No. 676,720.

Patented June 18, 1901.

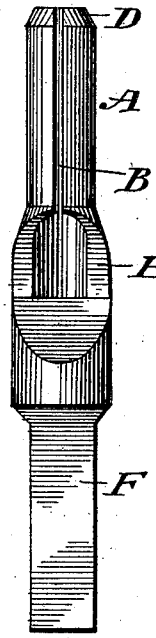
J. M. KOLLMYER.

PAPER BORING BIT.

(Application filed June 23, 1900.)

(No Model.)

Fig. 3.



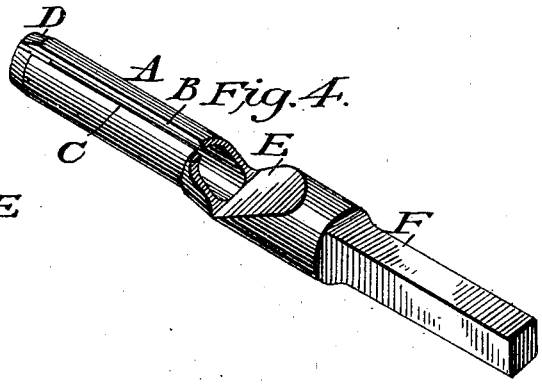




Fig. 4.

Fig. 1.

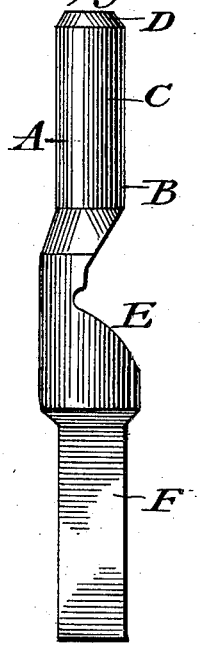
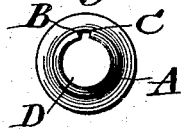



Fig. 2.




Witnesses:
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Inventor:
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# UNITED STATES PATENT OFFICE.

JOSEPH M. KOLLMYER, OF EVANSVILLE, INDIANA.

## PAPER-BORING BIT.

SPECIFICATION forming part of Letters Patent No. 676,720, dated June 18, 1901.

Application filed June 23, 1900. Serial No. 21,277. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH M. KOLLMYER, a citizen of the United States, residing at Evansville, in the county of Vanderburg and State of Indiana, have invented a new and useful Paper-Boring Bit, of which the following is a specification.

My invention relates particularly to an improvement in paper-boring bits, the objects of which are to provide a bit simple and economical in its construction, to obtain an exact evenness of perforations in manifold copies, and to provide a means of facilitating the perforation of bills and and other papers to be used for filing and binding purposes. These objects I attain by the use of the device illustrated in the accompanying drawings, in which—

Figures 1, 3, and 4 are perspective views of my bit, showing its different parts. Fig. 2 is a view of the cutting end of my bit.

For a detailed description reference is again had to the accompanying drawings, in which A is the blade of the bit, which is similar in construction to the blade of the spoon-bit, except that its outer edges are more nearly drawn together, making it tubular in form.

B is an open seam extending the entire length of the blade, which is formed by bringing the outer edges of the blade closely together, one of which edges projects outward slightly more than the other in order to form the vertical cutting-blade C. This cutting-blade is formed by sharpening the edge of the open seam B projecting farthest outward.

D is that end of the bit-blade farthest from the shank, which is sharpened by grinding off the outer circumferential edge in bevel form, so as to form a circular cutting-blade. The blade being tubular in form is hollow to admit the upward passage and expulsion of the paper cut out by the bit in boring.

E is an indenture at that part of the blade joined to the shank and into which the hollow interior of the blade opens, the purpose of which is to form an outlet for the passage of paper having previously passed through the hollow interior of the blade, as hereinbefore described.

F is the shank of the bit, which may be square or circular in form and is designed to be fitted into the chuck of a mechanically-operated brace.

To obtain most satisfactory results in the use of this bit, a press is provided having a horizontal platform-table with adjustable gages and suitable equipments for placing and retaining the paper under sufficient pressure to hold it in position when the bit is in use. The brace into which the bit is inserted is operated by a highly-geared mechanism raised and lowered by means of racks and pinions, the bit being preferably in a vertical position. When ready for boring, the paper is placed upon the platform-table with the edges of its end and side placed evenly against the gages and the pressure applied upon the paper, so as to prevent the action of the bit from changing its position. Then the mechanism operating the bit is run down until the end of the bit is directly upon the paper at the point desired, when it is placed in operation by any desired motive power.

The bit, as constructed, has two cutting-blades, the sharp circumference at its end D, which has a penetrative force, and the sharp vertical edge C, which cuts out the inner circumference of the aperture formed by the bit and provides it with abundant room in which to rotate freely when in use.

In perforating sheets of paper laid one upon the other by the use of the punch it is impossible to prevent a portion of the sheets from shifting their position when moving the paper or punch, thereby causing an unevenness and irregularity of perforations, rendering bills and other papers so perforated of but little value and difficult to place upon a filing device. This difficulty is overcome by the use of my bit, the perforation rendered more rapid and less laborious, because when using a punch but very few sheets can be perforated at any one time, while with this bit a number of sheets of paper equal in thickness to the length of the bit-blade may be perforated at one operation.

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

1. A paper-boring bit, one end of which is a shank suitably adapted for insertion into a brace, the opposite end of which is cylin-

drical in form with a hollow interior opening into an indenture on the side of the bit at a point where the cylindrical portion and the shank of the bit unite, the cylindrical portion of the bit having on that side where the indenture is, an open seam, extending from said indenture to the opposite end of the cylindrical portion, having a hollow interior, one of the edges of which open seam extends slightly beyond the outer circumference of the said cylindrical portion of the said bit, and is converted into a cutting edge by grinding off in bevel form that part of the edge of the said open seam on the hollow interior in such manner as to form a sharp edge on the outer circumference of the bit extending the entire length of the open seam, and providing an edge for cutting purposes on that portion of the bit farthest from the shank by grinding off in bevel form the square end and outer edge of the bit in such manner as to form a sharp edge on the inner circumference at the end of the bit, which is made and used substantially as and for the purposes herein set forth.

2. In a paper-boring bit, having a blade tubular in form, with a circular cutting edge formed by grinding off in bevel form the outer circumference of the edge of the end of the blade, and a vertical cutting edge formed by sharpening that side of the open seam projecting outwardly somewhat beyond the circumference of the blade, made, and used substantially as and for the purposes herein set forth.

3. A paper-boring bit, the blade of which is tubular in form, having a hollow interior opening into an indenture at the point where the blade and shank are joined together, the bottom end of which blade is a circular cutting edge, and that edge of the open seam projecting farthest outward is a vertical cutting edge, made and used substantially as and for the purposes herein set forth.

4. A paper-perforating device, constructed of a single piece of metal, one end of which is suitably adapted for insertion into a brace, the opposite end of which is suitably adapted for use in perforating an unlimited number of sheets of paper in a single operation, being constructed in hollow form with a beveled edge on the interior surface of the end used in perforating, and provided with an open seam extending from the end of the hollow portion to an indenture formed at that part where the hollow portion and the solid portion forming a shank unite, which open seam has two edges approaching nearly together, one of which edges extends outward slightly beyond the outer circumference of the perforating device, and is provided with an edge extending its full length, at the surface of the outer circumference, by grinding off in bevel form that portion of the metal on the inner edge of the said seam, which is made and used substantially as and for the purposes herein specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH M. KOLLMYER.

Witnesses:
CLIFFORD SHOPBELL,
WILL J. HARRIS.