

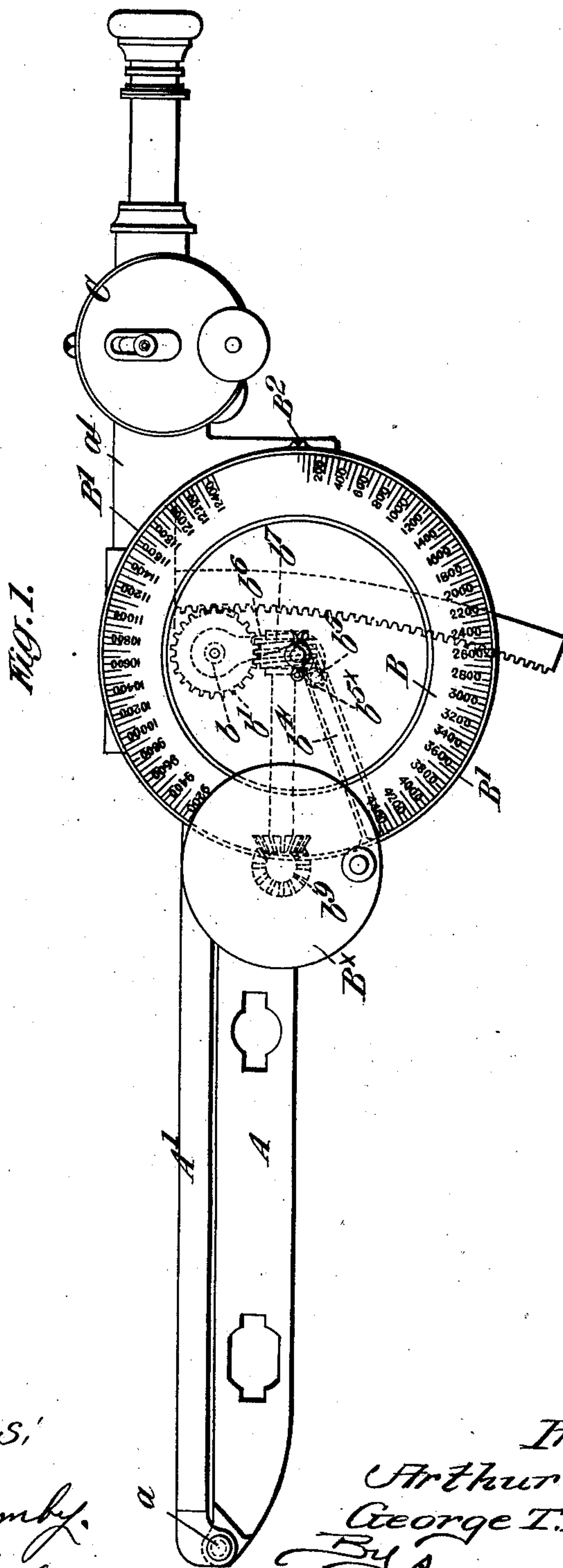
No. 826,836.

PATENTED JULY 24, 1906.

A. T. DAWSON & G. T. BUCKHAM.
SIGHTING APPARATUS FOR ORDNANCE.

APPLICATION FILED DEC. 8, 1905.

3 SHEETS—SHEET 1.



Witnesses:
Dennis Sumbly
C. D. Hessler

Inventors
Arthur T. Dawson
George T. Buckham
By James W. Norris
Att'y

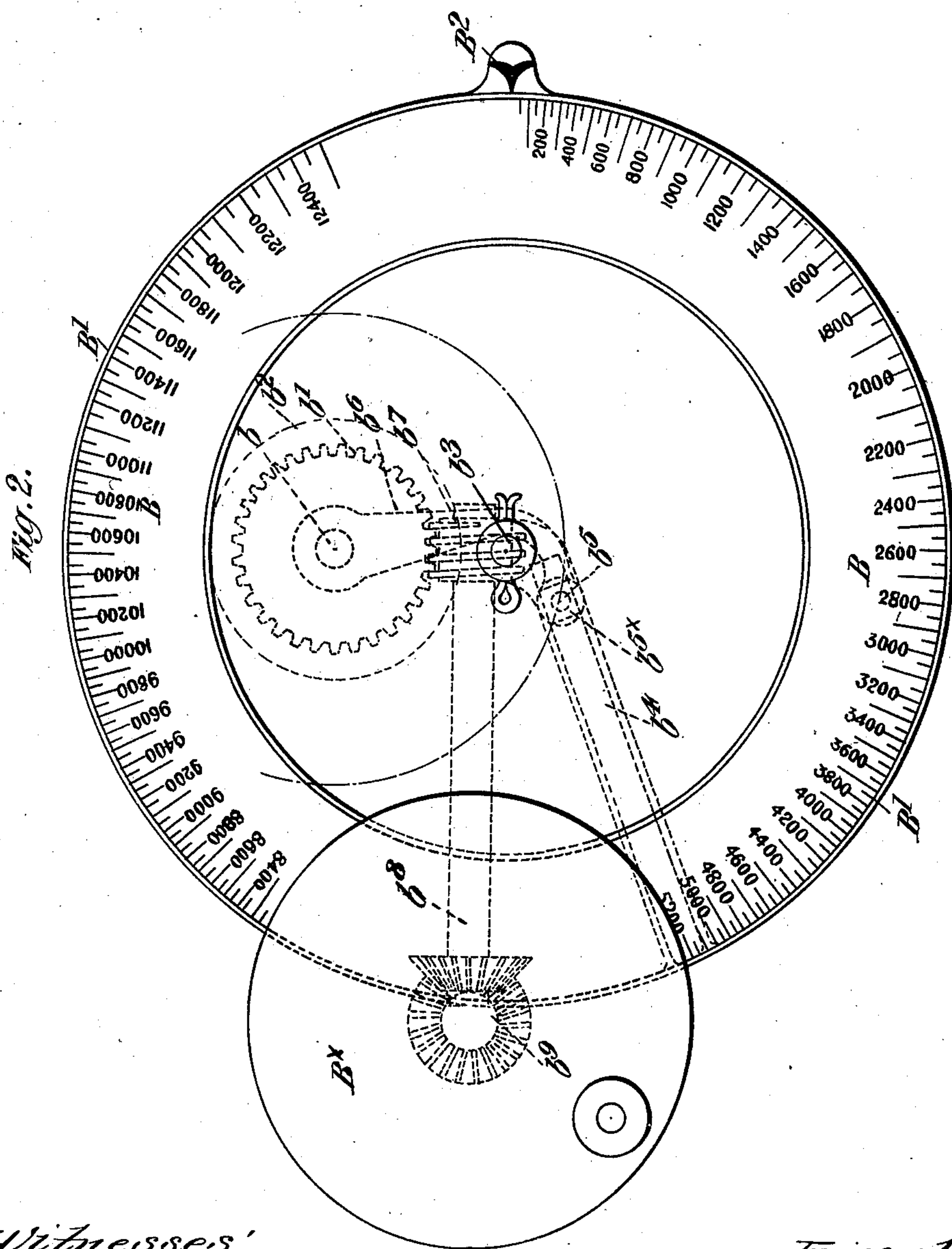
No. 826,836.

PATENTED JULY 24, 1906.

A. T. DAWSON & G. T. BUCKHAM.
SIGHTING APPARATUS FOR ORDNANCE.

APPLICATION FILED DEC. 8, 1905.

3 SHEETS—SHEET 2.



Witnesses:

Tennis Sumbly

C. W. Kessler

Inventors

Arthur T. Dawson

George T. Buckham

By *James L. Norris*

Att'y

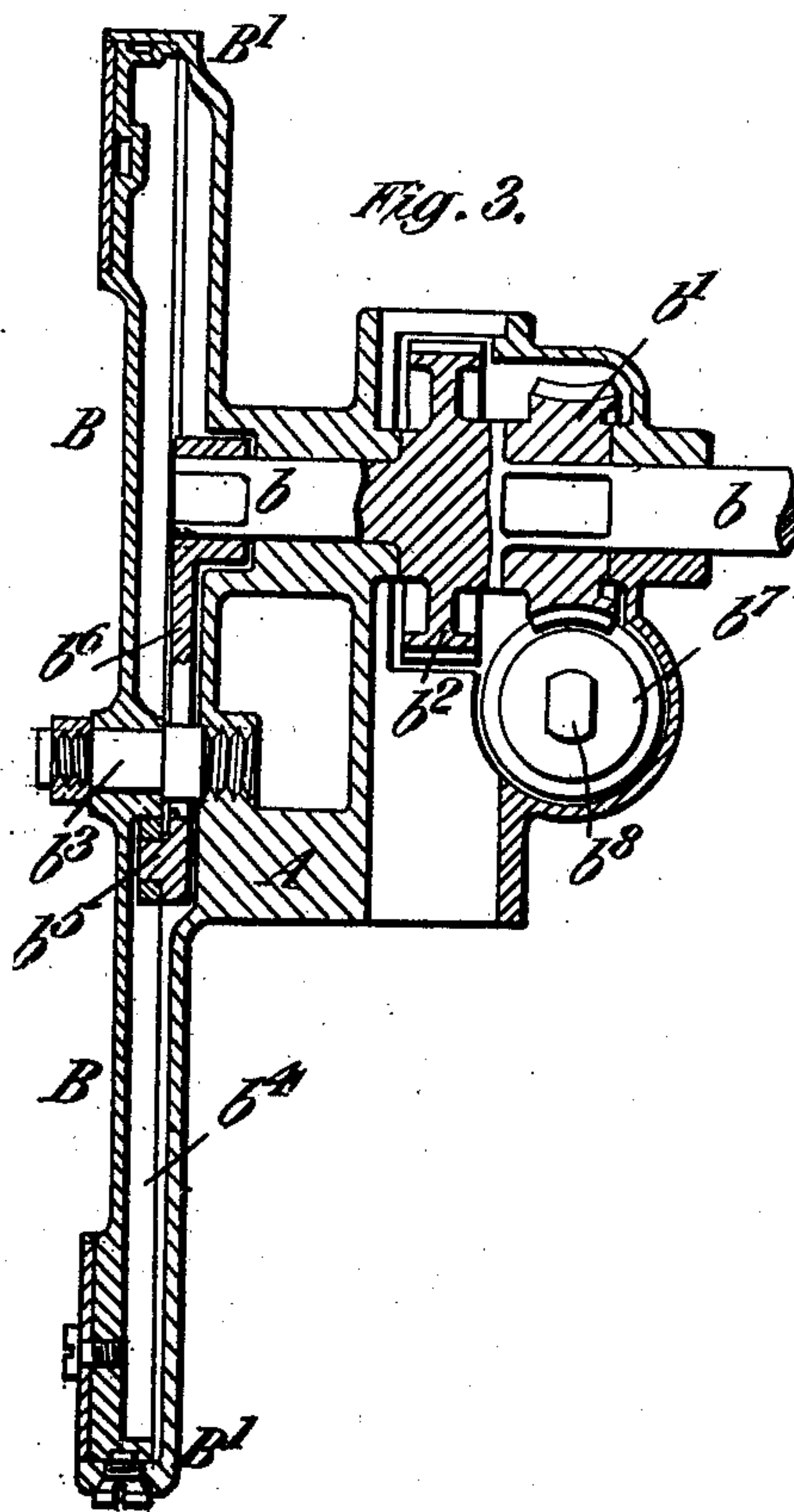
No. 826,836.

PATENTED JULY 24, 1906.

A. T. DAWSON & G. T. BUCKHAM.
SIGHTING APPARATUS FOR ORDNANCE.

APPLICATION FILED DEC. 8, 1905.

3 SHEETS—SHEET 3.



Witnesses:

Samuel S. Sully.

C. D. Kessler

Inventors

Arthur T. Dawson

George T. Buckham

By James L. Norris

Att'y

UNITED STATES PATENT OFFICE.

ARTHUR TREVOR DAWSON AND GEORGE THOMAS BUCKHAM, OF WESTMINSTER, LONDON, ENGLAND, ASSIGNORS TO VICKERS SONS & MAXIM, LIMITED, OF WESTMINSTER, LONDON, ENGLAND.

SIGHTING APPARATUS FOR ORDNANCE.

No. 826,836.

Specification of Letters Patent.

Patented July 24, 1906.

Original application filed September 29, 1904, Serial No. 226,587. Divided and this application filed December 8, 1905. Serial No. 280,985.

To all whom it may concern:

Be it known that we, ARTHUR TREVOR DAWSON, lieutenant of the Royal Navy, director and superintendent of Ordnance Works, and GEORGE THOMAS BUCKHAM, engineer, subjects of the King of Great Britain, residing at 32 Victoria street, Westminster, in the county of London, England, have invented certain new and useful Improvements Relating to Sighting Apparatus for Ordnance, of which the following is a specification.

This invention relates to sighting apparatus for ordnance.

As is well known, the graduations on a range-dial are ordinarily very close together at short ranges and more widely spaced at long ranges, thus rendering the sight-setting operation difficult to perform at short ranges, owing to the closeness of the graduations and the consequent difficulty in reading them correctly. This is a disadvantage which it is the chief object of our invention to remedy, so that the graduations on the range-dial will be equal or approximately equal throughout. For this purpose the axle carrying the toothed pinion that engages with the sight-elevating rack has a worm-wheel with which a worm engages for actuating said axle. On this axle is mounted a crank which engages with a groove or slot in the range-dial, said crank and slot being so disposed relatively to each other that the angular movement imparted to the range-dial by the sight-setting mechanism is regular or uniform, or approximately regular or uniform, notwithstanding the variable nature of the movement that has to be imparted to the elevating-pinion in changing the range.

In order that our said invention may be clearly understood and readily carried into effect, we will describe the same more fully with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of sighting apparatus provided with our improved sight-setting and range-indicating mechanism. Figs. 2 and 3 are respectively a side elevation and a vertical central section, on a larger scale, showing the range-dial and the mechanism directly connected therewith for actuating the same.

A is the usual bracket, which is affixed to the gun-mounting and to which the radial sight-bar A' is hinged at *a*, said sight-bar having the usual laterally-displaceable pivoted holder or carrier *a'* for the telescopic or other sight.

B is the range-dial, and C the deflection-dial.

B^x is the sight-setting hand-wheel for elevating the sight-bar A' through the intervention of the gearing hereinafter described, said hand-wheel being situated at the side of the sighting apparatus to permit of the latter being actuated by a separate sight-setter.

b is the axle, carrying the worm-wheel *b'* and elevating-pinion *b²*, and *b³* is another axle carrying the range-dial B and situated eccentrically with respect to the axle *b*.

b⁴ is the groove or slot in the range-dial for the reception of a crank-pin *b⁵* on the crank *b⁶*, the said crank-pin being preferably furnished with a block *b^{5x}* for sliding in the said slot. The crank *b⁶* is mounted on the axle *b*, which receives rotary motion from a worm *b⁷*, gearing with the worm-wheel *b'*. The said worm is mounted on a spindle *b⁸*, which is geared by bevel-pinions *b⁹* with the sight-setting hand-wheel B^x. By actuating said hand-wheel B^x the axle *b* and its crank *b⁶* are angularly displaced, whereby the crank-pin is caused to slide in the groove or slot *b⁴* and impart angular movement to the range-dial. As the angular displacement of the sight-bar A about the hinge *a* increases the path of the crank-pin *b⁵* extends farther from the axis of the range-dial, owing to the eccentric position of the crank-axle *b* relatively to said axis, so that the pin *b⁵* moves outward along the groove or slot *b⁴*, and thereby imparts a gradually-increasing angular displacement to the range-dial, with the result that we obtain a uniform or approximately uniform movement of the dial during the sight-setting operation and a consequent equality or approximate equality of the graduations on the range-dial. The range-dial revolves in a stationary ring B', having a pointer B².

What we claim, and desire to secure by Letters Patent of the United States, is—

1. In gun-sighting apparatus, the combination with the sight-setting mechanism, of a range-dial having a groove therein, a crank

2

engaging with said groove, an axle carrying said crank and eccentrically situated with respect to the axis of rotation of the range-dial, means for operating the sight-setting mechanism and means for actuating said eccentric crank-axle simultaneously with the operation of said sight-setting mechanism for the purpose specified.

2. In gun-sighting apparatus, the combination with the sight-setting mechanism, of a range-dial having a more or less radial groove therein, a crank engaging with said groove, an axle carrying said crank and eccentrically situated with respect to the axis of rotation of the range-dial, means for operating the sight-setting mechanism, and means for actuating said eccentric crank-axle simultaneously with the operation of said sight-setting mechanism for the purpose specified.

3. In gun-sighting apparatus, the combination with the sight-setting mechanism, of a range-dial having a more or less radial groove therein, a crank engaging with said groove, an axle carrying said crank and eccentrically situated with respect to the axis of rotation

of the range-dial, a toothed pinion on said eccentric crank-axle engaging with the sight-elevating rack, and means for actuating said eccentric crank-axle substantially as and for the purpose specified.

4. In gun-sighting apparatus, the combination with the sight-setting mechanism, of a range-dial having a more or less radial groove therein, a crank engaging with said groove, an axle carrying said crank and eccentrically situated with respect to the axis of rotation of the range-dial, a toothed pinion on said eccentric crank-axle engaging with the sight-elevating rack, a worm-wheel on said eccentric crank-axle engaging with a worm, and means for actuating said worm substantially as and for the purpose specified.

In testimony whereof we have hereunto set our hands, in presence of two subscribing witnesses, this 23d day of November, 1905.

ARTHUR TREVOR DAWSON.
GEORGE THOMAS BUCKHAM.

Witnesses:

HENRY KING,
ALFRED PEAKS.