P. McALEER.

PAPER PERFORATING-MACHINE.

No. 170,873. Patented Dec. 7, 1875.

Fig: 1.

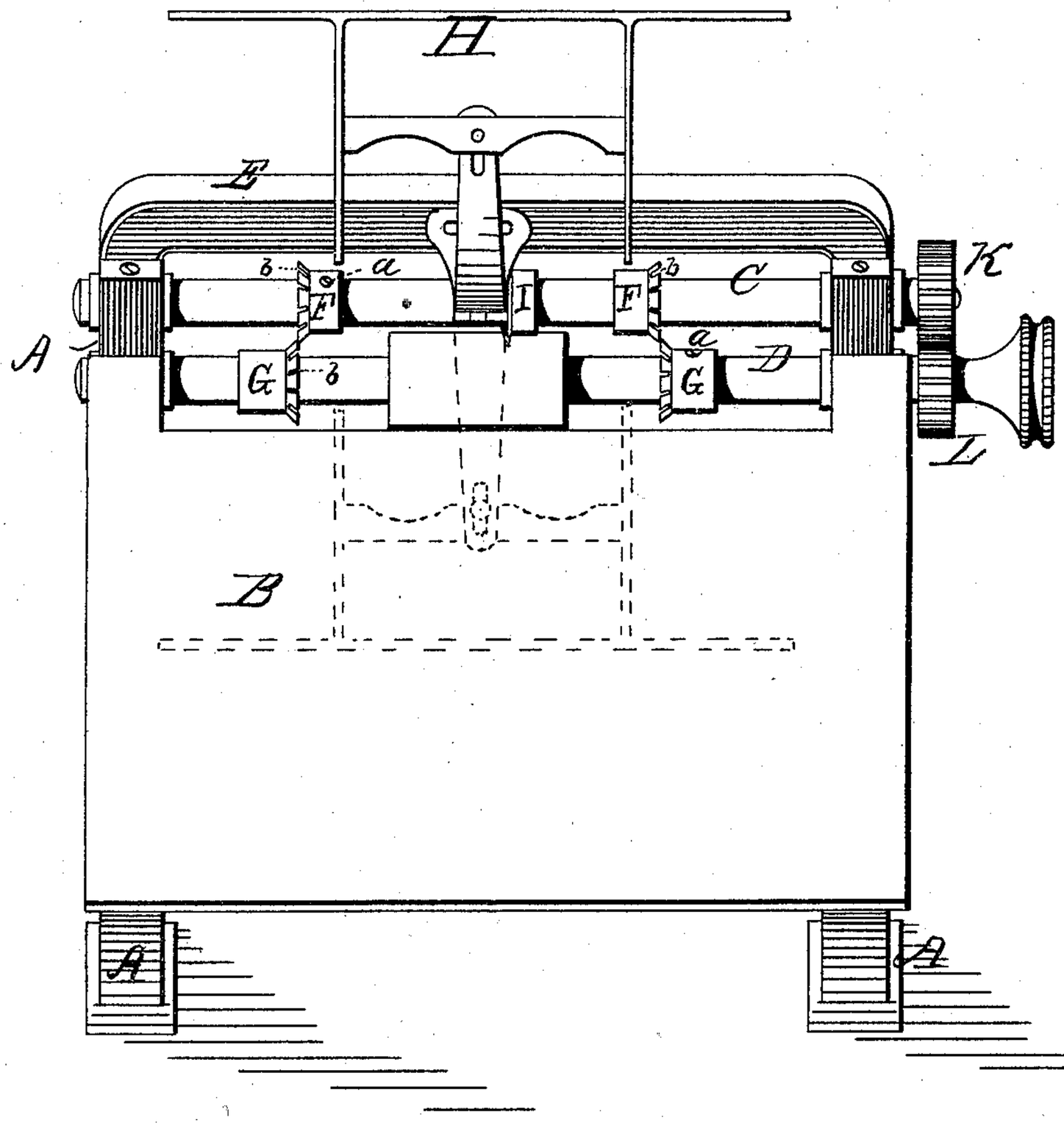
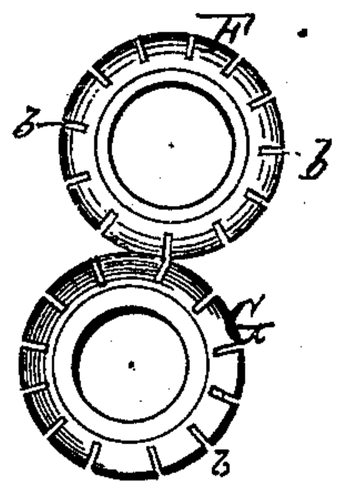


Fig: 2.



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UNITED STATES PATENT OFFICE.

PHILIP McALEER, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN PAPER-PERFORATING MACHINES.

Specification forming part of Letters Patent No. **170,873**, dated December 7, 1875; application filed September 14, 1875.

To all whom it may concern:

Be it known that I, PHILIP MCALEER, of Washington, in the county of Washington and District of Columbia, have invented certain new and useful Improvements in Paper-Perforating Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification.

My invention relates to improvements in machines adapted for perforating and cutting paper designed to be subsequently separated by hand. It has for its object to produce a cut which shall leave no burr, so that sheets perforated or cut may be compactly packed upon each other, and be readily counted and handled without sticking or catching to one another. With this object in view my invention consists of a perforating-machine, the cutting-knives of which are adjustably secured to two parallel shafts, and adapted to slightly pass each other when rotated, so that the cutting-surfaces shall, in passing each other, penetrate the interposed sheet from opposite sides and produce a shearing-cut, thus avoiding any burr on either side of the paper, as will be hereinafter more fully set forth.

To enable those skilled to more fully understand the construction and operation of my machine, I will proceed to describe the same, referring by letters to the accompanying drawing, in which—

Figure 1 is a top perspective view of a machine embodying my invention; and Fig. 2, a detail view of the cutting-disks, showing clearly the passage of the cutting-edges to produce the shearing-cut.

Similar letters indicate the same parts in both figures.

A is the frame of the machine, provided with a feed-table, B. C and D are two parallel shafts, mounted in suitable bearings in upwardly-inclined projections of the frame A, the bearing-boxes being held in place by a suitable supporting cross-arbor and frame, E, screwed to the frame, as clearly seen in Fig. 1. F and G are circular knives, secured by set-screws *a* to the parallel shaft, so that their cutting-edges will just pass a common center between the shafts C and D. These knife-edges are slightly beveled to make them more keen and certain in their cutting, and are divided up into any number of independent knives by radial slots *b*, extending from the periphery inwardly a short distance. The upper shaft C is arranged slightly behind the vertical axis of the shaft D, so that the heels of the successive knives shall approach and pass each other, as clearly seen at Fig. 2, and thus produce a shearing-cut. The slots or spaces *b* between the knives form interruptions to a continuous cut, and thus leave solid partitions in the sheet between the cuts made by the knife-edges.

The rotary knife-disks are adjusted longitudinally upon their respective shafts up toward each other, so that they will just pass without contact. This may be done by placing a sheet or strip of thin paper between their disk-faces while adjusting and withdrawing it after the set-screws have been secured.

H is a guide-clamp, hinged to the arbor of the frame, and so hinged that it may be thrown up in the position shown in Fig. 1, out of the way, when desired, and dropped down into the position shown in dotted lines, to rest upon and guide the sheet being operated upon.

The knives, slightly passing each other, and the common center between the shafts, necessarily penetrate the sheet of paper, and the edges of the slots *b* grasp the partitions between the cuts, and serve to positively feed the paper through the machine, requiring no other device for accomplishing this end.

The shafts C and D are geared together for obvious reasons.

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

In a perforating-machine, the combination, with two parallel shafts, of one or more disk-knives adjustably secured to each shaft, and having their peripheries broken by radial slots and adapted to overlap, substantially as and for the purposes described.

Witness my hand and seal to foregoing specification this 25th day of August, A. D. 1875.

PHILIP MCALEER. [L. S.]

In presence of—
ARTHUR L. MCINTIRE,
COLBOURNE BROOKES.