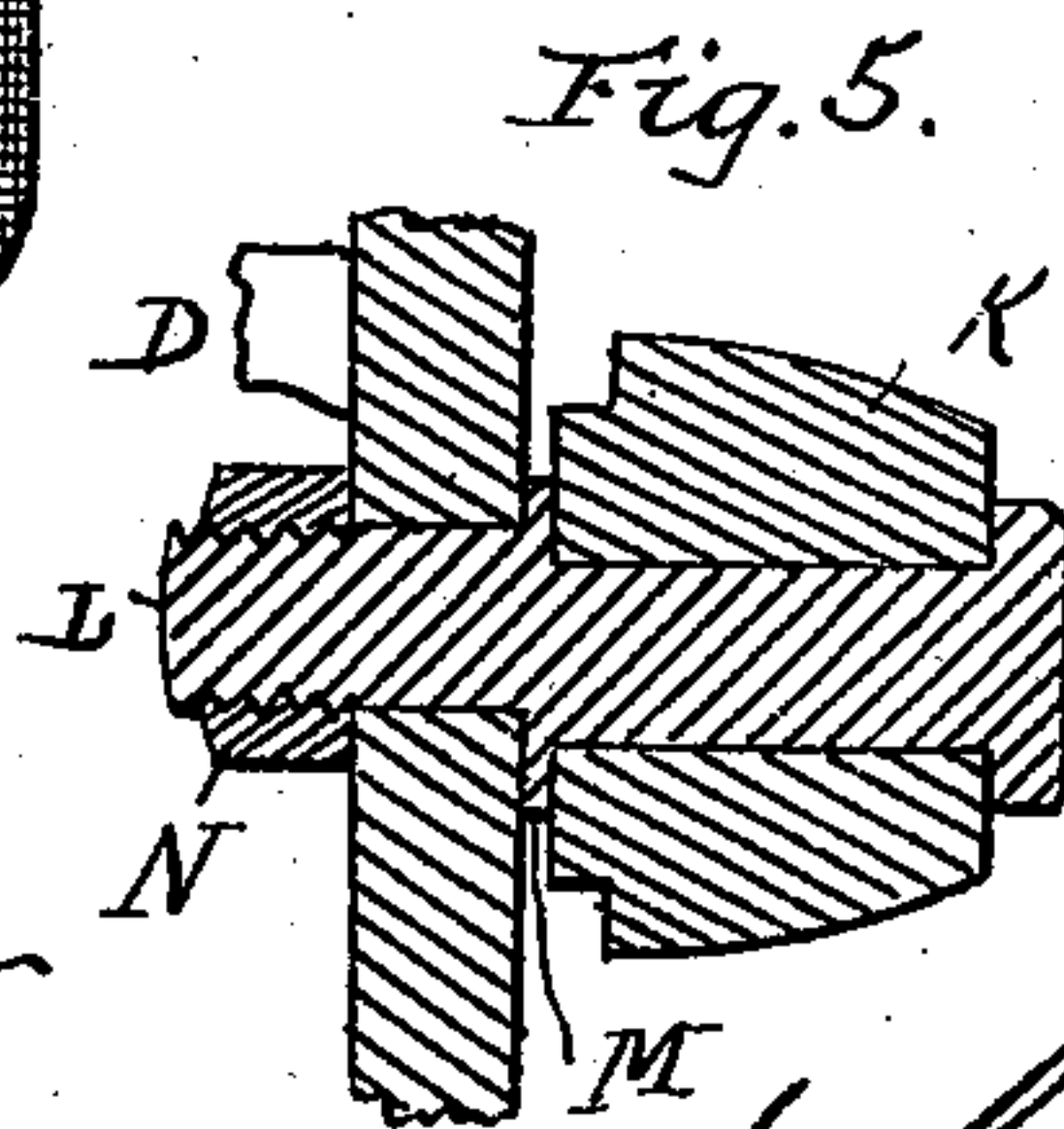
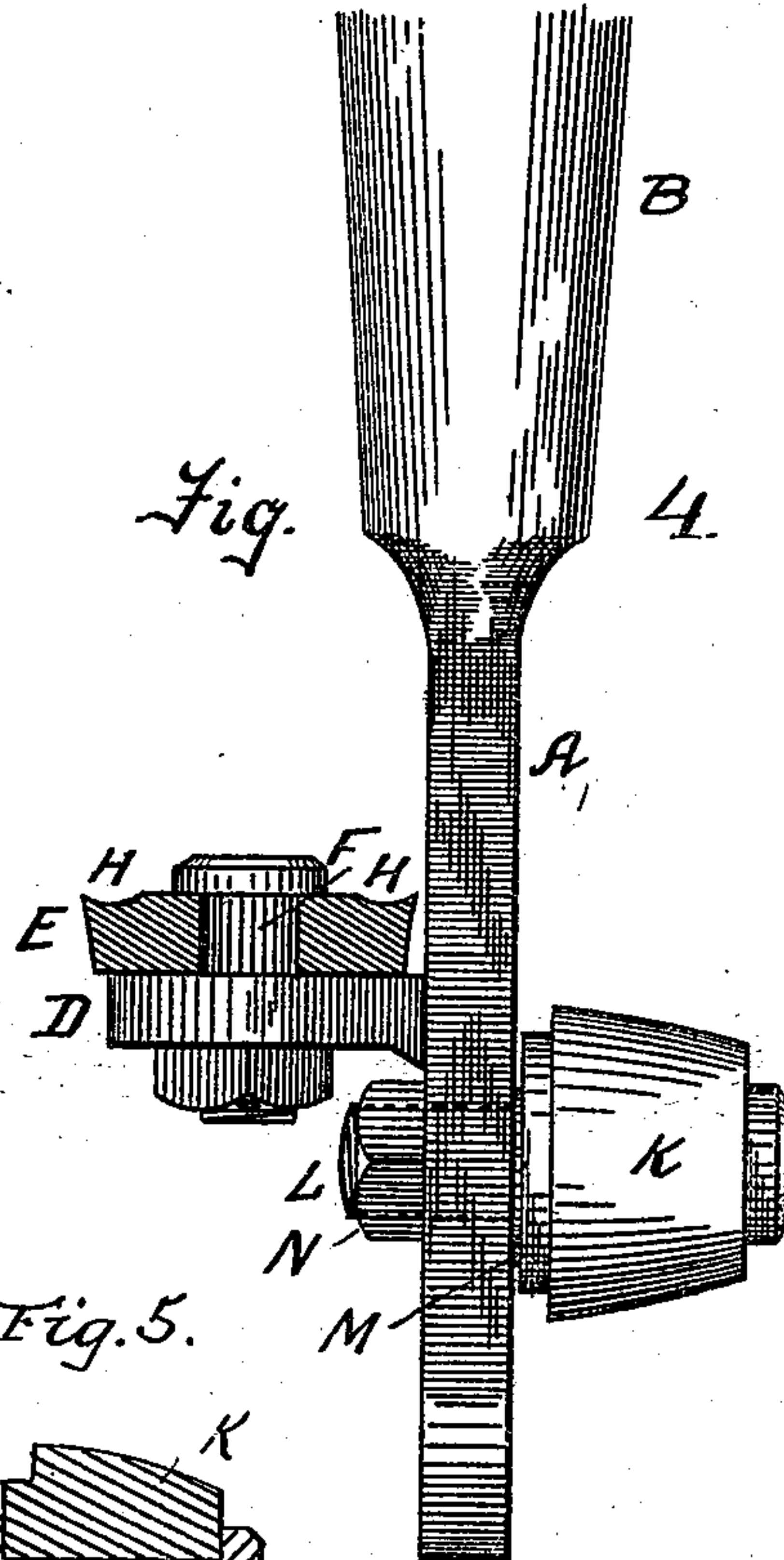
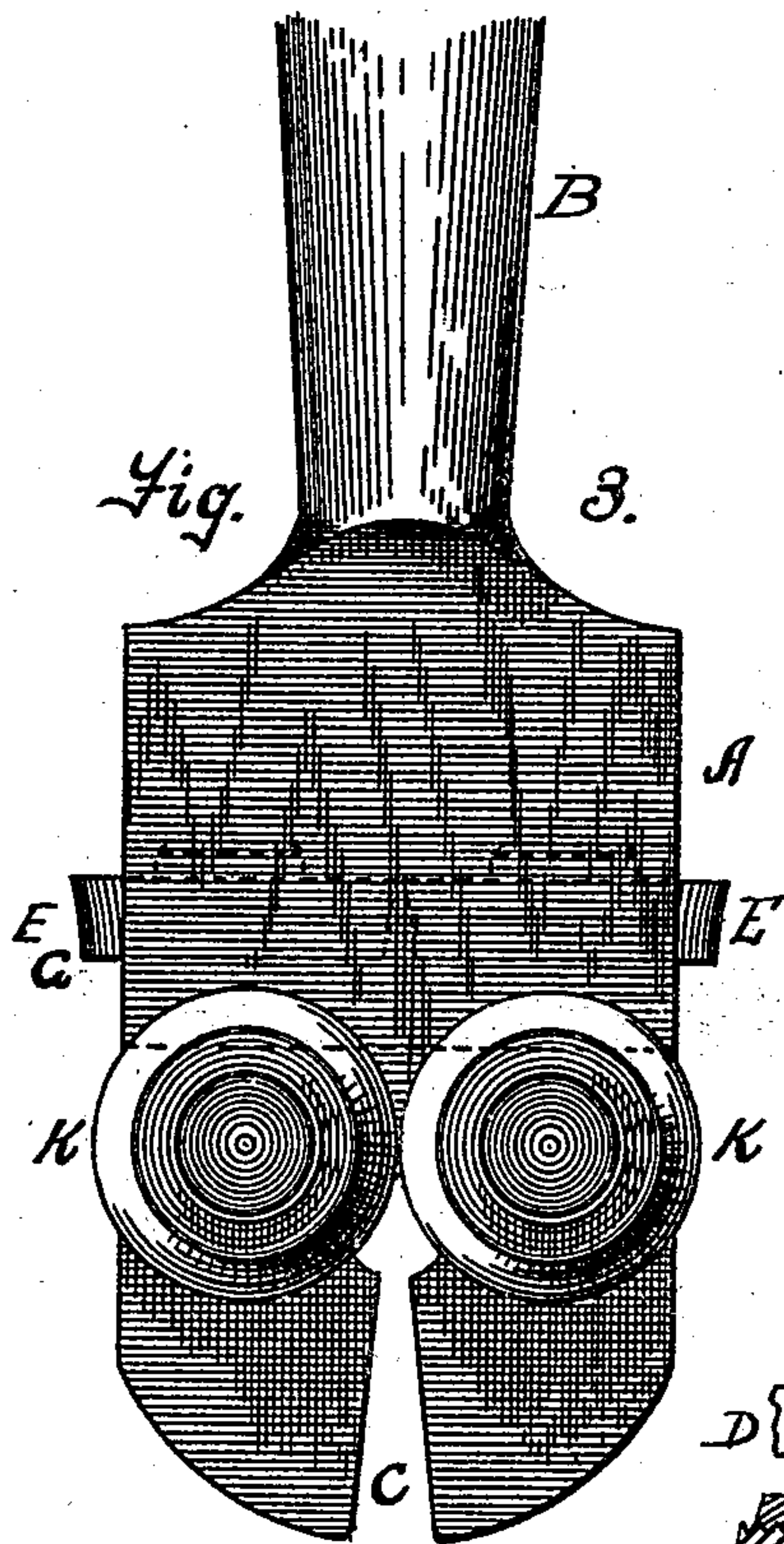
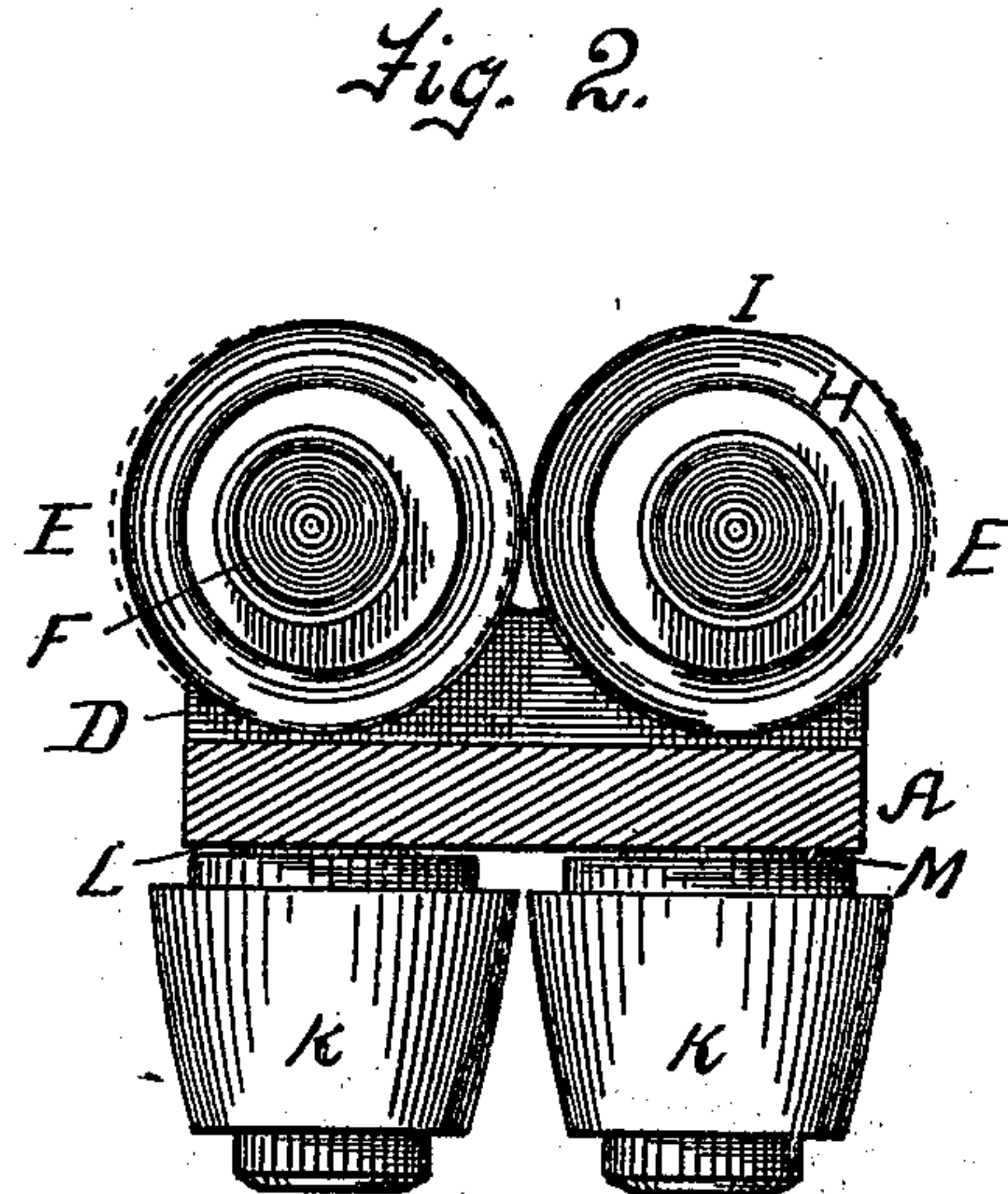
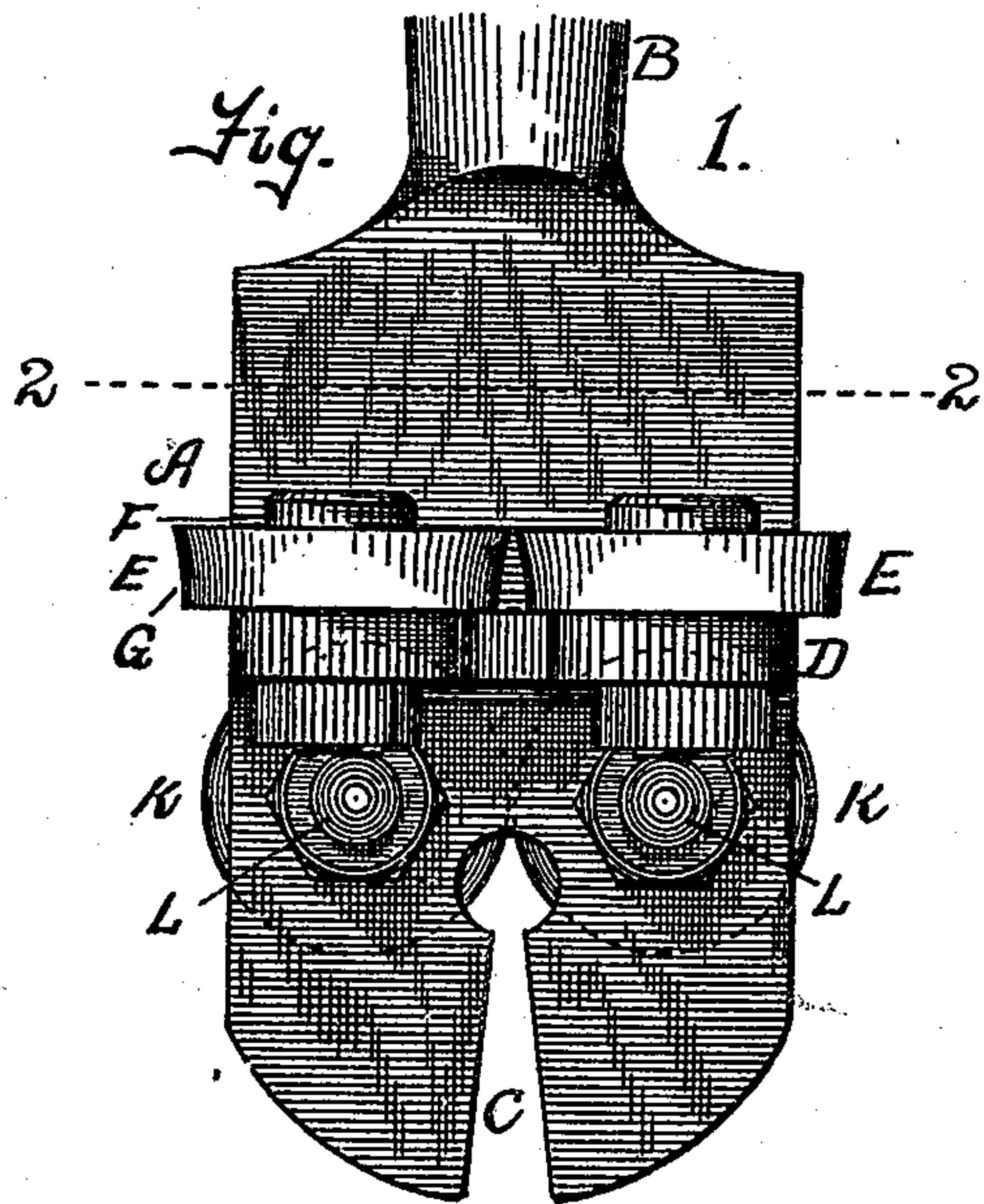


(No Model.)

E. NELSON.
TOOL FOR SHARPENING PLOWS.

No. 502,747.

Patented Aug. 8, 1893.



Witnesses.

L. M. L. Jackson
Mauley Blum

Inventor:
Erick Nelson.

By *J. M. L. Jackson* Attorney.

UNITED STATES PATENT OFFICE.

ERICK NELSON, OF ST. PAUL, MINNESOTA.

TOOL FOR SHARPENING PLOWS.

SPECIFICATION forming part of Letters Patent No. 502,747, dated August 8, 1893.

Application filed December 14, 1891. Serial No. 415,058. (No model.)

To all whom it may concern:

Be it known that I, ERICK NELSON, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Tools for Sharpening Plows; and I do 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 the letters of reference marked thereon, which form a part of this specification.

The object of my invention is to provide a combination tool for the purpose of, first, setting or straightening iron or steel edged tools; second, sharpening the edge of such tools, and third, by compression and friction, hardening, strengthening and finishing such sharpened edges.

The invention is illustrated in the accompanying drawings, in which—

Figure 1, is a view of the face of the tool carrying the sharpening dies; Fig. 2, a cross sectional view of the tool facing the sharpening and rolling dies; Fig. 3, a view of the face carrying the rolling dies; Fig. 4, a side view of the tool, showing one of the sharpening dies in section; and Fig. 5, is a view illustrating the eccentric mounting of the studs of the finishing rollers.

Similar letters refer to similar parts throughout the several views.

The base or foundation of the tool consists of a plate A, having a ferrule or shank B, for attaching a handle, which may be of wood and of any desired length.

In the end of the plate A, is a longitudinal recess C, forming jaws upon each side for the purpose of grasping a plowshare or point, and enabling it to be set, straightened or otherwise bent to a proper shape.

Upon one side of the plate A, and in a plane substantially at right angles thereto, are mounted upon a bracket D, the two disk-shaped sharpening dies, E, E. These are eccentrically and rotatively mounted upon studs F, F, to admit of adjustment thereupon, to

regulate the distance apart of the cutting edges of the dies and to enable a new part of the cutting edge to be brought into place of service in case of wear. The periphery of each die is slightly tapering or concaved, as shown at G, to give greater acuteness to the edge, and to effect this object to a still greater degree, the adjacent plane face of the die has formed therein close to its edge an annular concave groove H. The dies are made of hardened steel, and operate by shaving the instrument to a finer edge when drawn along the same. The periphery of one of the dies is flattened or made straight for a short distance, as at I, in Fig. 2, for the purpose, when desired, of sharpening the edge of an instrument on one side only, the flattened or straightened part of the die being so adjusted as to bear against the side of the edge of the instrument which is not to be sharpened opposite the other die by which the sharpening is effected.

The finishing rollers, K, K, are two hardened, convexly-tapered steel rollers, revolving on eccentrically-mounted studs, L, L, and placed side by side upon the opposite side of the plate A, from the sharpening dies. The edges of the instrument being inserted and drawn through between the rollers, or the latter being caused to revolve under pressure along either side, are, by the compression of the rollers and the friction produced, made to come to a fine edge, and the same hardened and made more durable. The studs L, have a shoulder M, which abuts against the plate A, to admit of the same being drawn rigidly into place thereupon by their nuts N, and the eccentricity of the stud is effected by giving the tenon or part which enters the plate a different center from that of the part of the stud carrying the roller K. By loosening the nuts N, the studs may be adjusted to bring the faces of the rollers close together or at different distances apart, to provide for the finishing of edges beveled to different angles, or to compensate for wear upon the rollers.

The adjustment of the sharpening dies E, E, may be effected by mounting the dies themselves eccentrically upon the studs, or

by mounting the studs eccentrically in the bracket D, in the same manner as in the case of the roller studs.

I claim as my invention—

5 1. In a tool for sharpening or shaving the edges of metal instruments, hardened steel disk-shaped dies each having a tapering peripheral face and an annular concave groove upon the larger plane face adjacent to said
10 peripheral face, substantially as and for the purpose specified.

2. In a tool for sharpening or shaving the edges of metal instruments, a pair of hardened steel disk-shaped dies having tapering
15 peripheral faces and rotatively mounted in juxtaposition in the same plane, one of said dies having its peripheral face flattened or straightened for a short distance, substantially as and for the purpose specified.

20 3. In a tool for sharpening and finishing the edges of metal instruments, a pair of studs eccentrically mounted upon a suitable base or standard, and convexly-tapered steel rollers rotatively mounted upon said studs, the
25 position of said studs being such that when

so mounted the larger part of the peripheral surfaces of said rollers may be in juxtaposition, substantially as and for the purpose specified.

4. A combination tool for sharpening, finishing and setting the edges of metal instruments, consisting of a base plate to which a handle may be attached, an upright bracket upon one side of said plate, a pair of dies having cutting peripheral faces or edges rotatively and eccentrically mounted in juxtaposition upon the faces of said bracket, a pair of studs eccentrically or adjustably mounted upon the opposite side of said plate, a pair of convexly-tapered steel rollers rotatively
30 35 40 mounted upon said studs, and jaws formed by a recess in said plate, substantially as and for the purpose herein specified.

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

ERICK NELSON.

Witnesses:

GUDBRAND J. LOMEN,
F. W. LANE.