

(No Model.)

J. A. KAY.  
ENDLESS BAND KNIFE.

No. 286,706.

Patented Oct. 16, 1883.

*Fig. 4.*



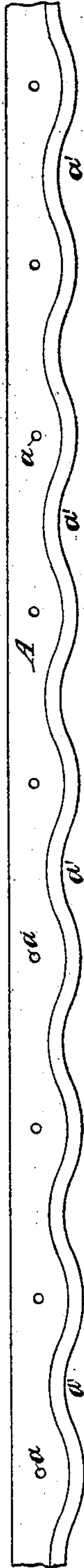
*Fig. 5.*



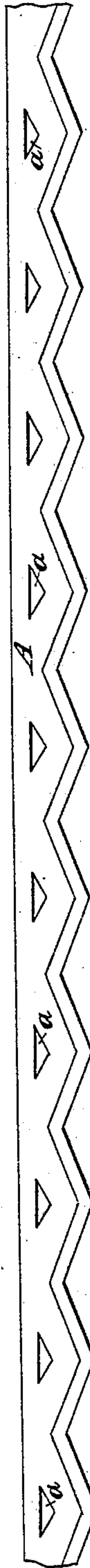
*Fig. 2.*



*Fig. 1.*



*Fig. 3.*



*Witnesses:*  
*Ed. L. Moran*  
*J. H. Leane*

*Inventor:*  
*Joshua A. Kay*  
*by his Attorneys*  
*Permit Brown*

# UNITED STATES PATENT OFFICE.

JOSHUA A. KAY, OF MELBOURNE, VICTORIA, ASSIGNOR OF ONE-HALF TO  
DAVID BEATH, OF SAME PLACE.

## ENDLESS BAND-KNIFE.

SPECIFICATION forming part of Letters Patent No. 286,706, dated October 16, 1883.

Application filed April 16, 1883. (No model.) Patented in Victoria May 19, 1882, No. 3,223; in South Australia August 22, 1882, No. 270, and in New South Wales October 27, 1882.

*To all whom it may concern:*

Be it known that I, JOSHUA ALEXANDER KAY, a subject of the Queen of Great Britain, residing at Melbourne, in the British Colony of Victoria, engineer, have invented new and useful Improvements in Endless Band-Knives, (for which I have obtained Letters Patent in Victoria, dated the 19th day of May, 1882, and numbered 3,223, Letters of Registration in New South Wales, dated the 27th day of October, 1882, and South Australian Letters Patent dated the 22d day of August, 1882, and numbered 270,) of which the following is a specification.

This invention relates to endless band-knives in which the edge describes a wave line, or a succession of curves, or a series of angles, or partly curved and partly angled, or, in fact, any line not being a straight line, which will enable the knife to give a succession of drawing cuts, instead of the one continuous cut of the band-knives now in use.

The object of this invention is to reduce the friction and lessen the heat produced by such motion of band-knives. This I accomplish by making a series of holes in the widest portion of such knives, which holes also have the effect of carrying along with them any loose refuse and discharging it as it emerges from the material through which it is passing.

I sometimes make my band-knives double-edged, so that when one edge is worn out it can be reversed, and what was formerly the edge of the knife becomes the back.

In my drawings I have shown three different illustrations of the way in which my invention can be carried into effect. Figure 1 shows a band-knife with a wave edge; Fig. 2, a band-knife with its edge describing a suc-

cession of curves, and Fig. 3 with its edge describing a series of angles, while Figs. 4 and 5 are cross-sections of the knife with chisel edge and knife edge. The blade of the knife is in each case marked A, and the holes therein *a a*. It will be noticed that in all these illustrations the cutting-edge is made interstitial.

In making my endless band-knives I take a narrow strip or band of steel and stamp out of it at intervals along the entire length of one or both of its edges a series of curves or notches or indentations, as shown at *a'*, Fig. 1. The effect of this is to leave the blade with a succession of alternately convex and concave surfaces forming a wave edge. This wave edge is then filed or ground down sharp, like a chisel, as shown in cross-section; or it might be notched or indented and beveled during the process of rolling, Fig. 4; or it may take the form shown in cross-section at Fig. 5. The ends of the band or strip are then brazed together to form an endless flexible knife.

The holes *a* may be punched or stamped out at the same time that the wave or notched or indented cutting-edge is formed, and either before or after brazing, or otherwise fastening together the ends of the strip or band to form the endless band-knife.

What I claim as my invention, and desire to secure by Letters Patent, is—

An endless band-knife having a waved cutting edge or edges, substantially as set forth, and perforations *a*, for the purpose of reducing friction and preventing heating, as described.

JOSHUA ALEXANDER KAY.

Witnesses:

EDWD. WATERS,

WALTER SMYTHE BAYSTON.