

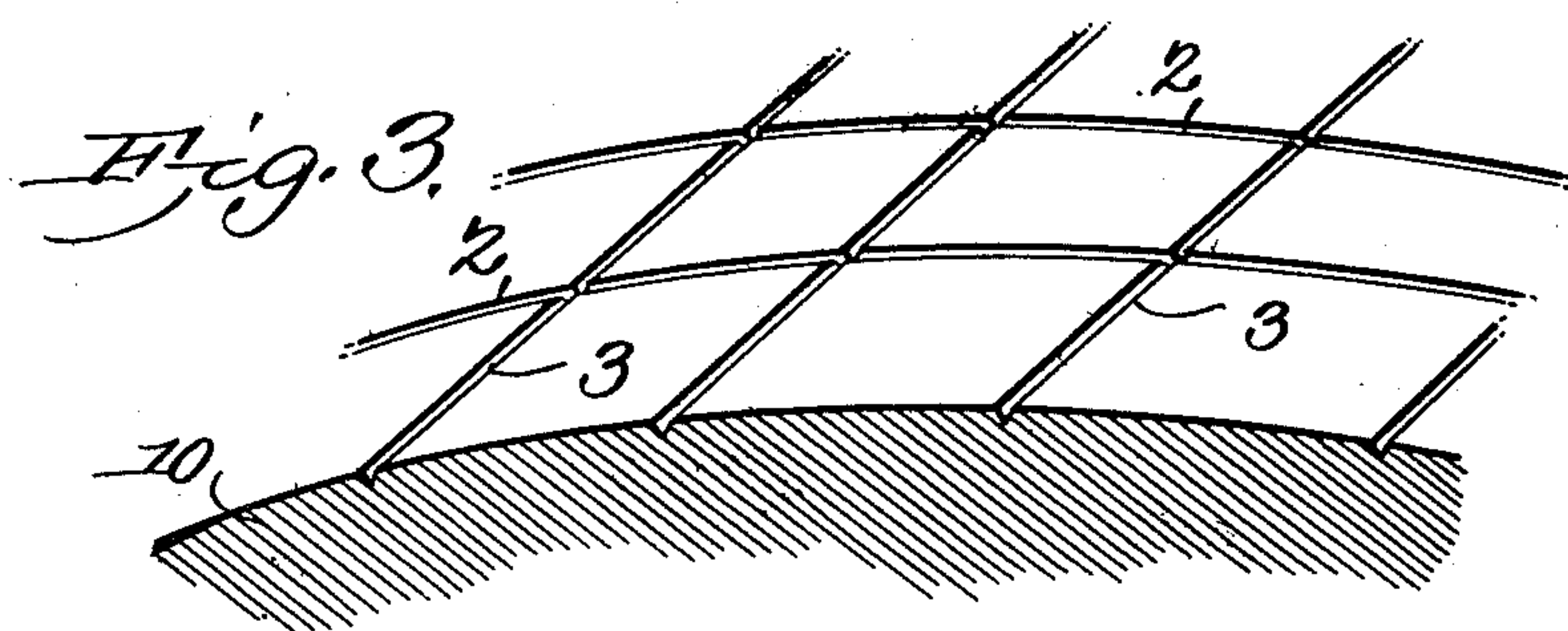
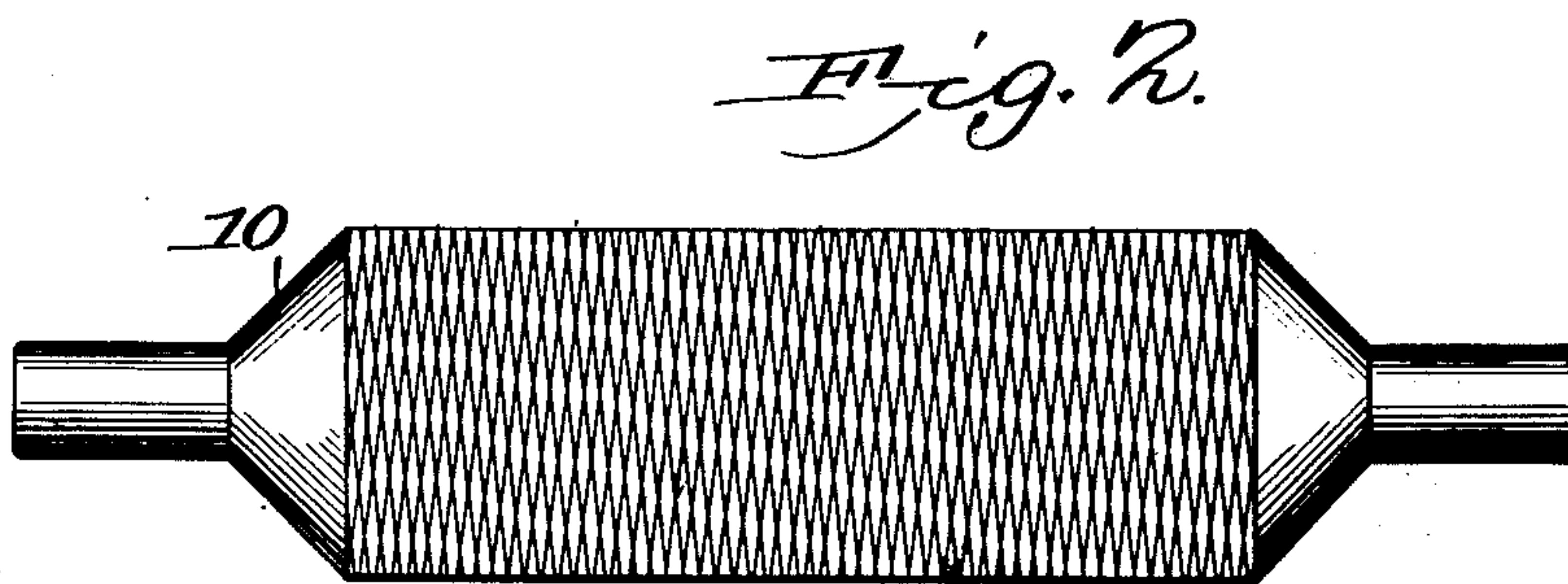
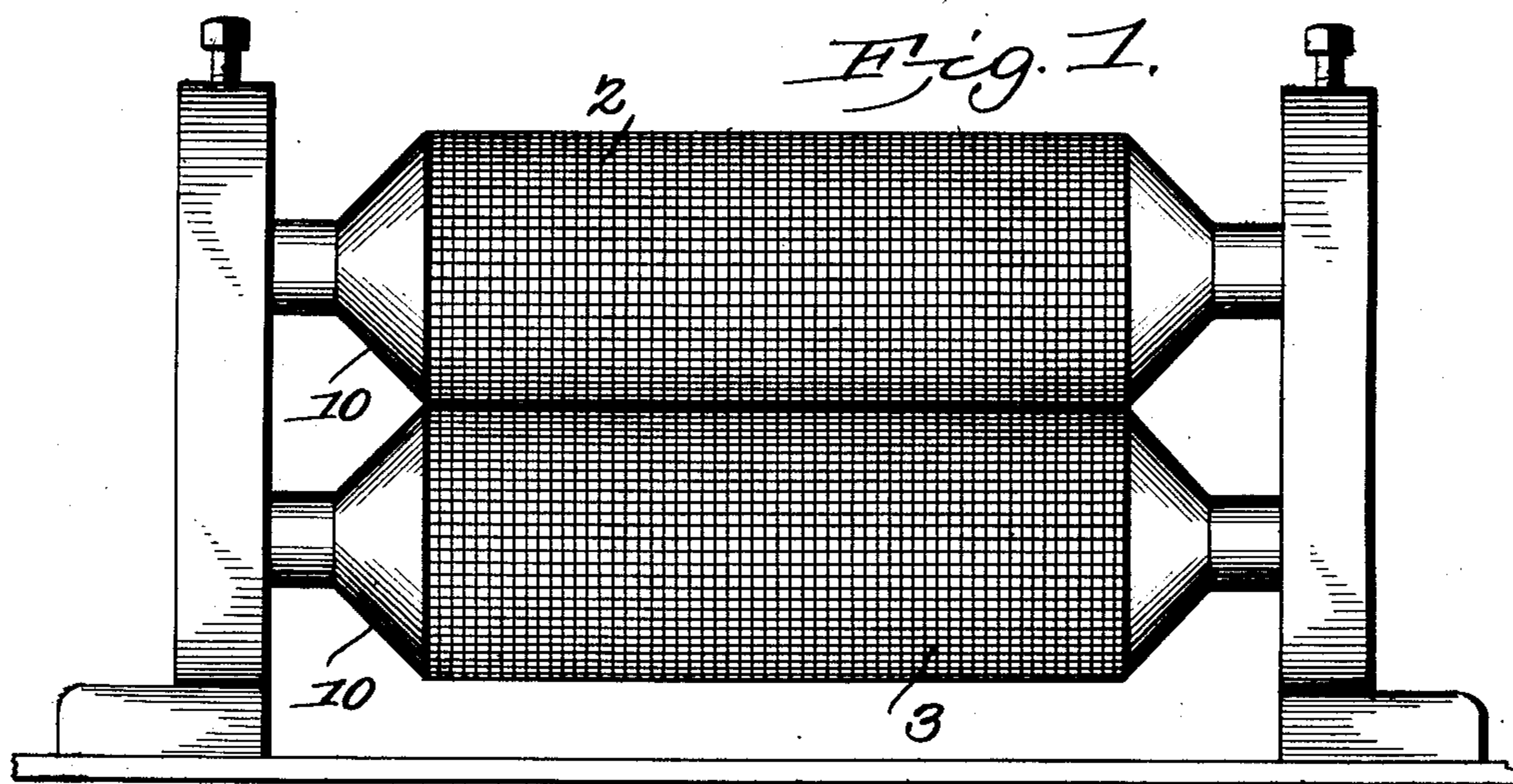
No. 845,434.

PATENTED FEB. 26, 1907.

A. RIDD.

METHOD OF MAKING MOTTLED ROLLS.

APPLICATION FILED SEPT. 21, 1905.



Witnesses
E. J. Stewart
J. M. Parker

Ambrose Ridd, Inventor.
by *C. A. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

AMBROSE RIDD, OF NEWPORT, KENTUCKY.

METHOD OF MAKING MOTTLED ROLLS.

No. 845,434.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed September 21, 1905. Serial No. 279,535.

To all whom it may concern:

Be it known that I, AMBROSE RIDD, a citizen of the United States, residing at Newport, in the county of Campbell and State of Kentucky, have invented a new and useful Method of Making Mottled Rolls, of which the following is a specification.

This invention relates to a method of making mottled rolls for use in the manufacture of sheet metal, and particularly sheet metal of that class known as "Russian sheet-iron." This metal is formed of sheet-iron or steel having an oxid-coated surface, the film of oxid being condensed and planished, forming an enamel-like protecting-surface for the metal. One of the principal characteristics of the metal as made in Russia and Siberia is the partly-mottled appearance of its surface, and this effect is generally the result of accident, the mottling not being uniform and being absent in many of the sheets.

The principal object of the present invention is to provide a roll or rolls by means of which this peculiar mottled effect may be produced and in which the mottling shall be of substantially uniform character throughout the sheet, materially adding to the attractiveness of the metal.

A further object of the invention is to provide a novel method and means for mottling the surfaces of the rolls.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a front elevation of a sheet-metal-rolling mill having mottled rolls made in accordance with the invention. Fig. 2 is an elevation of a single roll, showing a slight modification of the mottling. Fig. 3 is a sectional perspective view, on an exaggerated scale, showing the arrangement of the grooves by which the mottled surface is formed.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In carrying out the invention one or both of the rolls 10 are first turned and smoothed perfectly in a lathe. Shallow grooves 2 are then turned in the periphery of the roll, the grooves being equidistant, preferably about one-eighth of an inch, from each other, although the distance may be increased or diminished. All of these grooves are very shallow and are of equal depth. After this operation is completed the grooves are crossed by grooves 3 of the same depth, said grooves being equidistantly spaced and being parallel with the axis of the roll. As a result of this operation the surface of the roll is divided into thousands of minute squares. The grooves may also be formed in the manner shown in Fig. 2 by turning two continuous helical grooves crossing each other, the grooves forming diamond-shaped blocks or surfaces on the roll, or the grooves may be otherwise formed so long as the result obtained is the formation of a very large number of minute raised surfaces on the roll.

After the grooves have been formed in the manner described the rolls are placed in the cheek plates or housings and the mill coupled up with the driving mechanism, the roll-journals being connected by gears, which may be differential or may be of equal diameter, and the rolls are turned one on the other until all of the sharp edges formed by the grooves are smoothed out.

In practice it is preferred to connect the rolls by differential gears, and after setting the screws heat is applied to the rolling-surfaces, and the rolls are turned on each other for a long period of time, so that there will be no sharp edges to injure the film of oxid on the metal sheets being treated, and the result is a highly-polished mottled surface, the mottled effect being reproduced on the metallic sheets which are passed between the rolls.

In some cases it may be necessary to groove but one of the rolls, and then by turning the grooved roll, together with a plain roll, the mottled effect of one will be transmitted to the other to an extent sufficient to create the desired effect on the sheet.

It will not in all cases be necessary to remove the rolls from the housings to a lathe, inasmuch as a suitable cutting device may be mounted on the housings or adjacent thereto and the rolls grooved *in situ*.

Having thus described the invention, what is claimed is—

1. The process of manufacturing mottled

rolls, said process consisting in first forming grooves in the rolls, and then turning said rolls in contact and under pressure to smooth out the sharp edges of the groove.

- 5 2. The process of manufacturing mottled rolls, said process consisting in first providing said rolls with grooves running in different directions, heating the same, and then turning said rolls in contact under pressure, the

rolls being operated at different speeds, respectively.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

AMBROSE RIDD.

Witnesses:

JNO. C. DE MOSS,
FRED B. BASSMANN.