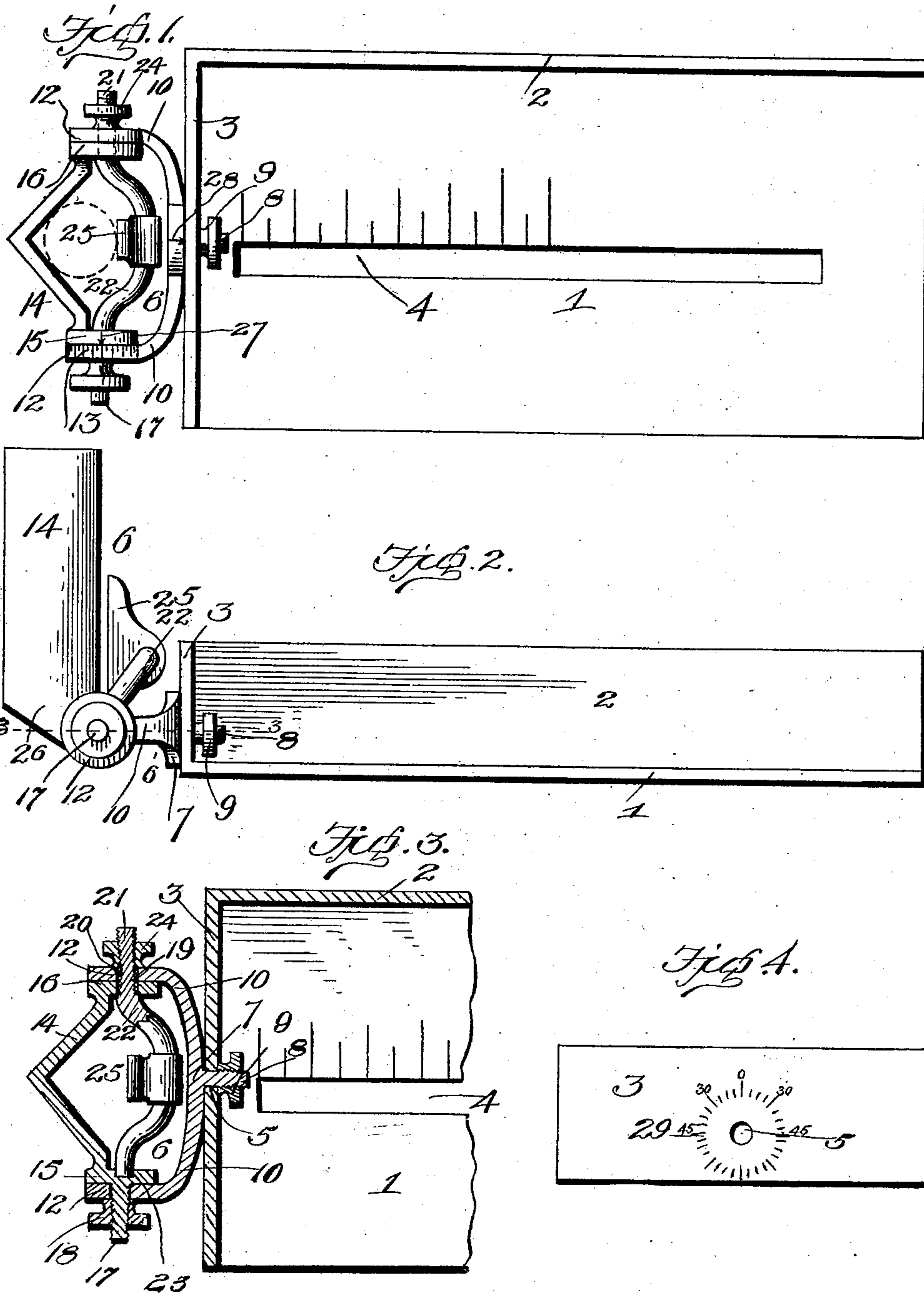


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G. E. STANFORD.
GAGE FOR DRILLS AND AUGERS.

APPLICATION FILED APR. 29, 1907.



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UNITED STATES PATENT OFFICE.

GEORGE ERNEST STANFORD, OF CHICAGO, ILLINOIS.

GAGE FOR DRILLS AND AUGERS.

No. 884,233.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed April 29, 1907. Serial No. 371,004.

To all whom it may concern:

Be it known that I, GEORGE ERNEST STANFORD, a citizen of the United States, residing at Chicago, in the State of Illinois, have invented certain new and useful Improvements in Gages for Drills and Augers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in gages or guides, drill or auger bits by means of which the bits will be guided to accurately bore a hole at any desired angle.

With the foregoing and other objects in view which will appear as the nature of the invention is better understood, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a plan view of the gage. Fig. 2 is a side elevation of the same; Fig. 3 is a horizontal sectional view on the line 3—3 of Fig. 2; and Fig. 4 is an end view of the guide holding plate showing the arrangement of the scale for indicating the transverse angle for setting the guide.

Referring more particularly to the drawings, 1 denotes the guide holding plate which is preferably provided on one side with a right-angular upwardly-projecting flange 2 and on one end with a similar flange 3. The plate 1 is also provided with a central longitudinally-disposed slot 4 along one edge of which may be provided a scale.

In the end flange 3 is formed a bolt-hole 5 in which is adapted to be pivotally mounted a bit guide frame 6, which comprises a head 7 having an integrally-formed right-angularly projecting bolt 8 which is adapted to be inserted through the hole 5 in the frame 3 of the fastening plate. On the projecting inner end of the bolt 8 is adapted to be screwed a clamping nut 9 by means of which the frame 6 may be held at any desired angle. On the head 7 of the frame 6 are formed laterally and outwardly curved arms 10 on the ends of which are formed circular bearing plates 12 on the edge of one of which is arranged a scale of degrees 13.

Pivotally mounted on the bearing plates 12 is a drill guide 14, said guide being preferably in the form of right-angularly disposed plates on the lower end of which are inte-

grally formed disks 15 and 16. The disk 15 is provided with a centrally-disposed laterally projecting pivot bolt 17 which is adapted to be inserted through a hole formed in the center of the bearing disk 12 on which the scale 13 is arranged. The outer end of the bolt 17 is threaded and on said threaded end is adapted to be screwed a clamping nut 18. In the opposite disk 16 is formed a centrally-disposed hole 19 which when the guide is in position is adapted to be alined with a hole 20 in the bearing disk 12. Through the holes 19 and 20 is adapted to be inserted the threaded outer end 21 of a curved bar 22, the opposite end of which is journaled in a bearing recess 23 formed in the disk 15. On the threaded end 21 of the bar 22 is adapted to be screwed a clamping nut 24 by means of which the bar 22 may be held in any desired position. On the curved portion of the bar 22 is formed a centrally-disposed bit guide shoe 25. The lower end of the right-angularly formed plates of the guide 14 is cut off or beveled at an angle, as shown at 26.

In using the guide, the bit is inserted in the angle formed by the plates of the guide 14 as shown in dotted lines in Fig. 1, after which the arm 22 is turned to bring the guide shoe 25 into engagement with the opposite side of the bit, as shown. After the shoe 25 has thus been engaged with the bit, the nut 24 on the threaded end 21 of the arm 22 is tightened up to hold said arm and shoe in operative position. After the bit has been thus arranged the guide 14 is tilted until an indicating mark 27 on the disk 15 of said guide is brought into alinement with the proper degree mark on the scale 13 of the disk 12, after which the nut 18 is tightened up on the bolt 17 of the guide thereby holding the latter in correct position.

With the parts arranged as thus described, the bit is held in position to accurately bore a hole at a longitudinal angle to the holding plate 1.

Should it be desired to bore a hole at a transverse or lateral angle, the bit is inserted in the guide as hereinbefore described and the frame 10 is then turned in the bearing opening in the flange 3 to bring the indicating mark 28 on the head 7 of said frame into alinement with the proper degree mark of a scale 29 arranged on the outer side of the flange 3 of the holding plate, said scale being clearly shown in Fig. 4 of the drawings. The holding plate 1 may be secured to the work

to be bored or drilled by means of clamps or in any other suitable manner to firmly hold the same in place.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined by the appended claims.

Having thus described my invention, what I claim as new is:—

1. A drill and bit gage comprising a fastening plate, a guide frame pivotally mounted on said plate, a drill guide pivotally mounted in said frame and means to secure said frame and drill guide in their adjusted positions, substantially as described.

2. A drill and bit gage comprising a fastening plate, a guide frame pivotally mounted on said plate, a clamping nut to hold said drill guide in adjusted position, bearing disks arranged on said frame, a drill guide pivotally mounted on said disks, a guide shoe adapted to be engaged with the bit when arranged in said guide and means to hold said drill guide and shoe in their adjusted positions, substantially as described.

3. A drill and bit gage comprising a fastening plate having a side and end flange, a drill guide frame pivotally mounted on the end flange of said plate, a set screw to hold said frame in its adjusted position, bearing disks formed on the outer ends of said frame, a drill guide comprising right-angularly disposed plates having on their lower ends bearing disks, means to pivotally connect said disks with the bearing disks of said frame, a pivotally mounted guide shoe arm, a drill guide shoe on said arm adapted to be engaged with the drill or auger bit in said bit guide and clamping screws adapted to hold

said guide and shoe in operative and adjusted positions, substantially as described.

4. A gage for drills and auger bits comprising a slotted fastening plate having a side and an end flange, the latter having a pivot hole, an annular degree scale arranged on said end flange, a drill guide frame comprising a circular head, a pivot bolt on said head adapted to be inserted in the pivot hole in said end flange of the fastening plate, a clamping nut adapted to be screwed on to said bolt to hold said frame in an adjusted position, an indicating mark on the circular head of said frame adapted to coact with the scale of degrees on said flange to determine the position of said guide frame, bearing disks formed on the outer ends of said frame, said disks having centrally disposed bearing opening, a degree scale on one of said disks, a drill guide comprising right-angularly disposed plates having inclined or beveled lower ends, bearing disks on the lower ends of said plates, one of said disks having a bearing recess, a pivot bolt or stud on one of said disks adapted to be pivotally engaged with the bearing opening in one of the disks of said guide frame, a clamping nut adapted to be screwed on said pivot bolt, a guide shoe bar adapted to be pivotally mounted in the bearing recess in one of the disks of said drill guide, a pivot bolt formed on the opposite end of said bar and adapted to be inserted through the aligned bearing openings of the opposite bearing disks of said drill guide and frame, a clamping nut on the end of said pivot bolt and a centrally disposed guide shoe on said bar adapted to be engaged with the drill or auger bit in said bit guide, substantially as described.

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

GEORGE ERNEST STANFORD.

Witnesses:

JOHN M. GIBSON,
G. C. SMITH.