

No. 619,047.

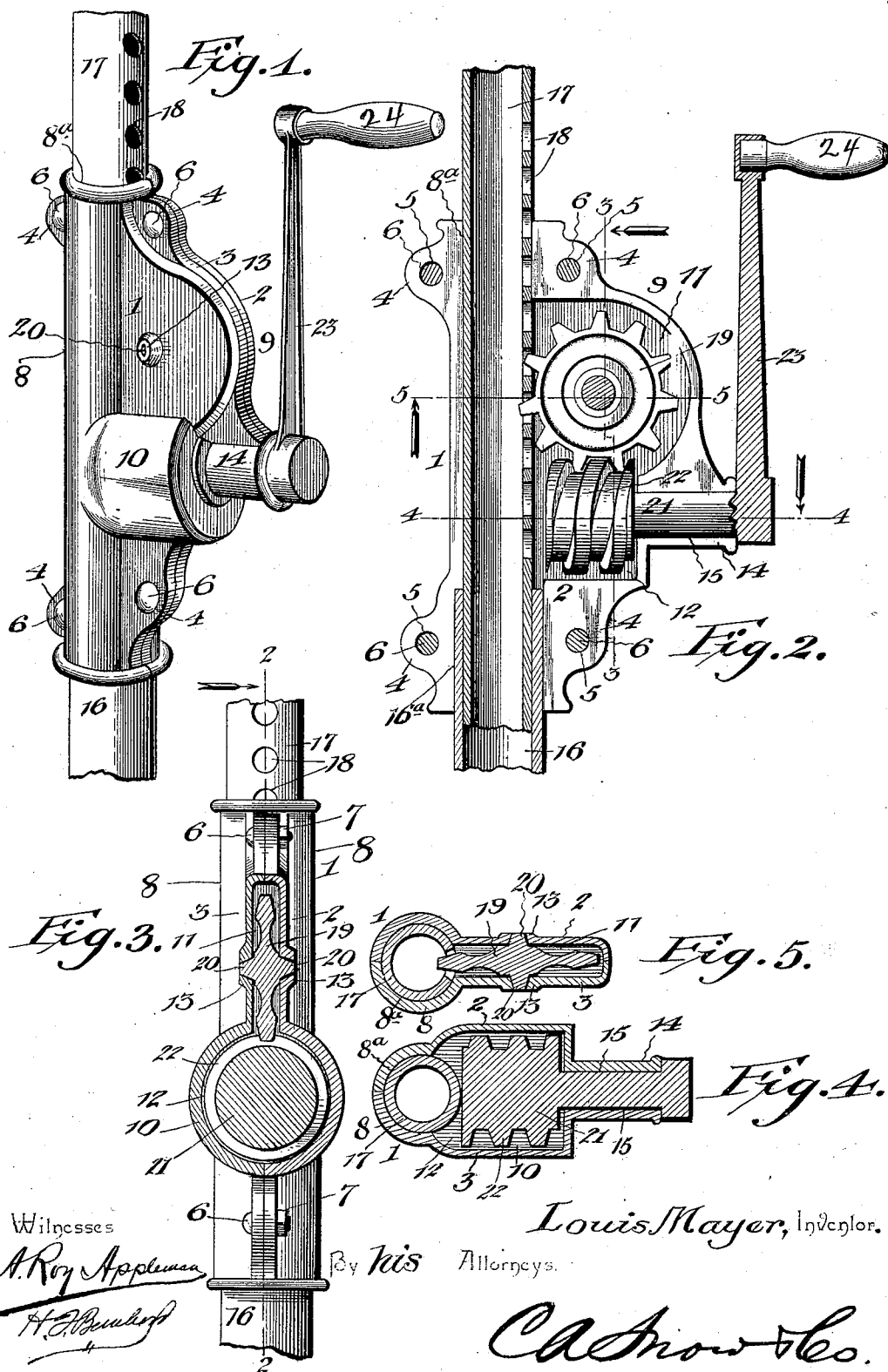
Patented Feb. 7, 1899.

L. MAYER.

ADJUSTING DEVICE FOR CLOTHES REELS.

(Application filed Feb. 21, 1898.)

(No Model.)



UNITED STATES PATENT OFFICE.

LOUIS MAYER, OF MANKATO, MINNESOTA.

ADJUSTING DEVICE FOR CLOTHES-REELS.

SPECIFICATION forming part of Letters Patent No. 619,047, dated February 7, 1899.

Application filed February 21, 1898. Serial No. 671,152. (No model.)

To all whom it may concern:

Be it known that I, LOUIS MAYER, a citizen of the United States, residing at Mankato, in the county of Blue Earth and State of Minnesota, have invented a new and useful Adjusting Device for Clothes-Reels, of which the following is a specification.

My invention relates to improvements in devices for vertically adjusting clothes-reels, although it is well adapted for use in other arts or relations where it is desirable to vertically adjust a device or a part thereof; and the object that I have in view is to provide a simple, strong, and durable structure which may be readily applied to a supporting-standard to hold itself in a fixed position thereon and which is cheap of manufacture, owing to the small number of its parts and to their simple construction.

In my improvement I employ a boxing or housing made in two complementary sections adapted to be readily assembled and clamped around a supporting-standard to hold itself securely in a fixed position thereon, and said sectional housing is constructed to serve as a guide for the vertically-adjustable stem and to support all of the operating contrivances by which said stem may be raised or lowered as desired.

My adjusting device has gearing of the type known to the art as "worm-gearing," adapted to serve as the means for adjusting and for holding or locking the stem at its adjusted position, and the parts of such worm-gearing are peculiarly constructed for being readily fitted in or assembled to the boxing or housing without requiring special construction of bearings for the reception of the parts or members of such gearing.

The invention consists in the novel construction and arrangement of parts, which will be hereinafter fully described and claimed.

The accompanying drawings fully illustrate my improved adjusting device, in which—

Figure 1 is a perspective view of the adjusting device in its entirety. Fig. 2 is a vertical sectional elevation on the plane indicated by the dotted line 2 2 of Fig. 3. Fig. 3 is a sectional elevation at right angles to the plane of section of Fig. 2 and on the dotted line 3 3 of said Fig. 2. Fig. 4 is a horizontal

sectional view through the worm-shaft and the boxing on the plane indicated by the dotted line 4 4 of Fig. 2. Fig. 5 is a horizontal sectional view through the worm or sprocket-wheel on the plane indicated by the dotted line 5 5 of Fig. 2.

Like numerals of reference denote like and corresponding parts in each of the several figures of the drawings.

In my improved adjusting device I employ the boxing or housing 1, of novel construction, adapted to be clamped to a fixed standard and to serve as a means for guiding a vertically-adjustable stem, which may carry the clothes-reel or other device or a part of such device for vertically adjusting the same. The boxing or housing is bisected vertically and longitudinally to produce the complementary members or sections 2 3, adapted to be readily fitted together around the supporting-standard. Said members are constructed with lugs 4, having flat faces adapted to bear firmly against each other, and the lugs or faces of said sectional boxing have the transverse perforations 5 to receive the short bolts 6, the headed ends of which bear against one member, while the nuts 7 are screwed on the threaded ends of said bolts to bear against the other member, whereby the boxing or housing may be readily clamped on the supporting-standard and its members securely united together to receive and support the operating parts of the adjusting device. Each complementary member or section of the boxing is cast in a single piece, and it is formed with a semitubular guide 8, a curved offset 9 in a vertical and longitudinal plane at one side of said semitubular guide 8, a lateral curved offset 10, standing in a plane at right angles to the offset 9, and the horizontal semitubular portion 14. When the complementary members of the boxing are assembled together and united by the transverse bolts, the semitubular guide portions 8 register to produce a vertical passage or opening 8^a through the boxing. The longitudinal offsets 9 and the lateral offsets 10 also register or coincide to form the upper chamber 11 and the lower chamber 12, and the horizontal semitubular portions 14 also register with each other to form the shaft-bearing 15.

From the foregoing description it will be understood that the vertical semitubular portions 8 of the two members form the vertical guide 8^a; that the longitudinal curved offsets 9 provide the chamber 11, adapted to receive the sprocket or gear wheel; that the lateral curved offsets 10 provide the lower transverse chamber 12 to accommodate the worm that actuates the gear or sprocket wheel, and that the horizontal semitubular portions 14 provide the bearing 15 for the worm-shaft.

The longitudinal curved offsets 9 at one side of the vertical plane of the guide through the boxing are provided with the integral bearings 13, which are in line with each other and the axis of which is at right angles to the axial line of the shaft-bearing 15, said bearing 15 being on a horizontal plane below the bearings 13 and in the plane of the lower worm-receiving chamber 12.

It will be understood that the bearings 13 and 15 are provided in the boxing at the time when the members thereof are cast, thus reducing to a minimum the machine-work on the boxing required to fit the latter for the purpose of receiving the various parts of the adjusting device, and the described construction of the boxing or housing enables the same to be produced rapidly and economically.

16 designates the standard, which is fitted in a recessed foot 16^a in the lower part of the boxing 1, such foot being in line with the vertical guideway 8^a through the boxing. The standard 16 may be and preferably is tubular, as shown by Fig. 2, and the boxing is adapted to be rigidly clamped around the upper part of said standard.

The stem 17, which carries the clothes-reel or other device which it is desired to adjust, is loosely fitted in the vertical tubular guide provided by the boxing or housing, and, as shown by Fig. 2, this stem is tubular and of a diameter less than that of the tubular standard 16, thus enabling the stem to slide endwise into the standard and affording a greater range of adjustment for the stem. In the side of the stem which faces toward the chambers of the boxing or housing I provide a series of transverse apertures spaced at suitable intervals apart and arranged in a vertical row for the purpose of having the sprocket or gear wheel (presently referred to) engage with said apertures in the stem to adjust the latter up or down, according to the direction in which said gear or sprocket wheel is rotated by the worm-shaft. This gear or sprocket wheel is indicated at 19 in the several figures of the drawings, and it is provided with the integral trunnions 20, which are in axial alinement with each other and adapted to be fitted loosely in the integral bearings 13 in the longitudinal curved offsets 9 of the boxing. The sprocket-wheel is thus journaled in the boxing within the upper chamber 11 thereof, and on one side of said wheel its teeth are adapted to project into the apertures 18 of the tubu-

lar stem, thus operatively connecting said sprocket-wheel with the stem which is to be adjusted.

The worm-shaft is indicated at 21 as journaled in the horizontal bearing 15 of the boxing. The inner end of this shaft carries the worm 22, which occupies the lower chamber 12 of the boxing, and said worm meshes or gears with the teeth of the sprocket-wheel 19 for the purpose of rotating the latter in one direction or the other and of locking said gear-wheel when the crank-handle is at rest, thereby preventing the gear-wheel from being rotated under the load on the stem 17. The protruding end of the worm-shaft is provided with a crank 23, which may be integral with said shaft or rigidly attached thereto, and to the extremity of said crank is attached a suitable operating-handle 24.

The operation of my device will readily be understood; but it may be described briefly as follows: To raise the stem, the crank is turned by hand in one direction to rotate the worm and the sprocket-wheel, which in turn elevate the stem. By reason of the employment of the worm meshing with the sprocket-wheel the stem is maintained in its elevated or adjusted position without the employment of a separate locking device. To lower the stem, the crank is rotated in the reverse direction to correspondingly actuate the worm and sprocket-wheel, the latter serving to depress the stem for the desired distance.

My improved construction of the boxing enables the worm-shaft and sprocket-wheel to be readily fitted in their respective bearings when the complementary members 2 3 are assembled together, and said members may readily be secured around the upper extremity of the supporting-standard. The recess in the foot of the boxing provides a shoulder against which the upper edge of the standard may abut, thus fitting the boxing to the standard against any tendency to vertical displacement owing to the weight on the stem or the strain on the adjusting device when the latter is in service.

It will be understood that changes in the form and proportion of parts may be made by a skilled mechanic without departing from the spirit or sacrificing the advantages of the invention.

Having thus described the invention, what I claim is—

1. In an adjuster for clothes-reels and other devices, a bisected boxing comprising the complementary members each cast in a single piece with the semitubular vertical guide, the vertical offset protruding from one side of said guide, the lateral offset standing at right angles to the longitudinal offset, the horizontal shaft bearing in the plane of the lateral offset, and the shaft bearing in the longitudinal offset, and said members assembled and united together to provide a tubular guide and the two chambers, combined with a tubular standard clamped in the lower end of the boxing-

guide, a rack-formed stem slidably fitted to the guide, a horizontal shaft journaled in one bearing and having a worm which is housed within one boxing-chamber and lies at one side of the stem, and a gear located in the other box-chamber at one side of the stem to mesh with said worm and the stem having its trunnions mounted in the shaft-bearings of the vertical offsets of said boxing, substantially as described.

2. In an adjuster for clothes-reels and other devices, the combination of a two-part boxing having its vertical guide formed with a shouldered recess and with the chambered offsets in a vertical plane at one side of the tubular guide, a tubular standard clamped in the recess of said tubular guide to have the passage

in the standard coincident with the passage of the guide, an apertured stem slidable freely in the tubular guide and the tubular standard, a shaft journaled in the boxing and having a worm which is housed within one chamber of the boxing, and a gear journaled in the other chamber of the boxing and meshing with said worm and the stem, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

LOUIS MAYER.

Witnesses:

ARTHUR SCHAUB,
A. ANDERSON.