(No Model.)

E. KUEHNE & D. W. BRYANT.

Mill Spindle Bush.

No. 231,962. Patented Sept. 7, 1880.

Fig. 1.

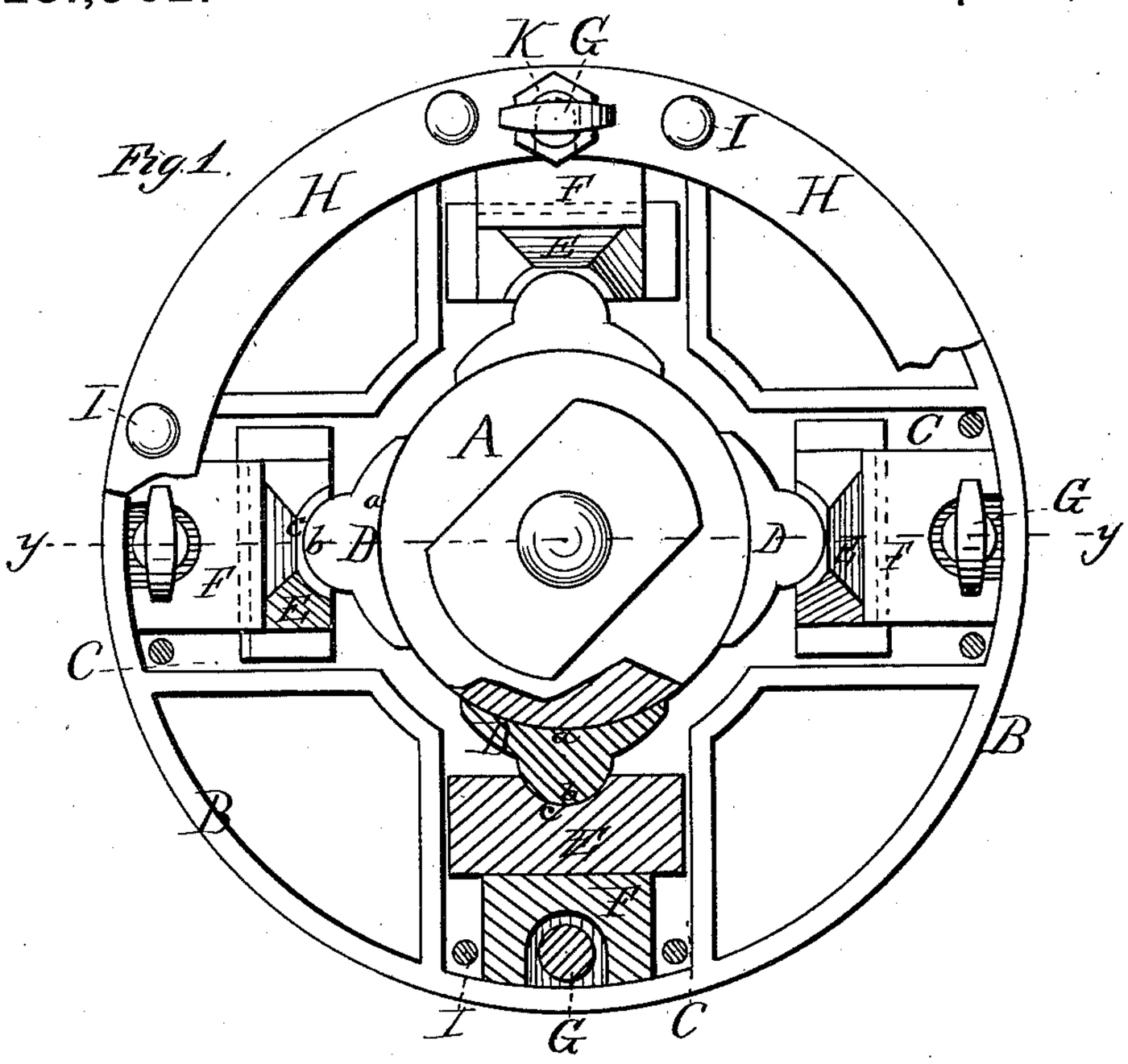
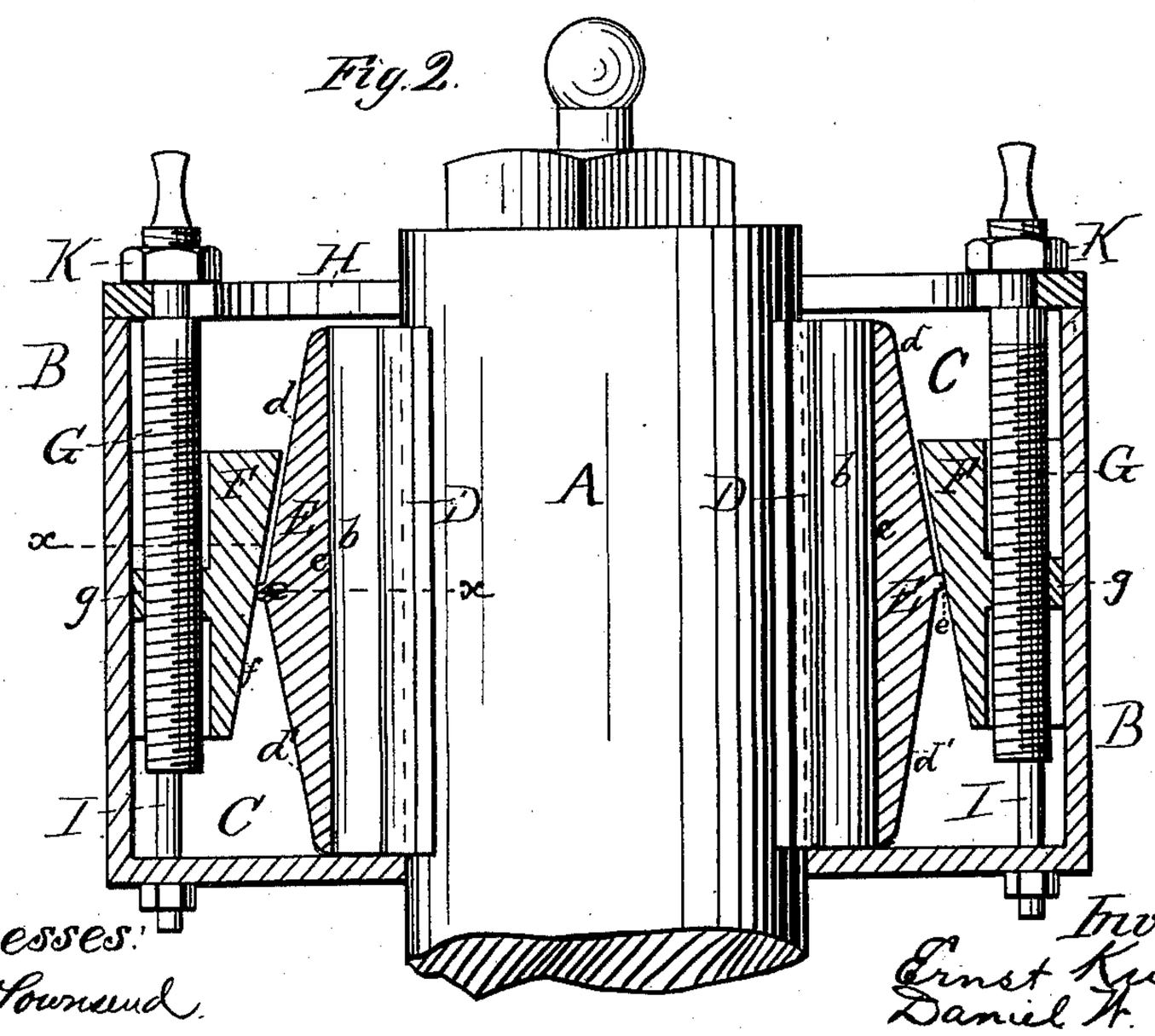


Fig. 2.



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UNITED STATES PATENT OFFICE.

ERNST KUEHNE AND DANIEL W. BRYANT, OF CHICAGO, ILLINOIS.

MILL-SPINDLE BUSH.

SPECIFICATION forming part of Letters Patent No. 231,962, dated September 7, 1880.

Application filed April 23, 1880. (No model.)

To all whom it may concern:

Be it known that we, ERNST KUEHNE and DANIEL W. BRYANT, both of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Devices for Tramming and Holding Millstone-Spindles, of which the following is a specification.

The object we have in view is to produce simple, durable, and efficient means for holding and tramming millstone-spindles which will permit of horizontal and vertical adjustments; and our invention consists in the peculiar devices for accomplishing this object, as fully hereinafter explained.

In the accompanying drawings, forming a part hereof, Figure 1 is a top view of a millstone-spindle and bush with our improvement attached, one of the devices being in lateral section on line *x x*, Fig. 2; and Fig. 2, a vertical section on line *y y*, the spindle being shown in elevation.

Like letters denote corresponding parts in both figures.

A is a millstone-spindle, and B is a bush of ordinary construction, having the usual pockets C for the tramming and holding devices.

D are the followers, made of any suitable material, and having concave bearing-surfaces *a*, which rest against the spindle, and provided on their backs with convex bearing-ribs *b*, upon which set the concave seats *c* of the gibs E. This construction permits the followers to rock on the gibs and to follow the surface of the spindle, so as to press uniformly thereon over their entire bearing-surfaces *a*. This same movement can be obtained by a construction the reverse of that shown—that is to say, the followers can be provided with seats and the gibs with projecting bearing-ribs, or the bearing-ribs and seats could be made somewhat angular instead of round.

The gibs E have their backs constructed with surfaces *d d'*, inclined inwardly toward the spindle from a central rib, *e*. This inclination is the same as that of the face of the keys F, which bear against the ribs *e*.

The keys F have inclined bearing-faces *f*, and are moved up and down by screws G, which work in nuts *g* in the keys.

The screws G are supported by a ring, H, which rests upon the shell of the bush, and is secured to such bush by bolts I, passing down through the bottom plate of the bush.

Above the ring H the screws G are threaded and have locking-nuts K, for locking the screws at any desired point of adjustment.

The screws may have flat or slotted heads, by which they can be turned, and they may extend partly or entirely through the bush.

It will be seen that the double inclination given to the backs of the gibs allows a rocking movement of the followers and gibs on the keys, so that the spindle can be adjusted in perfect tram with the face of the millstone and held rigidly in that position.

The devices for obtaining the horizontal and vertical adjustments are very simple and strong, and are very durable in use, since the wear is distributed over such large surfaces.

The ring H is narrow, and, resting on the shell of the bush, does not close the open top of the same, but permits the placing and removing of the followers and gibs without disturbing the wedge-keys and operating-screws.

What we claim as our invention is—

In a millstone-bush, the combination, with the locking wedge-keys F, operated by screws G, of the gibs E, having double inclined backs *d d'*, and the followers D, provided with concave faces *a*, and connected to the gibs by vertical bearings and seats *b c*, extending the entire length of the followers and gibs, substantially as described and shown.

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