(No Model.) 2 Sheets—Sheet 1.

H. H. UNZ.

MANIFOLDING DEVICE FOR TYPE WRITERS.

No. 507,189. Patented Oct. 24, 1893.

Fig. 2.

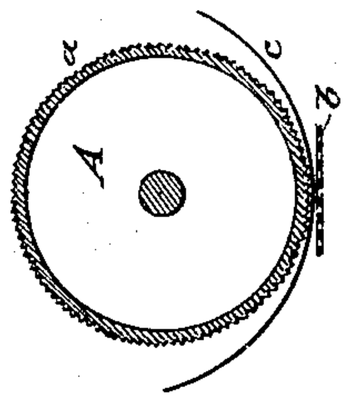


Fig. 4.

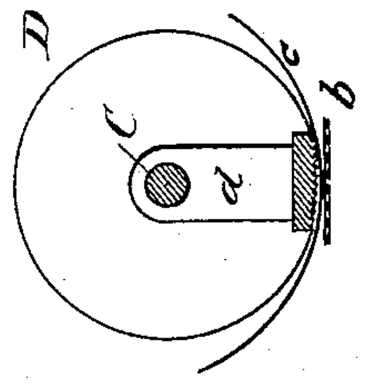


Fig. 6.

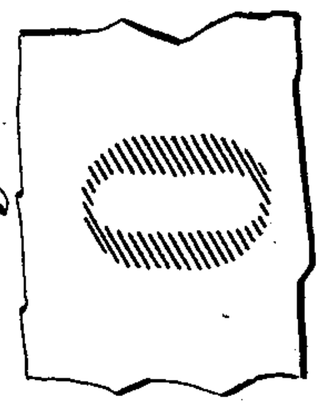


Fig. 1.

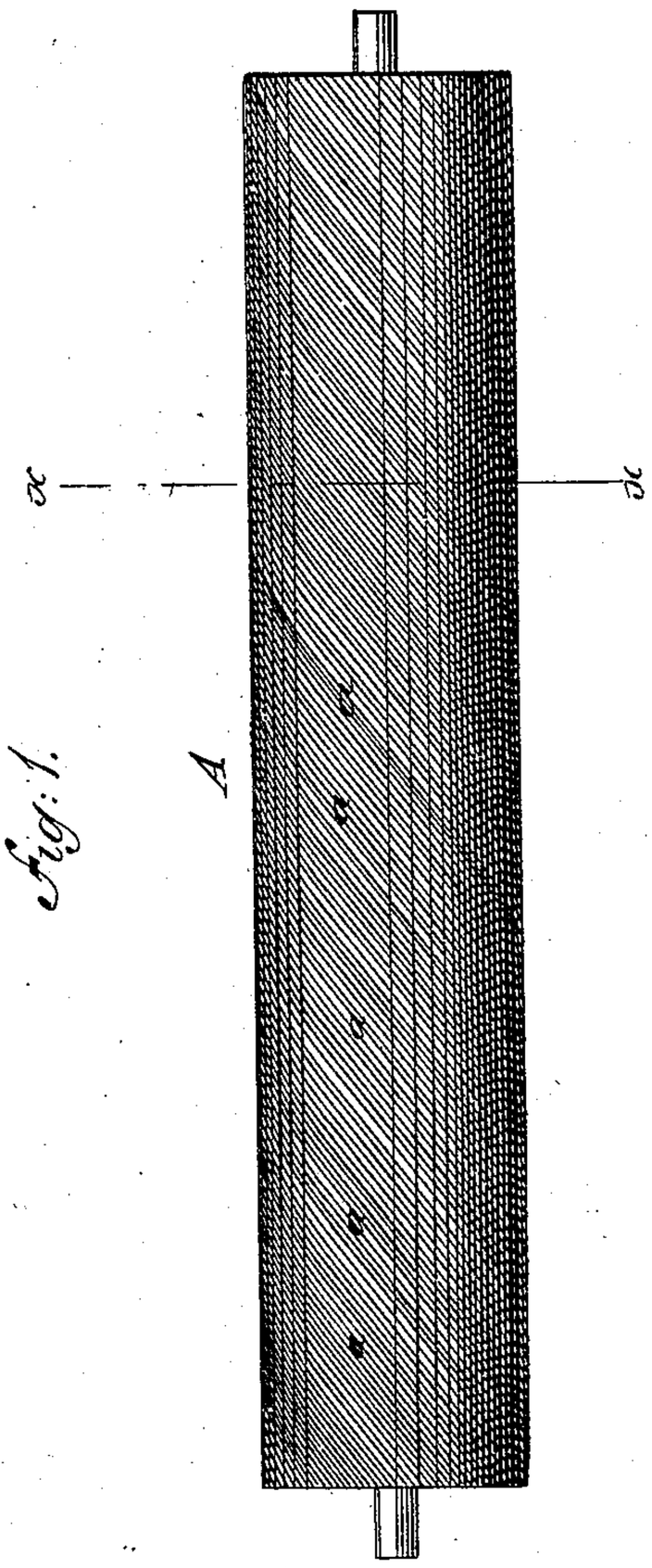


Fig. 3.

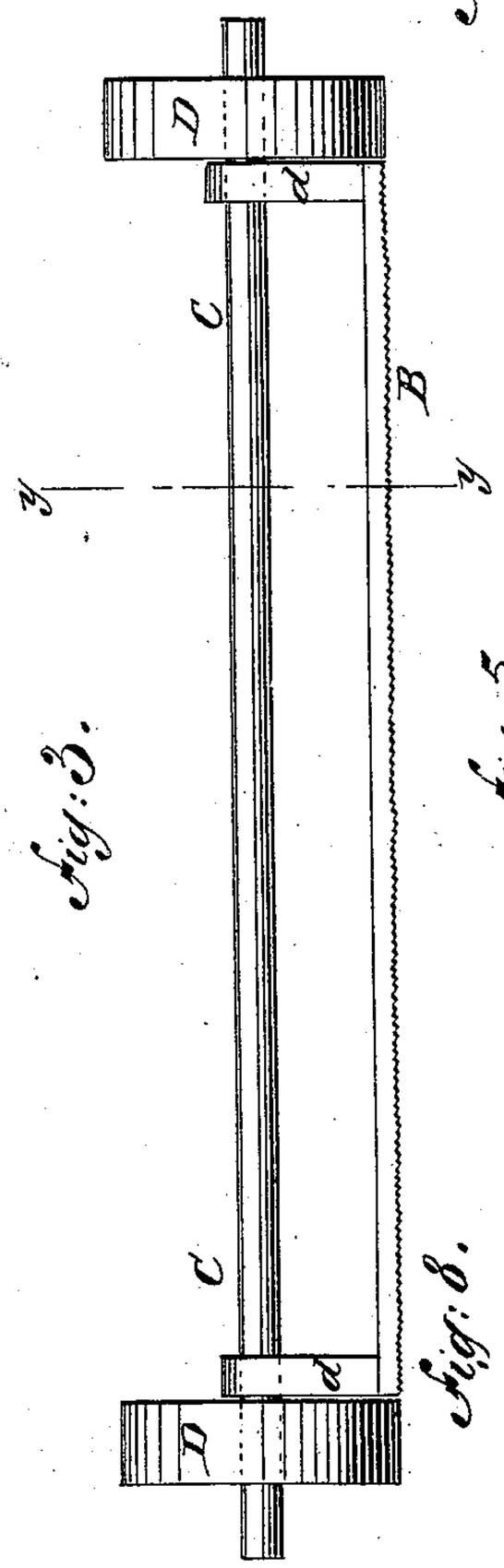


Fig. 5.

Fig. 8.

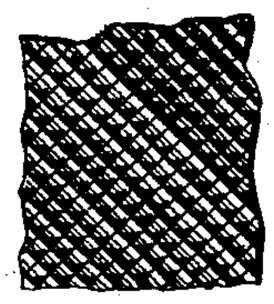
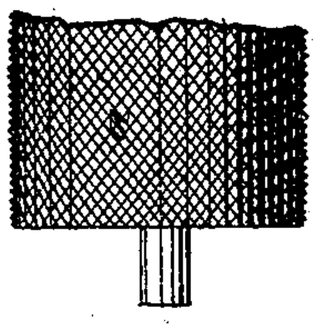


Fig. 7.



WITNESSES:

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INVENTOR:

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ATTORNEYS.

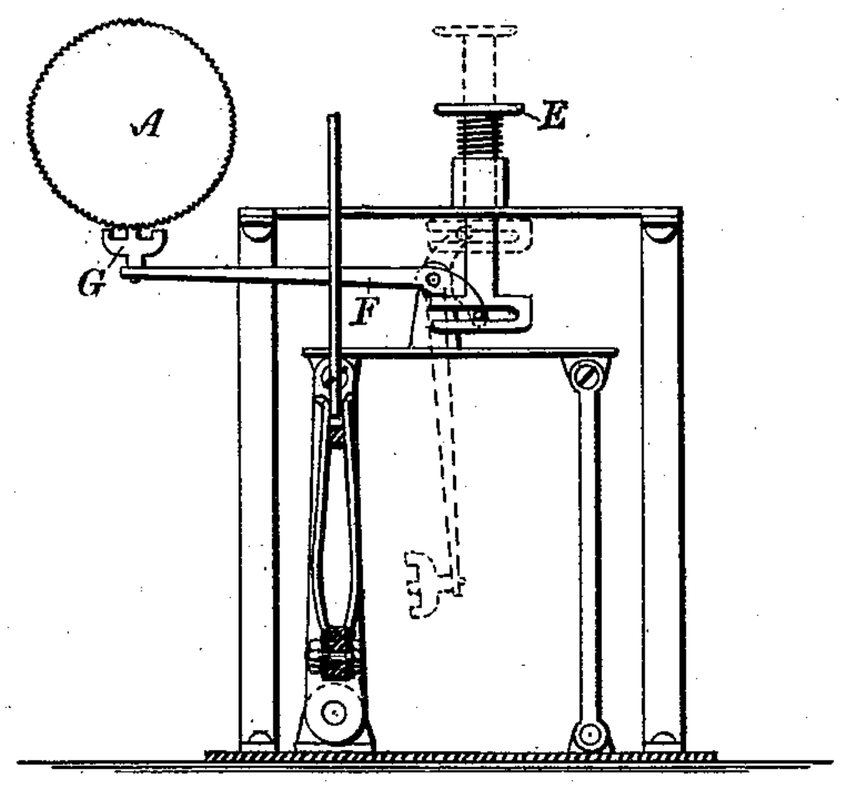
(No Model.) 2 Sheets—Sheet 2.

H. H. UNZ.

MANIFOLDING DEVICE FOR TYPE WRITERS.

No. 507,189. Patented Oct. 24, 1893.

FIG. 9.



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UNITED STATES PATENT OFFICE.

HENRY H. UNZ, OF NEW YORK, N. Y., ASSIGNOR TO THE NATIONAL TYPE WRITER COMPANY, OF PENNSYLVANIA.

MANIFOLDING DEVICE FOR TYPE-WRITERS.

SPECIFICATION forming part of Letters Patent No. 507,189, dated October 24, 1893.

Application filed November 7, 1885. Serial No. 182,111. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. UNZ, of New York, in the county of New York and State of New York, have invented a new and Improved Manifolding Device for Type-Writers, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a side elevation of a spirally ribbed roller, adapted to be used in a type writer, in lieu of the ordinary rubber faced roller commonly used in type writers. Fig. 2 is a transverse section taken on line *x x* in Fig. 1. Fig. 3 is a modified form of the device shown in Fig. 1. Fig. 4 is a transverse section taken on line *y y* in Fig. 3. Fig. 5 is a face view of the diagonally ribbed surface. Fig. 6 represents an enlarged letter formed of the diagonal slits. Fig. 7 shows a part of a roller with a file cut surface, and Fig. 8 is a detail view of the file surface. Fig. 9 represents a section showing the printing mechanism and platen.

Similar letters of reference indicate corresponding parts in the different figures.

The object of my invention is to provide for type writing machines a device, whereby the ordinary operation of type writing may be made to produce a stencil, which may be used in a stencil press, for making manifold copies of manuscript produced by type writers.

My invention consists in a roughened or diagonally or spirally ribbed surface, which I substitute for the ordinary platen, or rubber faced roller of a type writer, and by which, under the impact of the type of the type writer, minute slits will be made in the paper, which render it efficient as a stencil for producing manifold copies by the usual well known method.

In carrying out my invention, I remove the ordinary rubber faced roller of the type writing machine, and substitute therefor a metal faced roller A, having formed thereon spiral ribs *a*, which are sufficiently near together to produce within the borders of any one letter or character formed by the type writer, a series of minute diagonal slits in the paper, when the paper is forced against the ribbed surface of the roller by the impact of the type of the type writing machine.

In Fig. 9, A is the platen, E the type-operating key, F the type bar, and G the type.

I do not intend to limit myself to the particular printing mechanism shown in Fig. 9, as it is apparent that any of the well known printing mechanisms used in type-writers may replace that shown in the drawings, Fig. 9, without deviating from the invention.

The inclination of the spiral ribs to the axis of the roller is about thirty degrees; but I do not limit or confine myself to any particular angle for these ribs, the only requirement being, that the slits produced by the ribs, cross the letter at such an angle, as to make the shortest slits possible in a given letter; and so as not to make slits parallel with any of the longer lines of the letters or characters.

I have found by experiment that ribs one one-hundredth of an inch apart answer for ordinary work, but they may be nearer together, or farther apart according to the requirements of the work to be done.

I preferably form the roller of steel, or of a steel shell surrounding a core of lighter material, and I make the spiral ribs by the process of knurling, or by cutting in a milling machine, or in any other convenient way; but I may provide a roughened or file cut roller A′, as shown in Fig. 7.

To protect the types of the type writing machine from injury by the ribbed roller A, and also to guard against injury to the ribs of said roller A, I provide a strip *b* of soft rubber or similar material which is interposed between the type and paper employed for making the stencil.

The roughened or spirally ribbed roller A is to be used in the type writer in substantially the same manner as the rubber faced rollers are now used; and when it is not desired to use the type writer for producing a manifolding stencil, a suitable backing may be placed between the paper *c* and the roller, so that the paper will not be cut by the ribs of the roller.

Instead of employing a cylindrical spirally ribbed or roughened roller A, or A′, I may,

with the same advantage employ a section of a roller, or a bar B, roughened, or having formed thereon diagonal ribs, as shown in Figs. 3 and 5. This bar is supported on the shaft C by arms *d* and hangs by its own gravity in position to be engaged by the types of the type writer, in the manner already described, in connection with the roller shown in Fig. 1.

To support the paper *c* in the proper position, relative to the type, and the diagonally ribbed bar B, I pro-impression.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination with the printing mechanism of a type-writing machine of a platen having a hard roughened surface, and an elastic strip interposed between said platen and printing mechanism.

HENRY H. UNZ.

Witnesses:
GEO. M. HOPKINS,
C. SEDGWICK.