

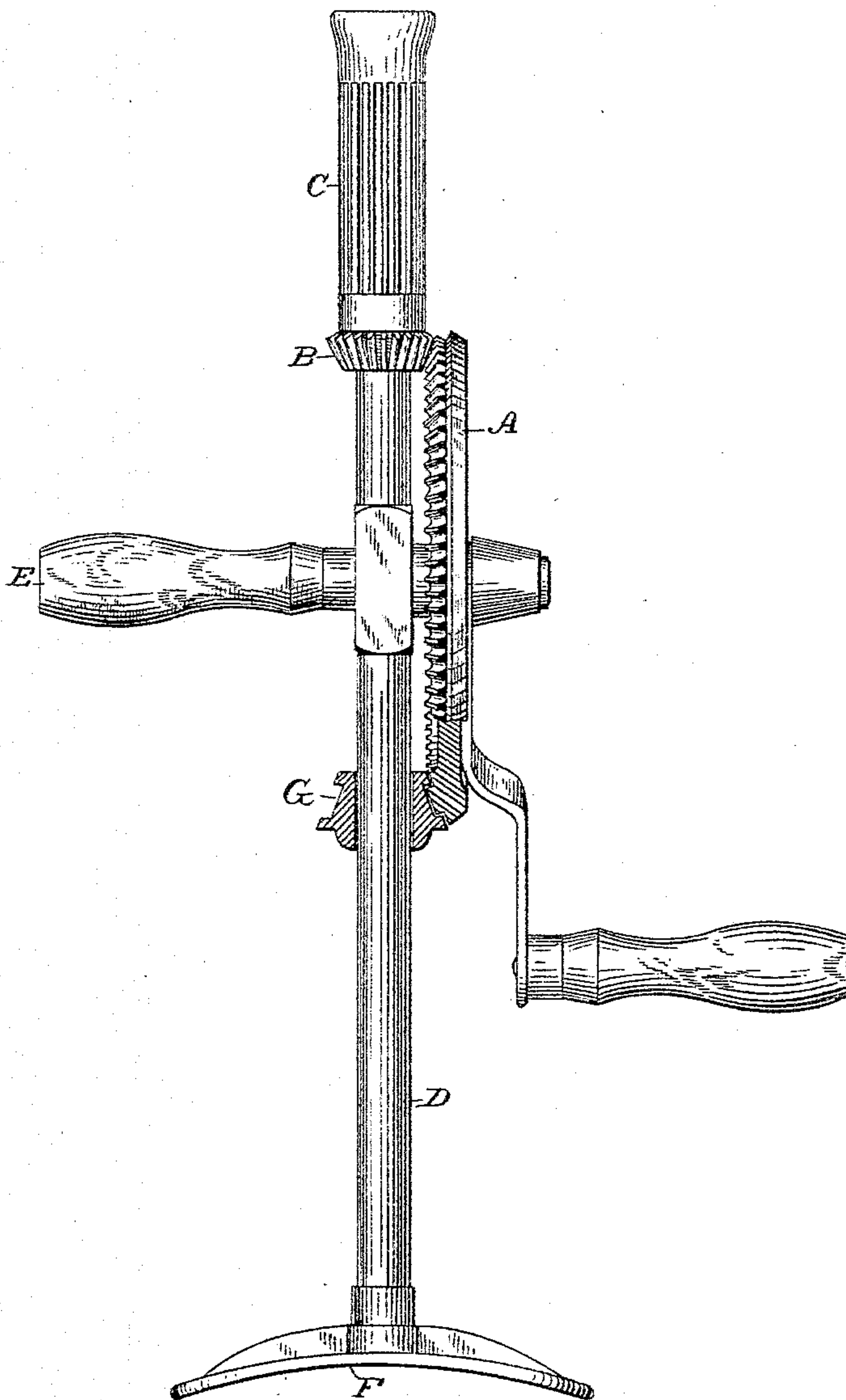
(No Model.)

A. SHEPARD.

HAND DRILL.

No. 356,898.

Patented Feb. 1, 1887.



WITNESSES.

John Edwards Jr.
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INVENTOR.

Amos Shepard.
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Atty.

UNITED STATES PATENT OFFICE.

AMOS SHEPARD, OF PLANTSVILLE, CONNECTICUT.

HAND-DRILL.

SPECIFICATION forming part of Letters Patent No. 356,898, dated February 1, 1887.

Application filed November 8, 1886. Serial No. 218,252. (No model.)

To all whom it may concern:

Be it known that I, AMOS SHEPARD, a citizen of the United States, residing at Plantsville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Hand-Drills, of which the following is a specification.

My invention relates to improvements in hand-drills of the class that are driven by a bevel gear-wheel and pinion; and the object of my improvement is to simplify the construction and to improve the efficiency and convenience of the machine.

In the accompanying drawing the only figure is a side elevation, partly in section, of my drill.

My improvement relates to the means for supporting the gear-wheel A, so as to hold it in proper engagement with the pinion B of the drill-head or chuck C. The general form and construction of the drill is old—that is to say, drills have heretofore been made with a single shaft or rod, D, a breast-pad, F, on one end, the head or chuck C and pinion B at the other, and between the ends of said rod the handle E on one side and the driving gear-wheel A, mounted on a stud opposite the handle. Such drills have also been provided with a pinion like the pinion B, but secured by collars to the rod D, so as to engage the teeth of the wheel A at a point diametrically opposite said pinion. All of said prior art is hereby disclaimed.

I form the teeth of the wheel A so as to leave a shoulder on each edge—that is, at the ends of the several teeth, as shown by that

portion of said wheel which is represented in section. In order to support the wheel A and prevent it from tipping or springing away from the pinion B under severe strain, I employ the plain grooved roller G, the groove in which is of a size to receive freely the projecting teeth of the gear-wheel A, as shown. This collar is loose upon the rod D, being merely slipped thereon before the parts are assembled, and held in place longitudinally on said rod by the engagement of the teeth of the wheel A with the groove of said roller.

This construction is very simple and inexpensive. When there is but little strain upon the wheel A, said wheel moves freely without necessarily revolving the roller. If, however, the wheel A is so strained as to cause it to bear with any considerable force upon the roller, said roller revolves with said wheel by frictional contact and holds said wheel in engagement with the pinion B, and without any tendency to cramp or bind. The edge of the roller being smooth, there is no danger of its catching and drawing in clothing or other objects, as there is when a pinion is used at this place.

I claim as my invention—

The herein-described hand-drill, having the toothless grooved supporting-roller G, with the teeth of the wheel A fitted thereto, substantially as described, and for the purpose specified.

AMOS SHEPARD.

Witnesses:

EDWIN G. LEWIS,
PETER HUTTON.