No. 721,797. PATENTED MAR. 3, 1903.

O. GUSTAFSEN.

PORTABLE DRILL PRESS.

APPLICATION FILED DEC. 3, 1901.

NO MODEL. 2 SHEETS—SHEET 1.

FIG. 2.

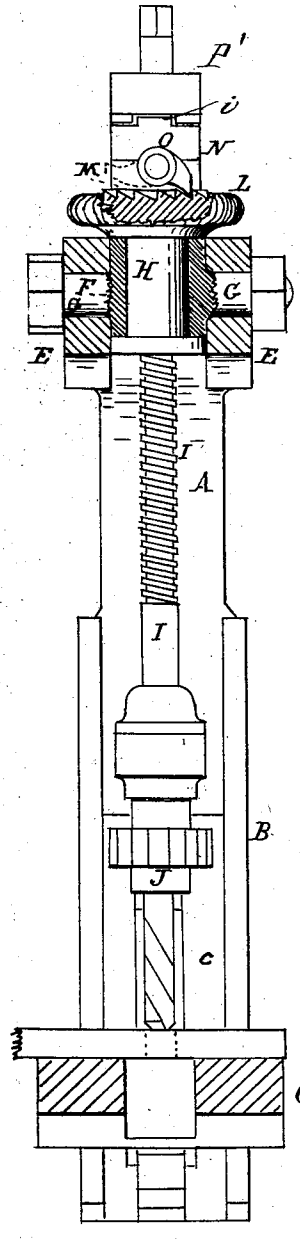
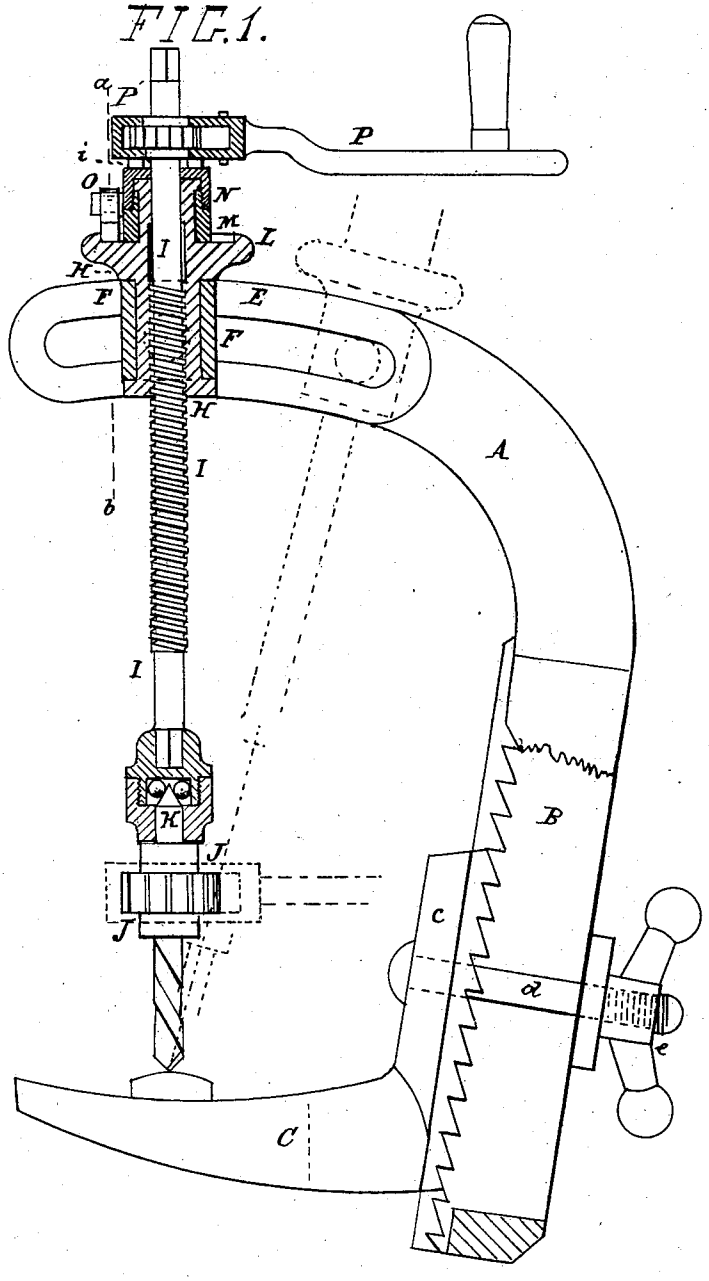


FIG. 1.



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NO MODEL. 2 SHEETS—SHEET 2.

FIG. 3.

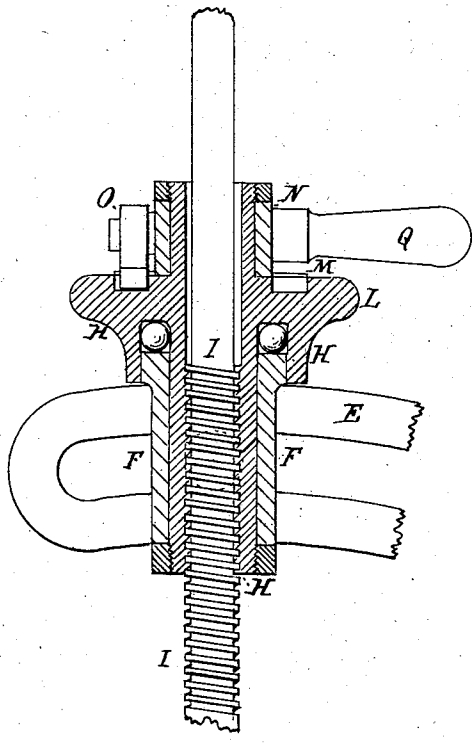
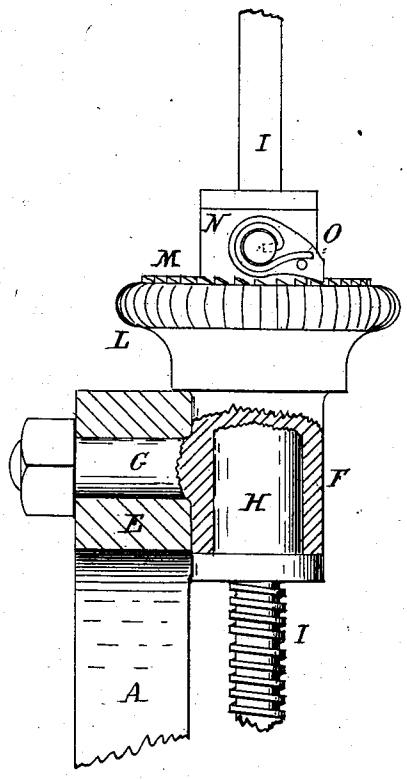


FIG. 4.



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UNITED STATES PATENT OFFICE.

OSCAR GUSTAFSEN, OF NEW YORK, N. Y.

PORTABLE DRILL-PRESS.

SPECIFICATION forming part of Letters Patent No. 721,797, dated March 3, 1903.

Application filed December 3, 1901. Serial No. 84,594. (No model.)

To all whom it may concern:

Be it known that I, OSCAR GUSTAFSEN, a citizen of the United States of America, residing at No. 423 West Twenty-seventh street, New York city, county of New York, State of New York, have invented certain new and useful Improvements in Portable Drill-Presses, of which the following is a specification.

This invention relates to certain novel and useful improvements in portable drill-presses.

The object of the invention is to provide a drill-press of the type above referred to, which shall be simple in construction, capable of being manufactured at but little expense, one which shall possess both hand and automatic screw feed-motors, one which is provided with antifriction or ball bearings, and finally one in which the drill is capable of angular adjustment relative to the work.

With these objects in view the invention consists in the certain peculiar constructions, combinations, and arrangements of parts hereinafter described in the specification, illustrated in the drawings, and set forth in the appended claims.

In the annexed drawings, Figure 1 represents a sectional side elevation of a drill-press constructed according to my invention, the angular adjustment of the drill relative to the work being shown in dotted lines. Fig. 2 is a sectional edge view of the same. Fig. 3 is a detailed enlarged vertical central section of the feed-screw nut in the angular adjustable pivot and ball-bearing device and showing the construction of a modified form of drill-arm. Fig. 4 is a sectional edge view of the same, the line of section being indicated at *a b*, Fig. 1.

Referring now to the drawings, the letter A indicates the arm of the portable drill-press by which the drill is held to the work. The upper portion of said arm is bent or inclined to one side relative to the vertical shank B. To the bottom end of said shank is secured or jointed a shoe or shoe-piece C, the latter projecting also to one side of the shank B. The said shoe or shoe-piece C has a vertical arm *c*, joining the left side of the shank B. The joining sides of both the shank B and the arm *c* are toothed and the teeth of one engage in the spaces of the other. By means of this arrangement of the toothed joint of the shank B with the arm *c* the shoe C is prevented from slipping from its position. The arm *c* is provided with a screw-bolt *d*, which passes through a slot in the shank B, said bolt *d* projecting on the rear side of the shank and is furnished with a suitable washer and screw-nut, as at *e*, to secure said shoe permanently in the desired position. It will be readily apparent that this arrangement enables the shoe-piece C to be adjusted in the desired position when the work is to be placed upon said shoe.

The top end of the arm A is curved on a radius having its center near the top surface of the shoe-piece C, as shown.

The aforesaid curved top portion of the arm A is formed with a fork having two prongs E E, with a central vertical space between, in which a vertical socket F is employed and is held by a trunnion G, extending each side from the socket and passing through the prong. Said trunnions have each a screw-nut provided on its outer end to clamp and secure the socket F to the prongs. Each prong has a concentric slot in which the trunnions are held, as shown. In the vertical socket F is guided the feed-screw nut H, and in the nut H in turn is guided the pressure feed-screw I. J represents the drill-socket of the ratchet-lever, being shown in dotted lines, Fig. 1.

The center-point bearing of the ratchet upon which the pressure of the feed-screw is received is shown at K. Said point revolves upon the balls in the bearing of the said center point, the friction being greatly reduced thereby. The feed-screw nut H is preferably provided with a large milled head L to turn said nut by hand when desired.

For drilling large holes the feed is preferably very slow, and for this purpose the aforesaid head L is provided on its upper surface with ratchet-teeth M, and over the top end of the nut H is placed a loose sleeve N, having pivoted thereto a pawl O to engage the ratchet-teeth M. The said sleeve N is also provided with upwardly-extending projections *i*, said projections assisting in retaining in place the operating-lever P, which engages the sleeve to turn the same thereby, causing the pawl Q to engage the ratchet-teeth M, thus obtaining a slow feed of the said nut H. Instead of providing said sleeve

N with projections to assist in turning said sleeve, as shown in Figs. 1 and 2, if desired the handle Q, as shown in Figs. 3 and 4, may be used. For drilling large holes ball-bearings or other suitable antifriction means may be provided between the socket F and the nut H, as seen in Fig. 3.

Instead of constructing the arm A with the fork having two prongs one stronger prong may be employed, and the socket F may have but one trunnion, as shown in Fig. 4.

By the curved top portion or fork of the arm the drill may be readily adjusted and held to drill holes at any desired angle, the drill being shown in an adjusted position in dotted lines, Fig. 1.

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

1. In a drill-press, the combination of a shank B, having an arc-shaped arm A at its upper end; an oppositely-curved work-support or shoe C at its lower end; a bearing adjustable along the arm, a feed-nut revoluble and held in said bearing; a feed-screw threaded in the feed-nut and constructed to bear upon a drill, and means for rotating the feed-nut, substantially as set forth.

2. In a drill-press, the combination of a shank B having an arc-shaped arm A at its upper end; an opposite curved work-support or shoe C at its lower end; a bearing adjustable along the arm, a feed-nut revoluble and held in said bearing, a feed-screw threaded in the feed-nut and constructed with ball-bearings passing the drill, and the shoe C vertically jointed and made adjustable to and from the feed-nut and secured to the shank B, substantially as set forth.

In testimony whereof I, OSCAR GUSTAFSEN, have signed my name to this specification, in the presence of two subscribing witnesses, this 18th day of November, 1901.

OSCAR GUSTAFSEN. [L. S.]

Witnesses:
GEO. GILDERSLEEVE,
ALEXR. CLUNAS.