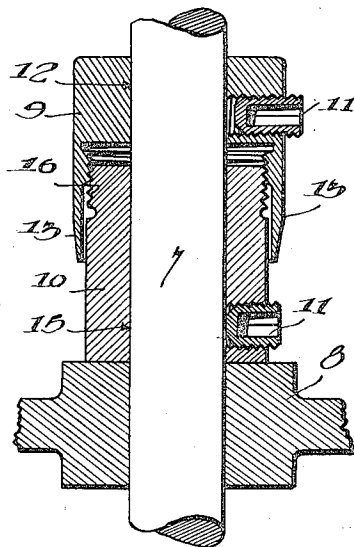
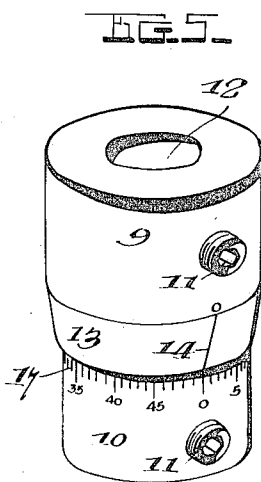
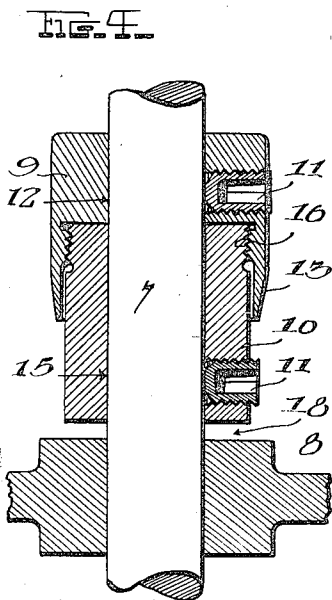
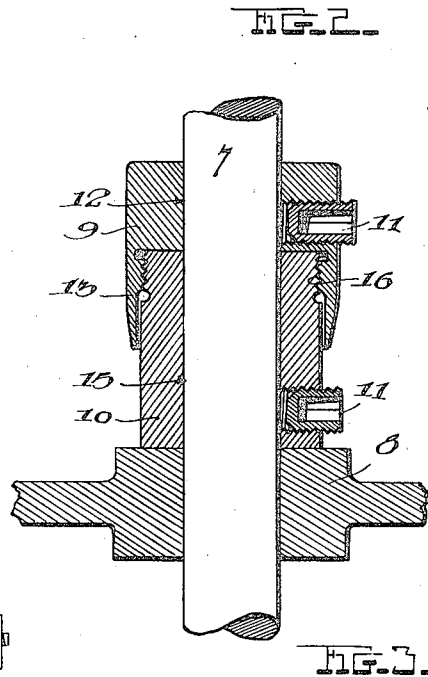
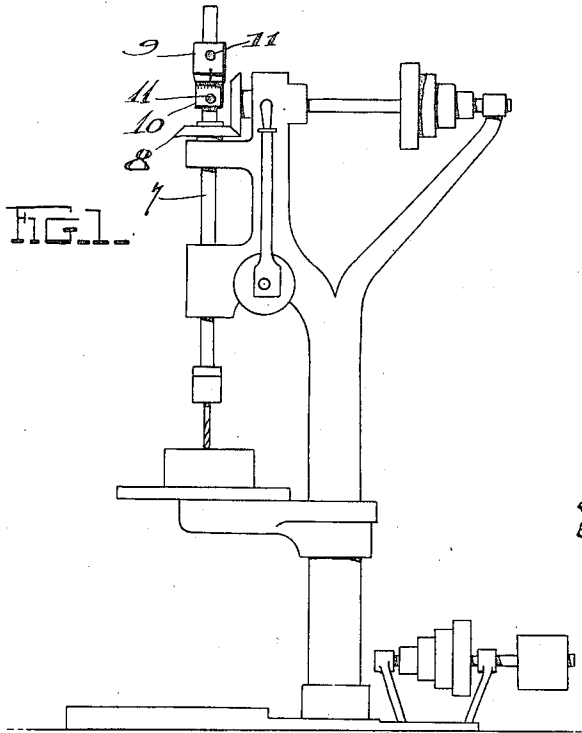


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MICROMETER DRILLING GAGE.
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1,305,872.

Patented June 3, 1919.



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MICROMETER DRILLING-GAGE.

1,305,872.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BERT BOLLIE, a citizen of the United States, residing at Aurora, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Micrometer Drilling-Gages; and I do 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 micrometer drilling gages, and it relates more specifically to an attachment for drill-spindles of machines used in drilling holes in metal.

One object of this invention is to provide a micrometer gage which is attachable to any drill press of ordinary construction;

A further object of this invention is to provide a device of this character which is attachable directly to the spindle that carries the drill or similar tool so as to preclude any inaccuracy which might result from lost motion if the device were elsewhere attached;

Another object is to provide a device of this character which may either act to effectually stop the spindle, or only act as a gage without stopping it, according to the desire of the operator;

Another object is to provide a device of this character which is strong, durable, convenient, accurate and thoroughly practical;

Another object is to provide a device of this character which consists of few and simple parts and may, therefore, be manufactured at a very low cost.

Other objects and advantages may become apparent to persons who read the following details of description in connection with the accompanying drawings, in which:

Figure 1 is a side elevation of a drill-press having my improved micrometer gage applied on the drill-spindle;

Fig. 2 is an enlarged vertical sectional view in the plane of the axis of the drill-spindle, this view illustrating the micrometer gage in the primary step of applying it to the spindle;

Fig. 3 is a view similar to Fig. 2, but showing the upper element of the device raised with relation to the lower element, the latter being now fixed to the spindle;

Fig. 4 is a view similar to Figs. 2 and 3, except that both elements are now secured to the spindle by their respective set-screws,

the measurement in this view being represented by the space between the lower element of the device and the upper surface of an element of the drill-press through which the spindle moves vertically; and—

Fig. 5 is a perspective view of my improved micrometer gage detached.

Referring to these drawings in detail, in which similar reference characters correspond with similar parts throughout the several views, the drill-press, being of ordinary construction, is not described in detail, except to mention the drill-spindle 7 and its adjuncts. By those who are familiar with the art, it is known that a drill-spindle of this character is rotated through the medium of a gear wheel 8 which is feathered to the spindle and permits longitudinal movement of the spindle with relation to the gear wheel 8; and that such longitudinal movement is imparted to the drill-spindle as the drill is fed into the body being drilled or bored. Therefore, the movement of the drill-spindle into the body being drilled is commensurate with the movement of the spindle through the gear element 8. With these considerations in view, it will be seen that by properly positioning a gage any desired distance above the element 8 on the spindle 7, the drill will have bored to the desired depth when the gage has moved down into contact with the element 8. In order that the depth of drilling may be measured very accurately, I provide my improved micrometer gage and secure it on the drill-spindle in the position required for the depth of hole to be drilled, and the construction of my improved gage is as follows:

The device comprises a sleeve or body 9, a second sleeve or body 10 and two set-screws 11. The body 9 is preferably cylindrical and formed with a cylindrical aperture 12 of a size to fit snugly about the spindle to which it is to be attached, the set-screw 11 thereof being engageable with the spindle for securing the body 9 in different adjusted positions on the spindle. The body 9 is also provided with an internally screw-threaded annular flange 13 which provides an annular space between the spindle and the flange, the exterior of the flange 13 being provided with an index 14. The body or sleeve 10 is provided with a through aperture 15 which is somewhat loosely fitted around the spindle 7, and this body may be fixed in different adjusted positions by means of its set-screw 11.

The body 10 is externally screw-threaded at 16, and these screw-threads are movably engaged with the internal screw-threads of the body 9. The body 10 is provided with
 5 a micrometer scale or annular series of graduations 17, these graduations being in position to register with the index 14. It will be understood that the scale 17 is made in accordance with the pitch of the screw-
 10 threads which connect the elements 9 and 10 together, and that any desired micrometer scale may thus be provided for this gage.

In applying this device to use, the bodies 9 and 10 are screwed together until the innermost end of the body 10 contacts with the inner radial surface of the body 9, at which time the index 14 will register with the "0" of the micrometer scale; the device is then placed around the spindle 7 in the position indicated in Fig. 2, and the lower screw 11 is then tightened so as to secure the body 10 temporarily to the spindle; next, the upper and outer body 9 is turned on the body 10 so as to bring the index 14 into position for
 25 registering the distance desired on the micrometer scale, and the upper member 9 is now fixed in this adjusted position by its set-screw 11; the lower set-screw 11 is now loosened, the body 10 is turned until the index 14 again registers at "0," thus transferring the measurement to the space indicated at 18 in Fig. 4; and now the lower set-screw is tightened so as to retain this adjustment. It will be seen, therefore, that the space indicated at 18 becomes narrower as the drilling of the hole progresses, and that when the lower end of the member 10 contacts with the upper side of the element 8, the hole has been drilled to the proper depth.

Although I have described this embodiment of my invention very specifically, it is not intended to limit my invention to these exact details of construction and arrangement of parts, but I am entitled to make
 45 minor changes without departing from the inventive idea disclosed in the foregoing description and following claims.

What I claim as my invention is:

1. In a gaging attachment for a spindle,
 50 a micrometer comprising a body having an index thereon and being provided with means to lock it to and release it from the spindle at different points along the spindle, and a body having a scale thereon and provided with a separate means to lock it to and
 55

release it from the spindle, these bodies being secured together by means that permits them to be moved with relation to one another to cause the index to register with different parts of the scale when either of the bodies is free from the spindle. 60

2. In a gaging attachment for a spindle, the combination of an internally threaded body having an index thereon and having an aperture therethrough and being provided
 65 with a set-screw adapted to extend from the outer surface into said aperture and engage with the spindle, and a cylindrical externally threaded body having an aperture therethrough and having a micrometer scale
 70 therearound and having a set-screw adapted to extend from its outer surface into the last said aperture and engage with the spindle, the internal threads of the first said body being meshed with and movable on the
 75 external threads of the last said body, said index being registerable with said micrometer scale.

3. The combination of a spindle, a body having an index thereon and connected to
 80 the spindle and movable therealong, a fastening element to secure said body on and release it from said spindle, a body having a scale thereon and being connected to the first said body by means which permits these
 85 bodies to be moved with relation to one another to cause the index to register with different parts of the scale when either of the bodies is free from the spindle, and a fastening element operable to secure the second
 90 said body to the spindle independently of the first said fastening element.

4. The combination with a spindle and an element correlated therewith, of a screw-threaded body adjustably secured on the
 95 drill-spindle, and a second screw-threaded body having its threads movably engaged with the threads of the first said body, said second body being disposed between the first said body and said element and being provided with means to secure it fixedly to the
 100 drill-spindle, one of said bodies being provided with a micrometer scale, the other of said bodies being provided with an index in position to cooperate with said micrometer
 105 scale.

In testimony whereof I have hereunto set my hand.

BERT BOLLIE.