

A. H. Brainard,

Milling Mach.

No. 110,951.

Patented Jan. 17, 1871.

Fig. 2.

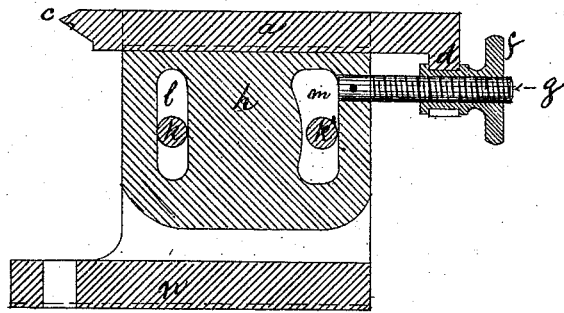


Fig. 1.

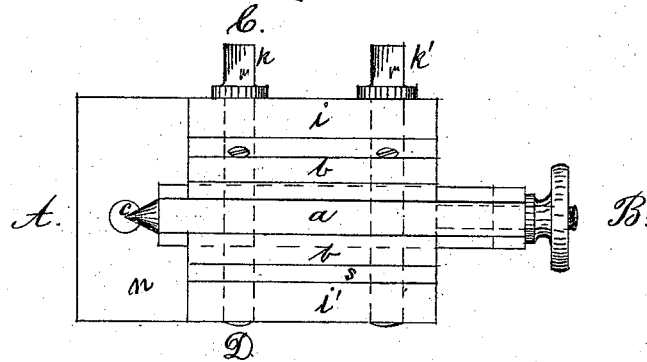


Fig. 3.

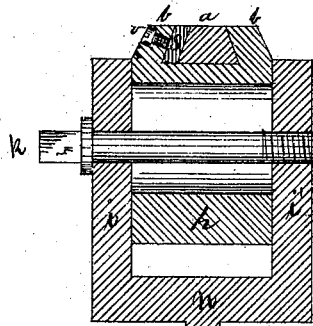


Fig. 4.



Witnesses:—

George Park
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Inventor:—

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by his attorney Alban Andrieu

United States Patent Office.

AMOS H. BRAINARD, OF HYDE PARK, MASSACHUSETTS.

Letters Patent No. 110,951, dated January 17, 1871.

IMPROVEMENT IN BACK CENTERS FOR MILLING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

I, AMOS H. BRAINARD, of Hyde Park, in the county of Norfolk and State of Massachusetts, have invented a new and useful Improvement in Back Centers for Milling and other Machines, of which the following is a specification.

Nature and Object of the Invention.

The object of my invention is to provide a simple and convenient back center or support for one end of arbors, reamers, or other work required to be supported at each end on centers, which shall always be in line with the arbor or other work, be the same higher or lower, or inclined to a horizontal line.

On the drawing—

Figure 1 is a plan;

Figure 2 is a longitudinal section on the line A B, fig. 1;

Figure 3 is a transverse section on the line C D, fig. 1; and

Figure 4 is a rear view of the bar *a*.

Similar letters refer to similar parts in all the figures.

a is a bar of dovetailed section, made so as to slide easily in the block *h*, and held firmly by the gib *s* and set-screws *v*, fig. 3, as shown.

On the front end of the bar *a* is a male center, made in the usual manner, shown at *c*, fig. 2, which forms the support for the arbor or other work, while the opposite end is furnished with a forked knee, as shown at *d*, fig. 2, and at *a e e*, fig. 4, which embraces the thumb-nut *f*.

The thumb-nut *f* is fitted to the screw *g*, which is firmly fixed in the block *h*.

The bar *a* may be moved backward or forward simply by turning this thumb-nut to the right or left.

The block *h* is fitted between two upright sides rising from a flat base, and is held in any required position by the screws or bolts *k k*. These bolts work in elongated slots in block *h*.

The slot *l* for the bolt *k* being simply a straight vertical slot, equal in width to the diameter of the bolt, which forms a movable pivot, on which the block *h* works when the point *c* is elevated or depressed.

The slot *m* for the bolt *k* is simply large enough to accommodate the different positions of the block *h*.

By this arrangement I can raise or lower the block *h* in a vertical direction, and also elevate or depress the center *c*, so as to line correctly with any desired angle to a horizontal line.

The uprights *i i* being cast in one piece with the base *n*, as shown in fig. 3, the whole may be attached readily to a milling or other machine.

My invention is operated as follows:

The base being firmly secured to the table of the machine, raise, lower, or incline the block *h* until the center *c* will exactly fill the counter-sink in the end of the arbor or other work supported. Screw up the bolts *k k*, and the block *h* is held firmly in its position. The thumb-nut *f* is then screwed up, so as to bring the center *c* in close contact with the counter-sink in the arbor, and the work is ready.

Machines of this kind have been made giving an inclined position to the bar *a*, but have always been of too complicated a nature for actual, practical, and daily use.

Having thus described the nature, construction, and uses of my invention, on which I wish to secure Letters Patent,

I claim—

The combination of the bar *a*, nut and screw *g f*, slotted block *h*, frame *n i i*, and bolts *k k*, substantially as and for the purpose set forth.

AMOS H. BRAINARD.

Witnesses:

ALBAN ANDREW,
FRANCIS GARDNER.