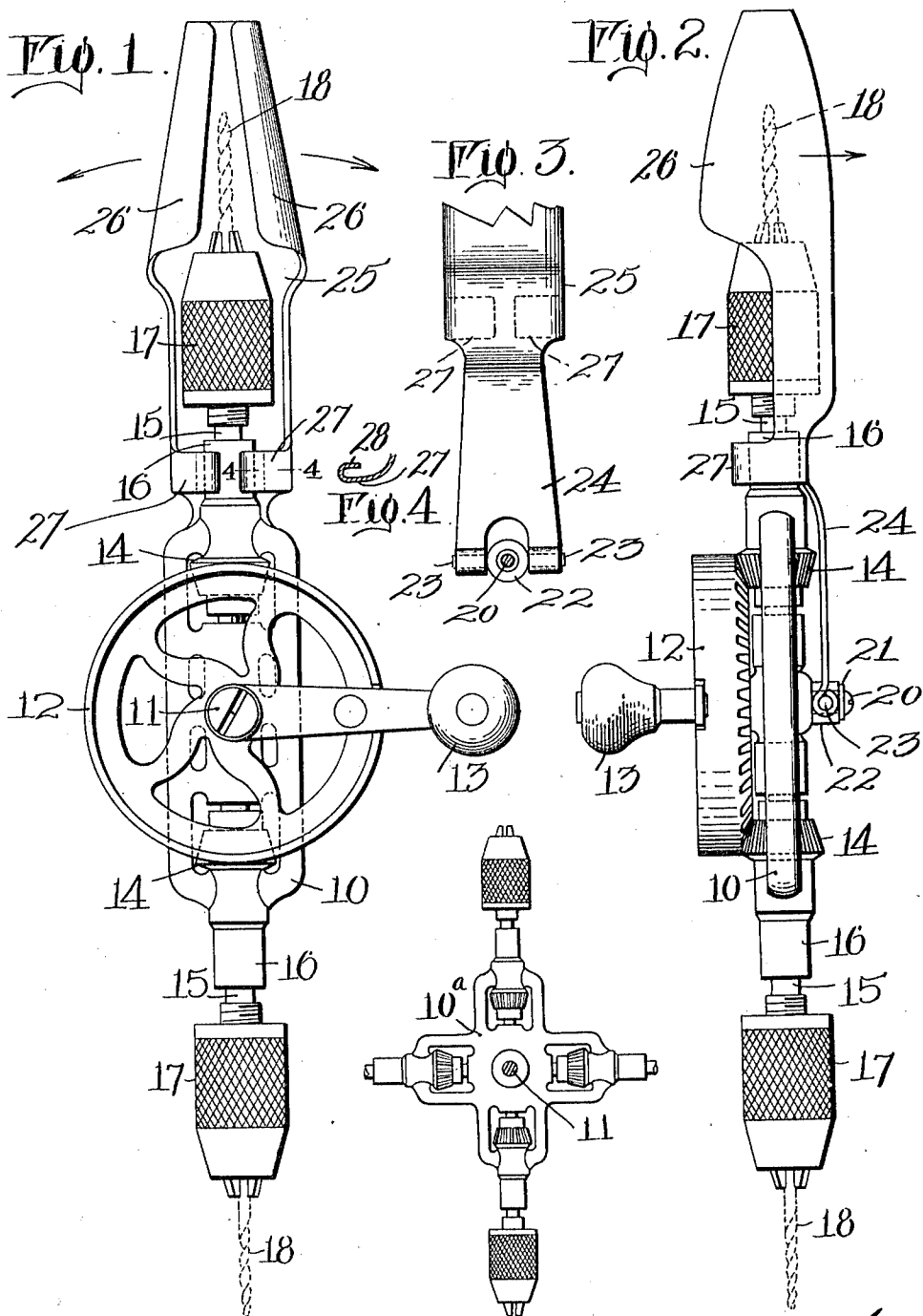


A. E. TUNSTALL.
HAND DRILL.
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1,061,706.

Patented May 13, 1913.



Witnesses:

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E. M. Allen.

Fig. 5.

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UNITED STATES PATENT OFFICE.

ALBERT E. TUNSTALL, OF WORCESTER, MASSACHUSETTS.

HAND-DRILL.

1,061,706.

Specification of Letters Patent.

Patented May 13, 1913.

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To all whom it may concern:

Be it known that I, ALBERT E. TUNSTALL, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Hand-Drill, of which the following is a specification.

This invention relates to a simple type of drill which is designed to be held and operated by hand.

The principal object of the invention is to increase the capacity of this type of drill so that a single frame can be provided with two or more drill spindles and operated conveniently, and especially to provide means whereby different sizes of drills or other implements can be carried by the several spindles and the device very conveniently and simply changed to permit the operator to hold the device without danger of injuring his hands and to shift readily from one spindle to another.

More specifically the invention involves the provision of a drill frame of this character so as to cover any one of the drill spindles and chucks thereon whereby the operator can use it in any desired position.

The invention also involves details of construction as will appear hereinafter.

Reference is to be had to the accompanying drawings in which—

Figure 1 is a side elevation of a well-known type of hand drill with a preferred form of this invention applied thereto; Fig. 2 is an edge elevation thereof; Fig. 3 is a rear elevation of a part of the removable handle; Fig. 4 is a sectional view on the line 4—4 of Fig. 1 showing details; and Fig. 5 is a front elevation showing a simple way in which the invention can be modified.

Referring to the first four figures, it will be seen that the invention is applied to a frame 10 of well known form and construction having a stud 11 thereon on which is mounted an operating bevel-gear 12 provided with a handle 13 for rotating it. This gear meshes with a bevel pinion 14 on a drill 15, this spindle being supported in a bearing 16 at the end of the frame. This spindle can carry a chuck 17 or the like for a drill 18 or any other tool. As so far described the parts are the same as ordinarily employed in hand drills of this character. In this case, however, the parts 14, 15, 16, 17 and 18 are duplicated at the other end of the frame so that the two gear pinions

14 serve to balance the pressure of the operating gear and transmit a motion of rotation to the two drill spindles 15. Both spindles are operated simultaneously in the form shown, but this is not necessary.

In order to provide for properly manipulating the tool and guiding it the following mechanism is shown. On the frame opposite the stud 11 is shown a stud or screw 20 having a collar or washer 21 under the head thereof and under which is located a cylindrical member 22 capable of turning on the stud into any desired position therearound. From this member project two opposite arms 23 of cylindrical form, preferably, and on them are mounted the two legs of a handle 24. This handle, therefore, is capable of turning on the two arms 23 around through an arc of about 180 degrees, and as the member 22 is also capable of turning on its own axis, (a universal joint being produced) it will be seen that this handle can be reversed end for end and side for side. The purpose of this will be seen from a specific description of this handle. It consists of metal, preferably, either sheet metal or cast metal as may be desired, and is provided with a main body 25 from which project two wings 26 that are intended practically to inclose the drill and part of the chuck to prevent injury to the operator thereby while the handle is being used. These parts do not assist in holding the handle in position, however, and for that function, in the form shown, I depend upon a pair of spring arms 27 which are designed to pass over and engage the stationary bearing 16 of the frame. They are reversely curved at 28 to permit them to spring over this bearing without any special manipulation on the part of the operator. It will be seen, therefore, that the turning of the handle from the position shown in Fig. 2 to exactly the opposite position would not be sufficient and that it is to be turned, during this motion preferably, on the axis of the screw 20 in order to get it into proper position when the upper drill in Fig. 2 is to be used, but in either position it fully protects the radial drill and chuck on one side, and permits its own use as a handle for setting and directing the operative tool at the other end.

The invention can be employed with more than two drill spindles as shown in Fig. 5. In this case the parts are the same as in

the other figures, except that the frame 10^a is modified to permit the presence of a number of drill spindles, in this case four, but in all cases the handle preferably will be moved around to cover the drill spindle opposite the one which is being employed.

It will be seen, therefore, that the device can be used conveniently in shops, or other places where comparatively small amounts of drilling are done, as well as in shops where there is a large amount of work. One of the principal advantages of the invention is that the handle can be turned quickly, in fact so quickly that it occupies none of the time usually devoted to drilling, to permit drills of different sizes to be used one after another in succession. This saves great amounts of time in certain classes of work where it is desirable to have a number of the hand drills now on the market, all supplied with drills of different sizes, and naturally time must be consumed in picking one up and laying another down, and particularly locating those which are to be used. In this way the expense of purchasing and maintaining a number of the drills is entirely avoided as well as the expense of changing from one to another.

Although I have illustrated and described only two forms of the invention, I am aware of the fact that many other modifications can be made thereof without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited to all the details of construction herein shown and described, but

What I do claim is:—

1. As an article of manufacture, a hand drill comprising a frame and a plurality of drill spindles supported thereon, means on the frame for driving said drill spindles, and a handle carried by said frame and movable into a plurality of positions, in one of which it covers one of the drill spindles and serves as a handle for guiding another one.

2. In a hand drill, the combination of a frame having a pair of opposite bearings, a drill spindle rotatably mounted in each of said bearings and having a driving pinion therefor at the inner end, a gear mounted on the frame and adapted to mesh with said pinions for driving said spindles, and a handle pivotally connected with said frame on the side opposite the gear and adapted to swing half way around on said frame in order to cover either one of said spindles while serving as a handle for guiding the other.

3. In a hand drill, the combination of a main frame, driving means mounted on one side thereof, a plurality of drill spindles mounted on said frame and having means thereon for engaging said driving means, and a handle connected with said frame opposite said driving means and adapted to move into positions to cover said drill spindles one at a time.

4. In a hand drill, the combination of a frame having a pair of opposite bearings, a drill spindle rotatably mounted in each of said bearings and having a driving pinion therefor at the inner end, a gear mounted on the frame and adapted to mesh with said pinions for driving said spindles, a rotatable stud on the side of the frame opposite the handle having two opposite arms, and a handle pivotally mounted on said arms.

5. The combination with a drill frame, of a stud pivoted thereon to swing on an axis normal to one side of the frame, and a handle pivoted on said stud to swing on an axis transverse to the axis on which the stud swings.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

ALBERT E. TUNSTALL.

Witnesses:

ALBERT E. FAY,
C. FORREST WESSON.