(No Model.)

2 Sheets—Sheet 1.

G. C. STEVENS & C. D. READ.

SPINDLE AND BEARINGS THEREFOR.

No. 260,504. Patented July 4, 1882.

Fig. 1.

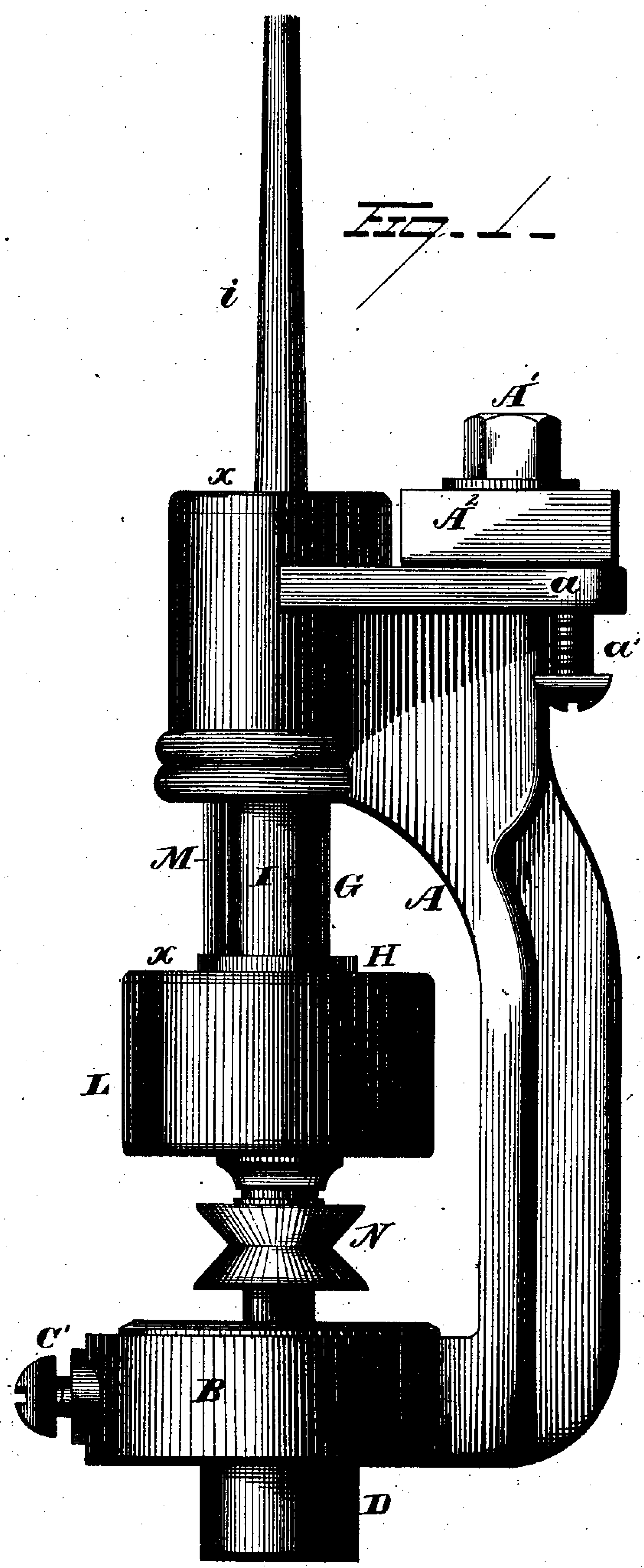
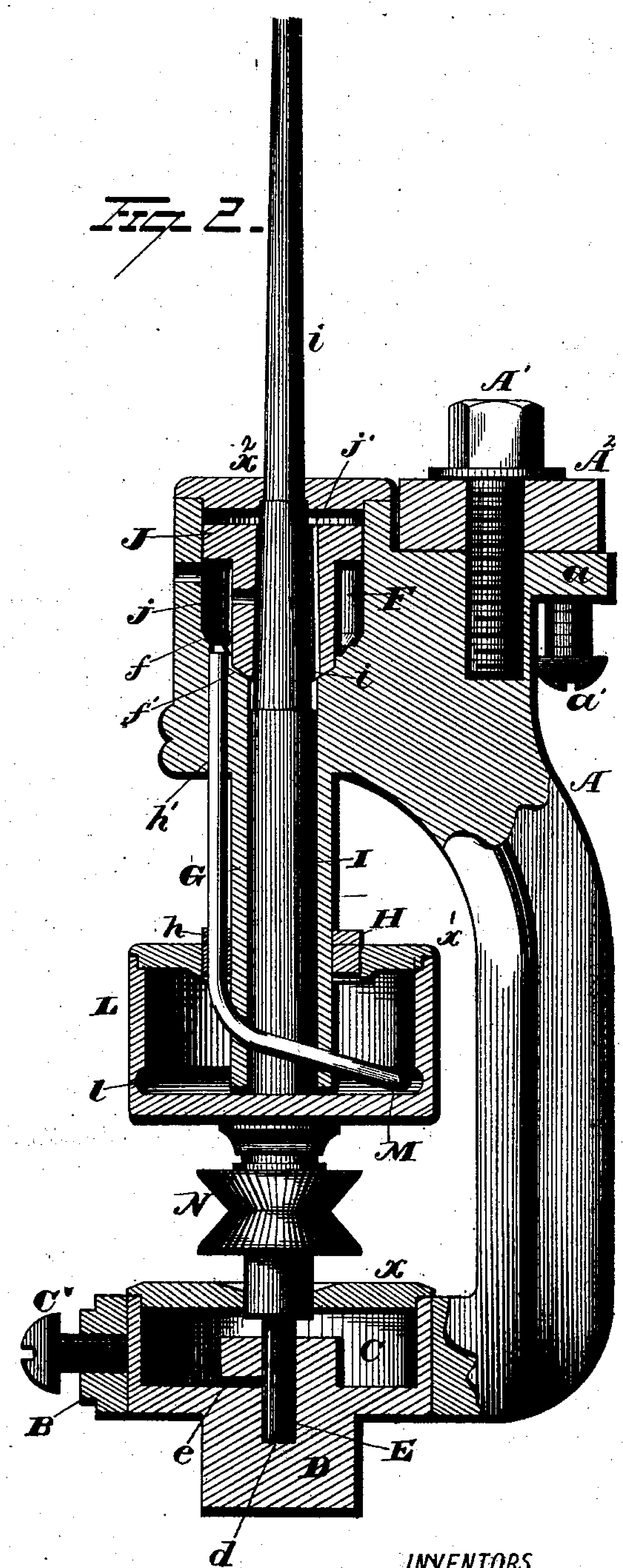


Fig. 2.



WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

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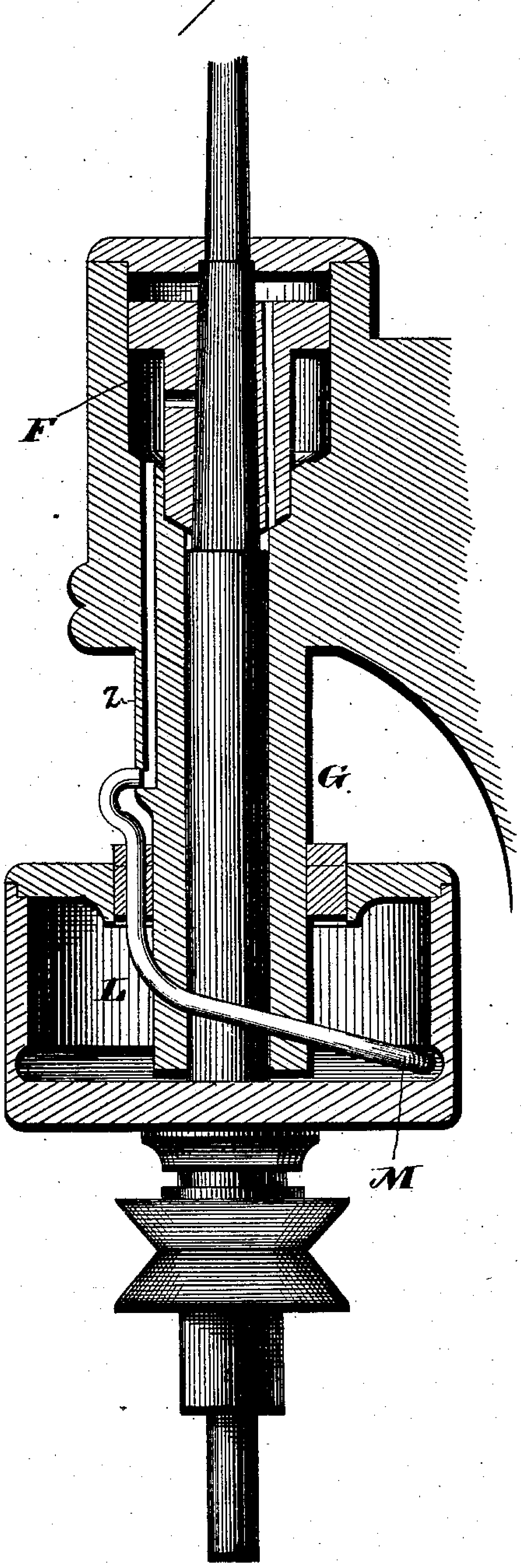
Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE C. STEVENS AND CALVIN D. READ, OF AYER, MASSACHUSETTS.

SPINDLE AND BEARING THEREFOR.

SPECIFICATION forming part of Letters Patent No. 260,504, dated July 4, 1882.

Application filed March 17, 1882. (No model.)

To all whom it may concern:

Be it known that we, GEORGE C. STEVENS and CALVIN D. READ, of Ayer, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Spindles and Bearings Therefor; and we 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 pertains to make and use the same.

Our invention relates to an improvement in spindles for cotton-spinning machines or other purposes, the object being to provide a spindle with a tapering bearing to admit of compensation for wear, and to combine with the spindle lubricating devices so constructed and arranged as to insure a regular and uniform oiling of the parts and a consequent free revolution of the spindle.

The invention consists in the improved construction and combinations of devices hereinafter fully described, and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a spindle and its attachments constructed in accordance with our invention. Fig. 2 is a central longitudinal section of the same, and Fig. 3 is a modification, shown partly in section.

A represents the holder for the bolster and step of the spindle, provided with a lower loop or bearing, B, adapted to receive a lower oil-receptacle, C, which is removably secured in the bearing by a set-screw, C′. The oil-receptacle C is provided with a central boss or hub, D, having a vertical perforation, *d*, to receive the step E of the spindle, and a horizontal perforation, *e*, near the bottom of the hub, which communicates with the perforation *d* to feed oil to the latter to lubricate the step E of the spindle.

F represents the upper cylindrical chamber of the holder, provided with inner shoulders, *f* and *f′*, and a depending tube or shell, G, the latter having a fixed collar, H.

The spindle I passes through the chamber F and its shell G, and is provided with a tapering bearing, *i*, which bears in a corresponding bolster loosely mounted on said bearing *i* of the spindle, and may be removed after removing the cover of the receptacle F.

The bolster J is arranged within the chamber F. This bolster is provided with a horizontal perforation, *j*, and a vertical perforation, *j′*, for a purpose hereinafter explained.

An oil-receptacle, L, is rigidly mounted on the spindle below the chamber F, and is adapted to revolve with the spindle. It is provided interiorly at its lower edge with an annular groove, *l*, to receive the end of a spirally-bent tube, M, which latter passes through a perforation, *h*, of the collar H, and into the chamber F through a perforation, *h′*, of the latter.

Any suitable whirl, N, is mounted on the spindle to revolve the latter by means of a driving-belt.

The oil-receptacles C and L and the chamber F are provided with suitable caps or covers, *x*, *x′*, and x^2.

The step E of the spindle receives its oil through the horizontal perforation *e*, formed in the hub D, from the oil-receptacle, which will supply oil to the step as long as there is any oil in the receptacle C.

The tapering bearing *i* of the spindle is lubricated by means of the tube M, which, as above described, has its lower end bent spirally and arranged within the revolving oil-receptacle of the spindle.

The revolution of the oil-receptacle causes the oil to flow up through said tube into the chamber F, between the latter and the bolster J, and through the perforation *j* of the latter to the tapering bearing *i* of the spindle.

The lower end of the tube enters the annular groove *l* of the revolving oil-receptacle, so that oil will be fed to the spindle as long as there is any in the reservoir.

If at any time the oil should rise above the bolster J, between the collar of the latter and the chamber F, it will flow into the vertical perforation *j′* of the bolster and pass back through the shell G to the oil-receptacle.

The tapering bearing *i* of the spindle admits of the vertical adjustment of the spindle to compensate for wear.

The upper end of the holder is provided with a horizontal flange, *a*, adapted to receive a bolt, A′, which pivotally secures the said holder to the rail A^2 of the spinning-frame. Said flange is also perforated to receive screws *a′*, adapted to have their upper ends bear against the rail A^2 of the frame. The spindle may be adjusted slightly to make it plumb by means of the screws *a′* in the holder. The spindle

thus described will be uniformily lubricated, and will revolve easily and regularly.

It will be apparent that many slight changes in the form and construction of our improvement may be resorted to without departing from our invention. For instance, as illustrated in Fig. 3, instead of extending the tube M up into the chamber F, a rib or enlargement, *z*, may be formed on one side of the shell G, and perforated vertically to communicate with the chamber F and horizontally to receive the upper end of the tube M.

We do not limit ourselves to the precise construction shown and described, but reserve to ourselves the right to make such alterations in form and construction as may properly fall within the scope of our invention.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a spindle and a bolster for supporting its upper portion, of an oil-receptacle located below the bearing and attached to the spindle, and an oil-conduit extending from said bearing downwardly and into the oil reservoir or receptacle, substantially as set forth.

2. The combination, with the upper chamber of the holder, of a spindle passing through said chamber, and provided below the latter with a revolving oil-receptacle, a bolster surrounding the spindle within said chamber, perforated both vertically and horizontally, and an oil-tube whose upper end extends within said chamber, while its lower end is spirally bent within the revolving oil-receptacle, whereby oil is fed upwardly by the revolution of the oil-receptacle, substantially as set forth.

3. The combination, with the upper chamber of the holder and its perforated bolster, of a spindle having a tapering bearing revolving in said bolster, and a revolving oil-receptacle provided at the lower edge of its interior with an annular groove, and an oil-tube whose upper end extends within said chamber to lubricate the tapering bearing of the spindle, while its lower end is arranged within the revolving oil-receptacle and spirally bent to extend into the annular groove of the latter, substantially as set forth.

4. The combination, with the spindle, bolster, and the upper chamber of the holder, provided with a downwardly-projecting tube or shell, and the revolving oil-receptacle of the spindle, of an oil tube or passage whose lower end is spirally bent and arranged within said revolving oil-receptacle, while its upper end communicates with said upper chamber to lubricate the tapering bearing of the spindle, substantially as described.

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

GEORGE C. STEVENS.
CALVIN D. READ.

Witnesses:
WILLIAM A. WRIGHT,
CLARK A. BATCHELDER.