E. T. LEDNUM.

CONCENTRATOR TABLE.

APPLICATION FILED NOV. 19, 1919.

1,385,693. Patented July 26, 1921.

Fig. 1.

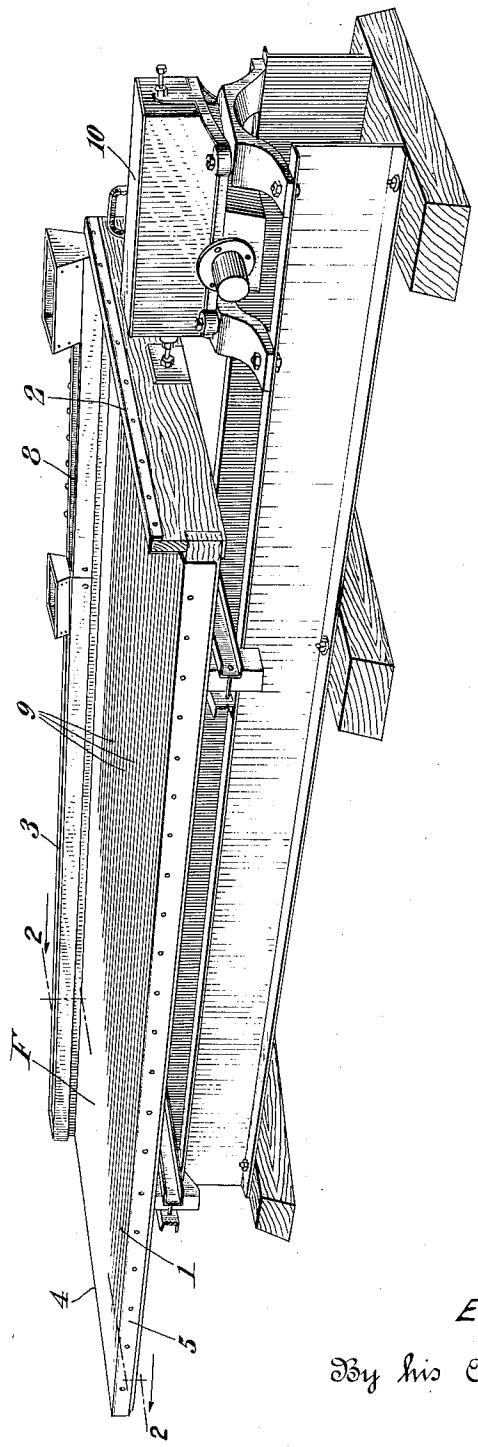
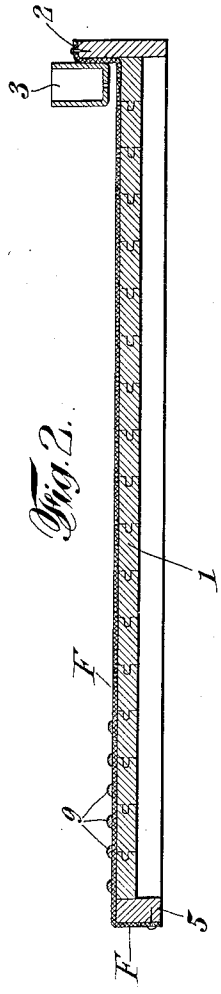


Fig. 2.



E. T. Lednum, Inventor

By his Attorney F. R. Squair.

UNITED STATES PATENT OFFICE.

EDMUND T. LEDNUM, OF DENVER, COLORADO, ASSIGNOR TO E. I. DU PONT DE NEMOURS & COMPANY, OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE.

CONCENTRATOR-TABLE.

1,385,693. Specification of Letters Patent. Patented July 26, 1921.

Application filed November 19, 1919. Serial No. 339,115.

To all whom it may concern:

Be it known that I, EDMUND T. LEDNUM, a citizen of the United States, and a resident of Denver, in the county of Denver and State of Colorado, have invented certain new and useful Concentrator-Tables, of which the following is a specification.

This invention relates to ore-concentrator tables surfaced with a cellulosic material possessing great durability; it pertains especially to a combination with a concentrator table of a surface material comprising a fabric base coated with a cellulose ester composition such as pyroxylin.

In view of the constant erosion to which the operative surface of a concentrator table is subjected, it is highly desirable to make this surface of a material which is specially adapted to withstand such erosion for a long period, and which is replaceable at but little expense at the end of said period. A suitable material for this purpose must be highly resistant not only to the abrasive action of the ore passing thereover, but also to the corrosive action of the salts and acids frequently present in the wash water. Furthermore the material should be tough and flexible and impervious to water.

I have found that a pyroxylin-coated fabric fulfils the above conditions in the eminently satisfactory manner, and that a concentrator table having a surface of this kind may be operated for extending periods, amounting in some cases to many months, without substantial deterioration.

The pyroxylin-coated fabric may be made in various ways, my invention covering broadly the combination of such material, however made, with the body portion of a concentrator table. However, in the construction of concentrator tables according to my invention, I prefer to use a sheet of woven fabric coated on both sides with a pyroxylin solution containing, for example, about 10 oz. by weight of pyroxylin, 1 gallon of solvent comprising 15% of amyl acetate and 85% of wood alcohol or 50% amyl acetate and 50% benzene, and also containing a pigment, preferably white in color. A plurality of coats are preferably applied to each side of the fabric. If desired the thus coated fabric may be embossed to impart to it a uniform and pleasing appearance.

A typical ore-concentrator with my invention embodied therein is shown in the accompanying drawings, in which Figure 1 is a perspective view, and Fig. 2 is a sectional view on the line 2—2 of Fig. 1.

The pyroxylin-coated fabric F is extended smoothly over the flat surface of the table 1 and is brought up over the head 2 and over the sides under the wash water box 3 and feed box 8, and is tacked or otherwise suitably fastened thereto. Another edge of the surfacing material is carried down under the end 4 over which the concentrates pass, and the remaining edge is made to cover the side 5 over which the gangue is wasted. The riffles 9 are laid over the fabric surface and held in place in any suitable manner as by tacking. The device for imparting a reciprocating motion to the table is shown at 10.

A pyroxylin coated fabric of the kind above described, when functioning as a concentrator table surface, has been found to possess marked advantages over other surfacing materials commonly used in various arts. Thus, comparative tests have shown that in general it will last at least twice as long as linoleum. The abrasive action of the ore, and the hydrolyzing action of the sulfuric acid which is frequently present in mine waters, soon destroys the linseed oil content of linoleum, whereas the tough, flexible film of pyroxylin protecting the fabric base, ruggedly resists abrasion and is practically immune to sulfuric acid corrosion. Linoleum freezes at low winter temperature, so that careful handling would be required should it be found necessary to recover a table during periods of low temperature, whereas the flexibility of a pyroxylin coated fabric is practically unimpaired by winter temperatures.

The pyroxylin-coated fabric which I preferably use is white in color so as to present a sharp contrast with the ore, and to show clearly the lines of demarcation of the flow of ore across the table, thereby permitting a closer adjustment of the table and the production of cleaner concentrates.

A further decided advantage resulting from the use of a pyroxylin-coated fabric is the saving in weight as compared with the use of other possible surfacing materials; as against linoleum, for instance, this saving amounts to about 80 to 90 pounds per table. When operating a battery of from 100 to 500 tables the saving in power there-

by effected becomes of considerable importance.

Although in describing my invention I have specified a fabric coated with a pyroxylin solution (that is, a solution of nitrocellulose) it will be understood that a fabric coated with another cellulose ester such as cellulose acetate comes within the scope of my invention; the greater expense of the latter, however, renders its use at the present time undesirable.

I claim:

1. An ore concentrator table having, at least in part, a surface of pyroxylin-coated fabric.

2. An ore concentrator table having its ore-separating surface composed, at least in part, of pyroxylin-coated fabric.

3. An ore concentrator table having interposed between riffles and body portion thereof a sheet of pyroxylin-coated fabric.

4. An ore concentrator table having, at least in part, a surface of fabric coated on both sides with a tough, flexible film of pyroxylin.

5. An ore concentrator table having, at least in part, a surface of fabric coated with a white colored film of pyroxylin.

6. An ore concentrator table comprising a body portion with riffle cleats attached thereto, and a wear-resistant pyroxylin-coated fabric interposed between said body portion and said riffle cleats and extending over the sides of the table.

7. An ore concentrator table, the ore separating surface of which consists, at least in part, of fabric having a cellulose ester coating.

8. An ore concentrator table comprising a body portion with riffle cleats attached thereto, and provided with a cellulose ester surface capable of withstanding the abrasive action of ore passing thereover for an extended period.

9. An ore concentrator table comprising a body portion with riffle cleats attached thereto, and provided with a white colored pyroxylin surface capable of withstanding the abrasive action of ore passing thereover for an extended period.

In testimony whereof I affix my signature.

EDMUND T. LEDNUM.