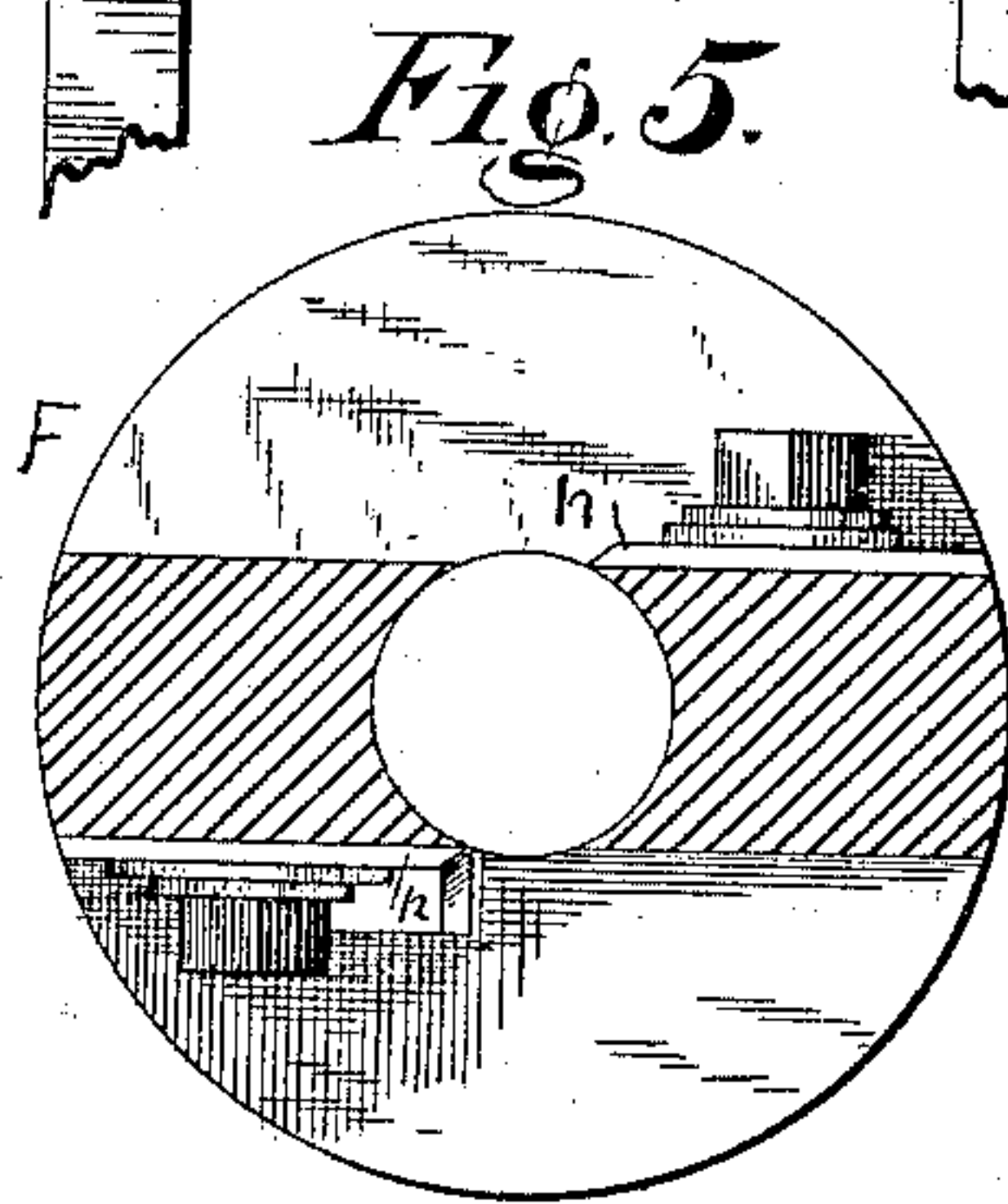
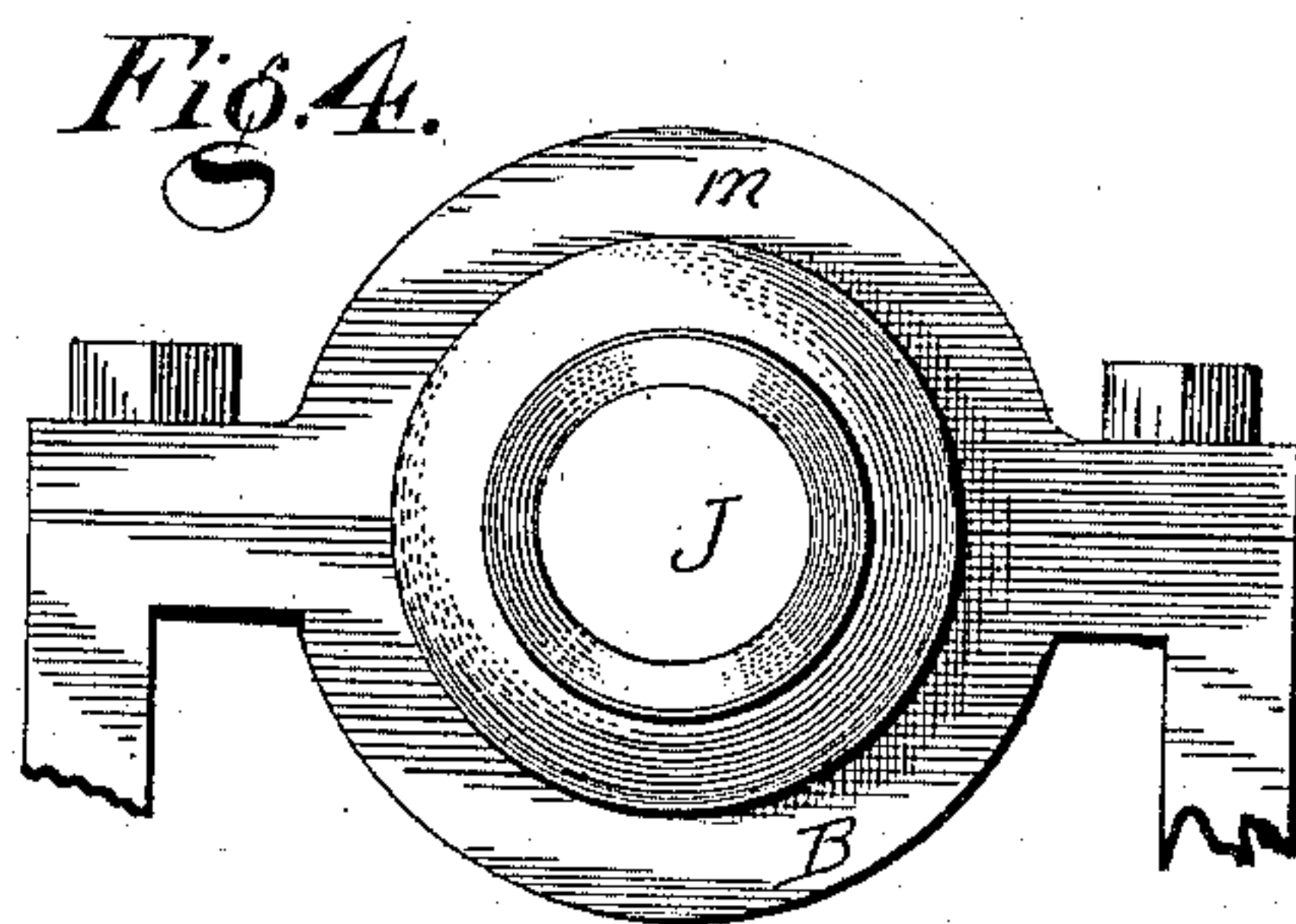
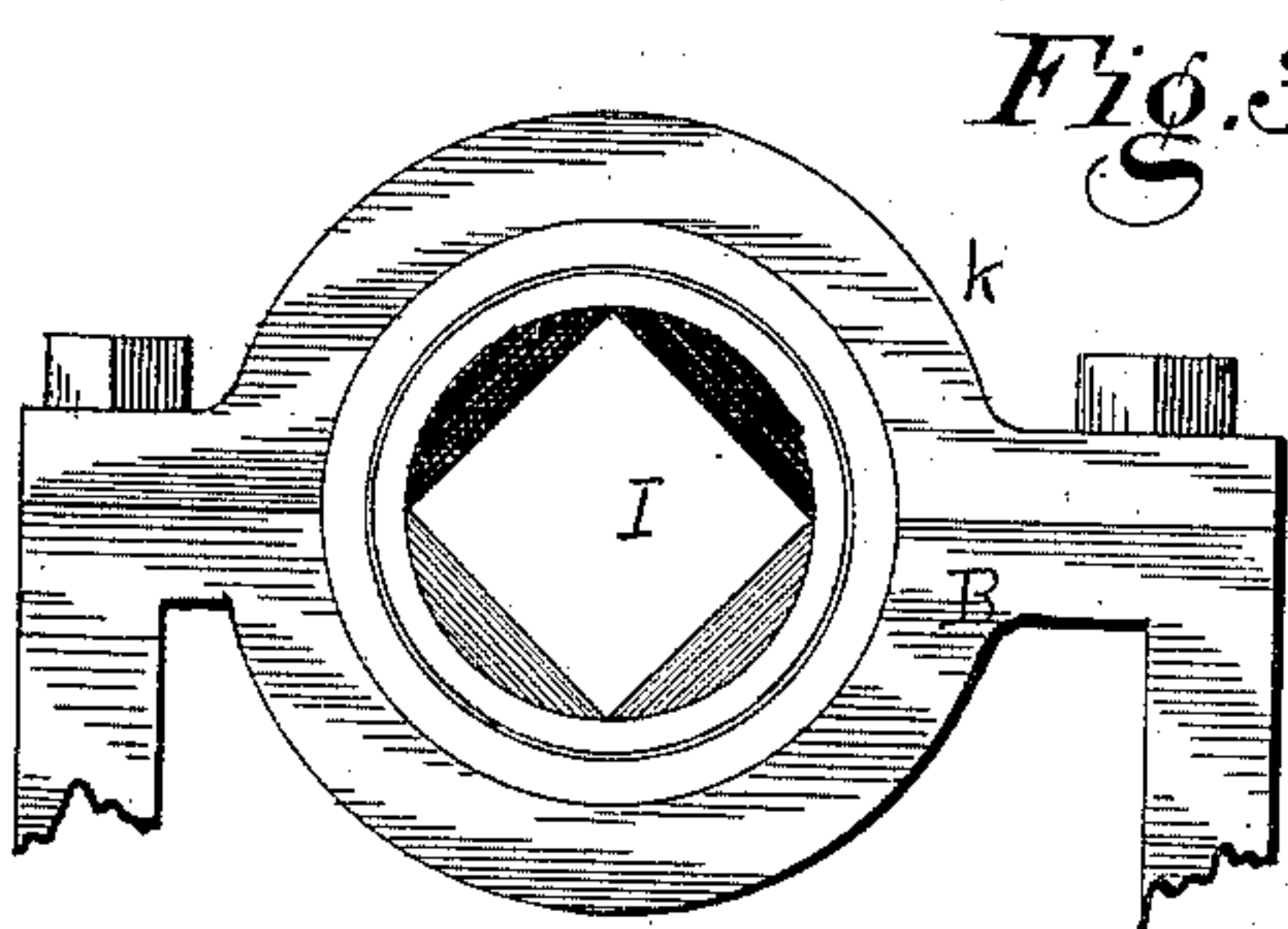
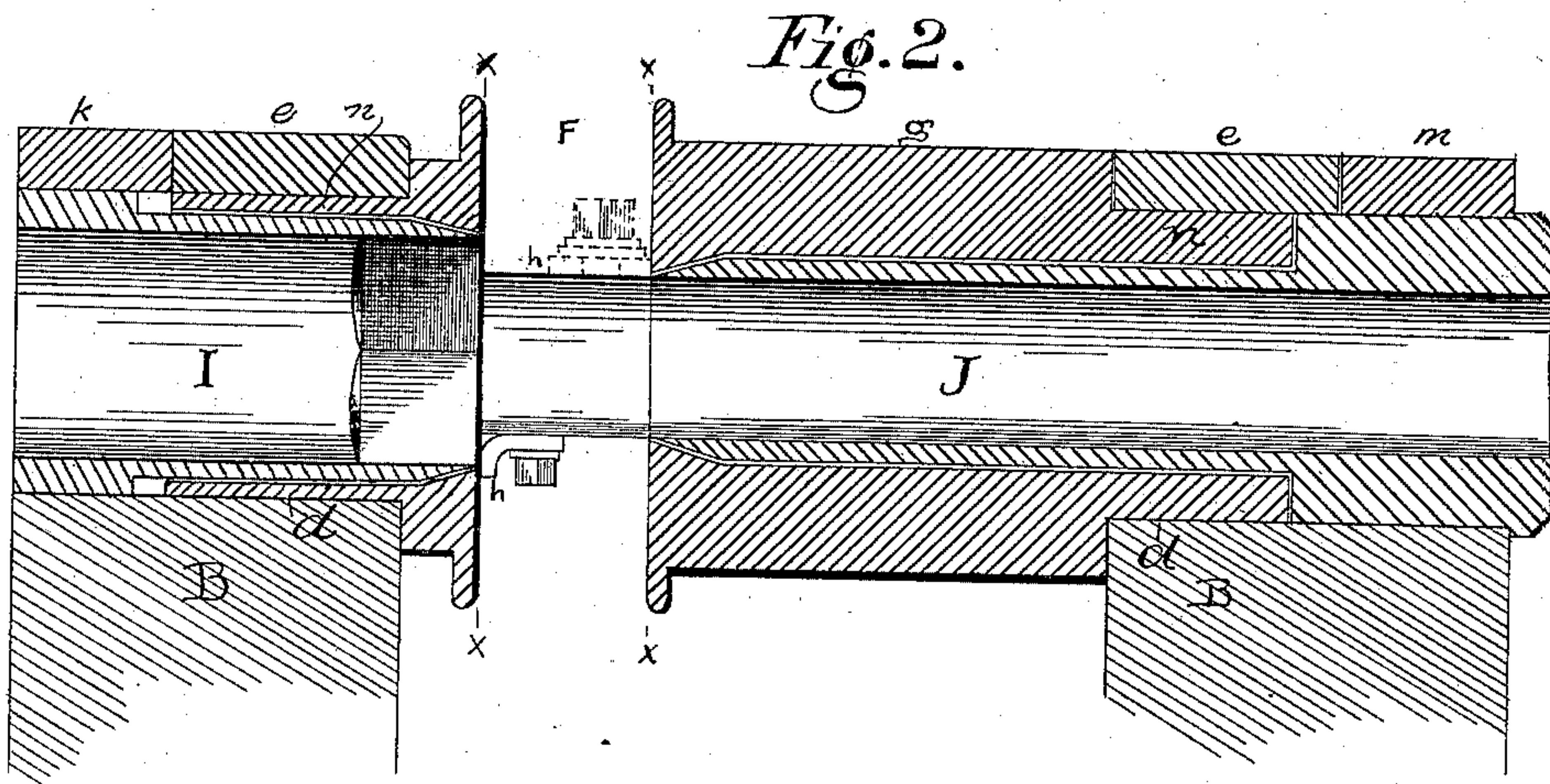
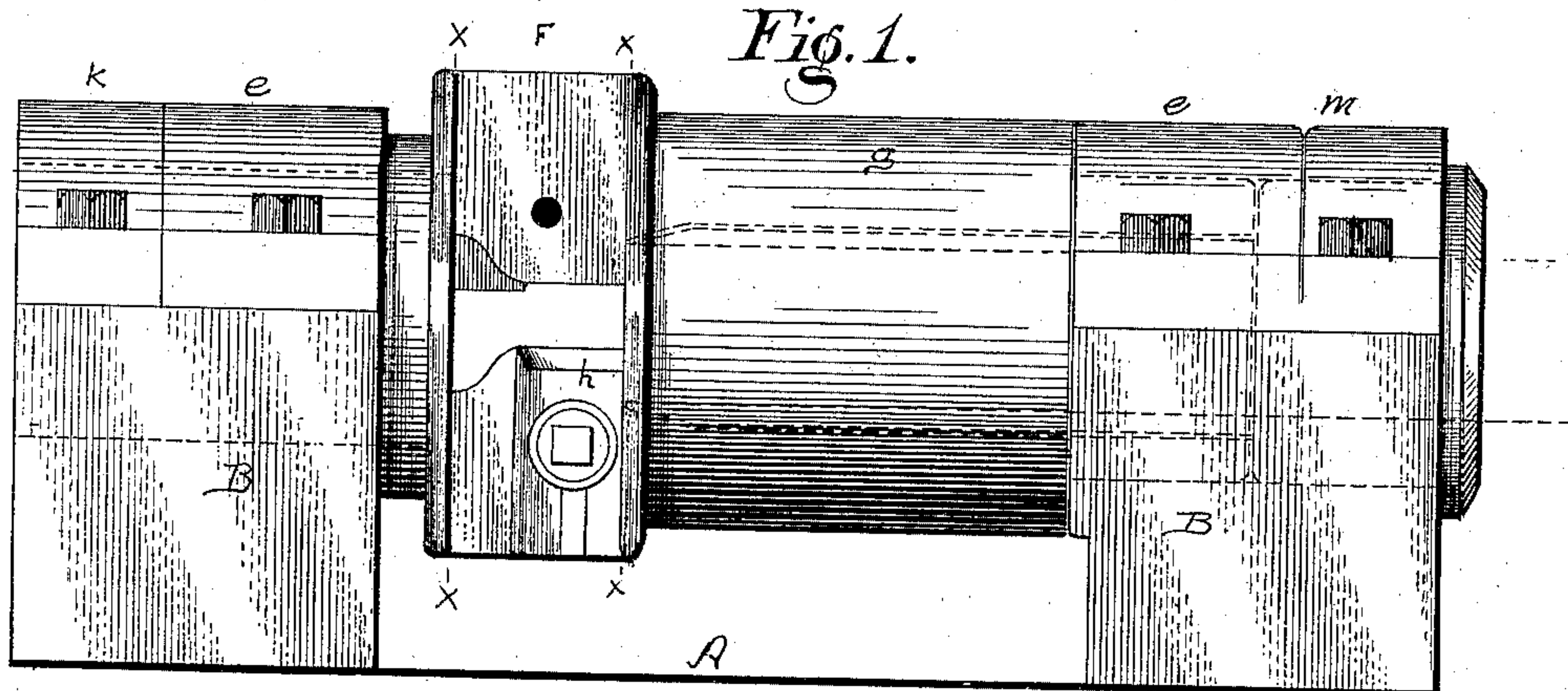


(No Model.)

G. PHILION.
TURNING LATHE.

No. 383,369.

Patented May 22, 1888.



Witnesses:
J. B. McGinn.
A. C. Rawlins.

Inventor:
George Philion,
By his atty
R. D. Smith.

UNITED STATES PATENT OFFICE.

GEORGE PHILION, OF MISHAWAKA, INDIANA, ASSIGNOR TO THE DODGE MANUFACTURING COMPANY, OF SAME PLACE.

TURNING-LATHE.

SPECIFICATION forming part of Letters Patent No. 383,369, dated May 22, 1888.

Application filed September 5, 1887. Serial No. 248,824. (No model.)

To all whom it may concern:

Be it known that I, GEORGE PHILION, of Mishawaka, in the county of St. Joseph and State of Indiana, have invented new and useful Improvements in that Class of Turning-Lathes Adapted to Turning Cylindrical Sticks or Poles; and I do hereby declare that the following is a full and accurate description of the same, reference being had to the accompanying drawings, wherein—

Figure 1 is a side elevation of my machine. Fig. 2 is a sectional elevation of the same. Figs. 3 and 4 are end elevations of the same. Fig. 5 is a central transverse section.

In machines of this character it is preferable to revolve the cutters and cause the stick to travel longitudinally without revolution, and it is essential that the stick shall not come in contact with any revolving part of the machine except the cutters, because it is essential that the stick shall be strongly supported close to the cutters, and if so supported in a part that revolves the entrance of a small quantity of sawdust or shaving is liable to wedge and stop the feed, and, by frictional heat, burn the surface of the stick. It is also essential that the revolving part shall rest in bearings which are always in line; otherwise said bearings are liable to heat. The sticks are usually square in cross-section, and to prevent them revolving with the cutters there is a guide at the entrance side provided with an angular opening corresponding with the cross-section shape of the stick, so that it is restrained from revolution as the cutter acts upon it. At the exit side there is a guide with a circular orifice corresponding in size with the diameter of the finished pole or stick.

I am aware that previous to my invention a lathe had been constructed with two tubular guides mounted above a bed plate or frame, one of said guides having a square orifice and the other having a cylindrical orifice, and a cutter-head mounted and revolving on the inwardly-projecting heads of said tubular guides; but that differs from my invention. The ends of said tubular guides were square and could not approach near to the plane of the cutters, and therefore the actual support of the stick

on the entering side was necessarily at a distance from the cutter, and on the exit side the support was in the revolving cutter-head itself. The tubular guides being removable from their supports, it was impossible to insure perfect alignment at all times, and consequently it was impossible to insure a perfect bearing for the cutter-head. These defects are obviated by my improvement, wherein the cutter-head revolves in permanent bearings on pillow-blocks rigidly attached to or integral with a solid bed-plate, and therefore permanent in relative position. The journals of the cutter-head are tubular, and tubular guides are inserted at their open ends and are independently supported by attachment to the pillow-blocks or other permanent support upon the bed-plate, and the ends of said tubular guides are so tapered that they may be extended to the plane of the cutter.

That others may fully understand my invention, I will particularly describe it.

A is the bed block or frame, provided with the pillow-blocks B B, and the journal-bearings *d d* are provided with caps *e e*, secured to the pillow-blocks by screws, as usual. The tubular cutter-head F is provided at each end with a journal, *n*, adapted to turn in the bearings *d d*, and, with the pulley *g*, to receive the running belt, whereby the cutter-head will be revolved. The central part is provided with seats for the cutters *h*, which are fastened in the usual way, so that when a stick of proper size is caused to pass through said cutter-head the cutters *h* will travel around it and reduce it to a cylinder. The central hollow of the cutter-head is increased in diameter at the plane of the cutter's entrance—that is to say, at the transverse plane at which the cutting begins, (indicated in the drawings at *xx*)—and a tubular guide, I, is inserted within the cutter-head, as shown, and secured permanently in position by strap *k*, which clamps said guides to the pillow-block or other permanent support. The guide I has an angular orifice adapted to receive the sticks to be rounded, and to restrain them from revolving with the cutters its inner end is conical or tapered on the outside, so that it may be extended into the cutter-head

to the plane of the cutter without unduly weakening said cutter-head at that point. At the exit end a guide, J, is similarly inserted into the hollow mandrel and rigidly secured by the strap *m*. The two supporting-sleeves of the cutter-mandrel are thus firmly supported on each side of the cutters, and at the same time the stationary guides I and J, by reason of their extending to the plane of the cutters, as already described, completely separate every part of said sleeves from the stationary piece of wood which is being operated upon. The inner end of the guide J is also conical, to enable it to advance to the plane of the cutter on the exit side. The guide J has a circular orifice corresponding in size with the diameter of the finished pole. The cutter-head F, therefore, revolves entirely independent of the guides I and J, and no part of said head except the cutters comes in contact with the stick under treatment, and said stick cannot be injured by failure to feed forward properly or by reason of sawdust or shavings drawn with it into the

guide J. The usual automatic feed may be employed.

Having described my invention, I claim—

1. The hollow revolving cutter-head F, provided with journals *n*, pulley *g*, and cutters *h*, and the permanent journal-bearings *d*, supporting and centering said journals on each side of the cutters, and caps *e e*, combined with the tubular guides I J, supported and secured independent of the cutter-head and entering the latter from each side thereof, as set forth.

2. A hollow revolving cutter-head, enlarged at the planes of the cutters on each side of the latter, provided with journals *n* and journal-bearings *d*, combined with guides I and J, tapered or conical at their inner ends, and extending from each side inward to the planes *x x* of the cutter, as set forth.

GEORGE PHILION.

Witnesses:

W. H. DODGE,

W. B. HOSFORD.