No. 744,002. PATENTED NOV. 10, 1903.

P. BELLE.

KNIFE GRINDING APPARATUS.

APPLICATION FILED JULY 23, 1903.

NO MODEL.

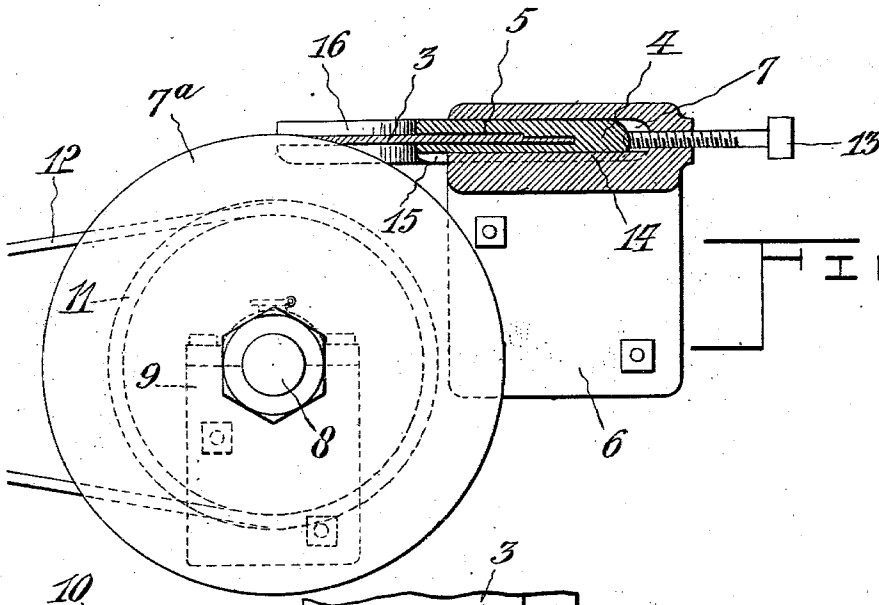


FIG. 1.

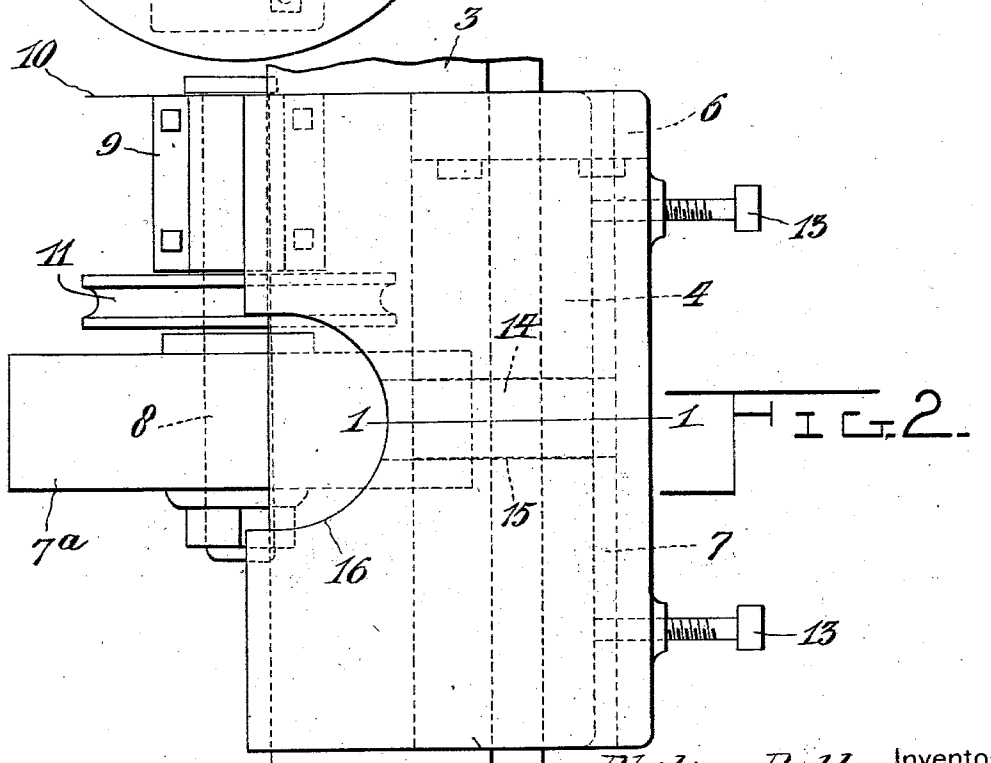


FIG. 2.

Witnesses:

John T. Dewhirst

George W. Colles

Philias Belle, Inventor

By Marion & Marion

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 744,002. Patented November 10, 1903.

UNITED STATES PATENT OFFICE.

PHILIAS BELLE, OF MONTREAL, CANADA.

KNIFE-GRINDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 744,002, dated November 10, 1903.

Original application filed March 21, 1903, Serial No. 148,939. Divided and this application filed July 23, 1903. Serial No. 166,685. (No model.)

To all whom it may concern:

Be it known that I, PHILIAS BELLE, a subject of the King of Great Britain, residing at the city and district of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Knife-Grinding Apparatus; and I do hereby declare that the following is 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.

My invention relates to an apparatus described in my patent application, Serial No. 148,939, filed March 21, 1903, of which this case is a division, such apparatus being an appliance for the purpose of continuously grinding the band-knife used in the machine described in that application and being applicable equally to any band-knife wherever used.

My invention consists, broadly speaking, in an emery or other grinding wheel which is arranged in proximity to the edge of the band-knife and given a rapid rotation from any suitable source of power, as one of the pulleys or shafts of the machine acting in conjunction with an adjustable knife-block which supports the edge of the knife in the neighborhood of said grinding-wheel.

My invention also comprises other constructions and combinations which will be hereinafter described, and more particularly pointed out in the claims.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation, the section being taken centrally through the guide-block on the line 1 1 of Fig. 2. Fig. 2 is a plan view thereof.

The band-knife to which this is applied (designated 3) comprises an endless steel strap which passes over pulleys and is moved continuously in one direction, continuously cutting material brought against it at a point intermediate between the pulleys. It is not, however, intended to limit this invention to band-knives, as other knives—as, for instance, a reciprocating knife formed of a steel strap stretched in a frame—could equally have my appliance applied to them, my main object being to keep the knife constantly sharp during its operation. It will be understood that a band-knife of this sort is ordinarily subject to lateral undulations or vibrations, which would ordinarily prevent a grinding-wheel or the like from being evenly applied. Besides, unless guided, the knife would tend to escape from or be pushed back from the emery-wheel and the result would be to produce a very uneven and ragged edge on the knife. Hence I provide primarily a guide-block 4 at the point at which the grinding-wheel is to be applied, this guide-block being flat and having a longitudinal deep slit 5 therein through which the knife passes. This guide-block is itself adjustably mounted in the bracket 6, which has a deep groove or recess 7, in which the guide-block is fitted to slide in a direction transverse to the knife, so as to adjust its position as it becomes ground in relation to the grinding-wheel 7^a, which latter is mounted on a shaft 8, turning in a journal-box 9, fixed upon the frame 10, and having a pulley 11, on which runs a belt 12, which gives the grinding-wheel a rapid rotation.

The bracket 6, which supports the guide-block, has in its rear side threaded sockets, in which turn set-screws 13, which serve as means for adjusting the position of the guide-block, and also the bracket should be provided with suitable means—such as a transverse rib 14, interlocking with a transverse groove 15 on the guide-block—to prevent the latter from moving longitudinally.

In my preferred form the guide-block is made sufficiently deep to receive the whole width of the knife, as shown, and to this end there is formed at the center thereof adjacent to the emery-wheel a gouge 16, by which the knife is surrounded on all sides without interfering with the latter, and provision is made for the wearing down of the knife. This though preferable is not an essential feature of my construction.

While I have shown in the accompanying drawings the preferred form of my invention, it will be understood that I do not limit myself to the precise form shown, for many of the details may be changed in form or position without affecting the operativeness or utility of my invention, and I therefore reserve the right to make all such modifications as are included within the scope of the fol-

lowing claims or of mechanical equivalents to the structures set forth.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination, a band-knife adapted to be maintained in continuous longitudinal movement, grinding means adjacent to the edge thereof, a slotted guide-block coöperating with said grinding means and through which said knife passes, and means for adjustably shifting said guide-block transversely to said knife.

2. In combination, a band-knife adapted to be maintained in continuous longitudinal movement, grinding means adjacent to the edge thereof, a slotted guide-block coöperating with said grinding means and through which said knife passes, a bracket supporting said guide-block and having a groove transverse with respect to the direction in which said band-knife moves, said guide-block projecting into said slot, and means carried by said bracket for adjusting said block.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

PHILIAS BELLE.

Witnesses:
T. MYNARD,
JOHN P. DEUFFERWIEL.