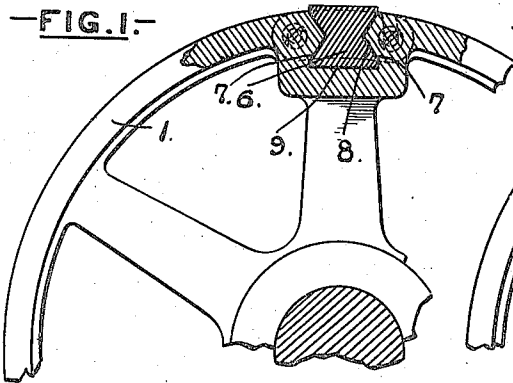


L. A. SCHMIDT.
CUTTING MECHANISM.
APPLICATION FILED DEC. 12, 1911.

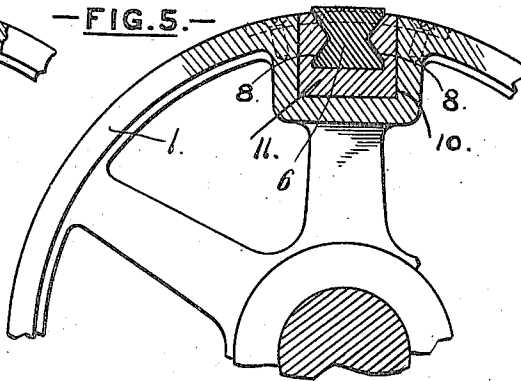
1,148,337.

Patented July 27, 1915.

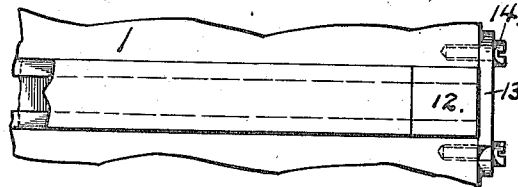
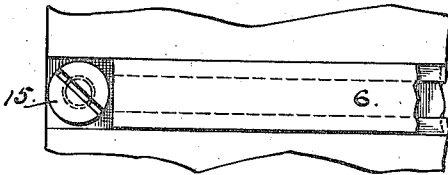
—FIG. 1.—



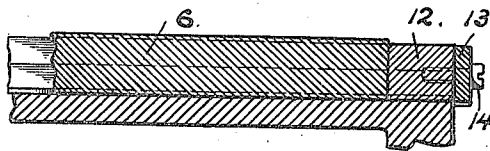
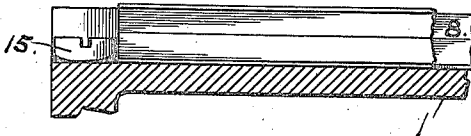
—FIG. 5.—



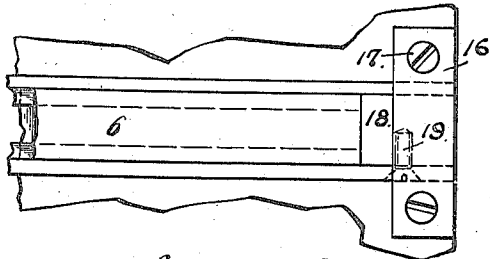
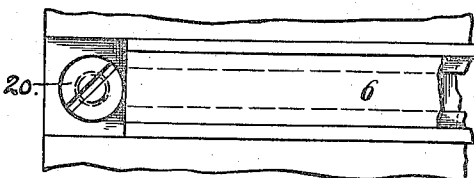
—FIG. 2.—



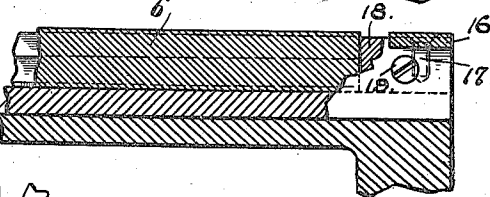
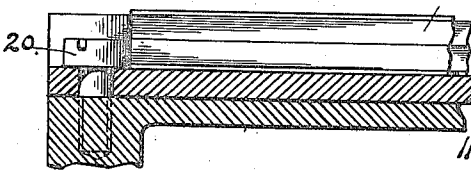
—FIG. 3.—



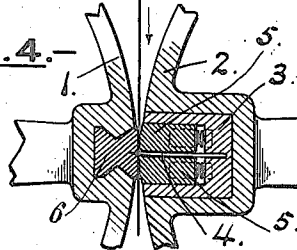
—FIG. 6.—



—FIG. 7.—



—FIG. 4.—



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UNITED STATES PATENT OFFICE.

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CUTTING MECHANISM.

1,148,337.

Specification of Letters Patent.

Patented July 27, 1915.

Application filed December 12, 1911. Serial No. 665,275.

To all whom it may concern:

Be it known that I, LOUIS A. SCHMIDT, a citizen of the United States, residing at New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Cutting Mechanisms, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to improvements in machines for cutting paper and other similar material.

In the cutting mechanisms which form a part of fast rotary printing machines the cutting knife operates against a cutting block. It was formerly customary to form this cutting block of wood. The speed of printing machines has, in late years, been increased to such an extent that the wood was not found to be sufficiently durable and there was substituted therefor a cutting block composed mainly of wood but having a sheet of thin rubber secured to its face. This construction was found to be an improvement, because the rubber formed a better gripping surface for the paper and because it prevented wear of the wood on each side of the knife at the time of cutting. These composite blocks have of late been largely replaced by a block made entirely of rubber or rubber composition, these blocks being held in troughs or boxes by means of screws which entered and held the blocks in the boxes or held the boxes together. In order to avoid weakening the rubber a large number of these screws were employed, sixteen screws being ordinarily employed on one cutting block. The holes for this large number of screws were expensive to make, and, further, considerable time was necessarily involved in changing one of these blocks when it wore out. Again, as rubber has become increasingly expensive the cost of replacing these rubber or composition blocks when worn has correspondingly increased.

The present invention has for its object to provide an improved elastic cutting block for paper cutting machines, the construction of the block and of the holding means employed in connection therewith being of such a character as to reduce the cost of both the block and holder, and also to reduce the time incident to changing a block when necessary on account of wear.

With this and other objects not speci-

cally referred to in view, the invention consists in certain constructions and in certain parts, improvements and combinations as will be hereinafter fully described and then specifically pointed out.

In the accompanying drawings:—Figure 1 represents a side elevation, partly in section, of a portion of the cutting cylinder of a rotary printing machine embodying the invention. Fig. 2 is a plan view of the cutting block construction shown in Fig. 1. Fig. 3 is a longitudinal section of the construction illustrated in Fig. 2. Fig. 4 is a sectional view of parts of the cutting cylinders of a printing machine, showing the relative position of the blocks and knife during the cutting operation. Fig. 5 illustrates a cutting cylinder provided with a modified form of the construction. Fig. 6 is a plan view of the construction illustrated in Fig. 5. Fig. 7 is a longitudinal section of the construction illustrated in Fig. 6.

Referring to said drawings, the invention is illustrated in connection with the cutting cylinders of a fast rotary printing machine, the block carrying cylinder being marked 1 and the knife carrying cylinder, 2. The means employed for mounting the knife may be of any suitable construction. As shown, the cylinder 2 is provided with a box 3 in which is located a knife 4. Spring mounted wooden cheek-pieces 5 are located on each side of the knife, as common in such constructions.

The cutting block employed in carrying the invention into effect will be of elastic material, such as rubber composition, the block employed being illustrated at 6. This block is formed on its sides with reëntrant angular recesses, the surfaces of these recesses being marked 7. In constructions embodying the invention, the block will be held in position by a holder the walls of which present salient angular projections, these projections being indicated at 8. When the block is in position, these salient angles engage the surfaces 7 of the block and hold it firmly in position.

When the construction is to be embodied in new machines, as a rule the holder will be formed by a recess in the block carrier, the salient angular holding projections being located directly on the walls of the recess 9 in which the block is located. When, however, the construction is to be em-

bodied in machines already in operation and which are provided with the usual block receiving recesses, such as indicated at 10, in Fig. 5, the retaining projections 8 will be formed on the side walls of boxes 11 which will be inserted into the recesses referred to. In either case, the holder will be an integral open ended structure so that the block can be removed simply by sliding it out.

In the best constructions embodying the invention, these reëntrant angular recesses will be formed substantially midway between the other two sides or the top and bottom of the block, so that the block, when it becomes worn on one side may be turned over, thus presenting a fresh cutting surface to the knife. Further, when the block is thus turned over, the wear which the block has received on the side which has been operative, does not substantially reduce the strength of the block, because of the supporting action of the salient angular projections.

It will be further seen that the construction lends itself readily to renewing or reversing the block, because the block can be readily slid into and out of its receiving recess, so that the time necessarily employed for replacing the block is greatly reduced as compared with the old construction.

Suitable means may be employed to prevent the block from shifting endwise when in position, and two methods of thus preventing shifting are illustrated. Referring more particularly to the constructions shown in Figs. 2 and 3, a filling block 12 is employed, the sides of this block being formed with reëntrant angles so that it may slip into the block holding recess at one end. This filling block is prevented from coming out of the recess by a bridge piece 13 held in position by screws 14. The block is so positioned that one end abuts against this filling block and is held in that position by a screw, as 15, which engages the other end of the block.

According to the construction illustrated in Figs. 6 and 7, which is particularly applicable to the construction of holder illustrated in Fig. 2, the cylinder is provided with a bridge piece 16 held in position by screws 17. A filling block 18 is provided, this block being recessed on its top, as shown, so as to engage the bridge piece 16. This block is held in position in the holder by a screw 19. When the cutting block is in position it bears at one end against this filling block 18 and may be held thereagainst by a screw 20 which may be the screw which secures the box 11 in position in the cylinder.

Changes and variations may be made in the construction by which the invention claimed is carried into effect. The invention claimed, therefore, is not to be confined

to the particular constructions herein described and illustrated in the accompanying drawings.

What is claimed is:—

1. An elastic cutting block for machines for cutting paper and similar material, said block having reëntrant angular recesses in its sides in combination with an integral open-ended holder having retaining walls formed with salient angles which engage the surfaces of said reëntrant angles when the block is in position, said block being slidable longitudinally into and out of the holder through the open end of said holder.

2. An elastic cutting block for machines for cutting paper and similar material, said block having reëntrant angular recesses in its sides in combination with an integral open-ended holder having retaining walls formed with salient angles which engage the surfaces of said reëntrant angles when the block is in position, said block being slidable longitudinally into and out of the holder through the open end of said holder, and removable means for preventing endwise shifting of the block.

3. An elastic cutting block for machines for cutting paper and similar material, said block having reëntrant angular recesses in its sides, said recesses being located substantially midway between the other faces of the block, in combination with an integral open-ended holder having retaining walls formed with salient angles which engage the surfaces of said reëntrant angles when the block is in position, said block being slidable longitudinally into and out of the holder through the open end of said holder.

4. An elastic cutting block for machines for cutting paper and similar material, said block having reëntrant angular recesses in its sides, said recesses being located substantially midway between the other faces of the block, in combination with an integral open-ended holder having retaining walls formed with salient angles which engage the surfaces of said reëntrant angles when the block is in position, said block being slidable longitudinally into and out of the holder through the open end of said holder, and removable means for preventing endwise shifting of the block.

5. An elastic cutting block for machines for cutting paper and similar material, said block having reëntrant angular recesses in its sides, in combination with a cylinder provided with an open-ended recess to receive the block, the walls of said recess being formed with salient angles which engage the surfaces of the reëntrant angles when the block is in position in the recess, said block being slidable longitudinally into and out of the recess in the cylinder through the open end of said recess.

6. An elastic cutting block for machines

for cutting paper and similar material, said
block having reëntrant angular recesses in
its sides, in combination with a cylinder pro-
vided with an open-ended recess to receive
5 the block, the walls of said recess being
formed with salient angles which engage the
surfaces of the reëntrant angles when the
block is in position in the recess, said block
being slidable longitudinally into and out
10 of the recess in the cylinder through the

open end of said recess, and removable
means for preventing endwise shifting of
the block.

In testimony whereof, I have hereunto set
my hand, in the presence of two subscribing 15
witnesses.

LOUIS A. SCHMIDT.

Witnesses:

RICHARD KELLY,
JOHN LYNCH.