

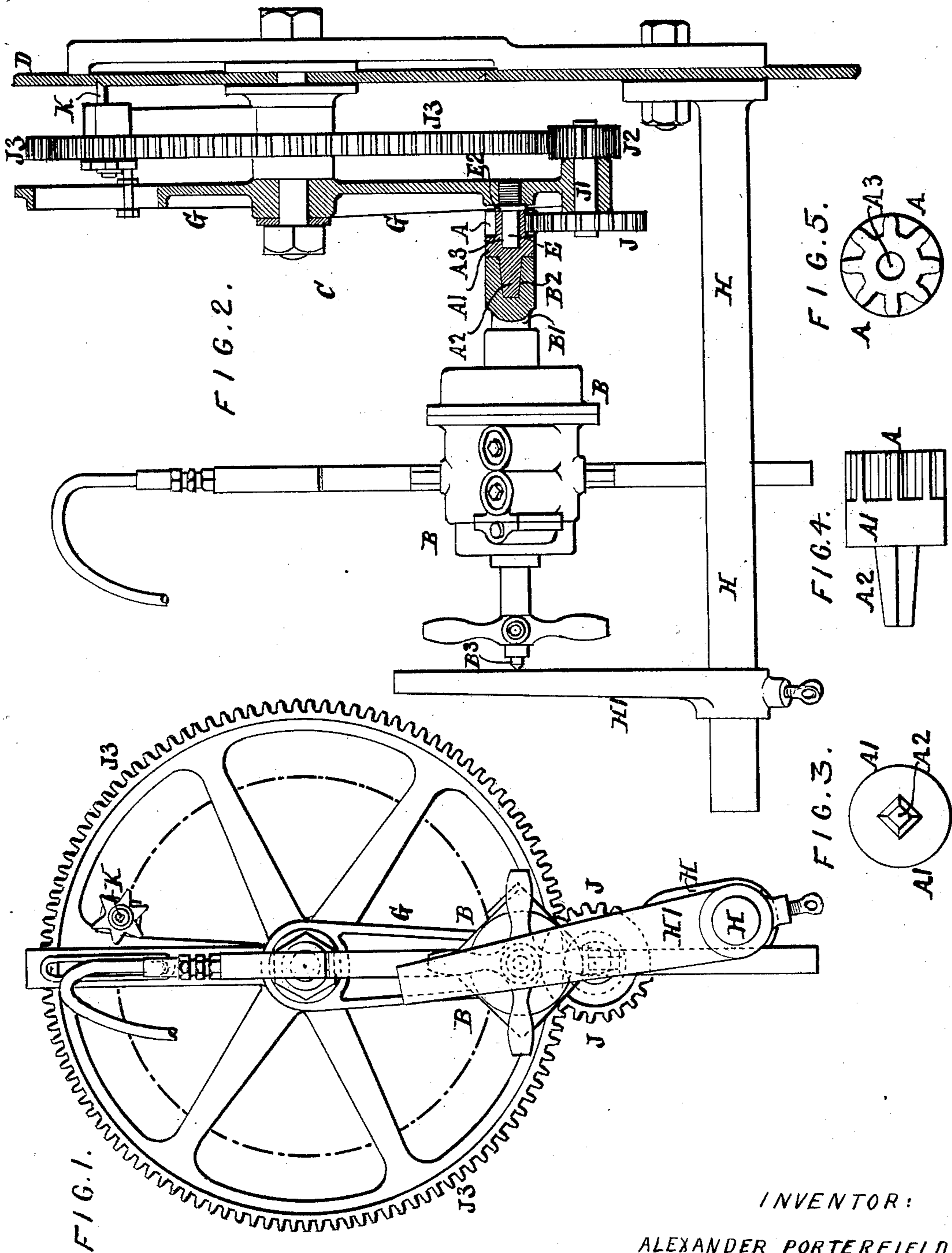
No. 731,948.

PATENTED JUNE 23, 1903.

A. PORTERFIELD.  
GEARING FOR MOTOR DRIVEN TOOLS.

APPLICATION FILED DEC. 9, 1902.

NO MODEL.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

ALEXANDER PORTERFIELD, OF DUMBARTON, SCOTLAND.

## GEARING FOR MOTOR-DRIVEN TOOLS.

SPECIFICATION forming part of Letters Patent No. 731,948, dated June 23, 1903.

Application filed December 9, 1902. Serial No. 134,498. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER PORTERFIELD, a subject of the King of Great Britain and Ireland, and a resident of Dumbarton, in the county of Dumbarton, Scotland, (whose postal address is Cree Bank, Dumbarton, in the county of Dumbarton, Scotland,) have invented a certain Improved Gearing for Motor-Driven Tools, (for which I have applied for a British patent, No. 13,581, dated June 16, 1902,) of which the following is a specification.

The said invention has for its object to provide an improved and simple fitting which can be applied to any known form of pneumatic drilling or boring tool, so that such tool when not required for drilling can be utilized as a motor to drive cutting or like machines, such as are used for cutting out openings for ships' "side lights" or the like, which machines have hitherto generally been worked by hand.

The invention is illustrated by the accompanying drawings, in which the same reference-letters are used to mark the same or like parts.

Figure 1 of the drawings is an end elevation, and Fig. 2 a side elevation, partly in section, of a cutting apparatus in which the improved fitting is employed. Figs. 3, 4, and 5 are respectively a back elevation, a side elevation, and a front elevation, of the improved fitting, drawn to a larger scale than Figs. 1 and 2.

The improved fitting according to the invention consists, essentially, of a pinion A, which is arranged on the spindle B' of a pneumatic drilling or boring tool B, so as to enable such tool to drive an ordinary cutting-machine C, which is set in position, as shown, for cutting out a circular opening in a plate or ship's side D. The pinion A is formed on or fixed to a pinion-piece A', having a plug end A<sup>2</sup> of tapered form to fit the usual drill-

socket B<sup>2</sup> in the spindle B' of the pneumatic boring-tool B, the pinion-piece being also formed with a socket A<sup>3</sup> to fit a stud E, which is screwed to a fixed bar G of the cutting-machine C. When the parts are in position, as shown, the back centering part B<sup>3</sup> of the tool B bears against the arm H' of an ordinary boring-bracket H, fixed to the ship's side D, while the pinion-piece A, which has its taper end A<sup>2</sup> inserted into the socket B<sup>2</sup> of the tool-spindle B', is mounted on the fixed stud E, the front end of the pinion-piece butting up against a fixed collar E<sup>2</sup> on the stud. The pinion portion A of the pinion-piece A' then gears with a pinion J, fixed to a shaft J', mounted on the lower end of the fixed bar G, another pinion J<sup>2</sup> on the shaft gearing with a spur-wheel J<sup>3</sup>, carrying the cutting-tool K. The pneumatic boring-tool B is thus simply and conveniently connected to the cutting-machine C, so that when it is started it will drive the machine, as required.

What I claim is—

1. In combination, a motor-driven spindle having a socket in its end, a bar, a gear-wheel mounted thereon, a pinion to mesh with said wheel having a plug to fit said socket at one end, its other end being adjacent to the bar, substantially as described.

2. In combination, a motor-driven spindle having a socket in its end, a bar, a gear-wheel mounted thereon, a stud on the bar, a pinion having a plug at one end to fit the aforesaid socket, with a socket at the other end to fit said stud, the pinion being adapted to mesh with the gear, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALEXANDER PORTERFIELD.

Witnesses:

DAVID FERGUSON,  
GEORGE PATTERSON.