thus operate to cause the connection between the handle and the head to be of more rigid and fixed character than would result if this latter wall was straight, inasmuch as when the fastener is seated the wood of the handle will be forced into the rabbet, and the opposed walls thereof by biting into the handle will secure an efficient and positive holding or securing together of the parts in conjunction with the curved wall 1.

As stated at the outset of the specification, one of the objects of the invention is to obviate the employment of wedges and also any boring into the handle for the purpose of seating the fastener therein, and these two objects are secured, the first by having the shank wedge-shaped and the second by having the threads terminate in a gimlet-point, which will readily bite into the wood, and as the fastener is seated it will split the handle and cause it to be tightly and firmly wedged within the eye. When the handle is to be removed should it become broken, it will only be necessary to remove the fastener, when the handle may be readily driven out of the head.

The head 7 of the fastener is in width co-

extensive, or substantially so, with that of the tool-head, so that in the event that the tool-handle works loose the head will positively be held from flying off. Where the handle works loose and it be desired to tighten it, it will only be necessary to remove the fastener, drive the handle farther into the eye, cut off the protruding portion of the handle, and again replace the fastener.

In some instances, as where an ax-head is to be secured to a handle, two or more of the fastening devices may be employed, as clearly shown in Fig. 5.

It will be seen from the foregoing description that although the improvements of this invention are exceedingly simple in character they will be thoroughly effective in use for the purposes designed and will in a ready and practical manner obviate difficulties heretofore present in the securing of tool-heads upon handles.

Having thus described the invention, what is claimed is—

The combination with a tool-head having an eye provided with one end wall extending approximately at right angles to the length of the head and provided with a rabbet and the other end wall disposed on a curve and in such manner as to form in conjunction with the first-named wall an approximately wedge-shaped eye, of a handle seated in the eye, and a fastening comprising a cone-shaped threaded shank and a rectangular head integral therewith and of a length to span the eye.

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

CHARLES F. RABB.

Witnesses:

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