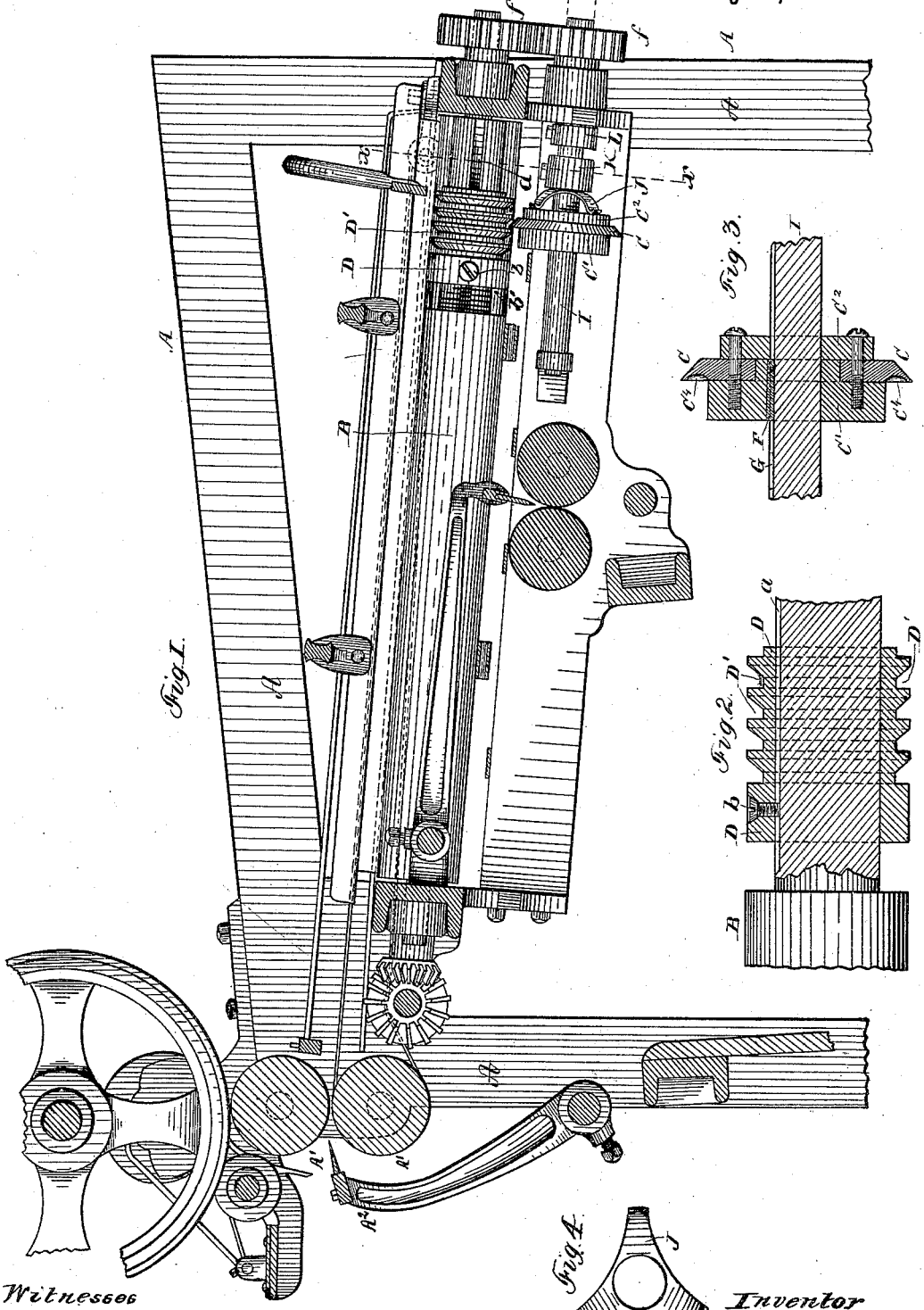
(No Model.) 2 Sheets—Sheet 1.

J. H. STONEMETZ.

PAPER TRIMMING MACHINE.

No. 301,178. Patented July 1, 1884.



Witnesses
W. B. Edelen
C. J. Bell.

Inventor
John H. Stonemetz.
Per Paine & Lord,
Att'ys

(No Model.) 2 Sheets—Sheet 2.

J. H. STONEMETZ.

PAPER TRIMMING MACHINE.

No. 301,178. Patented July 1, 1884.

Fig. 5.

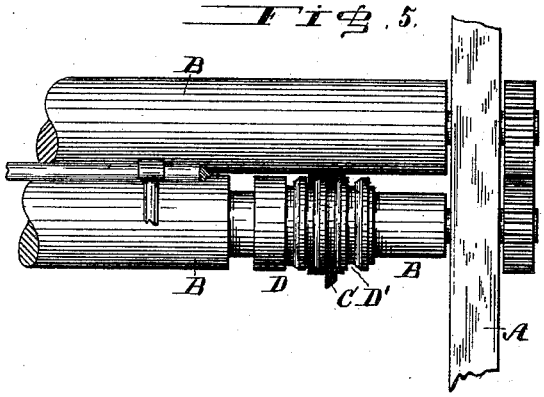
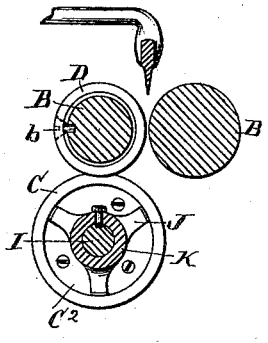


Fig. 6.



WITNESSES

C. J. Bell.

Oscar Nauck.

INVENTOR

John H. Stonemetz,

By Paine Hall & Slaughter,

Attorneys.

UNITED STATES PATENT OFFICE.

JOHN H. STONEMETZ, OF ERIE, PENNSYLVANIA.

PAPER-TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 301,178, dated July 1, 1884.

Application filed July 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. STONEMETZ, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Paper Cutting or Trimming Devices for Paper-Folding Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to devices for cutting or trimming the folded edges of sheets of paper as they pass through the rollers of a paper-folding machine.

The object of my invention is to provide an improved trimming mechanism which can be adjusted so as to admit of the folding and trimming of a variety of sizes of paper in the same machine, and which is also provided with a number of cutting surfaces or edges, each of which can be successively brought into service as they become worn.

To these ends the invention consists in the construction and combination of devices which will be hereinafter more fully described, and then set forth in the claims.

In the drawings, Figure 1 is a vertical transverse section of a paper-folding machine, exhibiting the second pair of rollers, the front one of which carries my improved paper-trimming device. Fig. 2 is a section of the adjustable annular sleeve on a portion of the roller-shaft, which is also shown in section. Fig. 3 is a section of the annular knife, showing the spline-and-groove connection between it and the shaft on which it is mounted, the pressure-spring being removed. Fig. 4 is a top view of the "star" or triangular spring for pressing together the cutting-edges of the annular sleeve and knife. Fig. 5 is a top view of the lower end of the second pair of rolls, showing the adjustable sleeve and annular knife beneath; and Fig. 6 is a vertical transverse section taken on the line *x x* of Fig. 1.

The letter A designates part of the frame of a paper-folding machine; A′ A′, the first pair of folding-rollers; A^2, the knife coacting with said rollers, and B *b′* denote the second pair of folding-rollers, which are arranged and driven in the ordinary manner. In the present instance the front one of this second pair of folding-rollers is reduced in diameter at one of its ends, as is shown in Fig. 1, and has a longitudinal groove, *a*, in said reduced portion. An annular sleeve, D, is fitted on this reduced portion of the roller B, and has a set-screw, *b*, which enters the groove *a*, as is clearly shown in Fig. 2. This set-screw is countersunk in the periphery of the sleeve D, and is flush therewith, so as to present no projection to the paper passing over the sleeve. The sleeve D has a series of circumferential or annular grooves, D′, the inner vertical faces of which grooves are beveled, as is shown in Fig. 2, for preventing the paper cuttings or shavings from being wedged in said grooves, and thus clog the cutter operating therein.

On a short independent shaft, I, having its bearings beneath the folding-roller bearing the grooved sleeve, and geared therewith by wheels *f*, is fitted a circular knife, C, which is held between the disk or hub C′ and a clamping-plate, C^2, secured to said hub by screw-bolts or other means. A spline, F, in the bore of said hub C′ enters a groove, G, in the shaft I, and serves to effect the connection between these parts, it being understood that the hub and its attached cutter can be adjusted longitudinally on the shaft I, but cannot turn thereon. The shaft I has a collar, L, fastened by a set-screw just within its outside bearing, which holds it against longitudinal displacement. The knife C has an annular groove, C^4, in its face, and is held automatically against one of the vertical faces of the annular grooves in the sleeve D by means of a star-shaped or triangular spring, J, which has an eye for the reception of the shaft I, and bears against the face of the clamping-plate C^2, as is shown in Fig 1. The spring is interposed between the plate C^2 and bearing-collar K, the latter being adjustable on the shaft I, so as to permit the bearing-collar and spring to be adjusted along said shaft, to allow the cutter to operate in either of the grooves of the annular sleeve D. When it is desired to shift the cutting-disk from one groove to another, the collars K and L are both

loosened, and the shaft I, with its gear, drawn out through its outer bearing into the position shown by dotted lines in Fig. 1 until the inner end of the shaft is clear of the cutter. The cutter is then loose and detached, and can be removed from contact with the grooved sleeve. The edge of the cutting-disk in then inserted into another groove, D', of the sleeve, and the central opening of the cutter-disk being brought into line with the end of the shaft I, the latter is pushed in through the cutter into place and locked by fastening the collar L.

It will be manifest from the description and the drawings that the annular sleeve D is fitted on a reduced portion of one of the folding-rollers, is made flat or straight, and does not project beyond the periphery of the largest part of said roller, and in this manner the annular sleeve virtually becomes a continuation of the roller, and serves to prevent the sagging or bending of the paper passing over the same. When the largest sized paper is to be cut, the adjustable sleeve is held at the extreme or outer end of the folding-roller, and the cutting-knife is entered into the last groove, so as to run therein. For smaller sheets of paper, or when larger strips are to be cut from the edges of the paper, the adjustable sleeve and cutter, or either, or both, are adjusted on their respective shafts, in order to change their positions in relation to the paper passing through the folding-rollers B.

I am aware that a spring-pressed knife or cutter fitted on an independent shaft has heretofore been employed in connection with a circumferentially-grooved folding-roller for trimming sheets of paper passing between it and an adjoining roller; and hence I make no claim to such cutter, broadly considered.

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

1. In a paper-folding machine, the combination of a folding-roller carrying an adjustable annular sleeve provided with circumferential grooves, with an adjustable circular cutter coacting with said adjustable sleeve, whereby both the line of trimming and the cutting-edge can be changed, substantially as herein set forth.

2. In a paper-folding machine, the combination of a folding-roller having a reduced end portion, the annular sleeve having circumferential grooves adjustably fitted on said reduced portion of the roller, and the same in its external diameter as the diameter of said roller, with a circular cutter coacting with said adjustable sleeve, substantially as herein set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN H. STONEMETZ.

Witnesses:

F. W. GRANT,

D. C. WELLER.