H. D. HAHL & J. J. LAMBERT.

PERFORATOR.

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1,225,326. Patented May 8, 1917.

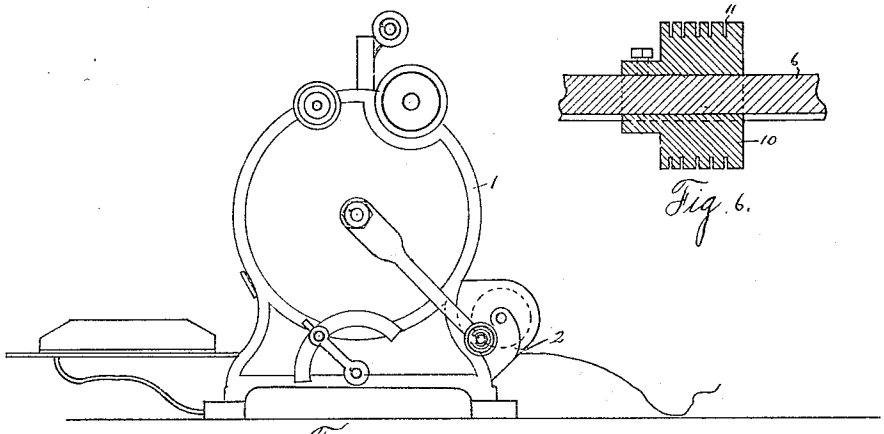


Fig. 1.

Fig. 6.

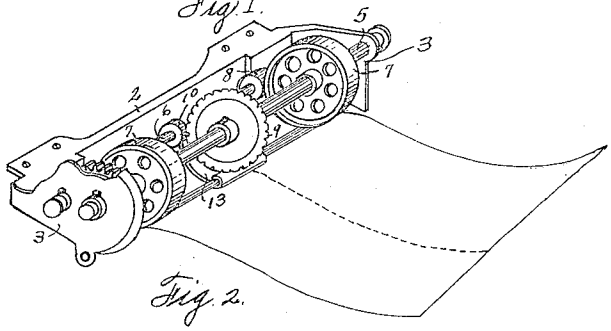


Fig. 2.

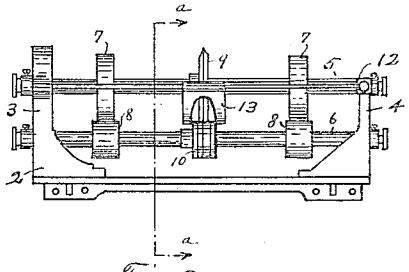


Fig. 3.

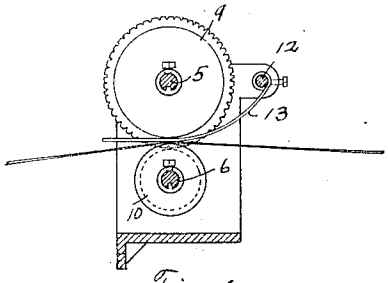


Fig. 4.

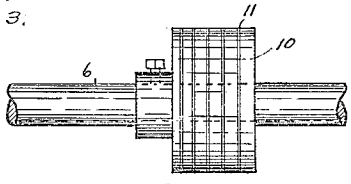


Fig. 5

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PERFORATOR.

1,225,326. Specification of Letters Patent. Patented May 8, 1917.

Application filed March 17, 1916. Serial No. 84,797.

To all whom it may concern:

Be it known that we, HAROLD D. HAHL and JAMES J. LAMBERT, citizens of the United States, residing at Houston, in the county of Harris and State Texas, have invented certain new and useful Improvements in Perforators, of which the following is a specification.

This invention relates to new and useful improvements in a perforator.

The object of the invention is to provide a device of the character described designed to be attached to the ordinary multigraph, for the purpose of perforationg the sheet which passes through said multigraph. It is often desirable in printing sheets of paper on a multigraph, to be used for various purposes, to perforate said sheets so that they can be easily separated into parts, and for that purpose the device herein described has been provided.

With the above and other objects in view the invention has particular relation to certain novel features of construction, operation, and arrangement of parts an example of which is given in this specification and illustrated in the accompanying drawings, wherein:—

Figure 1, is an end view of a multigraph showing the perforator attached thereto,

Fig. 2, is a perspective view of the paper ejector shown in inverted position,

Fig. 3, is a rear view thereof,

Fig. 4, is a transverse sectional view thereof taken on the line *a*—*a* of Fig. 3 and shown on a larger scale than Figs. 2 and 3,

Fig. 5, is a side view of the female roller employed, and

Fig. 6, is the sectional view of said roller, said Figs. 5 and 6 being shown on a larger scale than Fig. 4.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts in each of the figures the numeral 1 indicates the multigraph machine of the ordinary and well known construction, and numeral 2 refers to the frame of the paper ejector, which is secured to the machine in the rear, and has the end bearings 3 and 4, wherein is rotatable the upper and lower ejector shafts 5 and 6. The shaft 5 has fixed thereon the ejector wheels 7, 7, which are spaced a suitable distance apart, and opposing which are the ejector bearings 8, 8, usually formed of yieldable material, and which are fixed upon the shaft 6. These wheels 7 and the opposing bearing 8 are arranged so as to be adjustable toward and from each other on their respective shafts.

Fixed upon the shaft 5 is a disk 9, whose edge is serrated, forming teeth, whose sides are tapered so as to give each tooth a sharp cutting edge, and opposing this disk and fixed upon the shaft 6 is a female roller 10, having a plurality of peripheral grooves 11, into one of which the teeth of the disk 9 project so as not to dull the teeth as the disk rotates. The disk and roller are adjustable relative to each other and the roller may be of any length and may have its grooves spaced any desired distance apart so that the perforator disk 9 may be adjusted to any position so that the sheet may be perforated at any place desired. The shaft 5 may also be provided with a plurality of perforating disks so that the sheet may be separated into a number of parts. The female roller 10 will usually be made of fiber but may be formed of soft steel, gutta percha or any other suitable material.

Behind the shaft 5 and having its ends anchored in the respective end bearings 3 and 4 of the frame 2 is the rod 12 provided to support the paper retainer 13. This retainer is secured to said rod, is formed of flexible material and is bifurcated, the fingers thereof embracing the disk 9, and pressing downwardly against the paper and holding it against the roller 10, the object of said retainer being to release the paper from engagement with the teeth of the disk 9 as said disk rotates.

The paper is fed through the multigraph in the ordinary and well known manner and as it passes between the disk 9 and the roller 10 it is perforated by the teeth of said disk. The teeth of the disk engage with the paper and tend to carry the free edge of the paper up around the disk as it rotates and would do so were it not for the fingers of the retainer 13, which press against the paper and release it from said teeth.

What we claim is:

1. A device of the character described including two rotatable shafts, a disk whose margin is tapered to an edge and serrated forming teeth, adjustably mounted on one of the shafts, a roller having a plurality of peripheral grooves fixed upon the other shaft, said teeth projecting into the opposing groove of said roller, ejector wheels fixed on

one of said shafts and opposing ejector bearings formed of yieldable material fixed on the other shaft and contacting with said respective wheels.

2. A device of the character described including two rotatable shafts, a disk whose margin is tapered to an edge and serrated forming teeth adjustably mounted on one of the said shafts, a roller having a plurality of peripheral grooves fixed on the other shaft, said teeth projecting into the opposing groove of said roller, and flexible fingers opposing the roller and tending to hold the paper being perforated against said roller and between which the disk operates.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

HAROLD D. HAHL.
JAMES J. LAMBERT.

Witnesses:
CLAUDE E. TUGGLE,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."