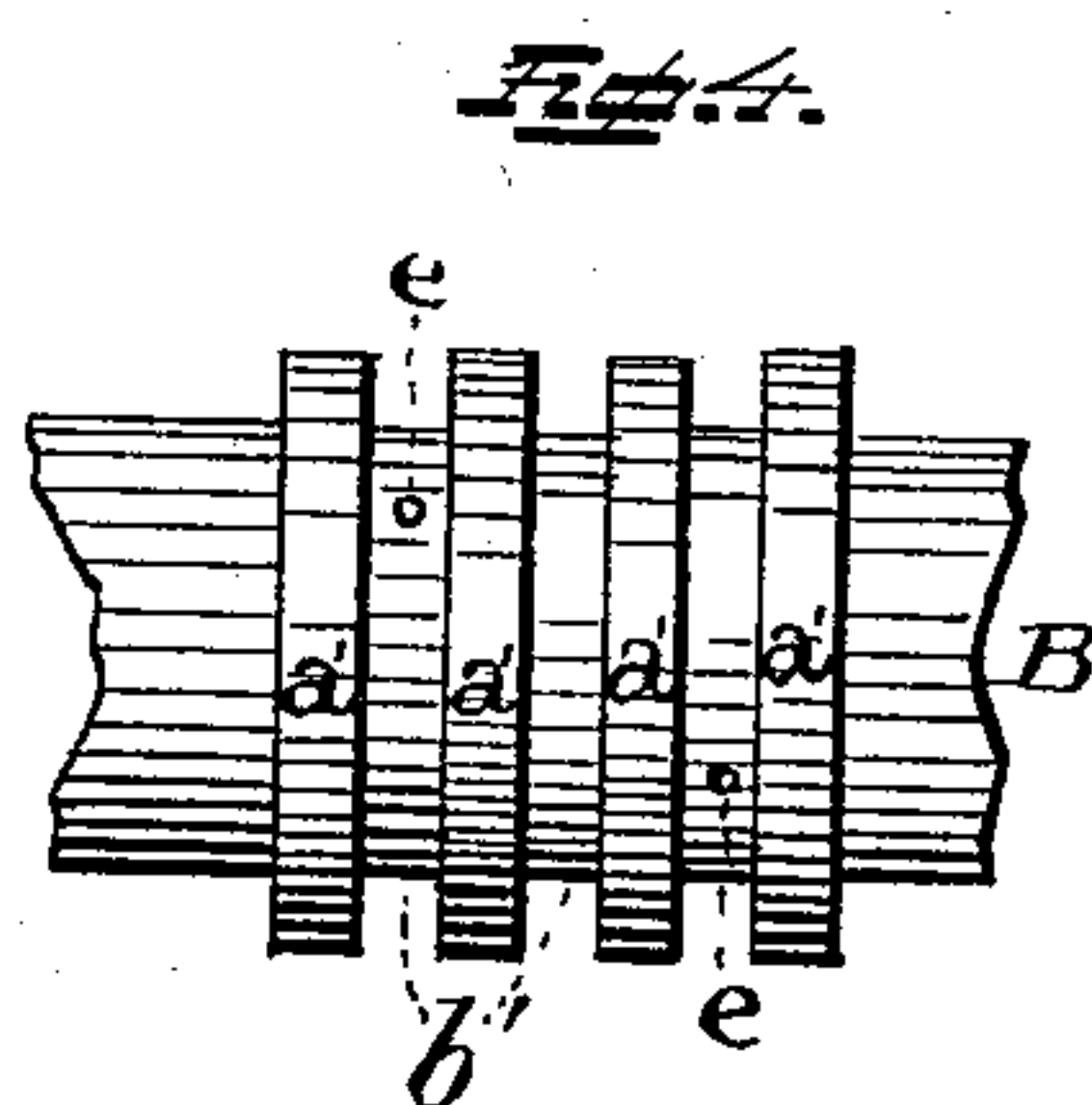
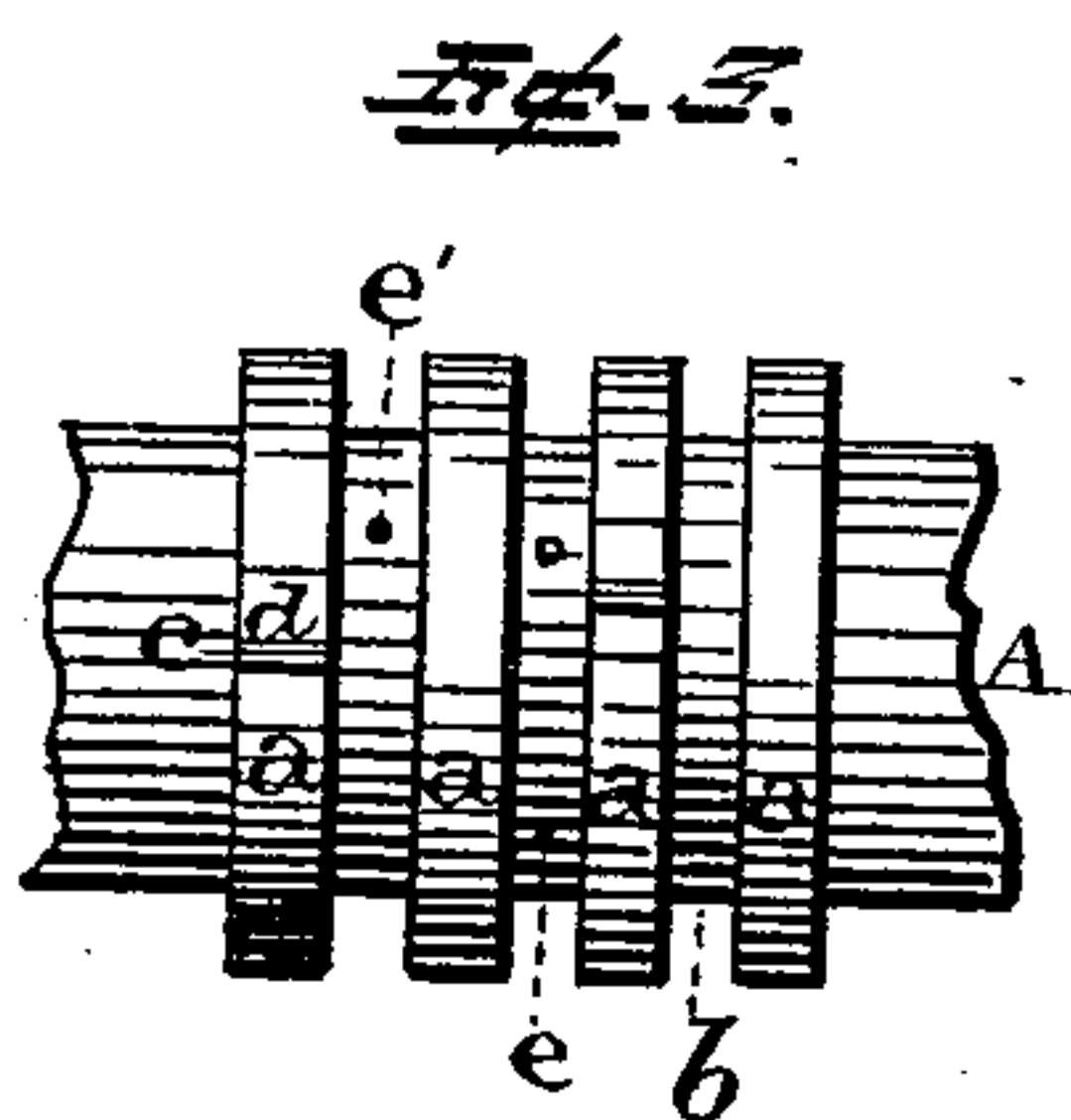
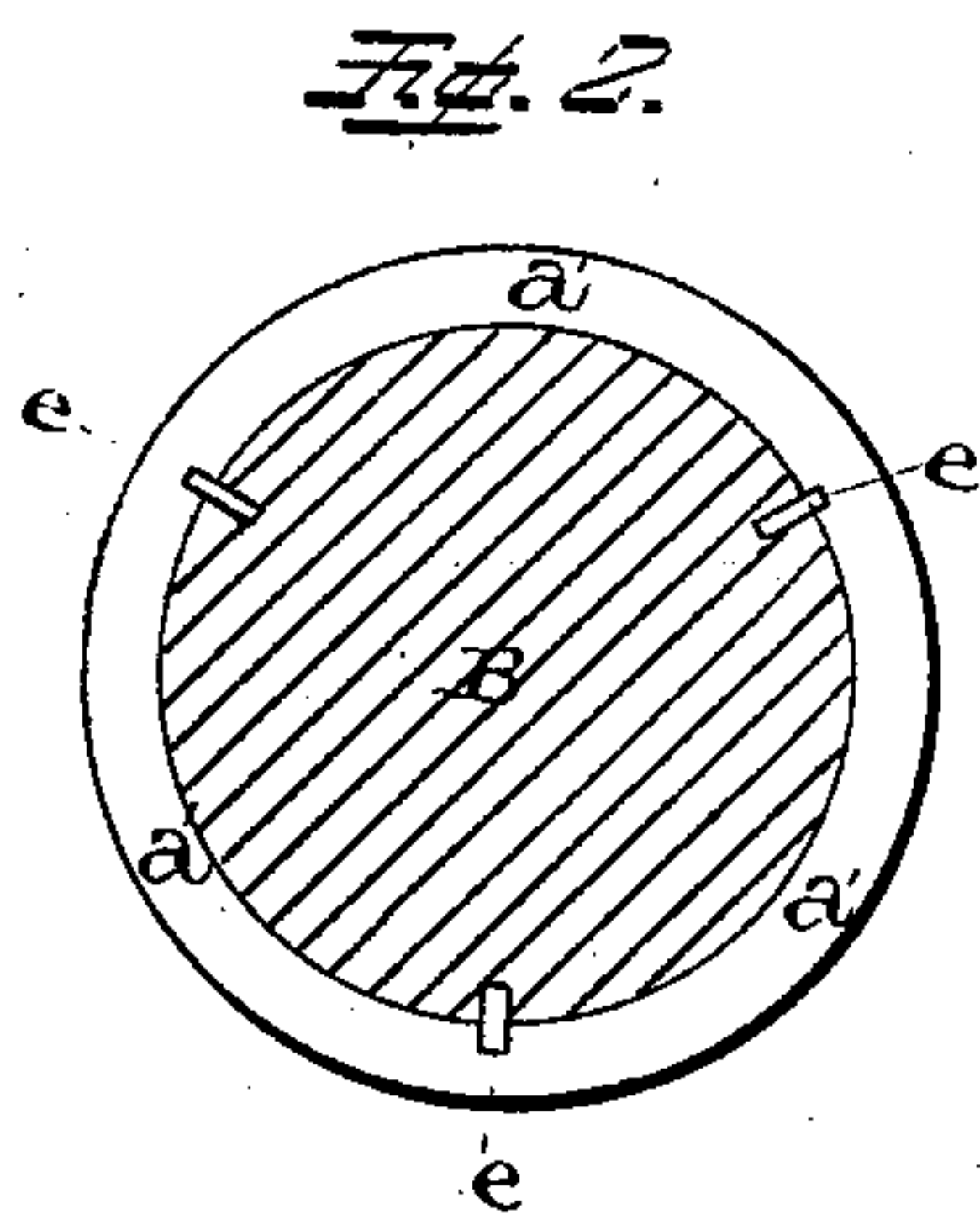
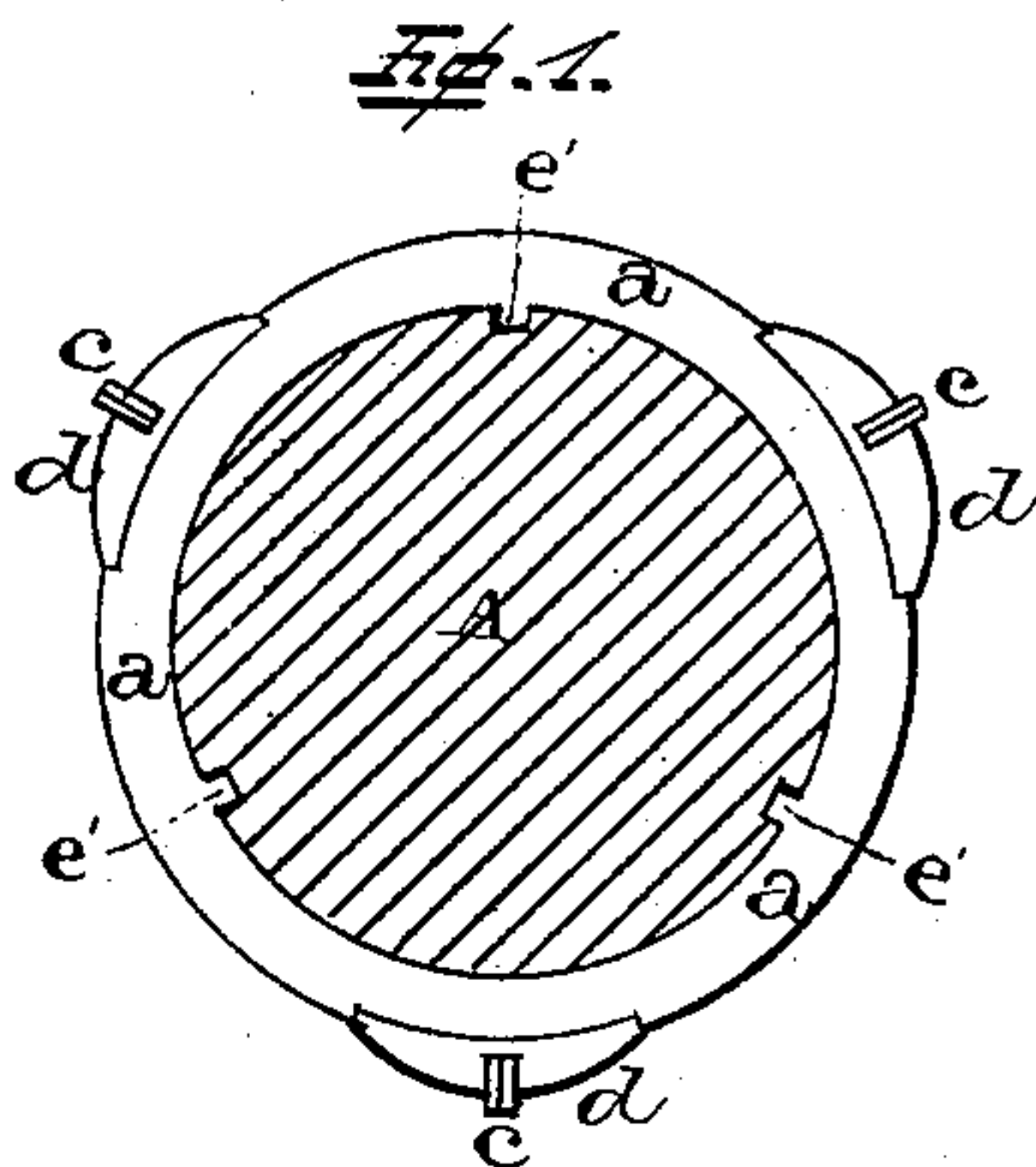


(No Model.)

D. F. KANALEY.
ROLL FOR ROLLING STEEL SPRINGS.

No. 272,556.

Patented Feb. 20, 1883.



Witnesses.
Wm. Mortimer.
W. H. Kern

Inventor.
D. F. Kanaley,
per
J. A. Lehmann,
att'y

UNITED STATES PATENT OFFICE.

DAVID F. KANALEY, OF PITTSBURG, PENNSYLVANIA.

ROLLS FOR ROLLING STEEL SPRINGS.

SPECIFICATION forming part of Letters Patent No. 272,556, dated February 20, 1883.

Application filed May 8, 1882. (No model.)

To all whom it may concern:

Be it known that I, DAVID F. KANALEY, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Rolls for Rolling Steel Springs, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improvement in rolls for rolling steel springs; and it consists in the construction of parts, that will be more fully described hereinafter, whereby a perfectly-shaped punched and tapered spring is produced at a single rolling.

Figures 1 and 2 are vertical cross-sections of the two rolls. Figs. 3 and 4 are side elevations of the same.

A B represent a pair of rolls, having the flanges *a a'* and the grooves *b b'*, which form dies in which the springs are rolled. The number and width of these flanges and grooves will depend entirely upon the size and number of springs to be rolled. The roll A is provided with a suitable number of blocks, *d*, convex on their outer sides, and held in suitable recesses made to receive them. These blocks, which are made detachable, are provided with removable cutting-dies *e*, for cutting off the springs, when finished, from the rods or blocks from which they are rolled. The blocks *d* serve to taper the ends of the springs, so as to give them the proper shape. The grooves *b'* of the roll B are provided with punches *e*, which are

so located as to punch holes in the springs at their centers, and the roll A is provided with corresponding recesses, *e'*, into which the punches take as the rolls are made to revolve. These punches punch holes through the center of the spring, and thus the spring is tapered at its ends and punched at the same operation. By making the blocks *d* and cutters *e* removable new dies can be substituted when the old ones are dull, and blocks having different shapes can be used.

I am aware that rolls have heretofore been made which have been provided with suitable sharp portions for cutting the metal being rolled into lengths; but these cutters have been formed as a part of the roll itself. My invention differs from this in making the blocks removable from the rolls and the cutters removable from the blocks.

Having thus described my invention, I claim—

In roller-dies for forming the leaves of elliptic springs, the combination of the rollers A B, the blocks *d*, which are made removable from the roller, and the dies or cutters *e*, which are made removable from the blocks, substantially as shown and described.

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

DAVID F. KANALEY.

Witnesses:

LOUIS MOESER,
F. A. LEHMANN.