(No Model.)

H. E. TIDMARSH.

PAPER SLITTER.

No. 430,492. Patented June 17, 1890.

Fig. 1

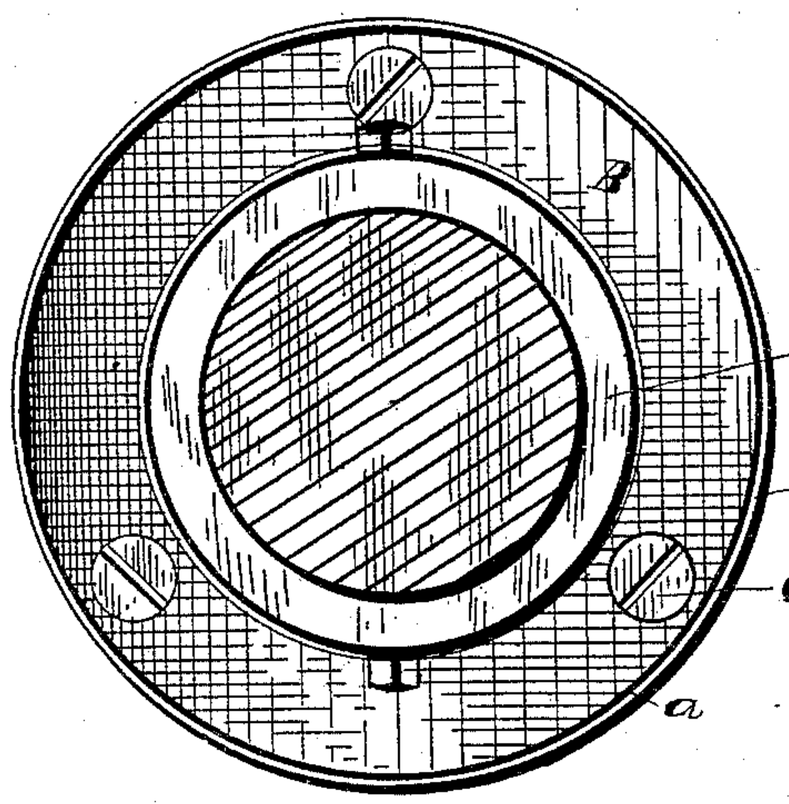
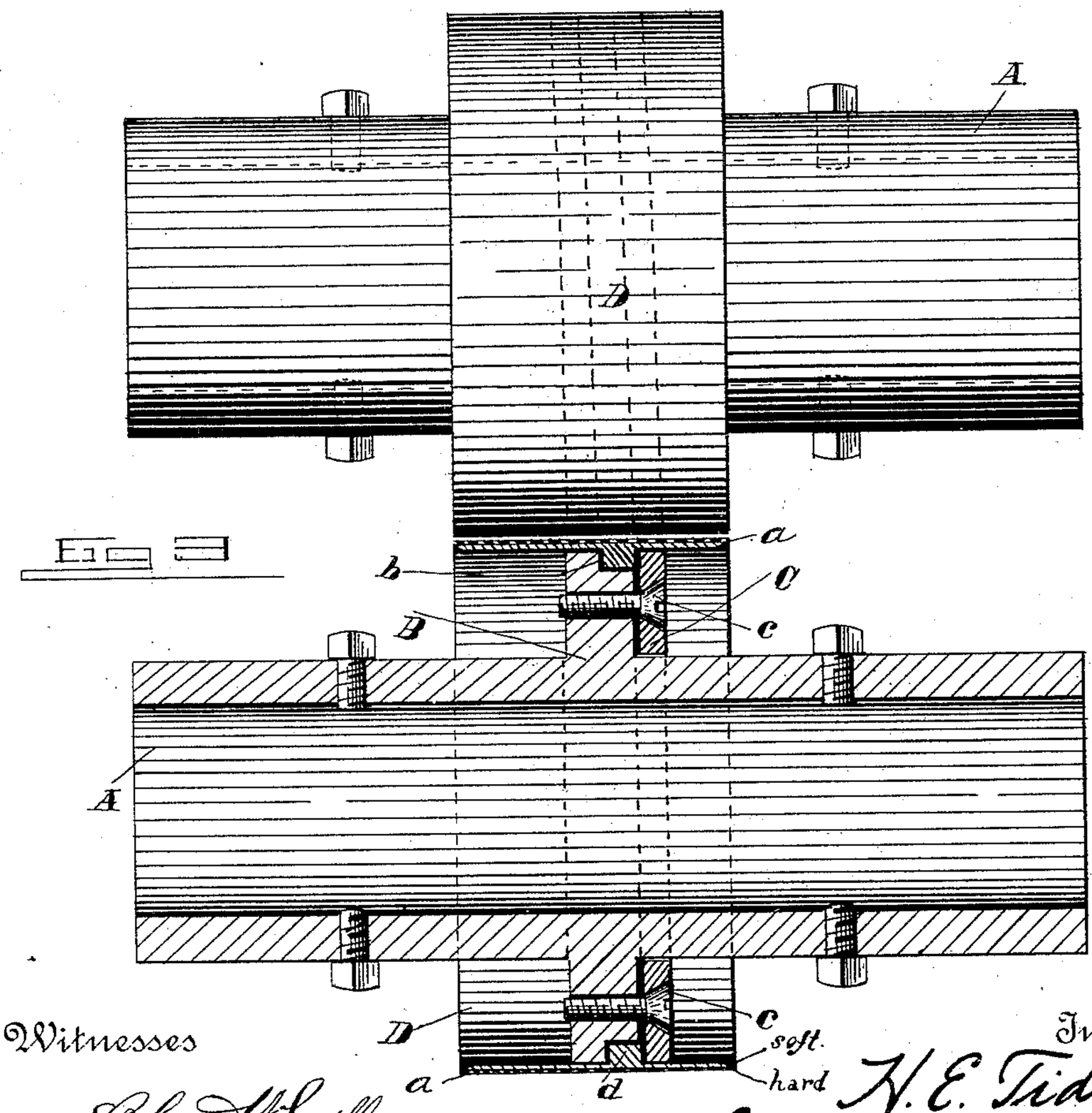


Fig. 2



Witnesses

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UNITED STATES PATENT OFFICE.

HARRY ELMER TIDMARSH, OF SANDY HILL, NEW YORK.

PAPER-SLITTER.

SPECIFICATION forming part of Letters Patent No. 430,492, dated June 17, 1890.

Application filed July 13, 1889. Serial No. 317,434. (No model.)

To all whom it may concern:

Be it known that I, HARRY E. TIDMARSH, of Sandy Hill, in the county of Washington and State of New York, have invented certain new and useful Improvements in Paper-Slitters; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a face view of my improved paper slitter or trimmer. Fig. 2 is a side view thereof. Fig. 3 is a vertical sectional view thereof through the line of the shaft.

This invention is an improvement in paper-cutting machinery, and is essentially an improved paper slitter or trimmer disk; and it consists in the novel construction of the cutting-blade band and its attachment to the hub to constitute therewith a disk having the requisite cutting-edges, which will automatically keep sharp by unequal wear of the outer and inner portions of the cutting-band, all of which will be clearly understood from the following description and claims.

Referring by letters to the drawings, A designates the hub of the slitter-disk, secured on the shaft in the ordinary manner, said hub having an exterior annular flange B of a diameter nearly equal to the diameter of the complete slitter. This flange is annularly shouldered, as at *b*, on one edge, and against said flange is removably secured an annular collar C, equal in diameter to the flange and secured to the latter by screws *c c*, the heads of which screws enter countersinks in the collar, as shown. The collar is secured to the shouldered face of the flange, so that the annular shoulder, in conjunction with the collar, forms an annular channel for the reception of a bead or flange on the cutting-band.

D designates the cutting-band, which is a thin ring of wrought or cast metal, preferably of iron or steel, said band being much wider than flange B, and on the inner face of this band, and projecting inwardly at right angles thereto and centrally thereof, is an annular bead or flange *d*, corresponding in cross-section to the channel formed by shoulder *b* and collar C and of a slightly-greater internal diameter than said channel, so that when collar C is removed band D can be slipped over the hub and onto flange B, its bead *d* being seated against shoulder *b* thereof. Collar C is then slipped up against the flange and secured thereto, binding the band to the flange, as is evident from the drawings. In the machines there are two slitters or cutting-disks, which operate together, one being above the other, but the mounting of these slitters does not form part of my invention.

The band D projects laterally beyond the faces of the flange and collar, and its edges are sharpened, as indicated at *a a*.

In order to preserve keen cutting-edges on the band, I have it made of comparatively soft metal, then case-harden its outer periphery, in any suitable manner, leaving its inner periphery soft, and thus obtain a thin cutting-edge, which has an exterior hard layer or surface and an interior softer surface that will wear by abrasion of the slitter in working much faster than the exterior portion, so that a thin keen edge will be constantly maintained if the band edges had been properly sharpened when first used. I thus avoid the expense and delay occasioned by the use of ordinary slitters or trimming-disks, which have to be removed at intervals and sharpened, owing to their construction and to the fact of their cutting-edges being homogeneous or of the same wear-resisting quality throughout.

By varying the width or diameter of bead or flange *d* varying sizes of slitting-bands may be mounted on the same hub, being readily attachable to or removable therefrom by means of collar C, as described.

Having thus described my invention, I claim—

1. In a paper-slitter, the combination of a hub and annular flange thereon, with an annular cutting-band having a bead on its inner face at center of the band and secured thereby against the flange of the hub, substantially as specified.

2. In a paper-slitter, an annular cutting-band having a bead on its inner face, said bead being situated in the center of the band, thus allowing the band to be reversed to permit either edge to be used for cutting, substantially as specified.

3. In a paper-slitter, the combination of the hub having an annular flange, substantially as described, with a cutting-band having a central annular bead on its inner face engaging the said flange, and an annular collar for confining said bead against said flange to secure the cutter in position, all substantially as specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

HARRY ELMER TIDMARSH.

Witnesses:
L. W. CRONKHITE,
D. J. SULLIVAN.