P. McFARLANE.

CONCENTRATOR.

APPLICATION FILED MAY 18, 1907.

956,777. Patented May 3, 1910.

2 SHEETS—SHEET 1.

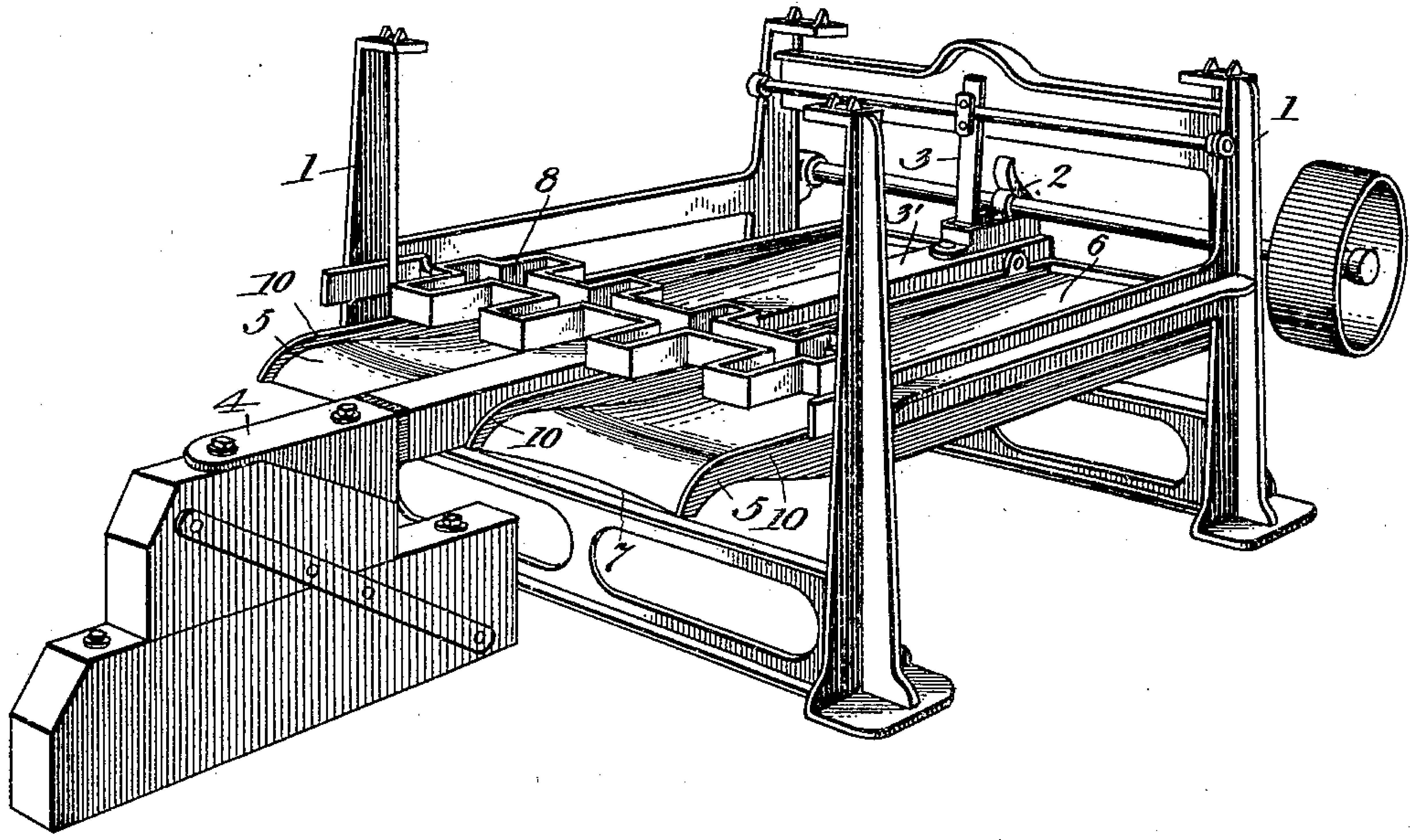

Fig. 1.

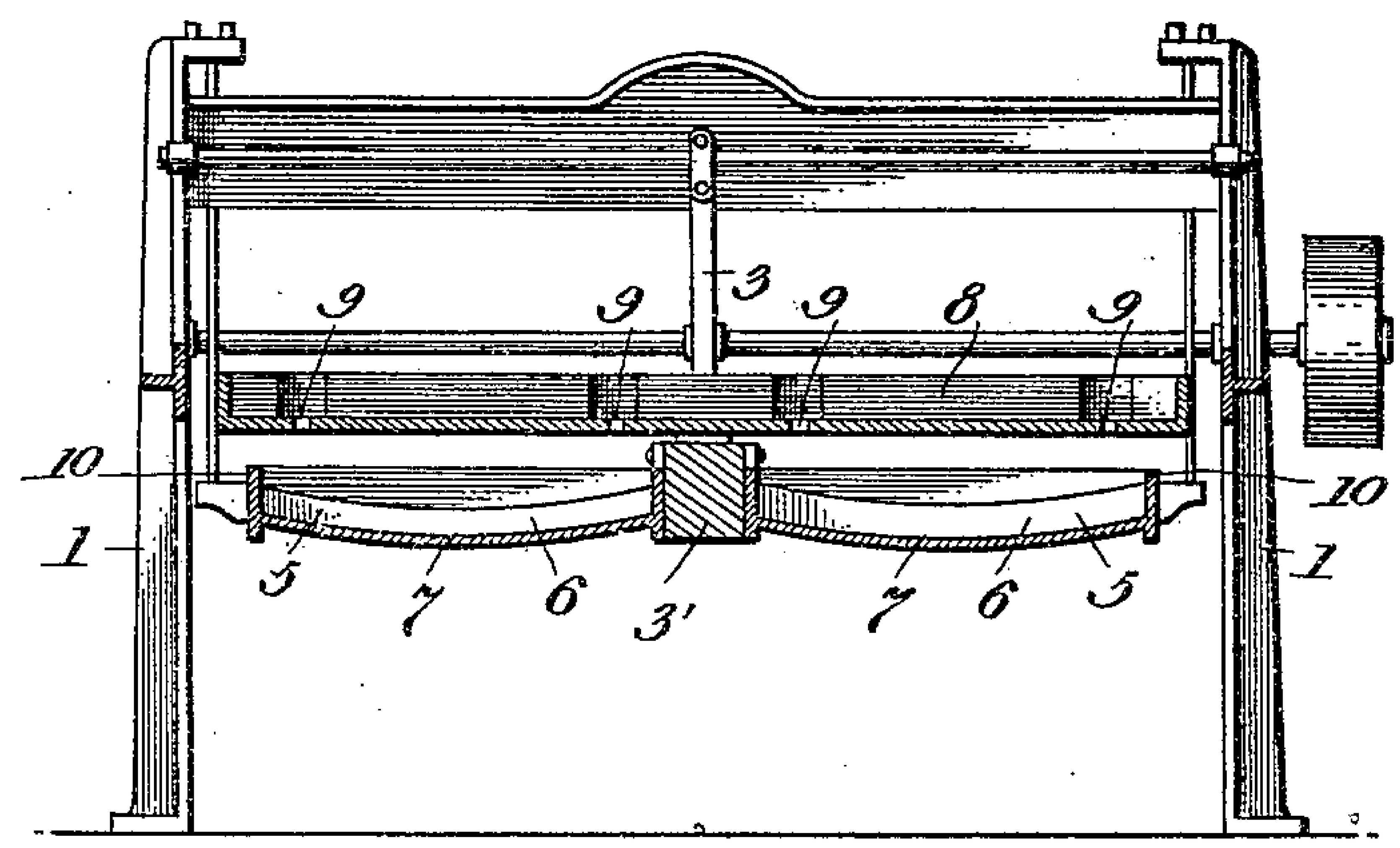

Fig. 4.

Witnesses:

Inventor,

Peter McFarlane

By

Attorney.

P. McFARLANE.

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2 SHEETS—SHEET 2.

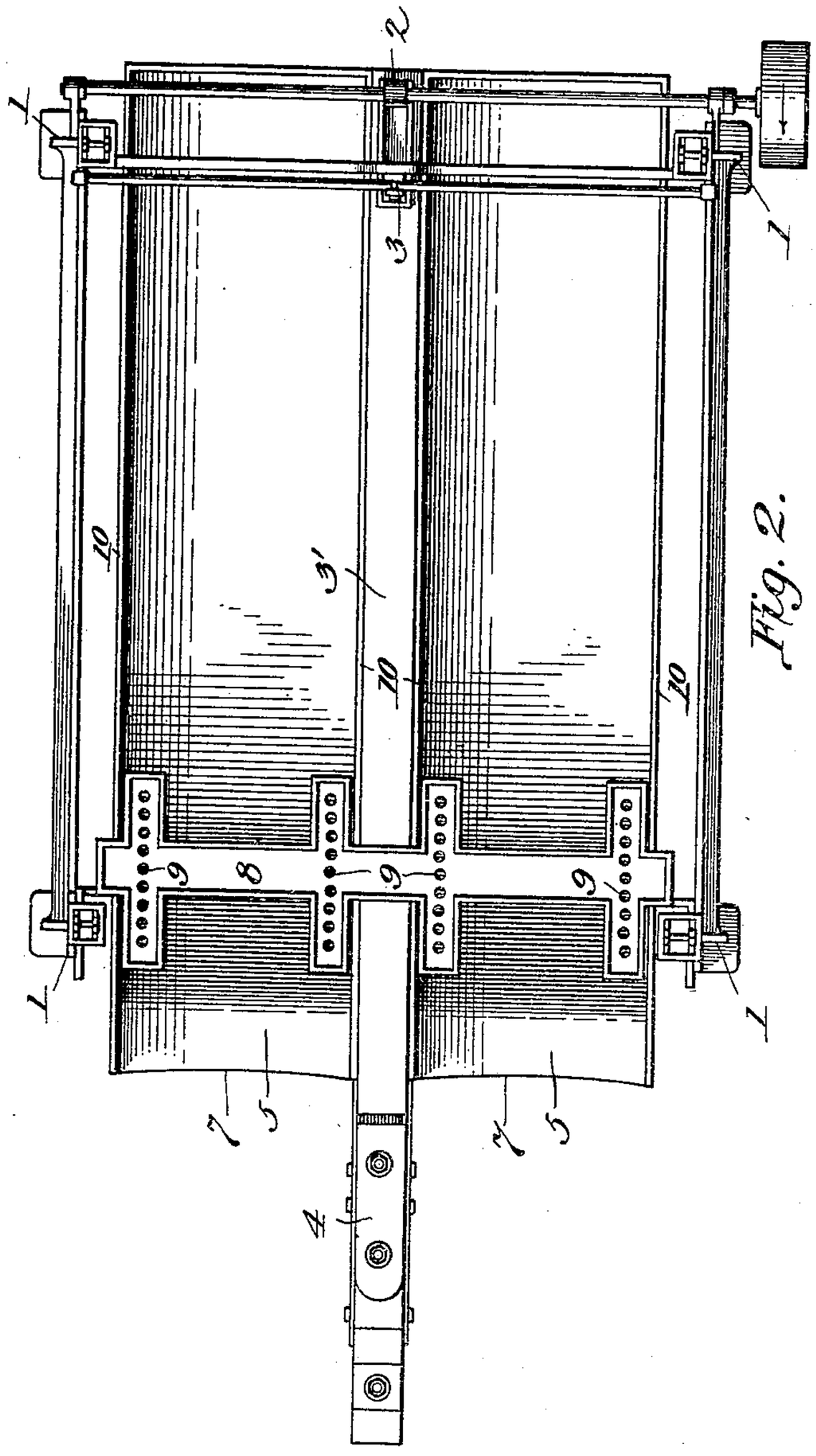

Fig. 2.

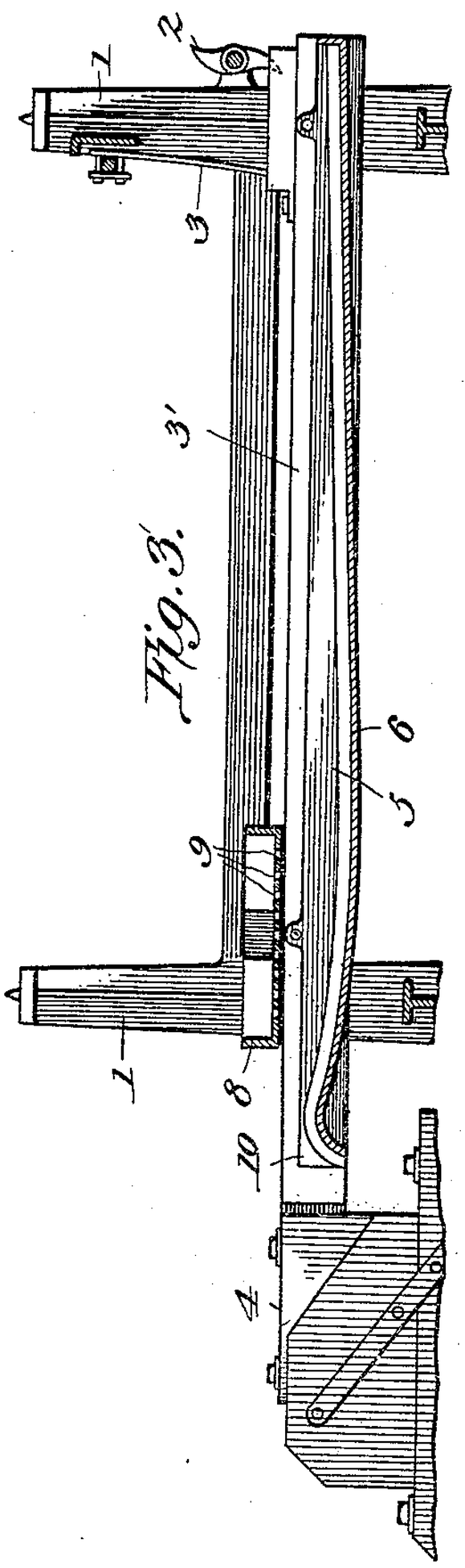

Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

PETER McFARLANE, OF CENTRAL CITY, COLORADO.

CONCENTRATOR.

956,777. Specification of Letters Patent. **Patented May 3, 1910.**

Application filed May 18, 1907. Serial No. 374,339.

To all whom it may concern:

Be it known that I, PETER MCFARLANE, a citizen of the United States, residing at Central City, in the county of Gilpin and State of Colorado, have invented certain new and useful Improvements in Concentrators; 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 numerals of reference marked thereon, which form a part of this specification.

My invention relates to ore concentrators of the type illustrated by U. S. Patent No. 445,154 granted January 27, 1891 to Silas Bertenshaw.

The present invention consists primarily in forming the concentrating table with a transverse curve, so that in addition to the longitudinal curve heretofore imparted to the table it shall have also a transverse curve. By such construction the advantages derived from the heretofore longitudinal curve are retained while the carrying off of valuable concentrate with the waste water, and the formation of a sand bar to interfere with the discharge of the concentrates at the head of the table are prevented, thus increasing the capacity of the table to effect a richer concentration and saving in percentage of the material.

To the accomplishment of the foregoing and such other objects as may hereinafter appear the invention consists in the features to be described and then sought to be clearly defined by the claim, reference being had to the accompanying drawing forming a part hereof and in which—

Figure 1 is a perspective of the concentrator; Fig. 2 a plan thereof; Fig. 3 a longitudinal section, and Fig. 4 a cross section through the same.

In the drawing, the numeral 1 designates the frame of the machine from which the table is suspended in a suitable manner to be oscillated or reciprocated by a cam 2 and spring 3, or otherwise, while 3′ represents a bumping beam and 4 a bumper.

The table is designated by the numeral 5 and while illustrated as formed of two parts placed side by side, so that in the form shown it may be said to be two tables side by side, yet that is not of importance and is used merely in an illustrative way. The table is given a curve 6 longitudinally thereof as heretofore as illustrated clearly in Fig. 3 of the drawing, so that the concentrate may be bumped over the head end of the table in the longitudinal movement of the table without the necessity of raking off the concentrate. In addition to this longitudinal curve I impart to the table a transverse curve 7 which will extend throughout the length of the table so as to give it a concave face across its width. In practice this curve will be about three-eighths of an inch, more or less, below a straight line in its deepest part in the center of the cross section. By casting the table from metal or cast iron it can be given the longitudinal as well as the transverse curve and both curves will be permanently maintained without any "buckling," or departure from the curves originally imparted to it, and with a degree of trueness and accuracy not to be practically obtained in any other way.

Above the table is placed the distributing box 8 into which the pulp is fed. This box has perforations 9 in its bottom above the sides of the table so that the pulp will be delivered onto the table at the sides thereof but is imperforate over the middle portion, thus directing the pulp only onto the table at its sides. By giving the table the transverse concave curve and delivering the pulp at the sides of the curve the pulp gradually concentrates and the mineral from the wash works its way toward the center of the table where it forms a mineral bed out of the way of the waste current without forming a bar, and from whence it travels up and over the discharge end of the table without being affected by the waste current and without the formation of any sand bar to interfere with the movement of the concentrate up and over the head of the table, which movement is effected by the longitudinal curve during the bumping operation of the table. I am thus enabled to overcome disadvantageous features heretofore existing, and to obtain a better concentration and a larger per cent. of concentrate.

While usually the side flanges 10 will be formed as an integral part of the table yet such is not essential for the embodiment of my invention, the important features of which are the transverse concave curve, the feeding of the pulp onto the table at the sides so that the concentrate may work down along the concave surface away from the

influence of the waste stream or wash, and the casting of the table with the transverse curve or concave and longitudinal curve so that said curves will be true and permanent without liability to buckle or change the compound curvature character of the table.

Having described my invention and set forth its merits, what I claim is:—

In a concentrator, a bumping table having its working face curved longitudinally of the length of the table and also transversely of its length, and means for feeding pulp onto the concave face of the table at the side thereof, substantially as described.

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

PETER McFARLANE.

Witnesses:
GEORGE M. McFARLANE,
WALTER B. McLEOD.