

C. N. CHOATE.  
ADJUSTABLE HOE.

APPLICATION FILED JUNE 27, 1904.

Fig. 9.

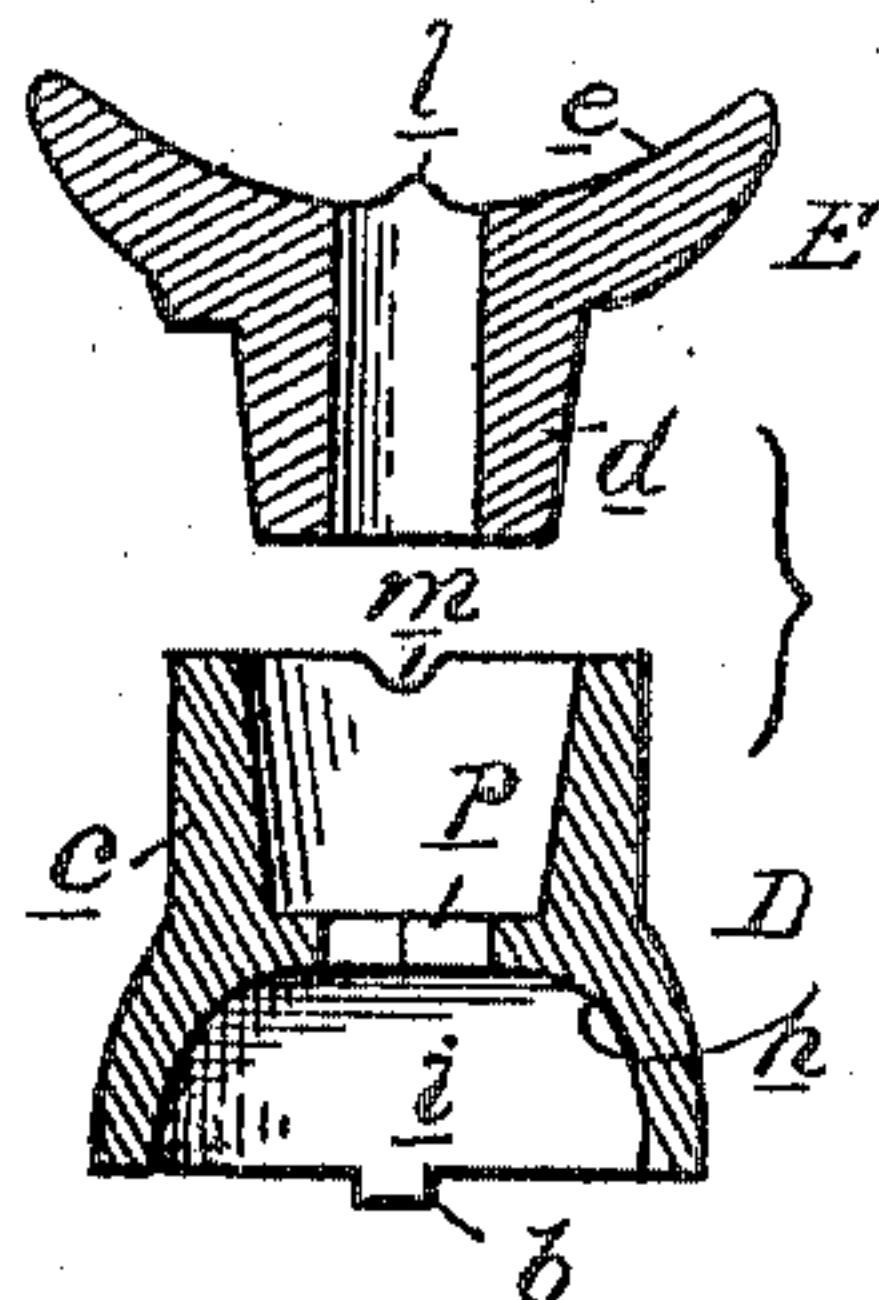


Fig. 8.

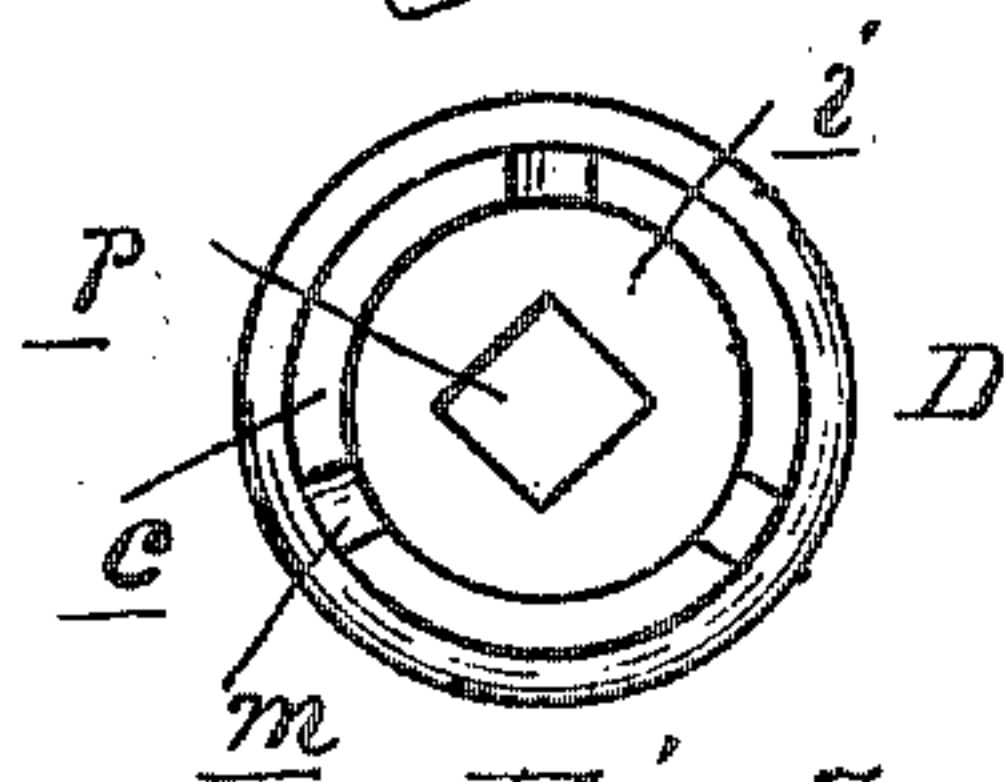


Fig. 7.

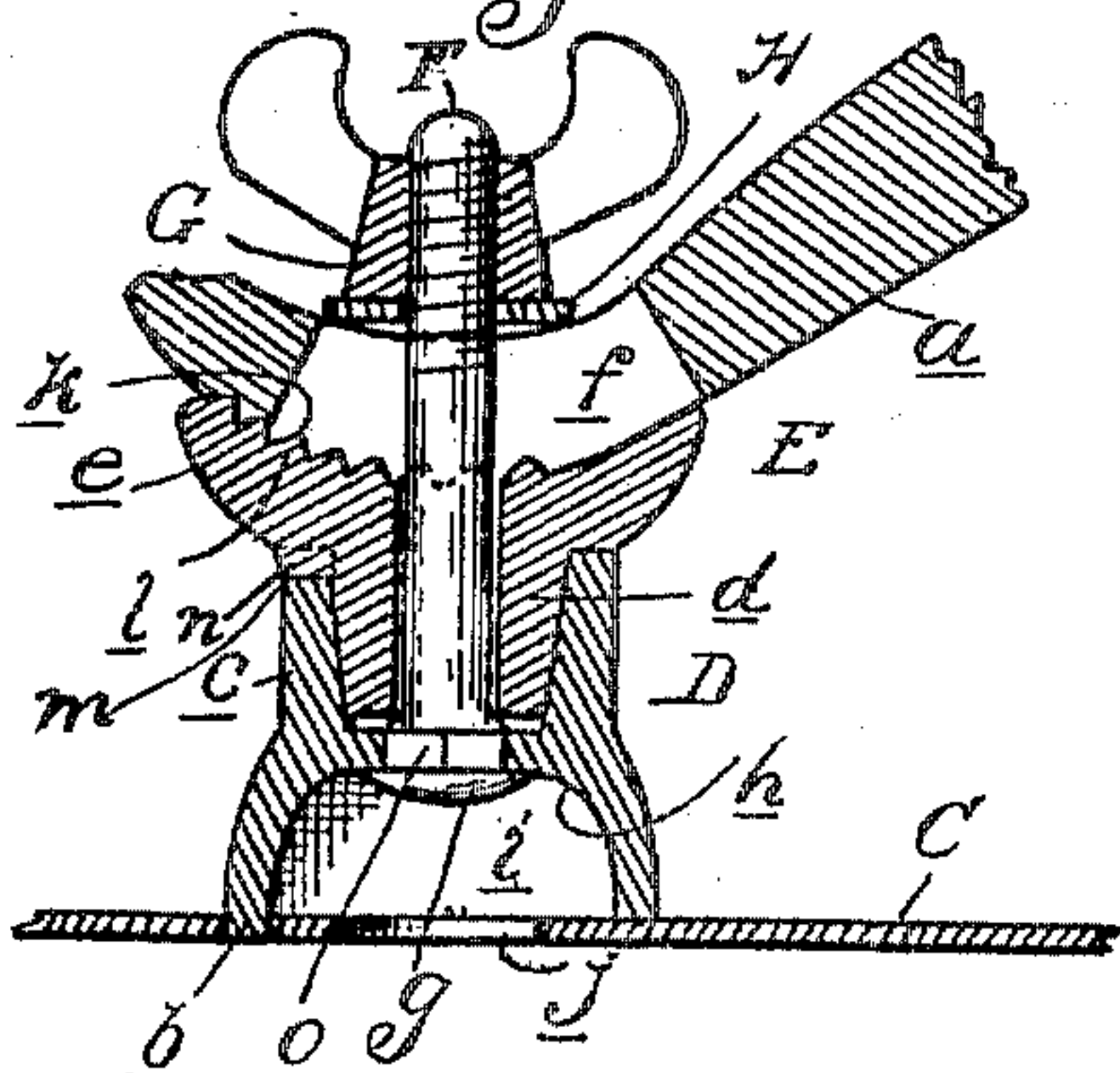


Fig. 5.

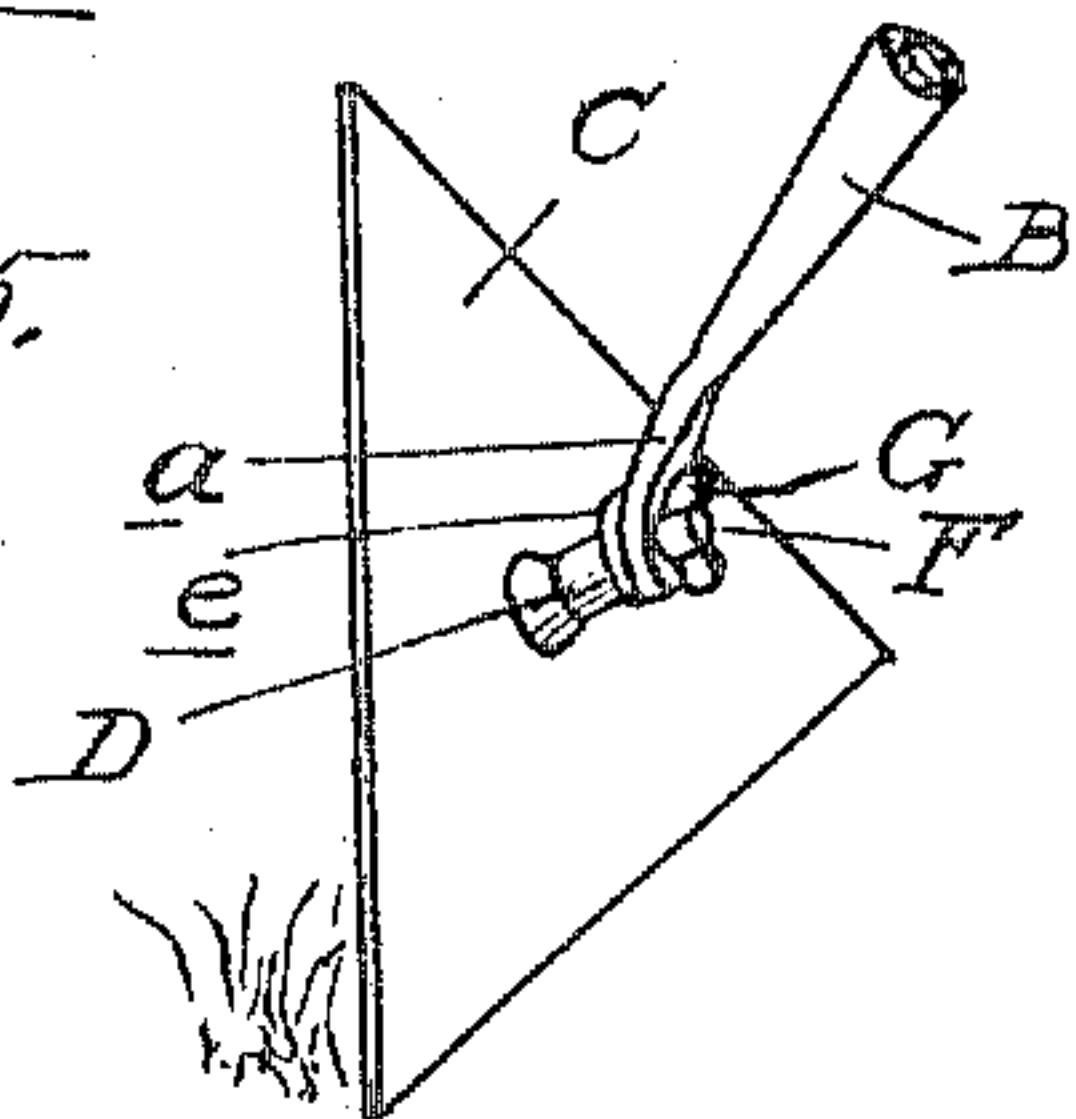


Fig. 1.

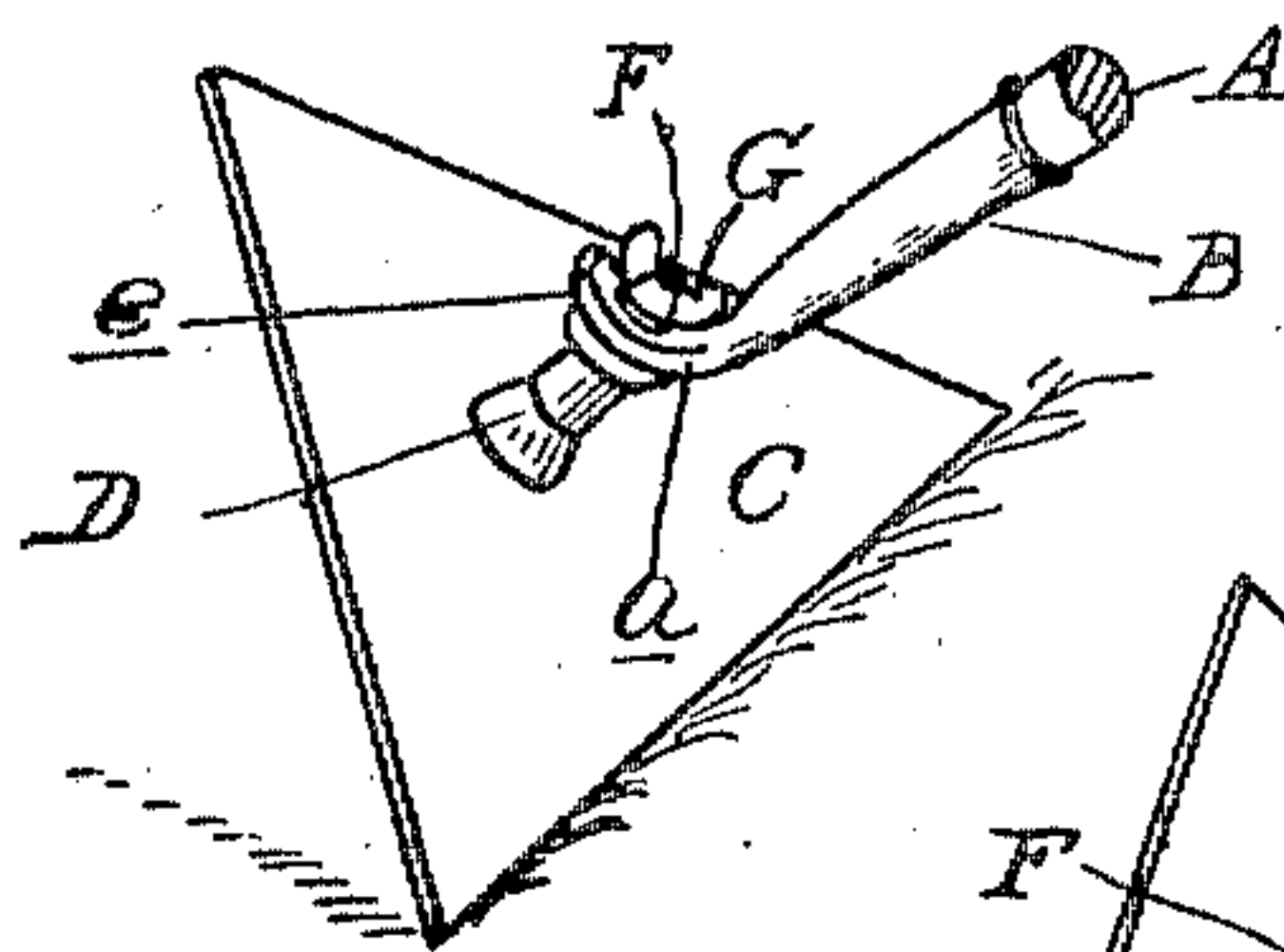


Fig. 2.

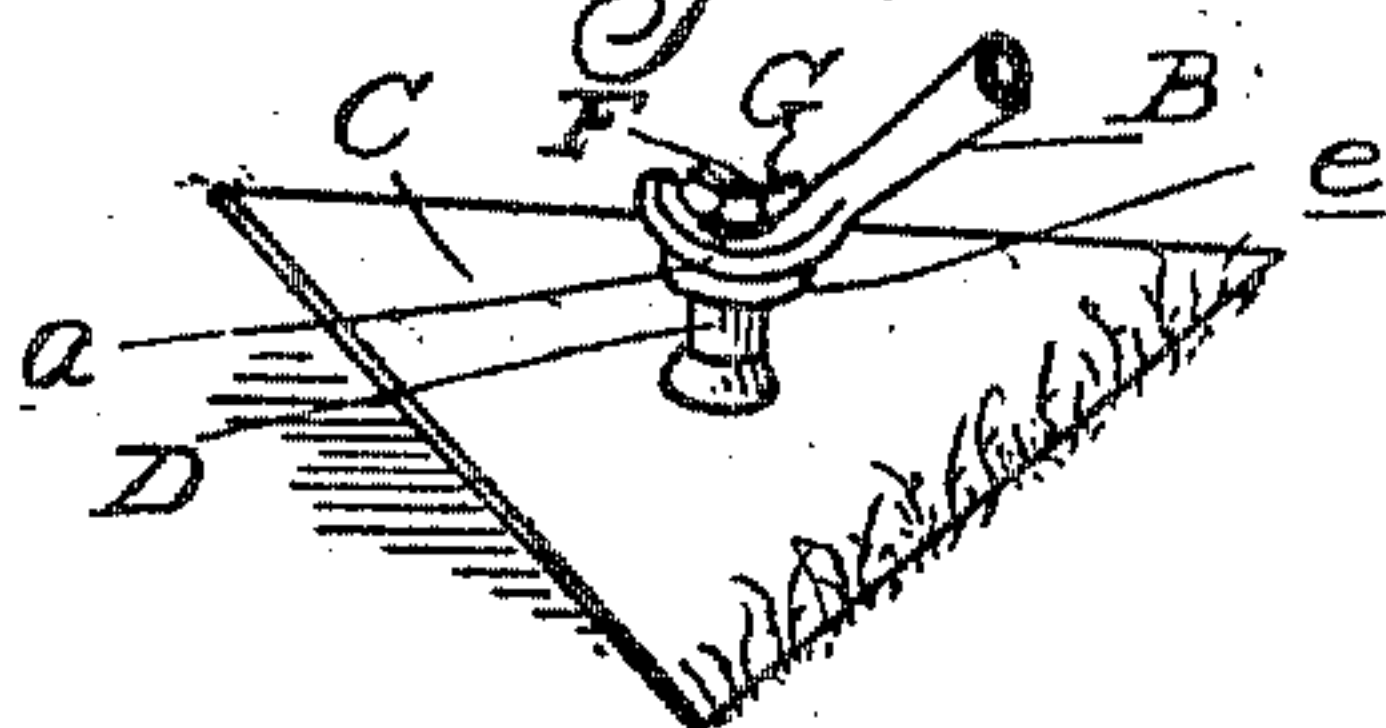


Fig. 4.

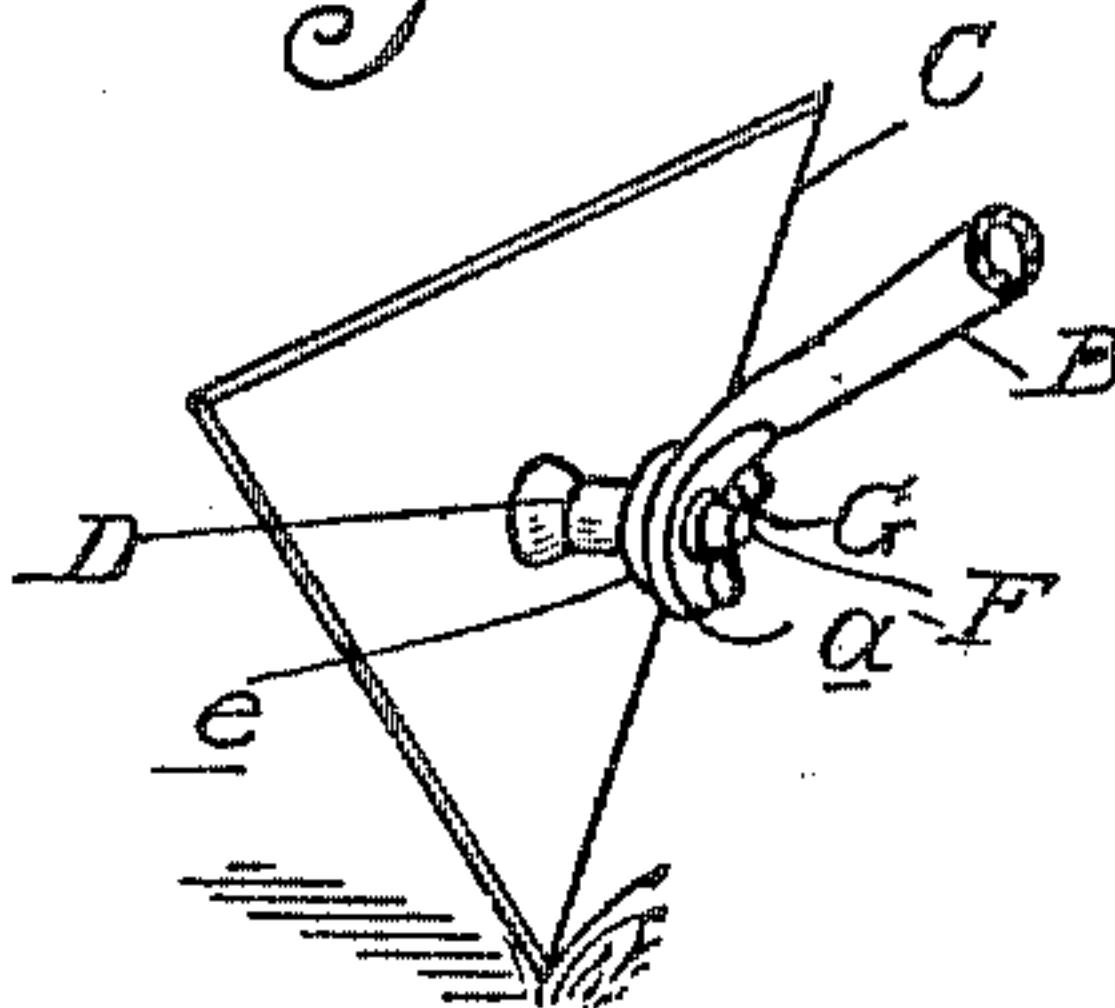


Fig. 6.

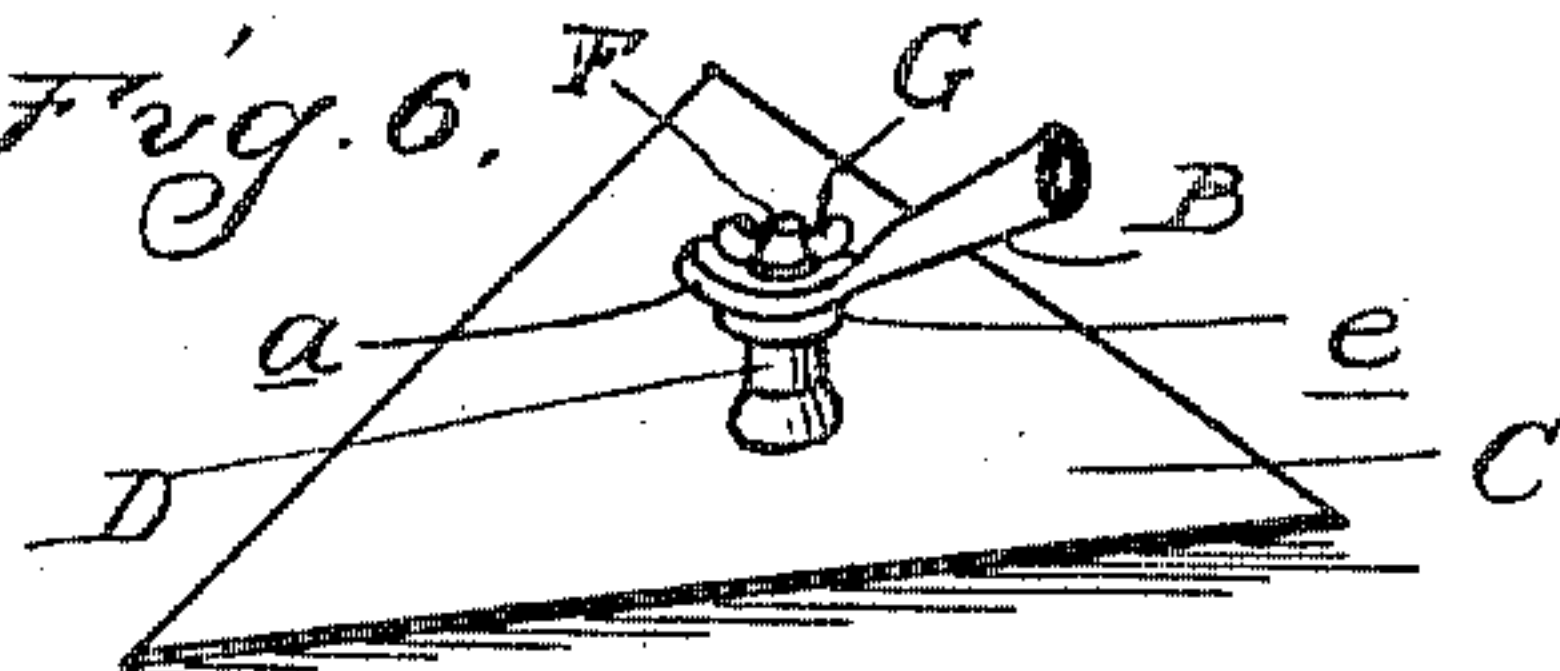
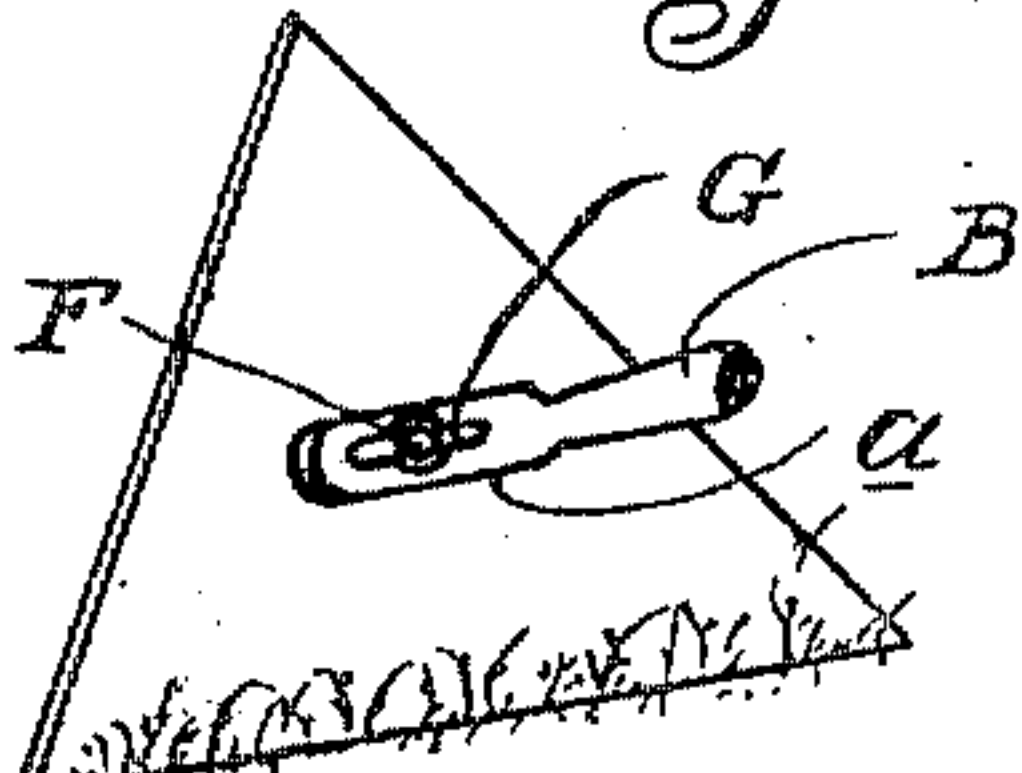


Fig. 3.



Inventor  
Charles N. Choate

By James Whittemore  
att'y

Witnesses  
H. B. Smith  
C. D. Ault



# UNITED STATES PATENT OFFICE.

CHARLES N. CHOATE, OF WINDSOR, CANADA, ASSIGNOR OF ONE-HALF TO  
FRED E. ATCHISON, OF DETROIT, MICHIGAN.

## ADJUSTABLE HOE.

No. 797,840.

Specification of Letters Patent.

Patented Aug. 22, 1905.

Application filed June 27, 1904. Serial No. 214,330.

*To all whom it may concern:*

Be it known that I, CHARLES N. CHOATE, a citizen of the United States, residing at Windsor, Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Adjustable Hoes, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to hoes, and has particular reference to the means employed for adjustably attaching the blade to the handle, whereby a hoe may be quickly adapted for various uses.

In the drawings, Figure 1 is a perspective view of the hoe as adjusted for one use. Figs. 2, 3, 4, 5, and 6 are similar views showing different adjustments. Fig. 7 is a longitudinal section through the adjustable connection between the handle-socket and blade. Fig. 8 is a plan view of a portion of this connection, and Fig. 9 is a sectional view of some of the parts of the connection detached.

A is the handle of the hoe, B the handle-socket, and C the hoe-blade, which latter is preferably of triangular form. The socket B is preferably provided with a segmental shank *a*, which is adjustably connected to the blade by the following construction: D is a fitting secured to the blade, preferably by being provided with lugs or pintles *b*, which pass through apertures in the blade and are riveted therein. The fitting D has formed thereon the round socket *c*, which is adapted to receive a tubular extension *d* on the member E. This member E is also provided with a segmental flange *e*, which is adapted to engage with the segmental shaft *a* of the socket B. The three parts B, E, and D are secured together by a bolt F, which passes through an axial aperture in the members D and E and through an elongated slot *f* in the shank *a*. The head *g* of the bolt engages with a shoulder *h*, formed in the fitting D, and is located within the recess *i* in the lower portion of said fitting. The blade C is preferably apertured at *j* opposite the center of said recess, so that the bolt F may be engaged or disengaged by passing through said aperture. The upper end of the bolt F is threaded and is engaged by the winged nut G, which bears, through the medium of the washer H, upon the segmental shank *a*.

With the parts as described the angle of the socket B and handle A therein relative to the

blade may be adjusted by unclamping the nut G on the bolt F and shifting the segmental shaft *a* in its engagement with the segmental flange *e*. The blade C may also be rotated in relation to the socket by turning the member E in the socket *c*. To hold the parts from accidental movement, the segmental face of the shank *a* is preferably notched or serrated at *k* to engage with the tooth *l* on the member E, and the rim of the socket *c* is also so notched at *m* to engage with the tooth *n* on the member E. The bolt F is prevented from turning preferably by having a squared shank *o*, which engages with a corresponding aperture *p* in the fitting D.

With the construction described the hoe may be adjusted into any position illustrated in the drawings, as well as to other positions of adjustment, and this may be quickly accomplished by merely unclamping the nut G, shifting the parts, and again clamping the nut.

What I claim as my invention is—

1. The combination with a blade and handle of a tubular socket member secured to said blade, an intermediate member rotatably adjustable in the socket of said tubular socket member, said intermediate member having a tooth adapted to fit in any one of a plurality of recesses in the edge of said socket, a shank on said handle rotatively adjustable upon said intermediate member in a plane transverse to that of its rotation in said socket, and a clamping-bolt passing through said socket, intermediate member and shank, and adapted to rigidly secure the same in various positions of adjustment.

2. The combination with the blade and handle of a tubular socket member secured to said blade, a slotted shank secured to said handle, an intermediate member between said shank and socket member rotatively adjustable in relation thereto in transverse planes, a tooth on said intermediate member adapted to fit in any one of a plurality of recesses in the edge of the socket of said socket member, a clamping-bolt passing through the socket of said tubular socket member and intermediate member and the slot in said shank and a winged nut engaging said bolt to rigidly clamp said parts together.

3. The combination with a blade and handle of the socket D secured to said blade, the curved and slotted shank *a* secured to said handle, the intermediate member E having



tubular extension  $d$  for engaging said socket and the segmental portion  $e$  for engaging said shank, the bolt F passing through said socket, intermediate member and shank, and the winged nut G.

4. The combination with the blade and handle of the socket member D secured to said blade, the shank  $a$  secured to said handle, the intermediate member E having a tubular extension engaging said socket and a segmental portion engaging said shank, the engaging surfaces being notched or serrated, a clamping-bolt passing centrally through said socket, intermediate member and shank, and a nut engaging said bolt for clamping said parts together.

5. The combination with a blade and handle, of a tubular member, one end of said member

being recessed to receive the head of a clamping-bolt and being secured to said blade, the other end of said tubular member having a socket, an intermediate member rotatively adjustable in the socket of said tubular member, a shank on said handle rotatively adjustable upon said intermediate member in a plane transverse to that of its rotation in said socket, and a clamping-bolt passing through said recess, socket, intermediate member and shank and adapted to rigidly secure the same in various positions of adjustment.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES N. CHOATE.

Witnesses:

H. C. SMITH,

E. D. AULT.