3 Sheets--Sheet 1.

E. F. BONAVENTURE.

Milling-Tool.

No. 162,739. Patented May 4, 1875.

Fig. 3

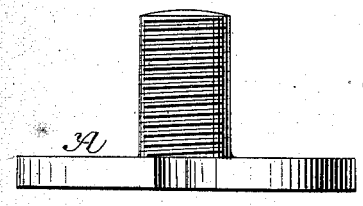


Fig. 1

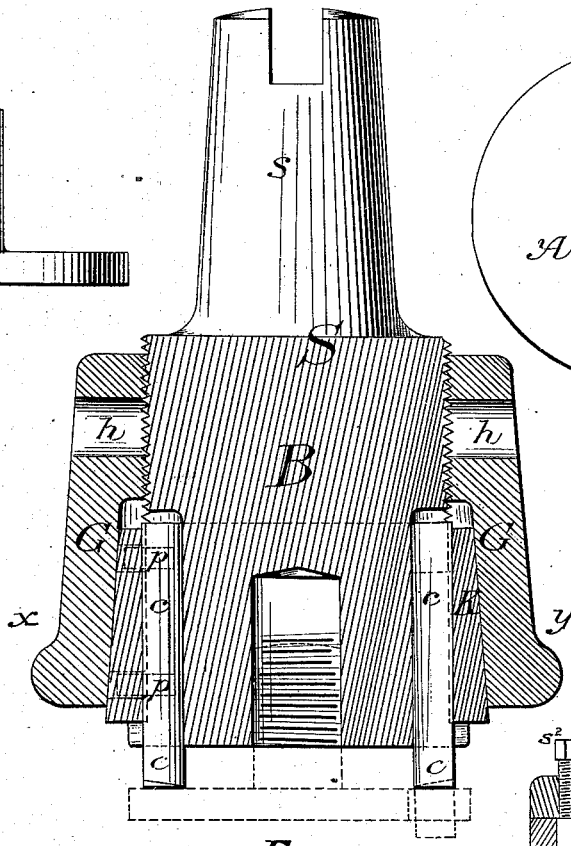


Fig. 4

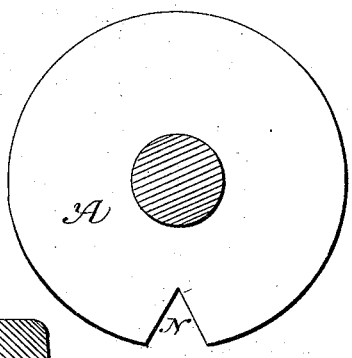


Fig. 5

Fig. 6

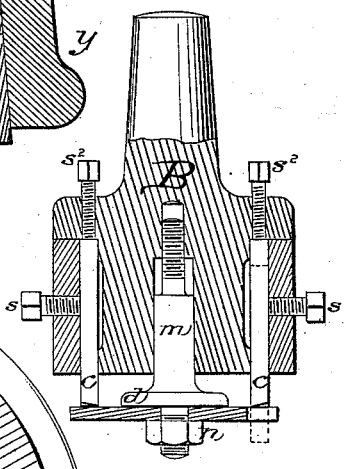
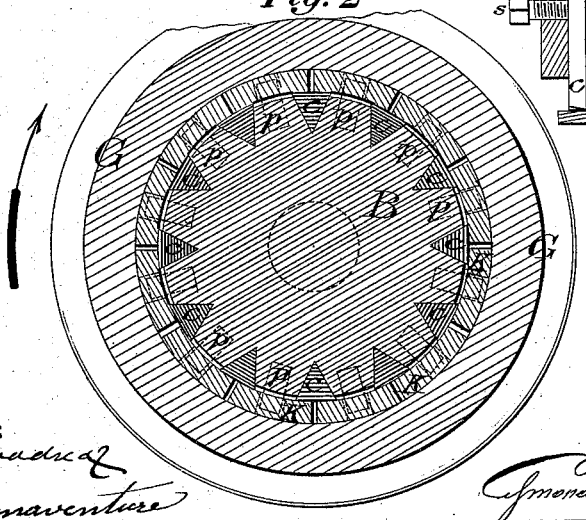


Fig. 2



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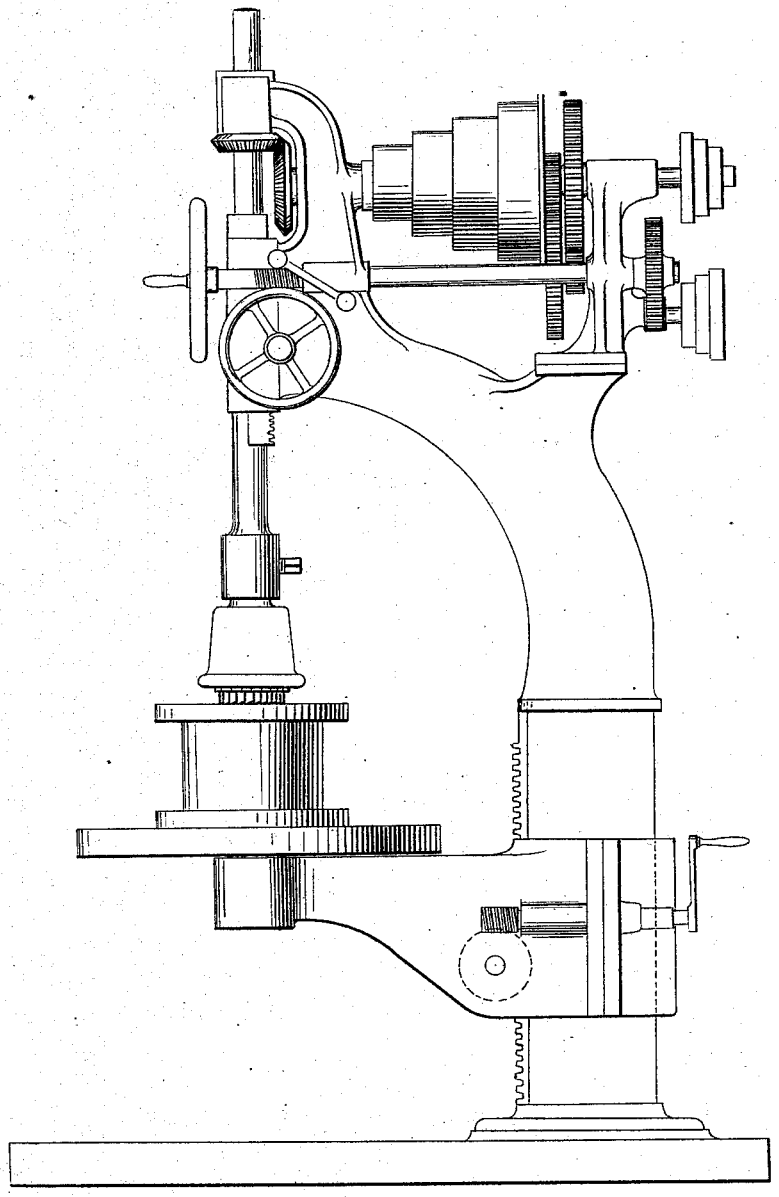
E. F. BONAVENTURE.

Milling-Tool.

No. 162,739. Patented May 4, 1875.

Fig. 8



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Milling-Tool.

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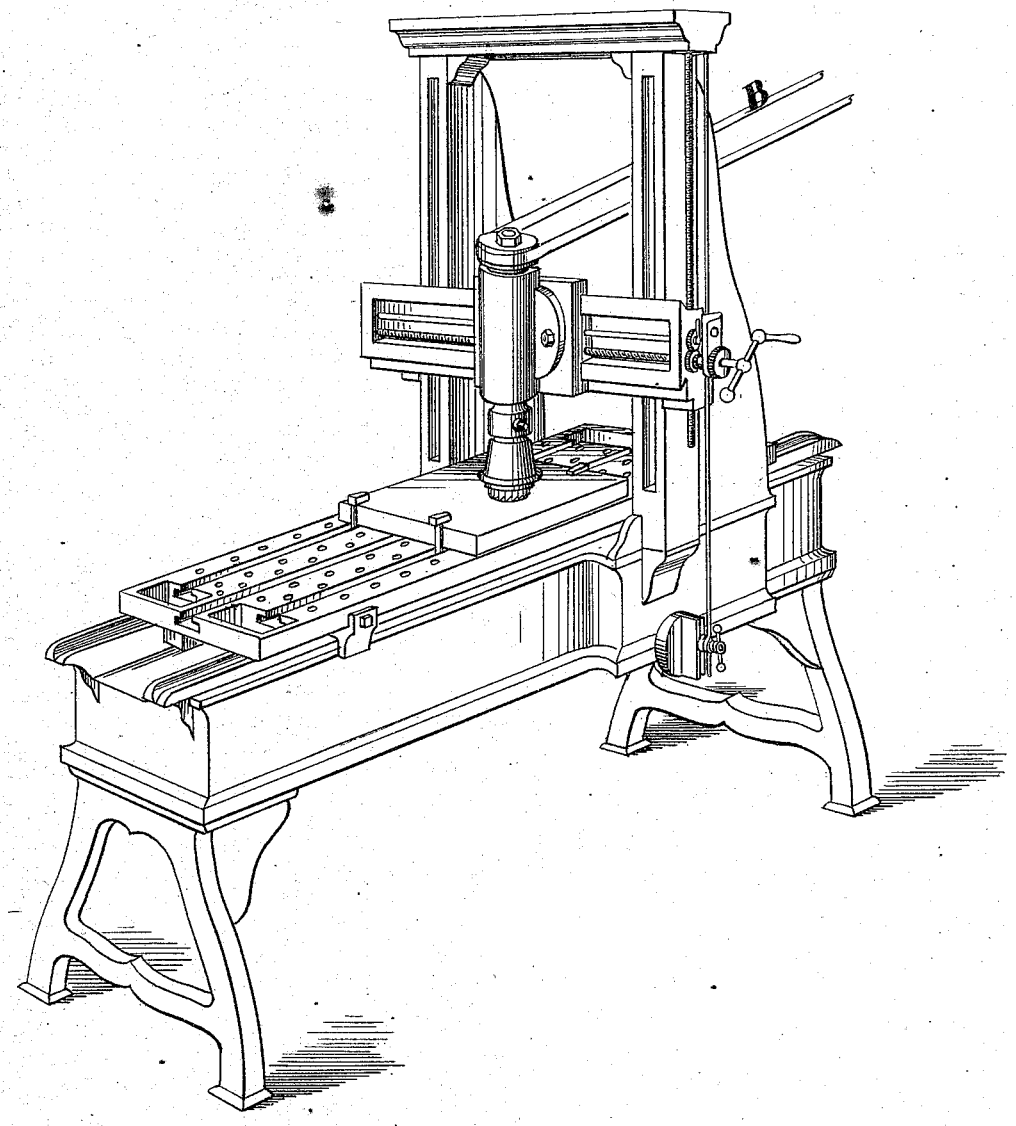
Fig. 7



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UNITED STATES PATENT OFFICE.

EDMOND F. BONAVENTURE, OF NEW YORK, N. Y.

IMPROVEMENT IN MILLING-TOOLS.

Specification forming part of Letters Patent No. **162,739**, dated May 4, 1875; application filed August 11, 1874.

To all whom it may concern:

Be it known that I, EDMOND F. BONAVENTURE, of France, at present residing in New York, have invented certain new and useful Improvements in Tools for Boring or Facing Metal; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a vertical section through said tool; Fig. 2, a transverse section through the same taken on the line X Y; Figs. 3, 4, and 5 are detail parts of said tool.

The object of this invention is to furnish metal-workers with an improved tool for cutting and facing metals—a tool that can be usefully applied to a drill-press, a lathe, or planing-machine.

Said tool consists of a cylindrical stock, B, in which the cutters are fitted; a shank, S, to fit the spindle of the lathe or drill press, or a suitable head to adapt it to a planing-machine; a griping-band, G, by which the cutting-tools are secured in the stock; an adjusting-plate, A, by which the cutting-tools are adjusted with reference to each other and the stock; and of a series of wedge-shaped keys to intervene between the cutting-tools and the clamping-band, by which the griping power of the band is made available to hold the tools.

The cutting-tools are shown in the drawing by C. They are made triangular in form, and are fitted in grooves of corresponding shape cut parallel to each other in the periphery of the stock. These tools are made triangular because the section of this form can be ground to present two cutting-edges, that the tool, when one edge becomes dull, can be reversed, and present a new or sharp edge on the other side of the angle. The lower part of the clamping band or sleeve is cut out or enlarged conically, to make space for the keys K, and in the upper part of said sleeve a screw-thread is cut to match a corresponding thread cut in the upper end of the periphery of the stock, by which the band is fitted to screw back and forth on the stock, the keys being forced hard upon the cutting-tools, securing them when the band is screwed forward, and off the keys, releasing both the tools and keys when screwed back. The sleeve may, of course, be made parallel inside, and be fitted with set-screws to bear upon each cutting-tool, and the cutting-tools may be adjusted by means of set-screws applied to the end of each cutter, as shown in Fig. 6 of the drawing; but I prefer the method shown in Fig. 1 of the drawing for securing and adjusting these tools.

The adjusting-plate or flange is fitted with a stem or shank to screw in a hole made in the center of the stock. The hole being made in the axis of the stock, and the shank of the plate being made upon its axis, the flange will, of course, set on a plane parallel with the end of the stock, so that if this plate be applied to the stock, and the band G screwed back, the ends of all the cutters will fall upon the flange. If the band be then screwed down the ends of all the cutters will be secured or set upon one plane, and if any one or more of the cutters need to be removed, the plate A is applied and the band screwed back. To release the cutters, the notch N, being first brought opposite to the disabled cutter, which, of course, drops out as soon as the sleeve is screwed back, to release the keys.

The sleeve G is screwed up and down, or back and forth, by means of a band-wrench applied to the holes H, or the upper part of the sleeve may be squared to receive an ordinary wrench.

The application of the tool to a drill-press is shown by Fig. 7 of the drawing, and its application to a planing-machine is shown by Fig. 8 of the drawing. Both of these machines, being of the ordinary and well-known variety, need no special description here.

Having now described the construction and operation of my invention, I claim and desire to secure by Letters Patent—

1. The improved compound cutting-tool, consisting of a head, B, fitted with a series of cutting-tools, arranged to project

beyond the end of the head, combined with a sleeve, G, formed to clamp or hold the cutting-tools when screwed down, and release them when screwed up or back toward the spindle.

2. The adjusting-disk A, made with the notch N, through which to remove any one of the cutting-tools, in the manner substantially as described.

EDMOND F. BONAVENTURE.

Witnesses:
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