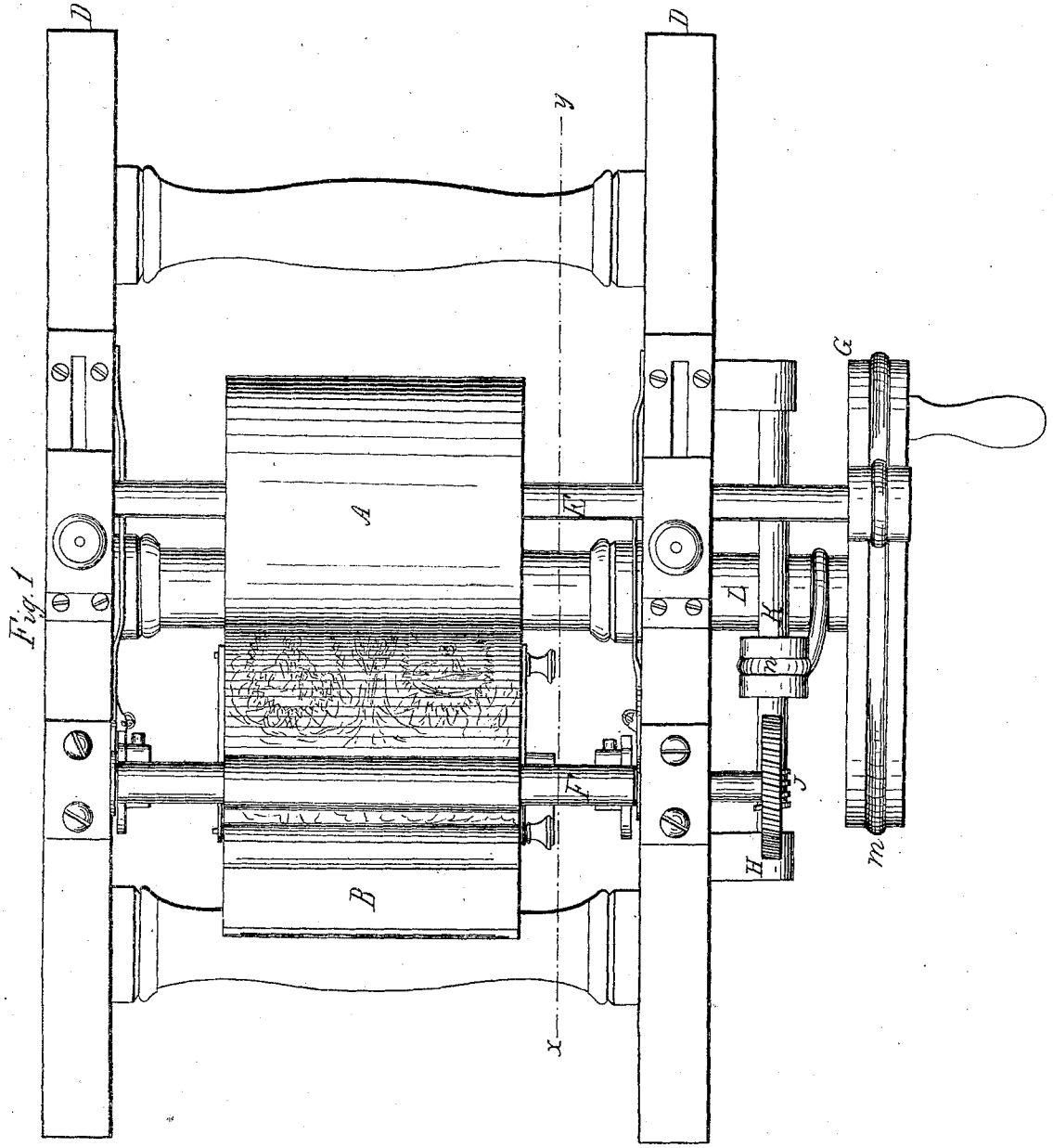
C. Lang.

Sheet 1. 2 Sheets.

Machine for Making Lace Paper.

No. 46115. Patented Jan. 31. 1865.



Witnesses
Chs Krehle
Henry Wehle

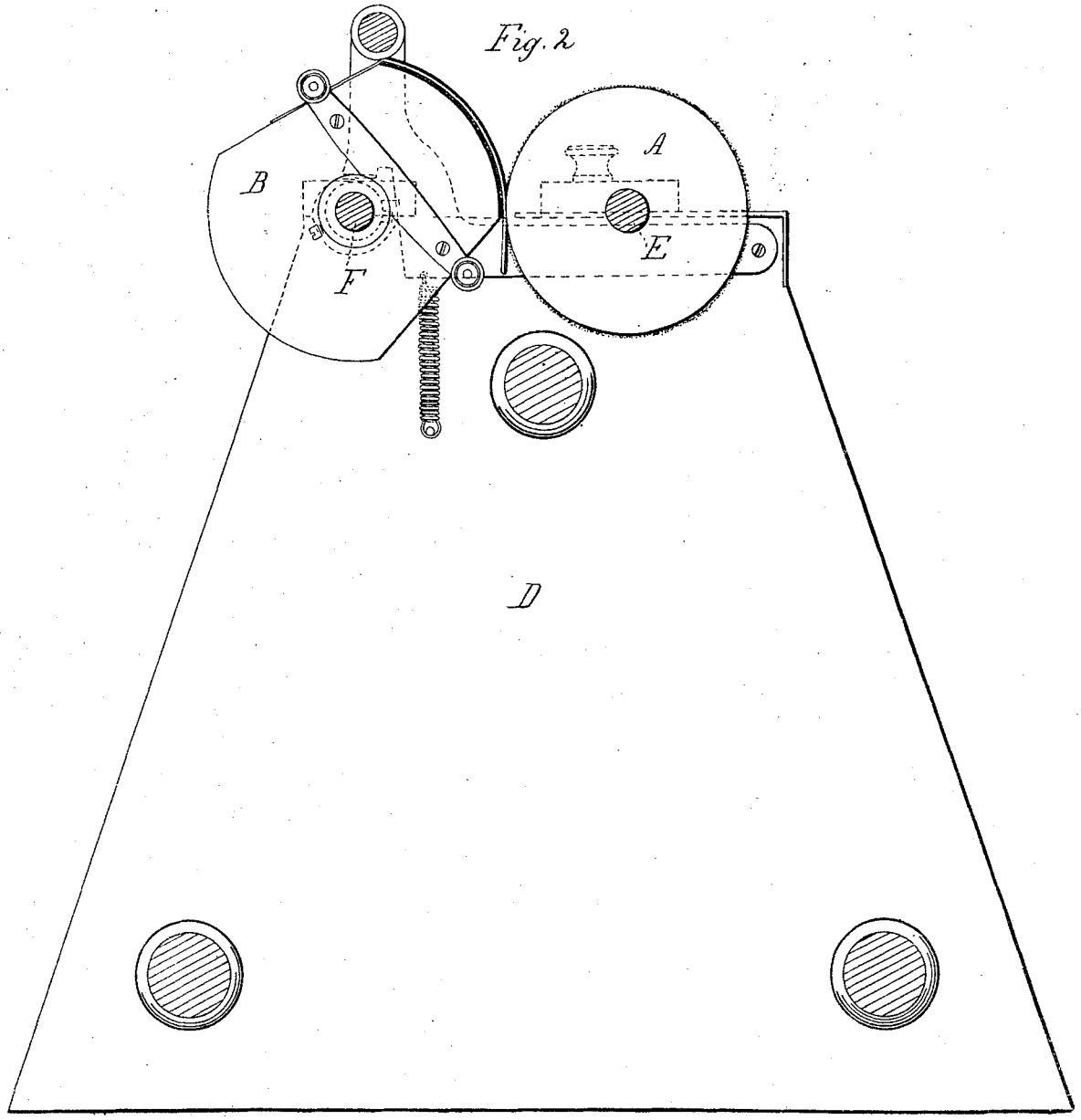
Inventor
Charles Lang

C. Lang. Sheet 2. 2 Sheets.

Mach^e for Making Lace Paper.

No. 46115. Patented Jan. 31. 1865

Fig. 2



Witnesses
Chas Mehl
Henry Helle

Inventor
Charles Lang

UNITED STATES PATENT OFFICE.

CHARLES LANG, OF WORCESTER, MASSACHUSETTS.

MACHINE FOR MAKING LACE-PAPER.

Specification forming part of Letters Patent No. **46,115**, dated January 31, 1865.

To all whom it may concern:

Be it known that I, CHARLES LANG, of Worcester, in the State of Massachusetts, have invented a new and Improved Method of Manufacturing Lace-Paper, and that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a plan or top view of the improved machine whereby the lace-paper is manufactured. Fig. 2 is a section of said Fig. 1 on line *x y*.

The same letters indicate the same parts in both figures.

The nature of my invention consists in grinding off or removing the elevated parts of embossed paper by means of a machine substantially as hereinafter described.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same.

I deem it proper to state that the usual manner of making-lace paper is by pressing a piece of paper between two dies, one of which contains the design in relief or elevated, while the other contains the design sunk or depressed. The embossed paper is removed from the dies, and the elevated parts of it are cut by hand with a knife or similar instrument, either by percussion or pressure.

My machine for removing the elevated parts of the embossed paper consists of a frame, D D, containing two cylinders, A and B, turning on two parallel axles, E and F, in opposite directions. One of said cylinders or rollers, A, is covered on its surface with a layer of ground glass, emery, or similar substance, or the roller itself may be formed of said substances. The other cylinder, B, is provided with a duplicate of the depressed or sunk die, upon which the embossed paper to be cut is fastened so as to fit neatly into the devices of the die. The projecting portions of the embossed paper are then brought into contact with the roller A by rotating the said roller, whereby the elevated parts of said paper are ground off or removed.

The said machine is so constructed that the cylinder A will rotate with a much greater speed than the cylinder B, the axle E of cylinder A being connected by a band or belt, *m*, with the circumference of fly-wheel G, while the axle E of cylinder B forms the axle of a toothed wheel, H, in which an endless screw, J, the axle of which endless screw K is connected by a belt, *n*, with the axle L of the fly-wheel or driving-wheel G. Thus the rotation of the said fly-wheel will cause a greater speed in the rotation of the roller A than in that of roller B.

The feeding apparatus is shown on the drawings, but is not claimed in this specification.

When all the elevated parts of the embossed paper are removed by means of this machine, the paper is removed from the die, and is then in a finished condition as lace-paper.

The advantage of this method of making lace-paper consists in greater cheapness, saving of time, and in the production of a better article.

What I claim as my invention, and desire to secure by Letters Patent, is—

Removing the elevated parts of embossed paper by means of an apparatus the principal parts of which consist of two rollers, substantially in the manner and for the purpose described.

CHARLES LANG.

Witnesses:
CHS. WEHLE,
H. WEHLE.