

May 19, 1953

E. GIANOGGIO
HYDRAULIC SYSTEM FOR DRIVING THE ROTATION
OF SUNDRY MEMBERS IN MACHINES FOR
THE WORKING OF SKINS AND HIDES
Filed July 7, 1950

2,638,769

FIG. 2

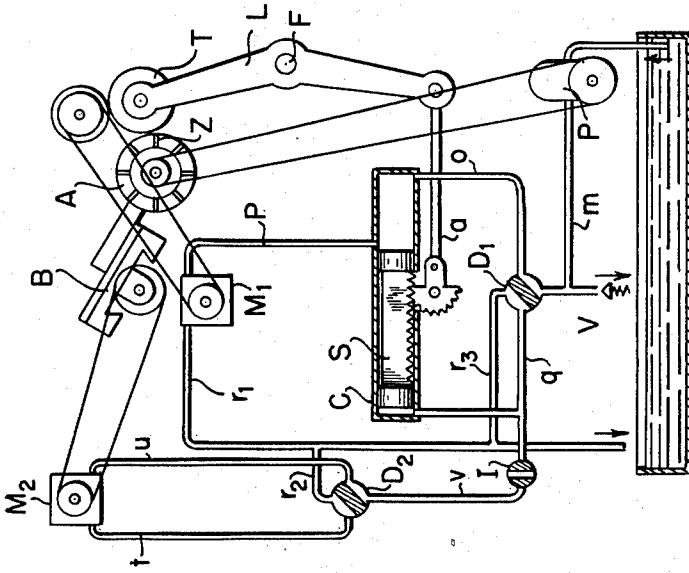
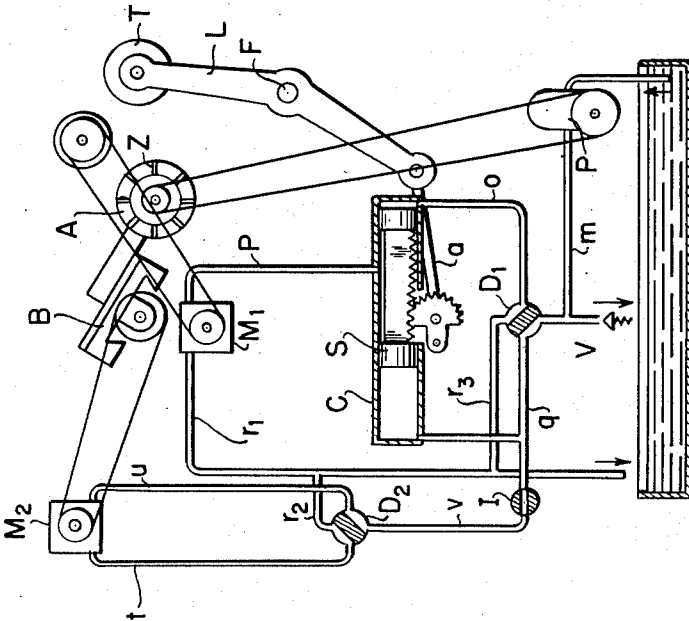


FIG. 1



INVENTOR.

Ermanno Gianoglio

BY

Richardson, Davis and Nodan

his ATTORNEYS.

UNITED STATES PATENT OFFICE

2,638,769

HYDRAULIC SYSTEM FOR DRIVING THE ROTATION OF SUNDRY MEMBERS IN MACHINES FOR THE WORKING OF SKINS AND HIDES

Ermanno Gianoglio, Milan, Italy, assignor to S. A. Luigi Rizzi & C., Modena, Italy, a firm

Application July 7, 1950, Serial No. 172,427
In Italy March 6, 1950

3 Claims. (Cl. 69—42)

1

It is the object of the present invention to provide a hydraulic system for driving the rotation of sundry members in machines for the working of skins and hides, comprising each at least one operating roller rotating at a high number of turns and at least one auxiliary roller rotating at a number of turns in general lower than the operating roller, in which there are provided a pump putting a fluid under pressure, and at least one hydraulic motor actuated by said fluid, the motor being designed to drive the rotation of said members of the machine.

The machines, to which the present invention can be applied are those of the following kinds: fleshing machines, setting-out machines, unhairing and scouring machines, samming machines, shaving machines, buffing machines etc.: that is to say, in general all the machines for the tanning industries in which there is provided an operating roller made to rotate at a high number of turns, and one or more auxiliary rollers (for instance roller for conveying the skin or hide, weighting rollers for the transport rollers, etc.) characterized in that they are endowed with a more reduced normal rotation.

All these machines may be diagrammatically represented as by the figures of the accompanying drawing; in particular, the operating roller A may be provided with blades Z sharpened at their outer edge by means of a sharpening apparatus B provided for this purpose (case of the fleshing and shaving machines etc.) or it may be provided with blades having a bevelled border and different technological functions (setting-out machines, unhairing and scouring machines). The figure of the accompanying drawing relates to the case of a fleshing machine; without the sharpening device it may be plainly referred to setting-out, to unhairing and scouring machines etc.

It is the object of the present invention to provide a hydraulic device for the rotation of various members in machines for working skins and hides, characterized in that there are provided a pump putting a fluid under pressure and a hydraulic motor, which is actuated by said fluid, said motor being designed to cause members of the machine to rotate. In some cases, where constructional reasons let it appear advisable, a number of hydraulic motors may be adopted in the same machine, each of them being entrusted with the task of driving determined members.

In the accompanying drawing, Fig. 1 represents an elevational view partly in section of the ma-

2

chine in the "open" position, and Fig. 2 represents an elevational view partly in section of the machine in the "closed" position or working position, the working position being the position in which the rollers serving to transport the skin or hide are approached to the operating roller which effects as said above the fleshing, the setting-out, the unhairing and scouring, the samming, the buffing, the shaving etc. of the skin or hide.

The operating roller is made to rotate by means of a motor provided specially for this purpose, directly or by way of transmission etc. For the sake of simplicity, said motor has not been represented in the figure.

The closing of the machine is effected by means of the cylinder C and plunger S. The fluid put under pressure by the pump P (actuated at the expenses of the energy supplied to the machine from outside), acts upon the plunger S causing it to run a complete stroke within the cylinder C. The rod *a* acts upon the lever L fulcrated at F and moves the transporting rollers T to the operating roller A.

There is provided a valve D₁, which can assume the two positions represented respectively by the two figures of the accompanying drawing, to open or to close the machine as the case may be, putting the pump in communication respectively with one or the other chamber of the cylinder C by way of the pipe *q* or *o* (Figures 1 and 2).

In the closing stage, the plunger S arrived at the end of its stroke uncovers an opening which permits the fluid under pressure to pass along the pipe *v* to the hydraulic motor M₁, which causes the transporting roller to rotate.

In the opening stage, the fluid under pressure acts, through the valve D₁ and the pipe *q*, upon the other face of the plunger S and determines its displacement in a direction opposite to the one described before.

The figure shows also a hydraulic motor M₂, designed, for instance in fleshing machines and in shaving machines, to drive the blade, sharpening device.

Following the position of the valve D₂ (that is to say, following the flow of the fluid under pressure from the pipe *v* to the motor M₂ by way of the pipe *t* or the pipe *u*), the hydraulic motor M₂ turns in one direction or in the opposed direction and drives in the two directions the movement of a carriage carrying the grinder for sharpening the blades of the operating roller. The position of the valve D₂ is determined, at the end of stroke, by the action of the carriage

itself, in such a manner as to make the aforesaid to and fro movement automatic. For the sake of completeness references r_1 , r_2 , r_3 designate the discharge pipings, V a safety valve and I an intercepting cock.

The invention as hereinbefore described offers the following advantages: great smoothness in the letting in of the driven members, absence of vibrations, self-lubrication of certain of the members, wide possibility of adjusting the number of turns of the driven members, swiftness of drive control, constructive simplicity and reduced space requirement as compared with the mechanical system aiming at the same tasks.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. A tanning machine having sundry rotating members, including at least one operating roller rotating at a high number of turns and at least one auxiliary roller rotating at a number of turns in general lower than said operating roller, a hydraulic system comprising a pump which puts a fluid under pressure and at least one hydraulic motor actuated by said fluid, said motor being designed to rotate said auxiliary roller of the machine, and comprising also means by which the hydraulic motor driving the auxiliary roller is rotated only if said auxiliary roller moves close to the operating roller.

2. A tanning machine having sundry rotating members, including at least one operating roller rotating at a high number of turns and at least one auxiliary roller rotating at a number of turns in general lower than said operating roller, a hydraulic system comprising a pump which puts a fluid under pressure and at least one hydraulic motor actuated by said fluid, said motor being designed to rotate said auxiliary roller of the

machine, and comprising also between the pump and the hydraulic motor or motors a cylinder with a plunger, which besides controlling the movement of said members, acts also as a distributor of the fluid permitting it to arrive at said hydraulic motor at the desired time.

3. A tanning machine having sundry rotating members including at least one operating roller rotating at a high number of turns and at least one auxiliary roller rotating at a number of turns in general lower than said operating roller, a hydraulic system comprising a pump which puts a fluid under pressure and at least one hydraulic motor actuated by said fluid, said motor being designed to rotate said auxiliary roller of the machine, and comprising also between the pump and the hydraulic motor or motors a cylinder with a plunger, which besides controlling the movement of said members, acts also as a distributor of the fluid permitting it to arrive at said hydraulic motor at the desired time, a lever, one end of which is attached to said one auxiliary roller, a rod, one end of which is connected to the other end of said lever, a gear connected to the other end of said rod, and said plunger having a rack meshing with said gear.

ERMANNNO GIANOGGIO.

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