

Fig. 1

(No Model.)

S. H. HARRINGTON.

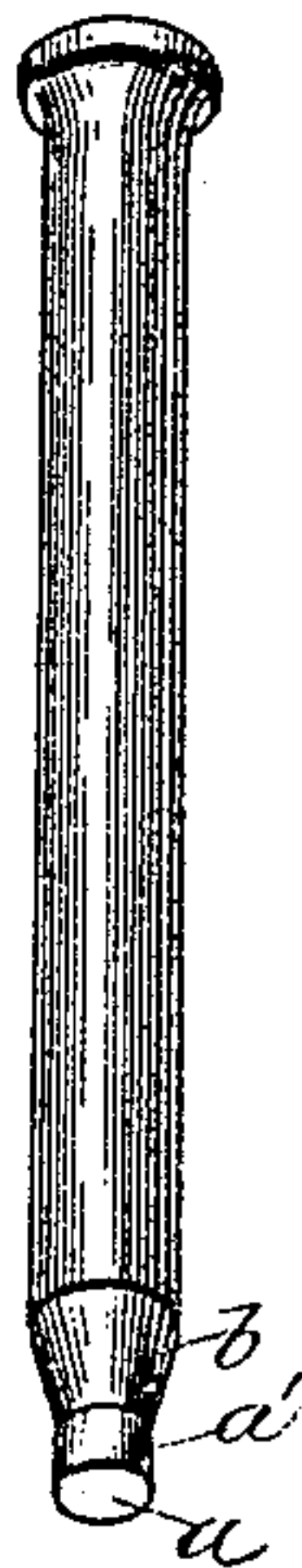
MAKING PERFORATED SCREENING PLATES.

No. 354,412.

Patented Dec. 14, 1886.

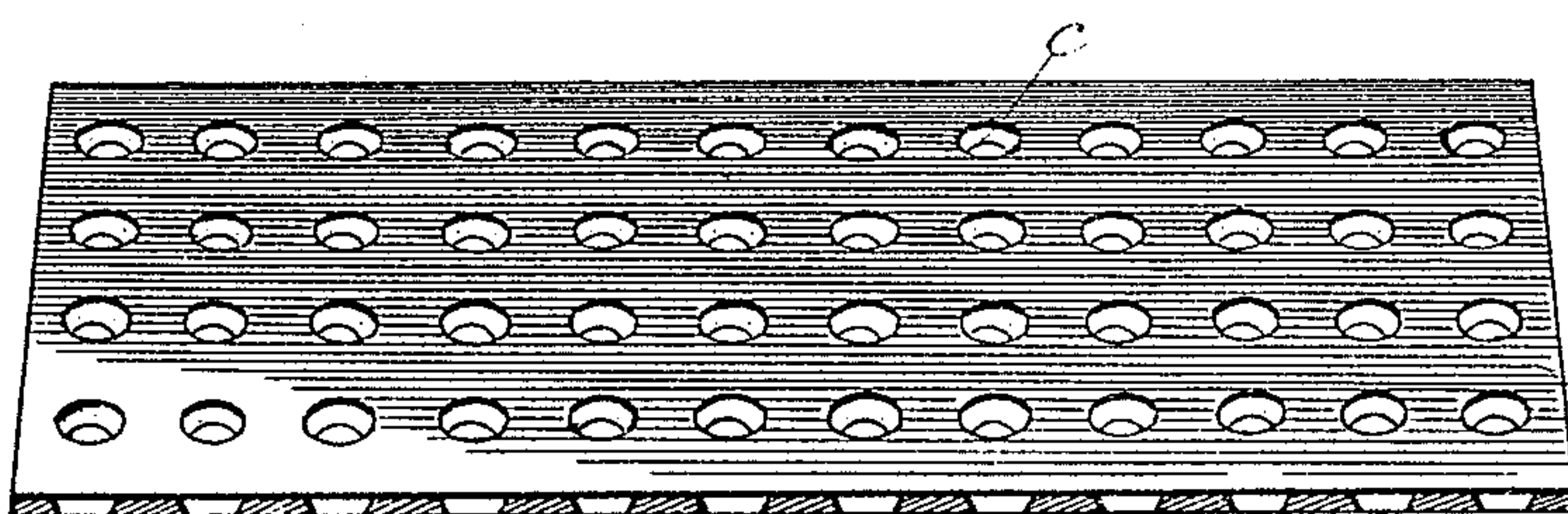
X 4110

Fig. 1.



2173
(5304)

Fig. 2.



Witnesses:
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Inventor:
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att'y.

UNITED STATES PATENT OFFICE.

STEPHEN H. HARRINGTON, OF CHICAGO, ILLINOIS.

MAKING PERFORATED SCREENING-PLATES.

SPECIFICATION forming part of Letters Patent No. 354,412, dated December 14, 1886.

Application filed April 13, 1886. Serial No. 198,720. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN H. HARRINGTON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in the Production of Perforated Screening-Plates for Use in Mining or other Operations, of which the following is a specification, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Heretofore such plates have been made with straight holes, or such holes have after the punching been reamed out to a taper; and it is my object to produce by a punching action alone plates with smooth tapered holes. This result, so far as my information extends, has never been successfully reached in the simple operation of punching. In plates used for screening ores and other analogous purposes

it is necessary that the plate should be provided with smooth holes having a regular taper, and economy in production requires that such holes should be produced without the necessity of reaming or drilling after the punching has been effected.

In the accompanying drawings, Figure 1 represents a punch used for carrying out, and Fig. 2 a plate produced in accordance with, my invention.

The plate to be punched is placed upon the bed or lower die of the punching-machine, and the moving part or stock having a series of punches is forced down toward the plate. The lower cutting-faces, *a*, of the punches and the cylindrical portions *a'* are forced through the plate, when the tapered portions *b* crowd the metal outward, so that when the full stroke has been completed a series of smooth holes, *c*, each having a regular taper, are produced in the plate. It is to be understood that holes of square, oblong, rectangular, oval, triangular, or other shape may be produced by using punches of such shapes.

Having described my invention, I claim—

The within-described method of producing in a sheet by a punching operation a smooth hole having a regular taper by spreading or crowding the metal out laterally from the punch to the necessary taper by a continuation of the stroke of the punch which has effected the perforation of the sheet, substantially as set forth.

In testimony whereof I have hereunto set my hand and seal.

STEPHEN H. HARRINGTON. [L. S.]

Witnesses:

FRANK A. HELMER,
A. N. EASTMAN.