

(No Model.)

G. E. HART.

COMBINED WHEEL AND PINION FOR WATCHES.

No. 338,959.

Patented Mar. 30, 1886.

Fig. 1

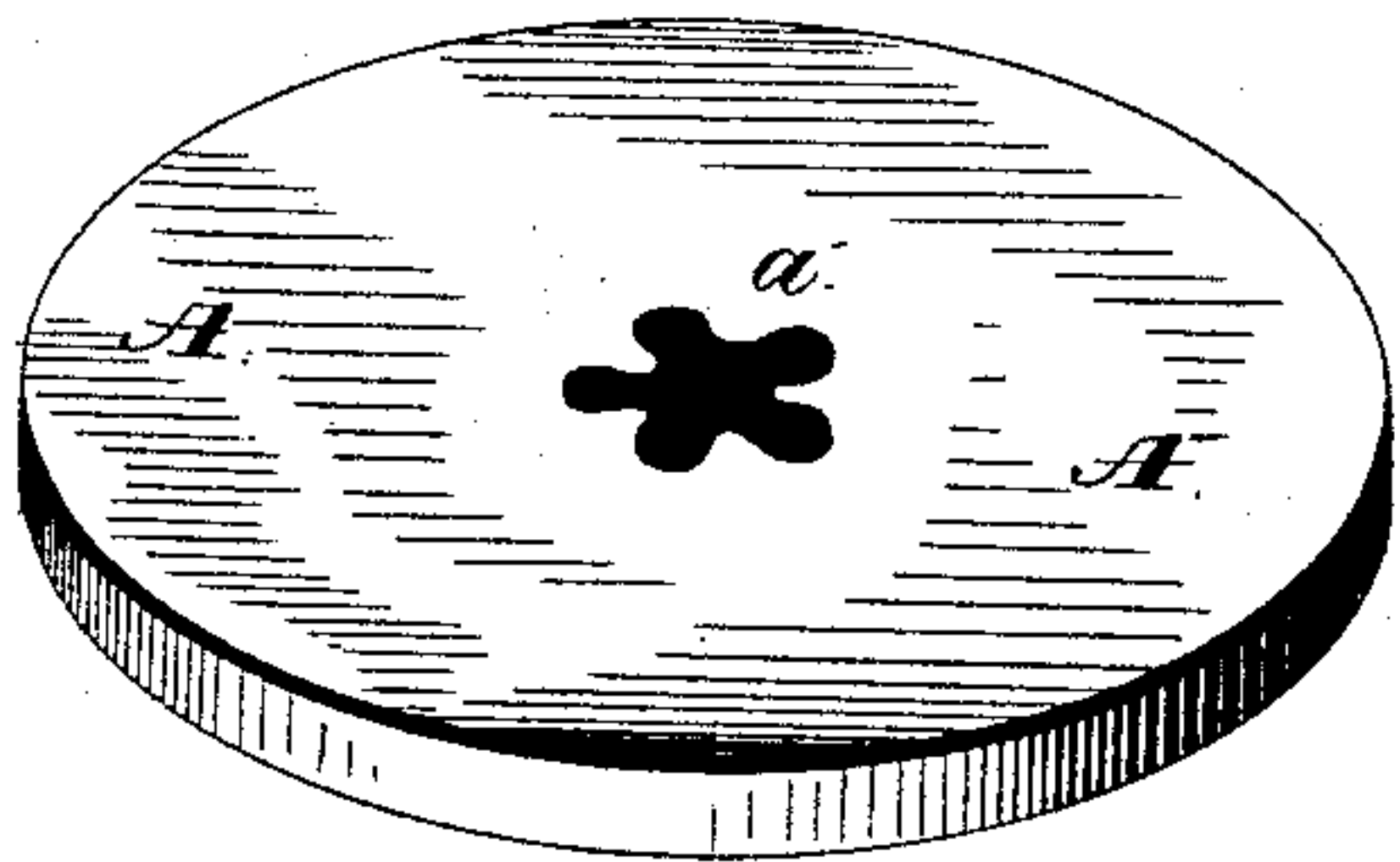


Fig. 2

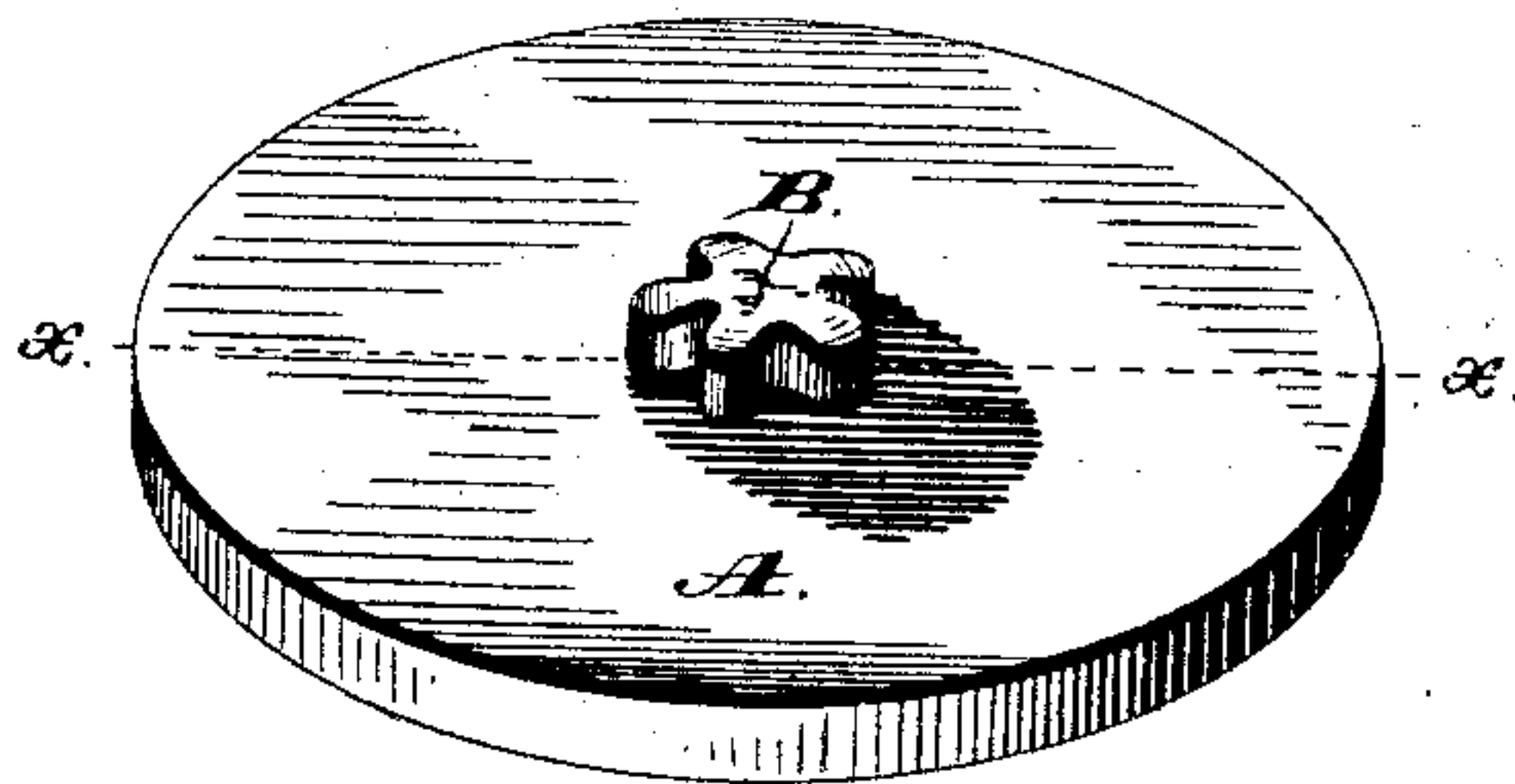


Fig. 3

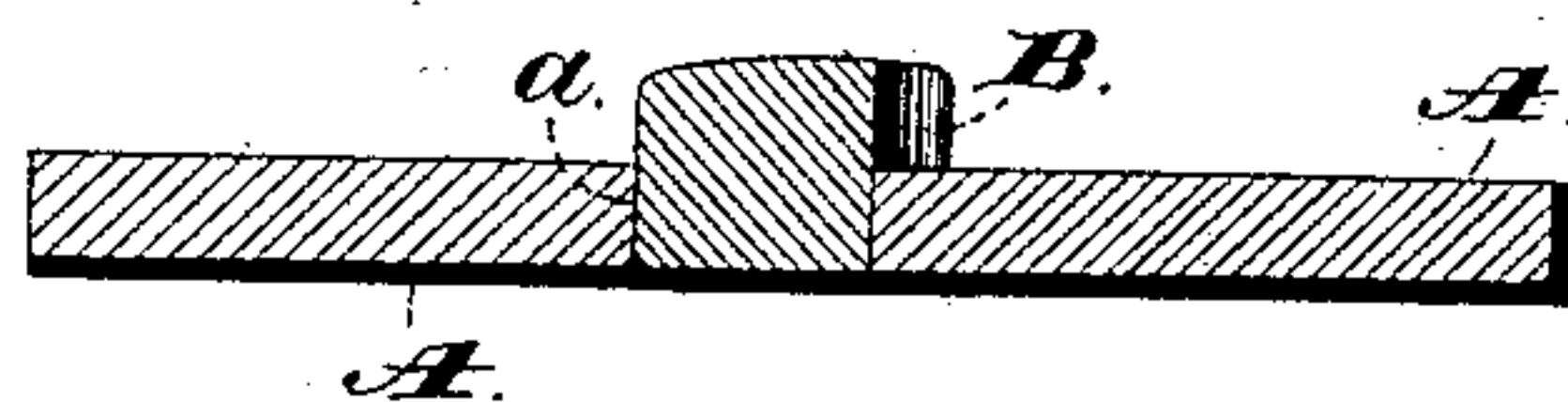


Fig. 4

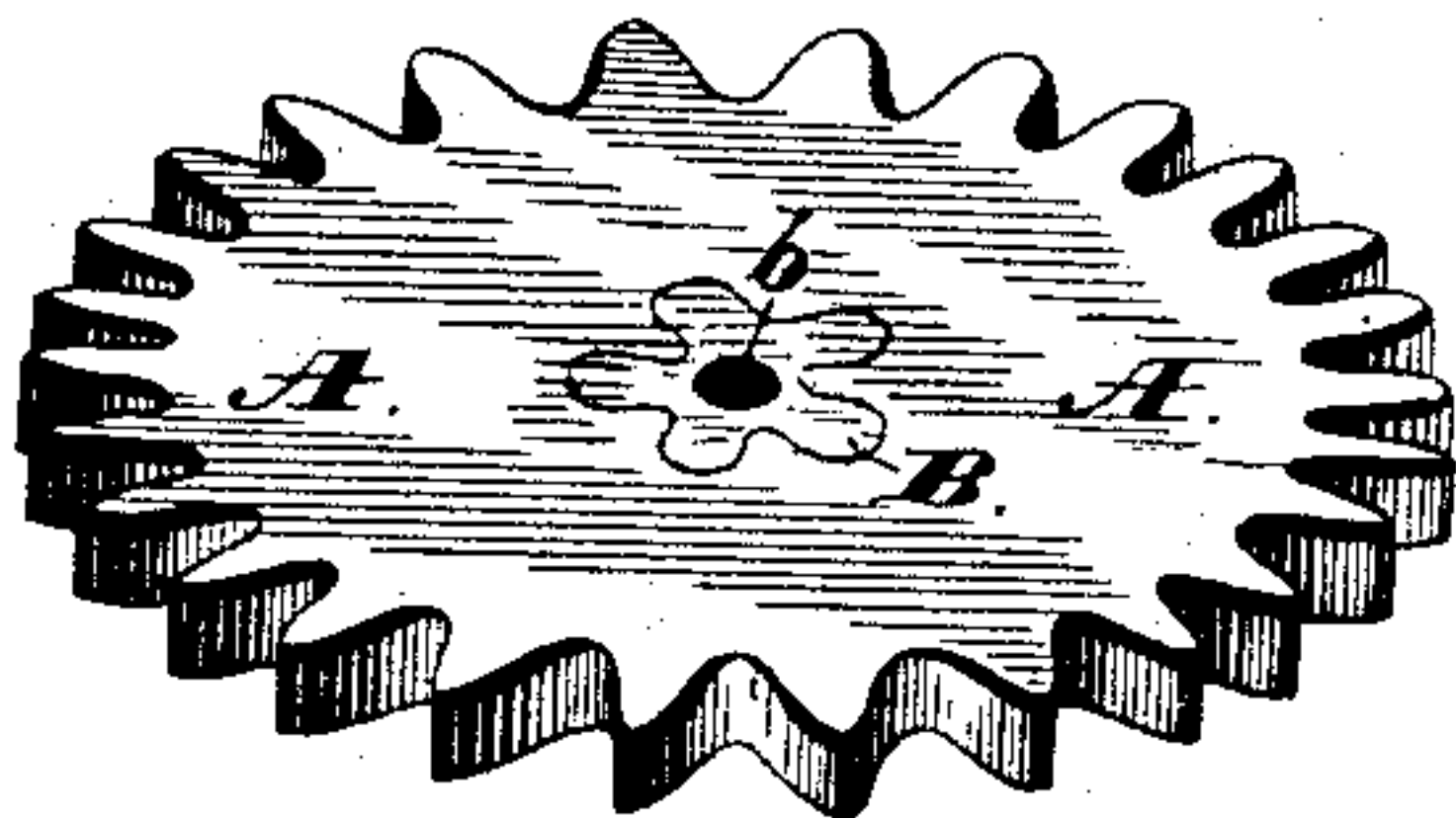


Fig. 5

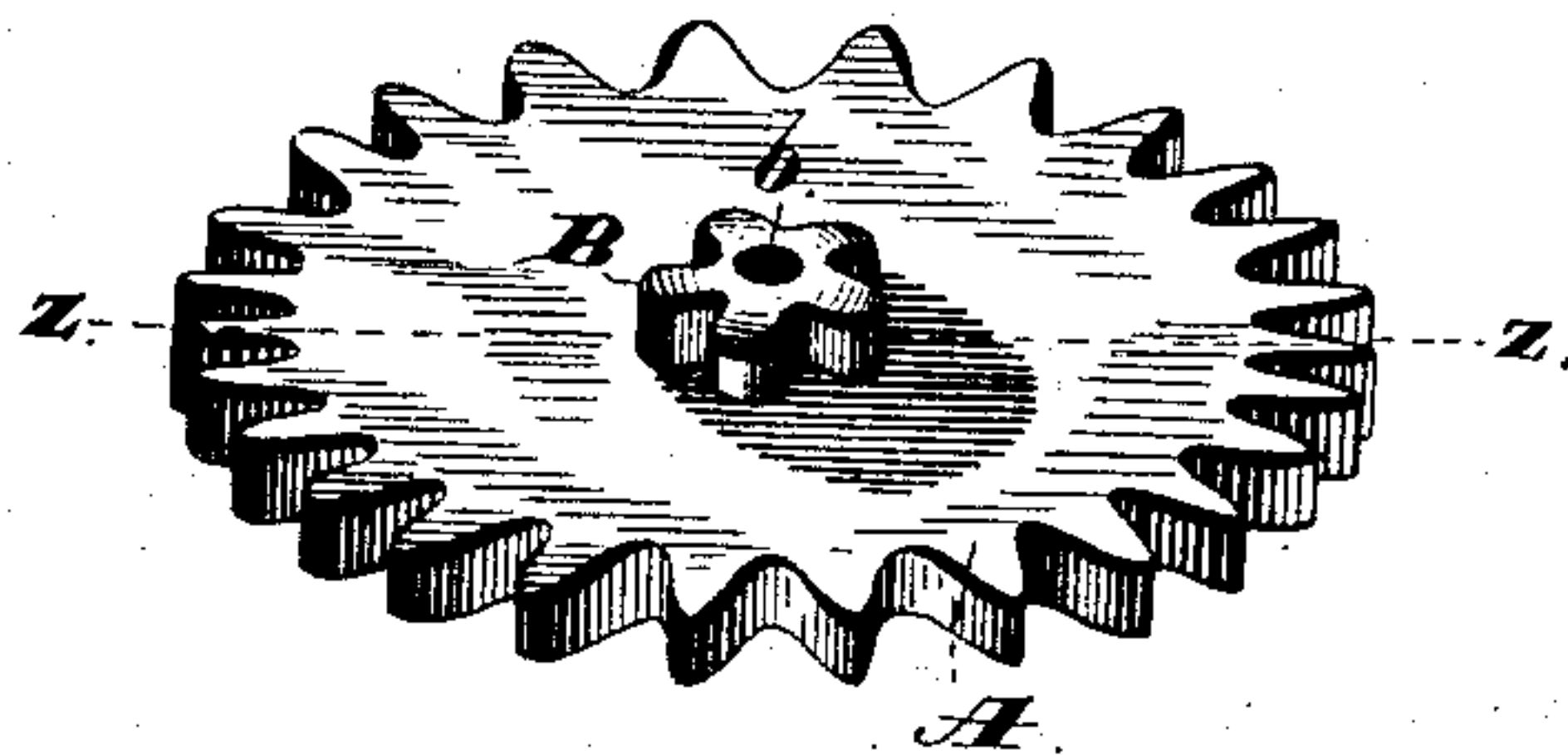
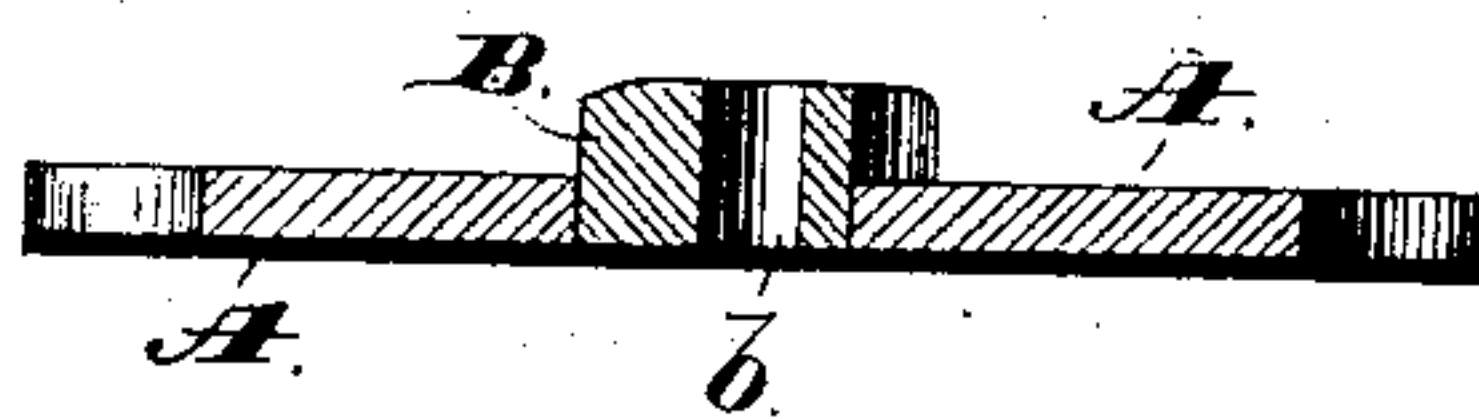


Fig. 6



Witnesses:

Jas. C. Hutchinson.

Chas. Williamson.

Inventor.

*Geo. E. Hart, by
Prindle & Russell, his att'ys*

UNITED STATES PATENT OFFICE.

GEORGE E. HART, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE
WATERBURY WATCH COMPANY, OF SAME PLACE.

COMBINED WHEEL AND PINION FOR WATCHES.

SPECIFICATION forming part of Letters Patent No. 338,959, dated March 30, 1886.

Application filed July 7, 1885. Serial No. 170,882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. HART, of Waterbury, in the county of New Haven, and in the State of Connecticut, have invented certain new and useful Improvements in a Combined Winding Wheel and Pinion; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in
10 which—

Figure 1 is a perspective view of my wheel-blank after having been prepared for the reception of the pinion-blank. Fig. 2 is a like view of the same after the insertion of said
15 pinion-blank. Fig. 3 is a section upon line x of Fig. 2. Figs. 4 and 5 are respectively perspective views of the rear and front sides of the combined wheel and pinion united and completed; and Fig. 6 is a section upon line
20 $z z$ of Fig. 5.

Letters of like name and kind indicate similar parts in each of the figures.

The design of my invention is to lessen the labor and expense required for producing combined wheels and pinions; and to this end said
25 invention consists, as a new article of manufacture, in a combined wheel and pinion, in which the pinion is formed separately and has one end inserted tightly within a correspondingly-shaped opening at the center of
30 the wheel, substantially as and for the purpose hereinafter shown.

In the carrying of my invention into practice, I employ a round disk of sheet metal,
35 A, which has substantially the diameter and thickness of the finished wheel, and at its axial center punch or form in any usual manner an opening, a , that corresponds in trans-

verse shape and dimensions to the like features of the desired pinion. From another and a
40 considerably thicker sheet of metal I now punch a pinion-blank, B, which corresponds in transverse size and shape to the opening a , and by any suitable means then press one end of said
45 blank into and cause it to closely fill said opening. The length of said pinion-blank B should be sufficient to give to its outer portion the required projection when its inner end is flush with the rear face of said wheel-blank. The
50 wheel and pinion blanks being thus firmly united the whole is completed by providing the former with peripheral gear-teeth and the latter with an axial opening, b , for the reception of an arbor, axial bearing, &c.

When constructed in the manner shown, the
55 wheel and pinion are accurately and firmly united, and are not liable to become separated, and can be produced and combined at a much less expense than by any usual method.

Having thus set forth the nature and merits
60 of my invention, what I claim is—

As a new article of manufacture, a combined gear-wheel and pinion, in which the gear-wheel is provided with an internally-toothed central opening that corresponds in size and
65 shape to the toothed periphery of the pinion, and said pinion is fitted into and caused to closely fill said opening, substantially as and for the purpose specified.

In testimony that I claim the foregoing I
70 have hereunto set my hand this 8th day of June, A. D. 1885.

GEORGE E. HART.

Witnesses:

GEO. S. PRINDLE,
HENRY C. HAZARD.