

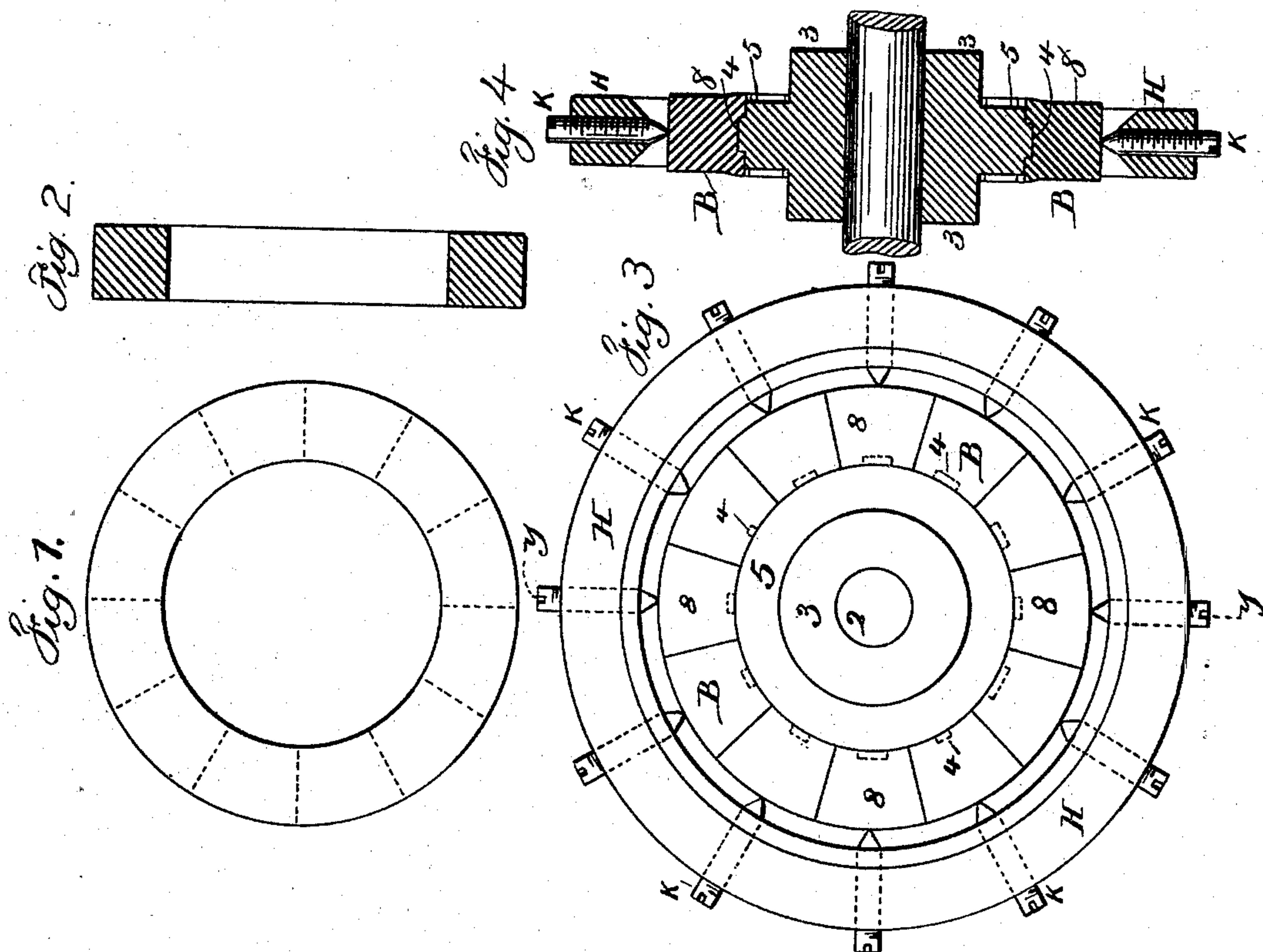
(No Model.)

2 Sheets—Sheet 1.

F. ECAUBERT.
DIE FOR MAKING TYPE WHEELS.

No. 500,801.

Patented July 4, 1893.



Witnesses

Chas H. Smith
J. Staib

Inventor

Frederic Ecaubert
per Lemuel W. Serrell atty

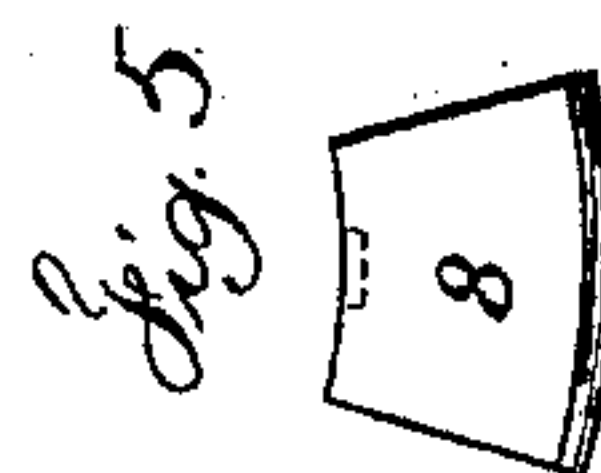
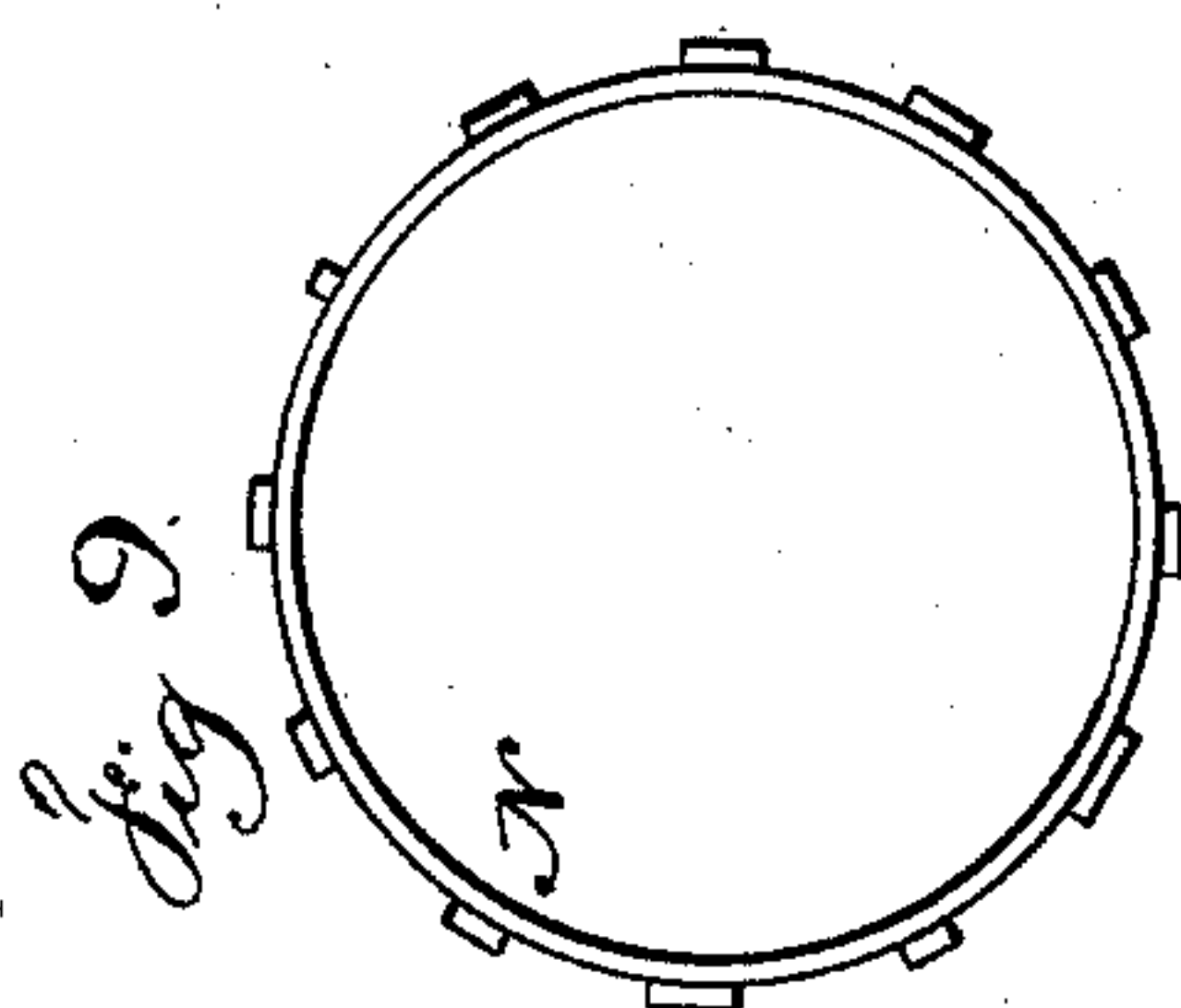
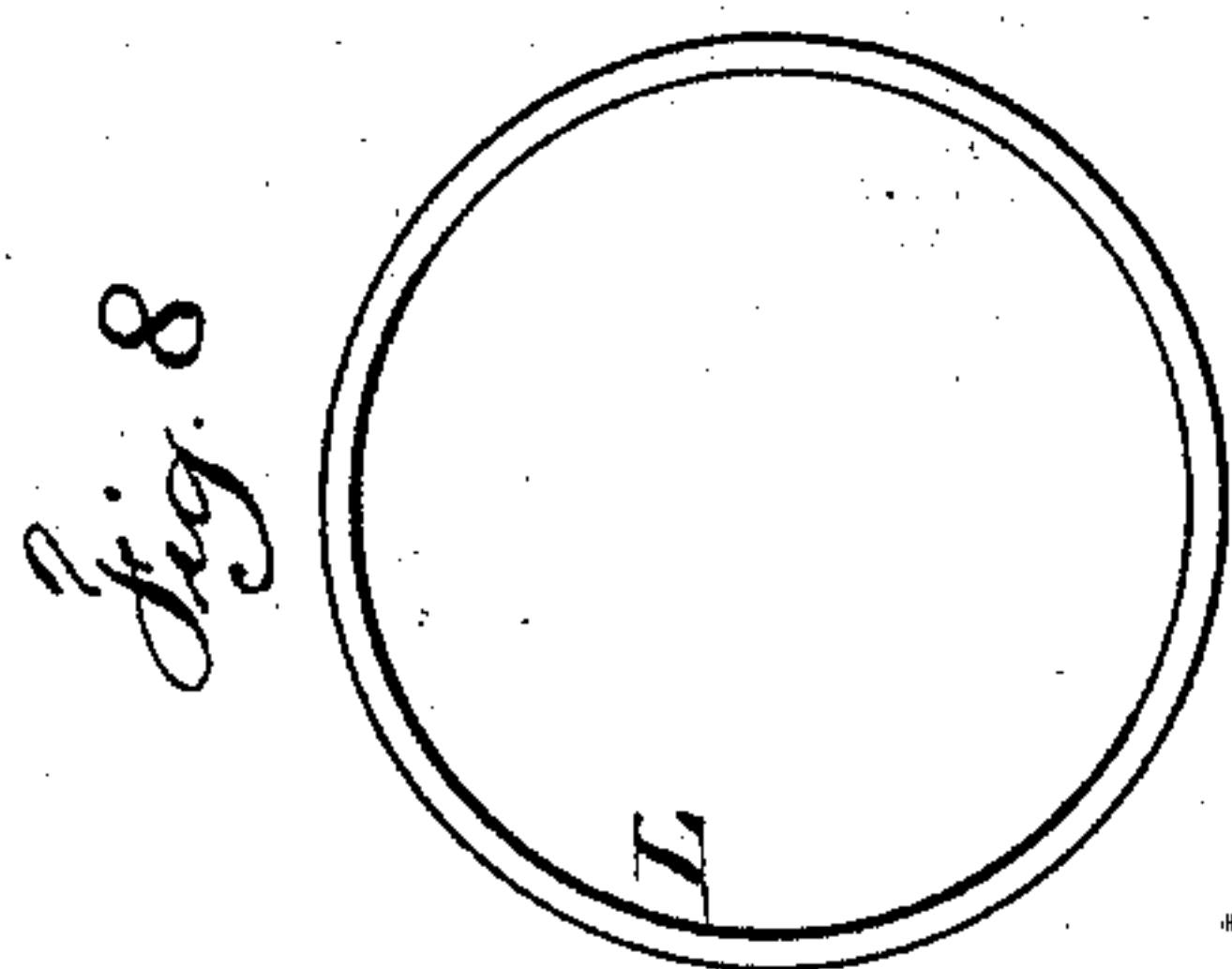
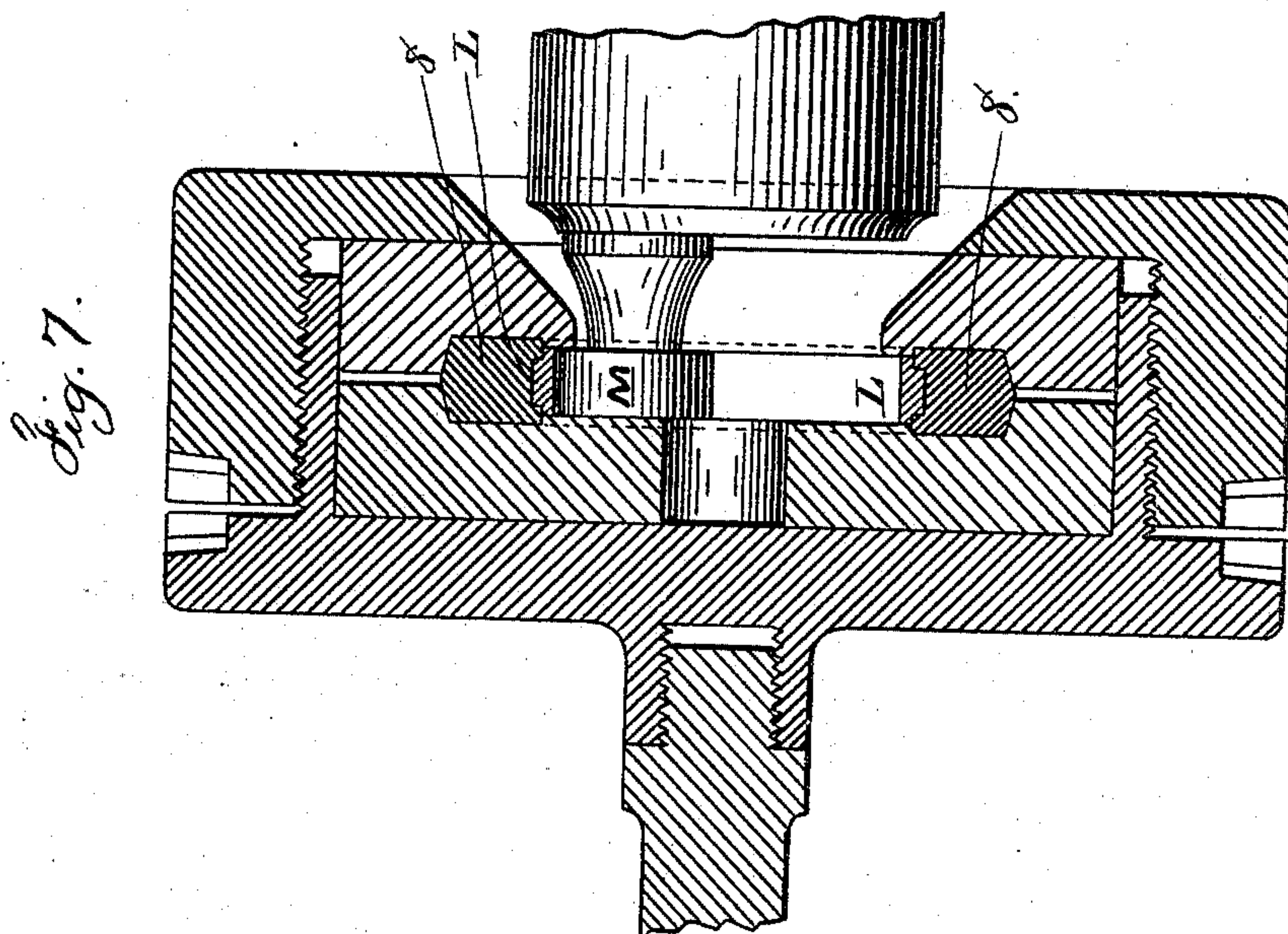
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UNITED STATES PATENT OFFICE.

FREDERIC ECAUBERT, OF BROOKLYN, NEW YORK.

DIE FOR MAKING TYPE-WHEELS.

SPECIFICATION forming part of Letters Patent No. 500,801, dated July 4, 1893.

Application filed September 29, 1887. Serial No. 251,006. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC ECAUBERT, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Dies for Making Type-Wheels, of which the following is a specification.

Type wheels for printing telegraph instruments have been made of type metal and by electrotype process, and number wheels for numbering machines have been of cast metal and have also been engraved by hand.

The object of the present invention is to produce letter, number or character wheels of brass, steel or similar metal so as to be of a much more perfect character than those heretofore made and more durable and at the same time less expensive.

In Letters Patent No. 270,644, dated January 16, 1883, dies are described for making watch case centers by the action of a roll upon the inside of a metallic ring within a die having the ornamental configuration of the surface of the watch case center, the roller acting to extend the metal ring and press the metal firmly into the die, but this die was not adapted to the production of raised or sunken letters or numbers upon a type wheel, because the sides of the base of each type require to be nearly parallel to the radius so as not to become filled with ink and dust and the segmental die in such patent, if made for a type wheel, could not be separated from such type wheel, and the segmental die could not be sufficiently strong for producing a type wheel and the type wheel would be too wide and require too much power in making it. The die is made of segments with radial or nearly radial edges and with the type matrix in the inner face for one or two types, and wider than the types, so as to obtain the required strength, and the clamping rings overlap the matrix dies, to confine the metal of the type wheel to the height of the letters, thus forming a narrow and perfect type wheel with but little power, and without risk of breaking the die.

In the drawings:—Figure 1. is an elevation of the soft steel ring to be cut into segments as indicated by the radial lines. Fig. 2. is a section of said ring. Fig. 3. is an elevation of the pattern wheel and of the segments in

place around the same and the ring or chuck and clamping screws for holding the parts while the sides and outer edges of the segments are turned off. Fig. 4. is a section at the line *y. y.* Fig. 3. Fig. 5. is a side, and Fig. 6. an end view of one segment. Fig. 7. is a section of the chuck for spinning up the letter ring. Fig. 8. is an elevation of the letter ring blank, and Fig. 9. is an elevation of the ring complete.

The matrix B. is made up of sections each section containing one or more letters or characters. In making these sections it is preferable to turn up soft steel rings, approximating in shape the completed matrix and to cut said rings up radially into segments 8. each of the proper size to receive into the inner end the character or characters. It is preferable to make two of these rings similar to those shown in Figs. 1 and 2, so as to have surplus of segments, to compensate for the loss of metal in sawing up the rings and in dressing up the radial surfaces.

One letter or figure for the wheel A. is pressed into the inner end of the segment 8. so that such letter or figure is entirely embedded and the end of the segment is preferably of the shape of the surface of the type wheel adjacent to such letter. A second segment is similarly prepared and receives the impress of the next letter, and so on until the whole of the letters or characters to form the type wheel have been impressed into the respective segments. The radial edges of the segments are then dressed off so that they set correctly against each other all around a type wheel or pattern 3. 4. 5. and then the segments are clamped to place by a ring or ring chuck H. with radial screws K. there being one screw to each segment 8. and the sides of the segments are turned off and also the outer ends, so as to form a complete matrix by the circle or ring of segments. In cases where the type wheel is to have sunken instead of raised letters, the pattern wheel is to be engraved with recessed letters and all the operations heretofore described are otherwise the same. After these segments are completed and hardened they are set together within a clamping chuck as seen in Fig. 7. which by preference is similar to that shown

in my Patent No. 270,644 except that the edges of the clamping ring dies overlap the inner edges of the matrix die, to lessen the width of the type wheel and a ring L. of brass or
 5 other suitable metal is placed in said chuck and the parts revolved and a roller M. is pressed against the interior of the ring to roll out and extend the same and compress the metal into the matrix until the cavities there-
 10 of are entirely filled and the type wheel N is completed as seen in Fig. 9. This requires comparatively little power, because the type wheel ring is only wide enough to receive the letters. The matrix is taken apart so that
 15 the segments can be removed from the type wheel, and said type wheel will be an exact counterpart of the letters, figures or characters upon the pattern 3. 4. 5. and the brass or other metal will be hardened and consolidated
 20 so as to be much stronger and more perfect and durable than the type or letter wheels heretofore made, the whole being of rolled metal and the letters integral with the ring portion of the type wheel.
 25 Arms or a suitable center may be used for

each type wheel ring in the printing telegraph, numbering machine, or other successive printing device.

I claim as my invention—

A ring-shaped die for making type wheels, 30 the same being formed of segments with radial or nearly radial edges and with one or two type matrices in the inner faces, the segments being wider than the letters or the type wheel to be made, so as to obtain the required 35 strength in the matrix for the letter to be pressed up, in combination with clamping ring dies recessed for the reception of the type wheel matrix segments and partially covering the inner surfaces of such matrix to 40 confine the edges of the type wheel to the width required for the letters, substantially as specified.

Signed by me this 20th day of September, 1887.

F. ECAUBERT.

Witnesses:

GEO. T. PINCKNEY,
 WILLIAM G. MOTT.