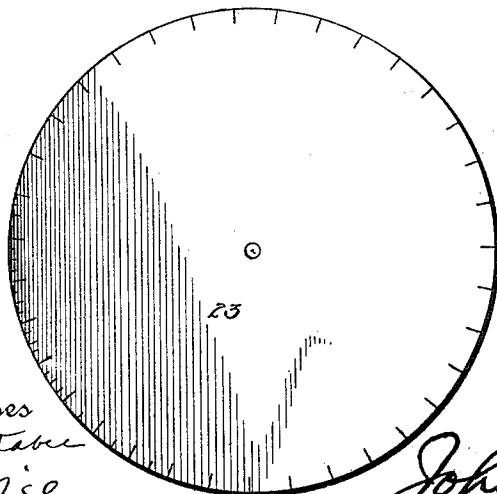
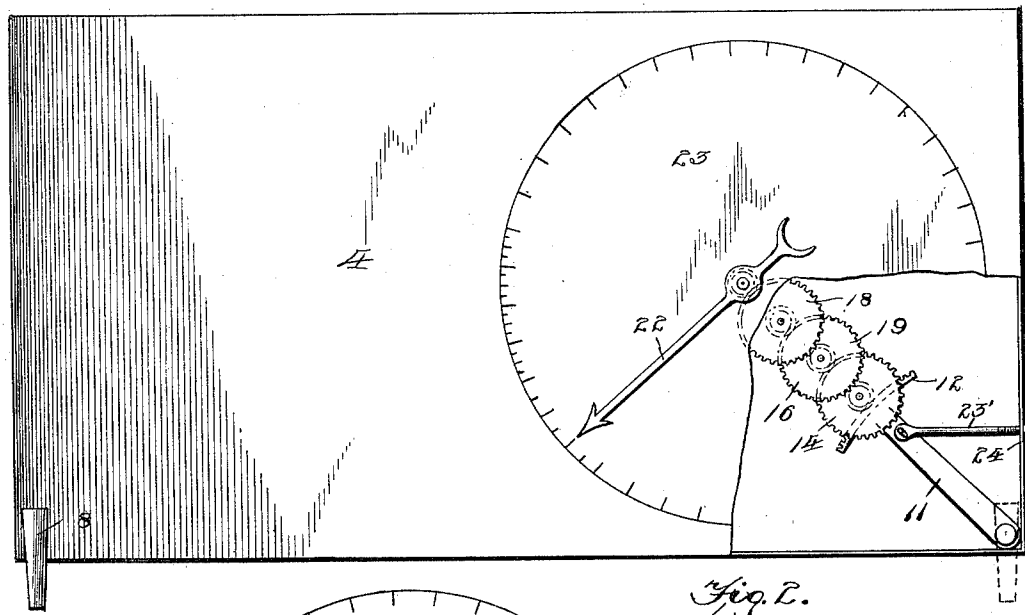
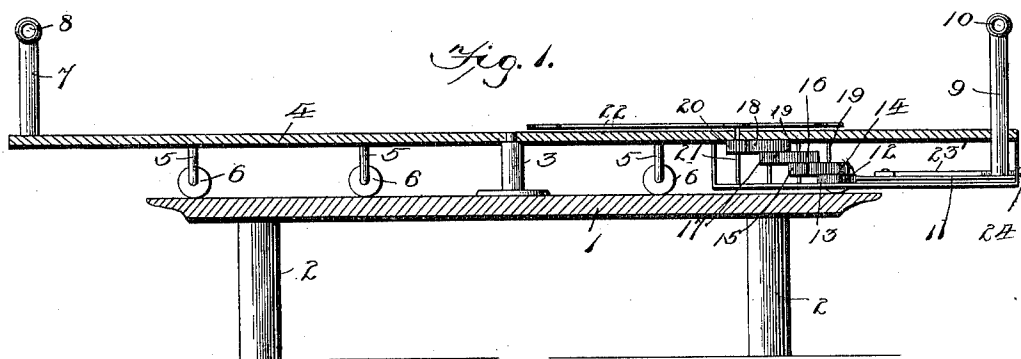


(No Model.)

W. MORAN.
RANGE FINDER.

No. 600,438.

Patented Mar. 8, 1898.



Witnesses
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Victor J. Evans

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UNITED STATES PATENT OFFICE.

WILLIAM MORAN, OF MINNEAPOLIS, MINNESOTA.

RANGE-FINDER.

SPECIFICATION forming part of Letters Patent No. 600,438, dated March 8, 1898.

Application filed June 25, 1897. Serial No. 642,293. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MORAN, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Range-Finders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to range-finders; and it consists, essentially, of a rotatable table having sights or seekers of a suitable form thereon, together with an indicator coacting with a scale automatically operating by the adjustment of one of the sights or seekers.

The invention further consists of the details of construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

The object of the invention is to provide a device for use by naval or army officers as well as other persons in ascertaining the distance of an object from a fixed point, and is particularly adapted for ranging guns or firearms, but can be used for any other purpose, such as surveying, and wherein the parts are simple and effective in their construction and operation, strong and durable, and comparatively inexpensive in the cost of manufacture.

In the accompanying drawings, Figure 1 is a sectional elevation of a range-finder embodying the invention. Fig. 2 is a top plan view partially broken away. Fig. 3 is a top plan view of the dial, which is preferably used in connection with the device.

Referring to the drawings, wherein similar numerals of reference are employed to indicate corresponding parts in the several views, the numeral 1 designates a base, preferably of circular form and having suitable supports 2 fixed to the under side thereof. Centrally rising from the said base is a pivot-post 3, and on said pivot-post is rotatably mounted a table 4, of any preferred form of construction and shape. Depending from the table 4 are hangers 5, having wheels or rollers 6 therein, which rest upon the upper surface of the base 1 and sustain said table in a true position as well as render it sensitive to adjustment without friction.

On one side of the table and supported by

an upright 7 is a sight or seeker 8, of any preferred form of construction, and which is stationarily mounted. On the opposite side of the said table is a rotatable support 9, carrying a sight or seeker 10 at the upper end thereof. The support 9 projects below the table 4 and has stationarily secured thereto the outer end of an arm 11, which extends inwardly under the table at an angle and at its free end is formed with a series of rack-teeth 12, which take into or intermesh with a pinion 13, movable with a gear 14, the latter engaging a pinion 15, similar to the pinion 13, and operating simultaneously with a gear 16, which in turn meshes with a pinion 17, unitedly rotating with a gear 18. The said gears and pinions are mounted on shafts or arbors 19, and the gear 18 coacts with a pinion 20, fixed to an arbor or shaft 21, and on the upper extended end thereof is secured an indicator 22, which moves over a scale-plate 23. Secured to the arm 11 is the inner end of an adjusting-rod 23', which projects outwardly and is engaged by a turn-nut 24.

In operation the table 4 is turned to bring the sight or seeker 8 to bear upon the object of which it is desired to indicate the distance from the point of observation, and the sight or seeker 10 is then adjusted by operating the adjusting-rod 23 through the turn-nut 24, and through this means the arm 11 is swung to one side or the other in accordance with the position of the object observed and to bring the sight or seeker 10 in proper position to take in the lines. The movement of the adjusting-rod and the arm 11 of course actuates the line of gears, and through their arrangement the indicator 22 is caused to travel over the dial 23 and designate the distance through the medium of the predetermined scale on the said dial, which will be divided and subdivided into miles and fractions of a mile or any other denomination of measurement. When the sight or seeker 10 is completely adjusted, the distance the object observed is away from the point of observation can be readily ascertained by examining the dial 23 and the position of the indicator 22.

The device is exceptionally positive in its action and simple in its construction, and the dimensions thereof may be varied in accordance with the use and can be reduced to very

compact form, so that it may be easily and readily carried in the pocket and be quickly set up in operative position.

It is obviously apparent that many minor changes in the details of construction and arrangement of the several parts might be made and substituted for those shown and described without in the least departing from the nature or spirit of the invention.

Having thus described the invention, what is claimed as new is—

1. In a range-finder, the combination of a stationary base, a table movably mounted thereon and having at one side thereof a stationary sight or seeker, a dial on the said table, an indicator movable over the said dial, an adjustable sight or seeker on the opposite side of the table supported on an upright the latter projecting downwardly through the said table, an arm attached to the lower end of the said sight or seeker, a train of intermeshing gears for operating the said indicator and actuated by the inner end of said arm, and an adjusting-rod attached to the said arm and extending outwardly through one side of

the table adjacent to the movable seeker, substantially as described.

2. In a range-finder, the combination of a base, a table movably mounted therein having depending hangers with rollers therein engaging the said base, a sight or seeker stationarily mounted on one side of the table, a dial-plate on the said table, an indicator relatively acting with said dial-plate, a sight or seeker having a support extending through and adjustably carried by the opposite side of the said table, an arm connected to said support of the adjustable sight or seeker and having rack-teeth on the inner end thereof, a series of intermeshing gears engaging the inner end of said arm and the indicator, and an adjusting-rod attached to the said arm, substantially as described.

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

WILLIAM MORAN.

Witnesses:

CHARLES GALLAGHER,
E. A. CLOSE.