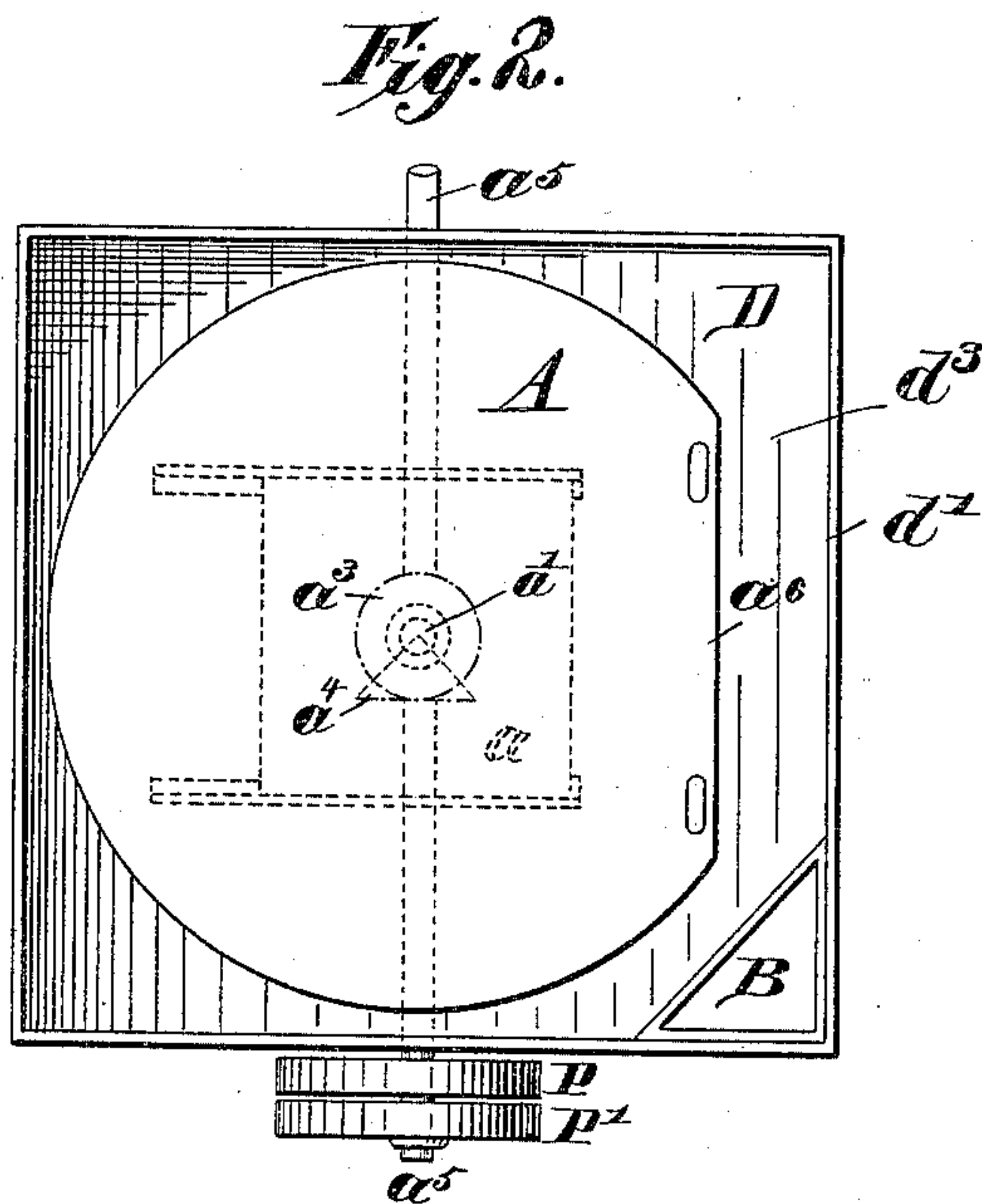
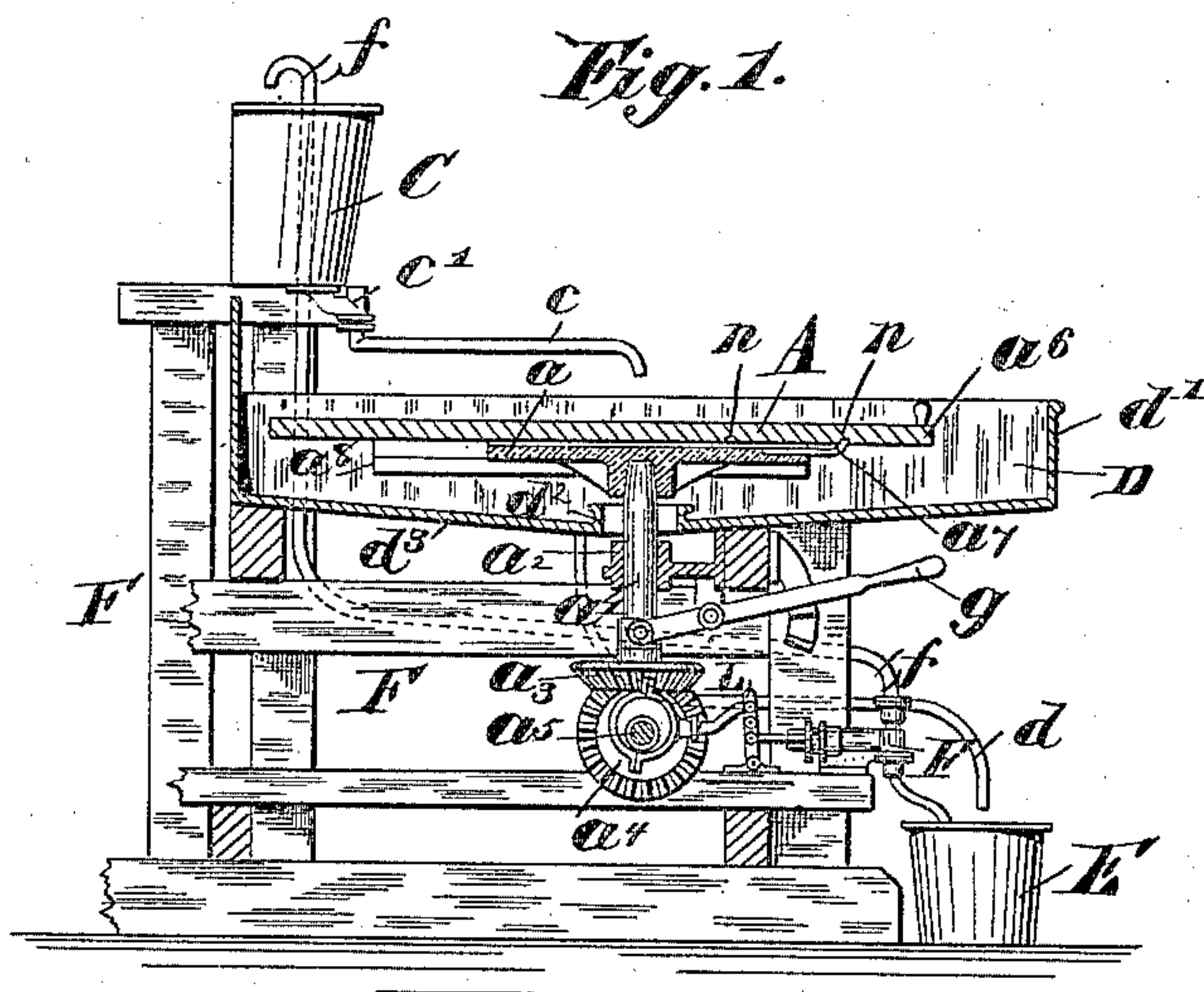


(No Model.)

J. KRISTEN.
APPARATUS FOR DYEING HIDES.

No. 427,697.

Patented May 13, 1890.



Witnesses:

Henry G. Dieterich
J. Thomson Cross.

Josef Kristen,
Inventor:

per. Henry Orls

Atty:

UNITED STATES PATENT OFFICE.

JOSEF KRISTEN, OF BRÜNN, MORAVIA, AUSTRIA-HUNGARY.

APPARATUS FOR DYEING HIDES.

SPECIFICATION forming part of Letters Patent No. 427,697, dated May 13, 1890.

Application filed June 19, 1889. Serial No. 314,841. (No model.)

To all whom it may concern:

Be it known that I, JOSEF KRISTEN, manufacturer, a subject of the Emperor of Austria, residing at Brünn, in the Province of Moravia, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in the Process of and Means for Dyeing Hides; and I do hereby 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 letters of reference marked thereon, which form a part of this specification.

Figure 1 is a vertical longitudinal section of a dyeing apparatus for dyeing hides embodying my invention, and Fig. 2 is a top plan view of the revoluble table and the tank for receiving the excess of dye-liquor.

The invention relates to the art of dyeing dressed hides or skins—such, for instance, as are used in the manufacture of gloves and other articles usually manufactured from such hides.

In the operation of dyeing these dressed hides or skins as heretofore practiced the dye has been applied by means of a brush, involving a great deal of labor and care in order to secure a uniform depth of color.

My invention has for its object not only to simplify this operation and to greatly expedite the same, but to insure a uniform distribution of the dye over the hide.

To these ends the invention consists in a novel apparatus whereby the operation of dyeing is effected mechanically by centrifugal action, substantially as hereinafter fully described, and as set forth in the claims.

In carrying out my invention any suitably-constructed apparatus may be used and provided with means for imparting a rapid revolving motion to the hide or skin and for delivering the dye-liquor thereto at a point corresponding with its axis of rotation. I have, however, devised an apparatus simple in construction, by which the operation of dyeing may be carried into practical effect, and have illustrated the same in the accompanying drawings, in which—

A indicates a circular horizontal table upon which the hide or skin is stretched, said table being centered upon a revoluble support a , mounted upon the upper end of a vertical shaft a' , that has its bearings in a suitable supporting-frame F, and carries at its lower end a bevel-wheel a^3 . This bevel-wheel a^3 gears with a like wheel a^4 on a horizontal driving-shaft a^5 , which horizontal shaft may be driven from any suitable prime motor, and to this end carries a loose and fast pulley P P', respectively. The table A revolves in a tank or cistern D, whose bottom d^3 is conical, and has an axial passage for the vertical shaft a' , a flange d^2 being formed around said passage to prevent the dye-liquor from flowing out at that point. The cistern D is connected by a pipe d with a receiving-vessel E, into which the excess of dye-liquor flows.

F is a pump, the suction-pipe of which dips into vessel E, while the force-pipe f thereof is carried upward and projects over or into the reservoir C for the dye-liquor, which reservoir is, as shown, located above the table A. The piston-rod of the pump is connected with a rock-lever L, and said lever is connected with an eccentric on the horizontal driving-shaft a^5 , so that the pump will be at work during the operation of dyeing.

The reservoir C is provided with a stop-cock c' , to which the delivery-pipe c is connected in such manner that when the pipe c is moved over the center of the vertical shaft a' the stop-cock will be open, and when moved to one or the other side of said point the stop-cock will be closed, the pipe c being of such length as that its discharge can be brought over the axis of rotation of the table A.

The cistern D is a square one, and to facilitate the stretching of the hides or skins on their removal from the circular table a portion thereof is cut away to form the cord or straight edge a^6 , and said table is provided with angle-irons a^8 , the horizontal ledge of which projects under the support a , so that said table may be moved endwise to the edge of the cistern D.

In the under side of the table A are formed two locking-notches $n n$, with which engages

a locking-spring a^7 , secured to support a , that locks the table when moved out to the edge d' of the cistern, or when moved back into position to be revolved, so that in the latter movement the spring also serves as a means for centering the table.

The operation of the apparatus is as follows: The table A being moved to the edge d' of the cistern D, a hide or skin is stretched thereon and mordanted, the mordant being contained in a vessel B, attached to or formed within the cistern. The table A is then moved back again and caused to revolve through the medium of the described mechanism. The pipe c is then turned so that its discharge will be at a point immediately above the axis of rotation of the table, when the dye-liquor will flow onto the hide or skin, and will be uniformly distributed thereon by centrifugal action, the excess of dye-liquor being projected against the walls of the cistern and carried therefrom to the receiver E, from which it is pumped to the reservoir C.

The labor attendant upon the operation of dyeing is so much reduced, as compared with the old methods, that one workman may attend to a number of apparatuses. These apparatuses may be arranged side by side and driven from a continuously-moving driving-shaft a^5 , means being provided to throw the vertical shaft that supports the table out of gear with the driving-shaft. To this end the vertical shaft a' of each machine is arranged so as to have vertical motion in its bearings, so that it may be lifted by means of the lever g , Fig. 1, for instance, to disengage the bevel-wheels a^3 a^4 , a toothed sector g' being provided to lock the lever, and consequently the shaft, into the desired position. A single reservoir for the dye-liquor may in this case also be employed, and means provided to conduct the dye-liquor thrown off by centrifugal action into a common cistern or receiver, from whence it may be pumped back to the reservoir; or each apparatus may be provided with its reservoir C, receiver E, and a pump.

Should it be desirable to give a deeper shade to the skin or hide than that obtainable from the dye-liquor, which is usually done by treatment with a solution of sulphate of iron or copper, this may also be effected on a machine of the described construction, and in this case I preferably attach the hide or skin to a copper table, or a table having a lining of sheet-copper, so that they may be more readily removed, and then transferred to another for the purpose of dyeing it.

The mechanical operative devices, as well as the arrangement of parts, may be variously modified. For instance, the reservoir C may be arranged with its axis on a line with the axis of shaft a' , and a short vertical discharge-pipe provided in its bottom. The plunger of the pump F may be directly connected with the eccentric on the driving-shaft a^5 , and may

be located in rear of said shaft. The vessel E may then be located immediately under the cistern D and connected therewith by a vertical pipe without thereby impairing the function of these devices.

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

1. In a machine for dyeing hides, means for distributing the dye-liquor over the hide by centrifugal action, comprising a revoluble horizontal plane surface upon which the hide is stretched and a pipe for delivering the dye-liquor to the hide, said pipe having its delivery-nozzle arranged above the revoluble plane surface, so as to deliver the dye-liquor at the center of rotation of the said surface, as set forth.

2. In a machine for dyeing hides, the combination, with a horizontally-revoluble table upon which the skin is stretched, of a cistern surrounding the table for the reception of the dye-liquor thrown off the hide by centrifugal action, a reservoir for the dye-liquor, located above the table, and a pipe-connection with said reservoir, having its discharge over the axis of rotation of the table, substantially as and for the purposes specified.

3. In a machine for dyeing hides, the combination, with a horizontally-revoluble table upon which the hide is stretched, a cistern encompassing the table for the reception of the dye-liquor thrown off the hide by centrifugal action, a receiver for said dye-liquor, connected with the cistern, a reservoir for the dye-liquor, located above the table, a pipe connected with the reservoir and extending over the table, and a pump having its suction in the receiver for the dye-liquor thrown off from the hide and its discharge in or above the reservoir for said dye-liquor, substantially as and for the purposes specified.

4. In a machine for dyeing hides, the combination, with a horizontally-revoluble table, a cistern encompassing the table, a receiver for the dye-liquor thrown off by centrifugal action, a pipe-connection between the cistern and receiver, and a reservoir for the dye-liquor, located above the table, of a vertical driven shaft for said table, a horizontal driving-shaft for driving the vertical shaft, and a pump having a suction in the receiver and its discharge on or over the reservoir, and a connection between the pump-piston and driving-shaft for imparting a reciprocating motion to the pump-plunger, substantially as and for the purposes specified.

5. In a machine for dyeing hides, the combination, with the horizontally-revoluble and endwise-movable circular table A, provided with a straight edge a^6 , of the cistern D, substantially as and for the purposes specified.

6. In a machine for dyeing hides, the combination, with the horizontally-revoluble and endwise-movable circular table A, provided

with the straight edge α^6 , of the cistern D, having a receptacle B formed therein, substantially as and for the purposes specified.

5 7. In a machine for dyeing hides, the combination, with a horizontally-revoluble table upon which the skin is stretched, of a reservoir for the dye-liquor, located above the table and to one side thereof and having a discharge branch provided with a stop-cock, of a

discharge-pipe connected with the plug or valve of the stop-cock, substantially as and for the purposes specified.

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

JOSEF KRISTEN.

Witnesses:

EDMUND JUSSEN,
OTTO SCHIFFER.