No. 763,072. PATENTED JUNE 21, 1904.

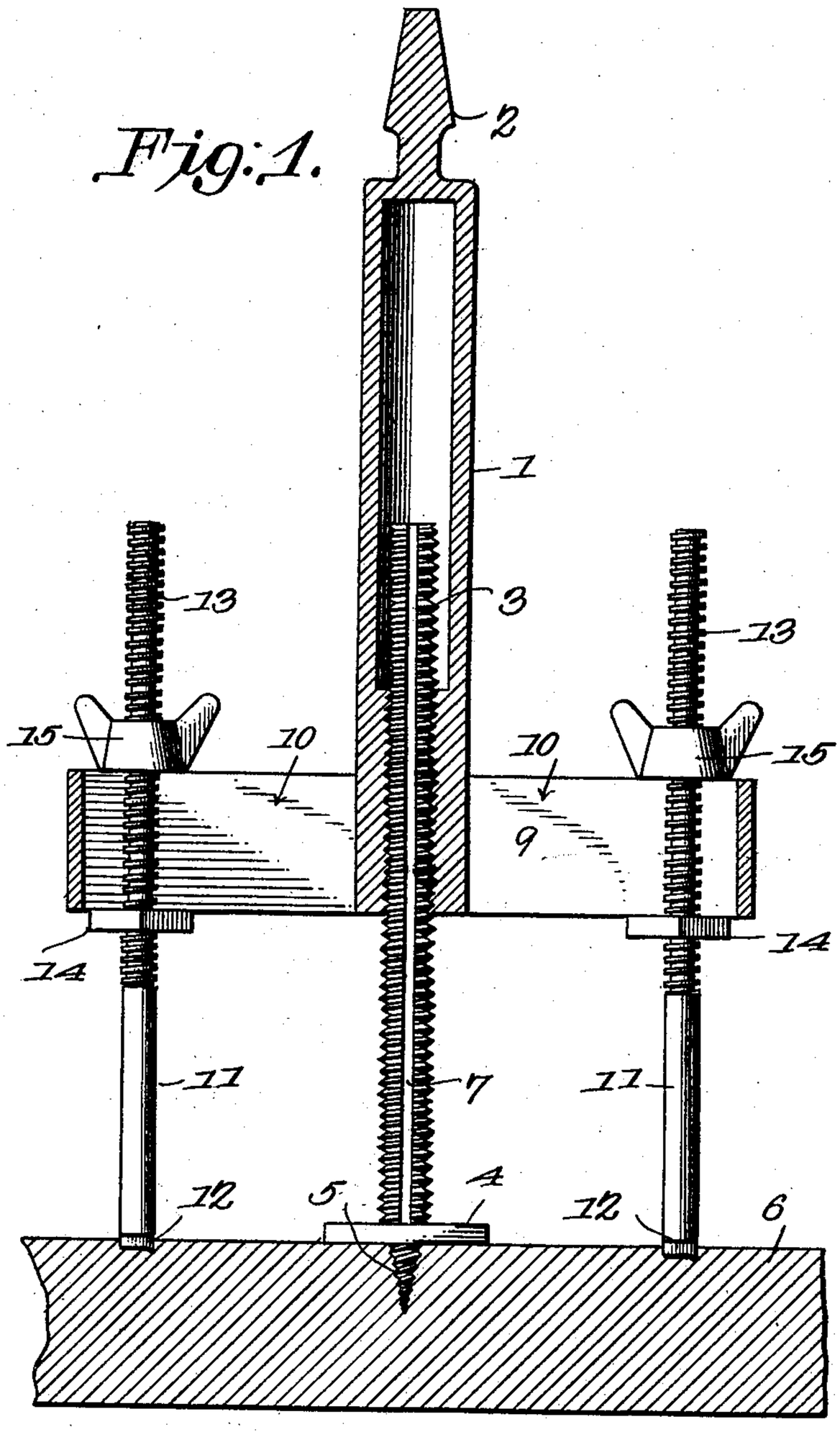
W. H. DE ROSEAU.

ADJUSTABLE BIT.

APPLICATION FILED FEB. 24, 1904.

NO MODEL.

Fig. 1.



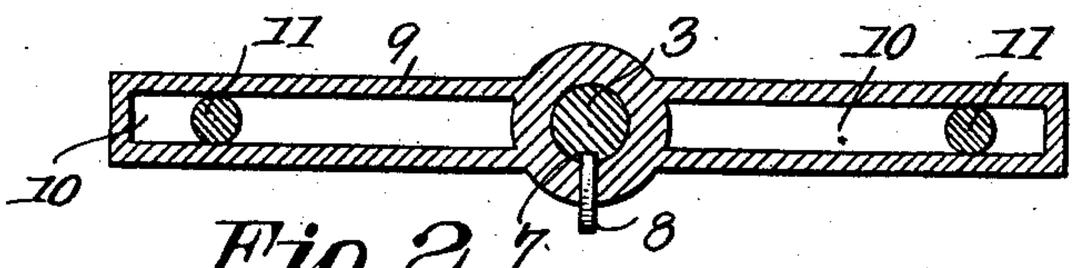




Fig. 2.

Witnesses
E. F. Stewart
F. L. Elmore.

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No. 763,072. Patented June 21, 1904.

# UNITED STATES PATENT OFFICE.

WILLIAM H. DE ROSEAU, OF CLIFTON, ARIZONA TERRITORY, ASSIGNOR OF ONE-HALF TO FRANK E. FORSTER, OF CLIFTON, ARIZONA TERRITORY.

## ADJUSTABLE BIT.

SPECIFICATION forming part of Letters Patent No. 763,072, dated June 21, 1904.

Application filed February 24, 1904. Serial No. 195,075. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. DE ROSEAU, a citizen of the United States, residing at Clifton, in the county of Graham and Territory of Arizona, have invented a new and useful Adjustable Bit, of which the following is a specification.

My invention relates to adjustable or expansible bits, and has for its objects to produce a comparatively simple inexpensive device of this character which may be readily adjusted for boring holes of widely-varying diameters and one in which the cutting-tools constituting a part of the bit will during the boring operation act upon only a small percentage of the material removed in making the hole, thereby minimizing the power necessary for driving the tool.

To these ends the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a vertical sectional elevation of a bit embodying my invention. Fig. 2 is a top sectional plan of the same.

Referring to the drawings, 1 designates a tubular shank provided at its normally upper end with a head 2, adapted for engagement with a suitable bit-stock (not shown) and having tapped into its lower end a feed member or screw 3, having in turn adjacent to its lower end a horizontal flange or shoulder 4, constituting a stop or abutment, beneath which latter the screw terminates in an engaging portion 5 in the form of any ordinary wood-screw and adapted for maintaining the feed member 3 in engagement with the body or timber 6 to be bored, as seen in Fig. 1. The screw 3, which telescopes with and is adapted to feed back and forth longitudinally into and out of the shank 1, is provided with a longitudinal groove or seat 7, adapted for engagement by a pin or key 8, extended through the wall of the shank 1, for fixing the latter and the screw against relative rotation for a purpose which will hereinafter appear.

Formed integral with or otherwise attached to and carried by the shank 1 at or adjacent to the lower end of the latter is a horizontal cross-head or guide 9, preferably in the form of a bar projecting from and extending on opposite sides of the shank, said head being provided with suitable longitudinal slots or ways 10, designed to receive, respectively, the shanks of cutting tools or members 11 during their adjustment radially toward and from the axial center of the screw 3, upon which latter the bit in practice rotates.

The bit is preferably provided with a pair of the tools 11 of the form herein shown and each having a lower cutting end 12 and a screw-threaded shank 13, designed to receive an adjustable bearing member in the form of a jam-nut 14 and a clamping device, preferably in the form of a thumb-nut 15, attention being here directed to the fact that the member 14 bears beneath the cross-head 9 for sustaining the strain incident to upward pressure on the tool in operation, while the device 15 engages and bears above the cross-head and is operable for clamping the tool in adjusted position thereon.

In practice the tool 11 may be adjusted longitudinally to accord with the depth of the hole to be bored by moving the nuts 14 15 upward or downward upon the shank and are further adjusted radially according to the diameter of the hole by movement longitudinally of the guideways 10 and are clamped in their adjusted positions by means of the thumb-nuts 15 in the manner heretofore explained. The bit as a whole is then engaged with the body or timber by first locking the shank and screw against relative rotation through the medium of key 8 and its seat 7 to permit the engaging member 5 to be entered into the timber until the abutment 4 bears firmly upon the latter. After this operation the key 8 is withdrawn, thereby permitting free rotation of the shank and its attendant parts upon the screw 3 as an axis to thereby enter the tools 11 into the material being bored. Attention is here directed to the fact that the tools in boring or producing the hole act upon or cut only a small percentage of the material removed, thereby minimizing the power required for operating the bit, and that inasmuch as the amount of ma-

terial cut or acted upon by the tools is uniform in producing both small and large bores the force necessary for driving the bit is likewise uniform under all conditions.

From the foregoing it is apparent that I produce a simple, inexpensive device, which is admirably adapted for the attainment of the ends in view; but it is to be understood that I do not limit myself to the precise details herein set forth, inasmuch as minor changes therein may be made without departing from the spirit of the invention.

Having thus described the invention, what is claimed is—

1. The combination with a tubular shank provided at its upper end with a stock-engaging head, of a feed-screw in threaded telescopic engagement with the shank and provided at its lower end with an engaging portion, said shank and screw being adapted to normally rotate independently, a guide member carried by the shank, a cutting-tool connected with the guide, and means for temporarily locking the shank and screw against relative movement for entering the engaging portion of the latter into the body acted upon.

2. The combination with a tubular shank provided at its upper end with a stock-engaging head, of a feed-screw in threaded telescopic engagement with the shank and provided with a longitudinal groove and at its lower end with an engaging portion, said shank and screw being adapted to normally rotate independently, a cross-head carried by the shank, a cutting-tool connected with the cross-head, and a member designed to be removably inserted through the shank into engagement with the groove for temporarily locking the shank and screw against relative movement while entering the engaging portion of the latter into the body acted upon.

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

WILLIAM H. DE ROSEAU.

Witnesses:

CHAS. SPENCER,

H. B. TOMPKINS.