

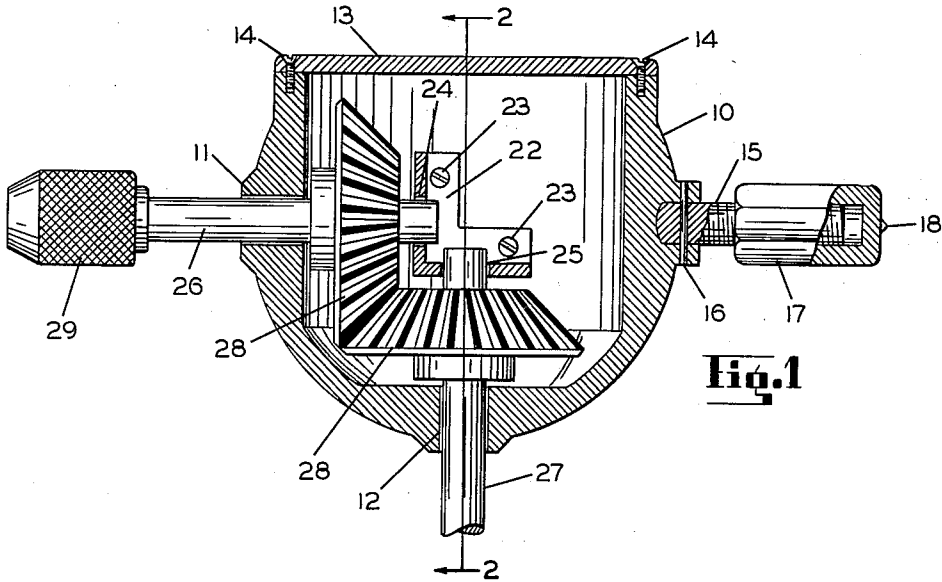
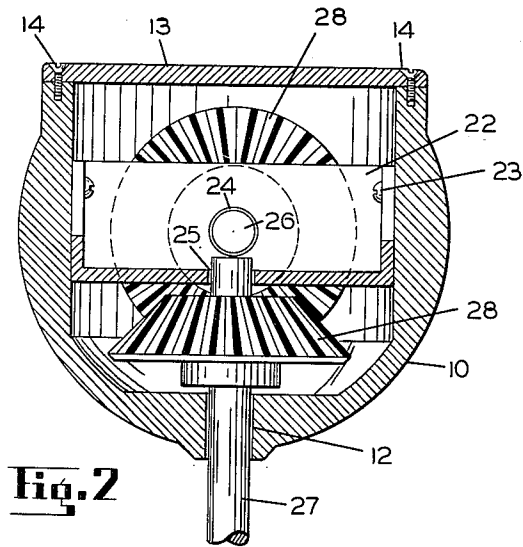
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2,620,840

RIGHT ANGLE DRILLING FIXTURE

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RIGHT ANGLE DRILLING FIXTURE

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1 Claim. (Cl. 145—67)

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My invention relates to drilling fixtures and more particularly to a drill fixture that may be employed to drill holes in rafters or joists which are spaced apart from one another.

The object of my invention is to provide a device that will enable the user to employ a standard brace or power drill unit, to drill a hole at right angle to the drill unit.

Another object of my invention is to provide a means of applying pressure to the drill bit during the drilling operation.

Still another object of my invention is to provide a device of the character described that has the driving gears encased into an enclosure, for safety purposes.

A further object of my invention is to provide a device that may be adjusted during the drilling operation.

It is manifest to any one familiar with the building trades that it is quite frequently necessary for the worker to drill holes in joists or rafters for the accommodation of pipes or conduit, and that the short distance between the joists makes it impossible to employ a conventional power drill or a hand brace. The unit described herein provides a device that may be inserted between two beams extending in parallel relation to one another and may be operated by a standard hand brace or power drill unit.

The device as described is simple in construction, is easily manufactured and is positive in its function.

Other and further objects of my invention will become more apparent as the description proceeds when taken in conjunction with the drawings, in which

Figure 1 is a fragmentary cross sectional view of the entire assembled device.

Figure 2 is a fragmentary cross sectional view as shown in Figure 1, taken at the line 2—2 in Figure 1.

Similar characters of reference indicate corresponding parts throughout the several views and referring now to the same, the character 10 shows a casing or body forming an enclosure, and having bearings 11 and 12 disposed within the walls of the enclosure.

The enclosure 10 is open at its top and is provided with a cover 13, held in position by screws 14 or in any other practical or convenient manner.

One of the walls of the enclosure is provided with a stud 15 extending outward therefrom, and shown held in position by means of a pin 16. The stud 15 is threaded and an elongated nut

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17 as shown in Figure 1, having a point 18 at its closed end is shown threadedly engaging the stud 15.

There is an angularly constructed plate 22 extending across the inside of the enclosure 10 and this plate is held in engagement with the inside of the walls of the enclosure by means of screws 23. The plate 22 is provided with apertures shown as 24 and 25 which act as bearings for shafts 26 supported by the bearing 11, and a shaft 27 supported by the bearing 12 respectively. Each of the shafts 26 and 27 has a beveled gear 28 rigidly attached thereto, and the gears 28 are brought in angular engagement with one another and are retained in that position at all times.

The shaft 26 is provided with a drill chuck unit shown as 29, this may be of any conventional design, and is arranged to accommodate a twist drill or auger (not shown) while the shaft 27 is arranged for contact and engagement with a breast drill or power drill unit (not shown) by having a square shank or the like at its outer depending end.

In operation, the operator will insert a drill into the chuck 29 which is mounted on a shaft 26, and will insert the end of the shaft 27 into a chuck mounted on a breast drill or power drill unit. The nut 17 which threadedly engages the stud 15 is in a retrieved position so as to place the point 18 as near toward the body 10 as possible, and blocks may be inserted between the joists when the drill is in position for drilling and these blocks may then be contacted by the point 18 as the nut is revolved. As the drill is caused to revolve due to the actuation of the shaft 27, the nut 17 is turned so that the point 18 will be forced outward to keep pressure on the drill during the operation.

The device is safe inasmuch as it has the gears totally enclosed and the outwardly extending shaft is arranged for the support of the drill chuck and for the engagement of a drill chuck in the driving unit, and it is thus possible to drill a hole at right angle without the use of special tools or the like.

In the chosen embodiment of my invention exemplified by the accompanying drawing there are many features not heretofore disclosed in the prior art, and although I have shown a specific construction and an arrangement of the component parts constituting the device, I am fully cognizant of the fact that many changes may be made in the construction of the device with-

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out departing from the spirit of my invention or the scope of the appendant claim.

Having thus described my invention what I claim and desire to secure by Letters Patent in the United States is:

In a drilling fixture, a casing defining an enclosure open at its upper end, a cover mounted on the upper open end of said casing, securing elements for detachably connecting said cover to said casing, said casing being provided with a pair of bearings extending through two of its walls, said bearings being disposed at right angles with respect to each other, an angular bearing plate extending entirely across the inside of said enclosure from one side to the other, said bearing plate including a base portion and a back section, a flange arranged transversely with respect to each edge of said base portion and said back section, there being spaced apertures in said flanges, securing elements extending through said apertures into the sides of said casing, said base portion and back section being provided with openings corresponding with and located in direct alignment with the bearings in said casing, a pair of shafts journaled within said bearings and having one end extending outward from said casing and the other end journaled within the openings within said bearing plate, a pair of beveled gears each rigidly mounted to one of said shafts and in engagement with one another, the projecting end of one of said shafts being provided with a drill chuck, the projecting end of the other of said shafts adapted to be con-

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nected to a power source, a threaded stud extending outward from the wall of said casing in opposed aligned relation to the shaft having a drill chuck attached thereto, a threaded nut open at one end and having a contact point on its closed end, said nut arranged for threadedly engaging the stud, there being a recess in the exterior of said casing for snugly receiving said stud, the casing portion surrounding said recess defining a bracket, and a pin extending through said bracket and through said stud.

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