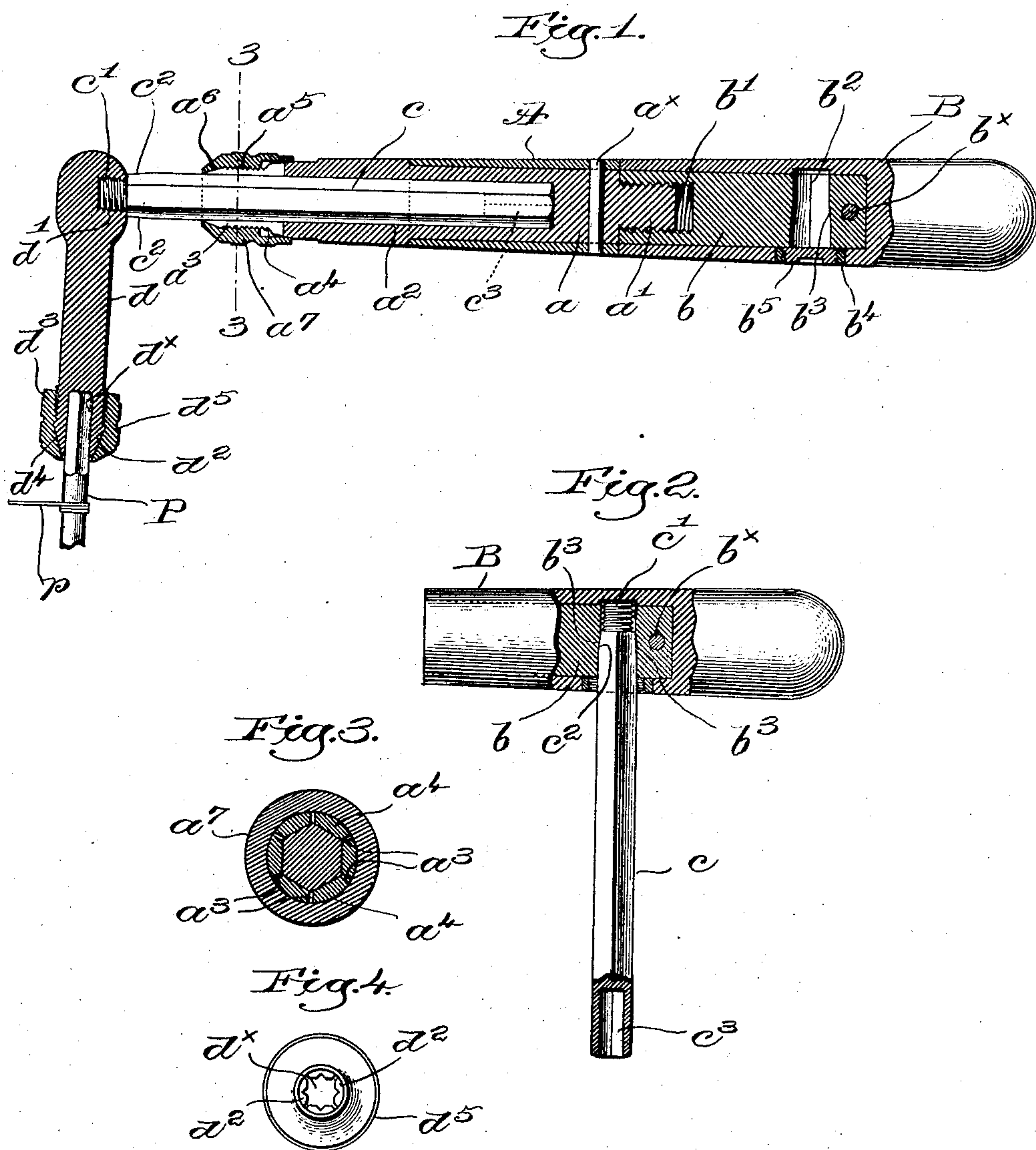


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PATENTED JULY 7, 1908.

C. P. DOLAN.
COMBINATION PIANO TUNING HAMMER.
APPLICATION FILED SEPT. 26, 1907.



Witnesses.
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COMBINATION PIANO-TUNING HAMMER.

No. 892,506.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES P. DOLAN, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Combination Piano-Tuning Hammers, of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawing representing like parts.

This invention has for its object the production of a novel and convenient piano tuning hammer so constructed that it may be used as an ordinary tuning hammer or as a T-hammer, as may be necessary, both tools being combined in one structure and obviating the expense and inconvenience of having two separate hammers.

In addition to the general structure of the hammer as above set forth, I have also provided several novel features whereby the operation of the tool is greatly improved.

The various novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is mainly a longitudinal sectional view of a combination tuning hammer, when used as an ordinary tuning hammer; Fig. 2 is a partial section and elevation of my invention ready for use as a T-hammer; Fig. 3 is an enlarged cross section on the line 3—3, Fig. 1; Fig. 4 is an end view of the clutch on the hammer head shown in Fig. 1.

In the present embodiment of my invention I make a two-part, separable handle comprising members A and B, Fig. 1, the member B having a strong metallic core *b* provided at one end with a threaded socket *b'*, said member B having a transverse socket *b²* substantially midway between its ends and extended through the core, the walls of the socket being preferably tapered, as at *b³*, Figs. 1 and 2, for a purpose to be described. A pin *b^x* passed through the inner end of the core holds it securely in the member B, which is preferably made of wood and of a suitable size and shape to be easily grasped by the hand. The outer end of socket *b²* is surrounded by an internally threaded bushing *b⁴* set into the wood of the handle member, to normally receive a closure *b⁵*, Fig. 1, giving a neat finish and closing the socket *b²* when not in use. The other member A of the handle has a metallic

core *a* extended through it and at its inner end reduced to form a threaded stud *a'* adapted to be screwed into the socket *b'* to thereby rigidly connect the two parts of the handle, the adjacent ends of the members A and B abutting to make a smooth joint.

A pin *a^x* fixedly connects the core *a* and the surrounding wood of the member A, the core having a deep longitudinal socket *a²* formed therein, the outer end of the core having a series of longitudinal slits *a³*, Figs. 1 and 3, in radial planes extending through the sides of the socket *a²*, leaving a series of fingers *a⁴* inclosing a hexagonal opening. The fingers are externally cylindrical, and are threaded as at *a⁵*, Fig. 1, and tapered at *a⁶* beyond the thread, a collar *a⁷* having an internal thread screwing on to the thread *a⁵* and having an internally tapered nose, said collar and the fingers *a⁴* forming a clutch. By screwing up the collar the fingers are pressed inward, reducing the size of the longitudinal socket *a²* at its outer end.

In Fig. 1 the two-part handle is connected and ready for use, and at such time I insert into the socket *a²* an extension rod *c*, hexagonal in cross-section and slidable in the socket, and held in adjusted position by the clutch just described.

By the construction shown and described the extension rod *c* can be clamped firmly and securely without any possibility of its turning in the handle or moving longitudinally therein. The extension rod *c* has one end reduced and screw-threaded, at *c'*, Fig. 1, and tapered at *c²* adjacent thereto, for a purpose to be described, the other end of said rod having a socket *c³*, Fig. 2, to fit onto a tuning pin.

Referring to Fig. 1 the hammer head *d* is made of metal, provided at one end with a lateral, internally threaded socket or hole *d'* into which is screwed the end *c'* of the extension rod, to connect the head firmly thereto, and at its other end the head is longitudinally socketed, at *d^x* and slitted to present fingers *d²*, externally threaded at *d³* and tapered at *d⁴*, a collar *d⁵* screwing onto the threaded part *d³* and having its nose internally tapered, to form a clutch.

The longitudinal socket *d^x* in the end of the head *d* is preferably made star-shaped in cross-section, Fig. 4, to more readily fit onto the head of a tuning pin, and by means of the collar *d⁵* the effective size of the socket is adjusted to different sizes of pins.

A pin P is shown in Fig. 1, the hammer head being applied thereto to turn the pin and regulate the tension of the string p . The effective length of the handle of the hammer is varied by moving the extension rod c in or out of the socket a^2 , and if a short handle is wanted the handle member B is unscrewed and removed, while the clutch on the head d provides for all of the different sizes of tuning pins. When a T-hammer is required the head d is unscrewed from the rod c , the latter is unclamped and withdrawn from the handle member A, which latter is separated from the member B, and the threaded end of the rod c is inserted in the socket b^2 , after removing the closure b^5 , as shown in Fig. 2. The tapered portion c^2 of the rod fits tightly in the tapered part b^3 of the socket b^2 to hold the rod in place securely, and the T-hammer is complete, with the pin socket c^3 at the outer end of the rod c .

I prefer to make the extension rod hexagonal in cross section, in order to enable the clutch to secure a firm rigid hold upon the rod to fix it in adjusted position in the handle without any possibility of movement, and it will be readily seen that there is little or no wear in the construction herein described. The tapering of the rod at c^2 , whereby a tight fit is provided when the rod is inserted in the socket b^2 of the handle member B to form a T-hammer obviates the necessity of screwing the rod into such handle member, the frictional fit being amply sufficient. The tapered portion b^3 of the socket b^2 is hexagonal in cross-section of course to correspond to the shape of the extension rod. The socket c^3 in the opposite end of the extension rod may be a square hole, or a so-called "star-hole", a socket of the latter shape corresponding to the shape of the socket d^x , see Fig. 4.

The cores of the handle members A, B, are preferably made from solid brass stock of sufficient strength to meet all requirements in the use of the hammer, the separable connection between the two handle members rigidly holding the same in the position shown in Fig. 1, when the tool is used as an ordinary tuning hammer.

It will be manifest that the handle member A may be used in connection with the extension rod c and the head d as a short tuning hammer, by merely disconnecting the handle member B as it is at times very convenient to use a short handled hammer.

I have combined in the one tool an ordinary tuning hammer with a handle adjustable in length by reason of the extension rod; a T-hammer, by disconnecting one member of the handle from its fellow, and using the extension rod as a head, as shown in Fig. 2, and a short handled hammer is provided by removing the handle member B from its fellow, leaving the latter member A with the extension rod and hammer head.

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

1. A tuning hammer comprising a handle having a longitudinally socketed metallic core slitted at its outer end and externally threaded and tapered, a compressing collar mounted thereon, forming with the slitted portion a clutch, the slitted end of the socket being hexagonal in cross-section, a hexagonal extension rod slidable in the socket and clamped in adjusted position therein by the clutch, the outer end of the rod being threaded, a head having at one end a lateral, threaded hole to receive the threaded end of the rod, said head having a polygonal, slitted socket in its other end, to embrace a tuning pin, and means to vary the socket to accommodate pins of different sizes.

2. A tuning hammer comprising a handle having a longitudinally socketed metallic core slitted at its outer end and externally threaded and tapered, a compressing collar mounted thereon, forming with the slitted portion a clutch, the slitted end of the socket being hexagonal in cross-section, a hexagonal extension rod slidable in the socket and clamped in adjusted position therein by the clutch, the outer end of the rod being threaded, a metallic head having at one end a lateral, threaded hole to receive the outer end of the extension rod, and a manually adjustable clutch on the other end of the head to embrace tuning pins of different sizes.

3. A tuning hammer comprising a handle having a longitudinally socketed metallic core slitted at its outer end and externally threaded and tapered, a compressing collar mounted thereon, forming with the slitted portion a clutch, the slitted end of the socket being hexagonal in cross-section, a hexagonal extension rod slidable in the socket and clamped in adjusted position therein by the clutch, the outer end of the rod being threaded, a metallic head having at one end a lateral, threaded hole to receive the outer end of the extension rod, the other end of the head being externally threaded and tapered and having a slitted, star-shaped socket, to embrace a tuning pin, and a collar on the said end to compress the socket walls and vary the size of the socket.

4. A tuning hammer comprising a two-part, separable handle one member of which has a longitudinal socket, the other member having a transverse socket substantially midway between its ends, means to rigidly connect said members, an extension rod longitudinally adjustable in the socket, one end of the rod having a socket and the other end being threaded, a clutch to hold the rod in adjusted position in the handle a head having at one end a pin pocket and at its other end a lateral, threaded hole to receive the threaded end of the extension rod, said end of the

rod when detached from the head fitting the transverse socket in the second member of the handle when the handle members are disconnected to form a T-hammer.

5 5. A tuning hammer comprising a handle consisting of two detachably connected members, one having a longitudinal socket therein and a clutch, the other member having a transverse socket, an extension rod having in
10 one end a socket and threaded at its other end, said rod being held in the longitudinal socket of one handle member by the clutch, and a head detachably connected with the threaded end of the rod, the said threaded
15 end entering the transverse socket of the second handle member to form therewith a T-hammer when said handle members are disconnected.

20 6. A tuning hammer comprising a handle consisting of two detachably connected members, an extension rod longitudinally slidable and adjustable in one of said members and adapted to form with the other member a T-hammer, one end of the rod having a socket,
25 means on the other end to connect it fixedly with a head when the rod is longitudinally

inserted in a handle member, and means to fixedly connect said rod centrally of and at right angles to the other handle member when disconnected from its fellow, to form
30 the T-hammer.

7. A tuning hammer comprising a handle consisting of two detachably connected members, one having a longitudinal socket therein and a clutch, the other member having a
35 transverse, tapered socket, an extension rod adapted to be clamped by the clutch, said rod being tapered at one end and at its other end having a socket, a head having a socket
40 in one end for a tuning pin, and means to detachably connect the head and the tapered end of the rod, the latter when detached from the head having its tapered end enter the tapered socket in the second handle member,
45 to form therewith a T-hammer.

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

CHAS. P. DOLAN.

Witnesses:

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