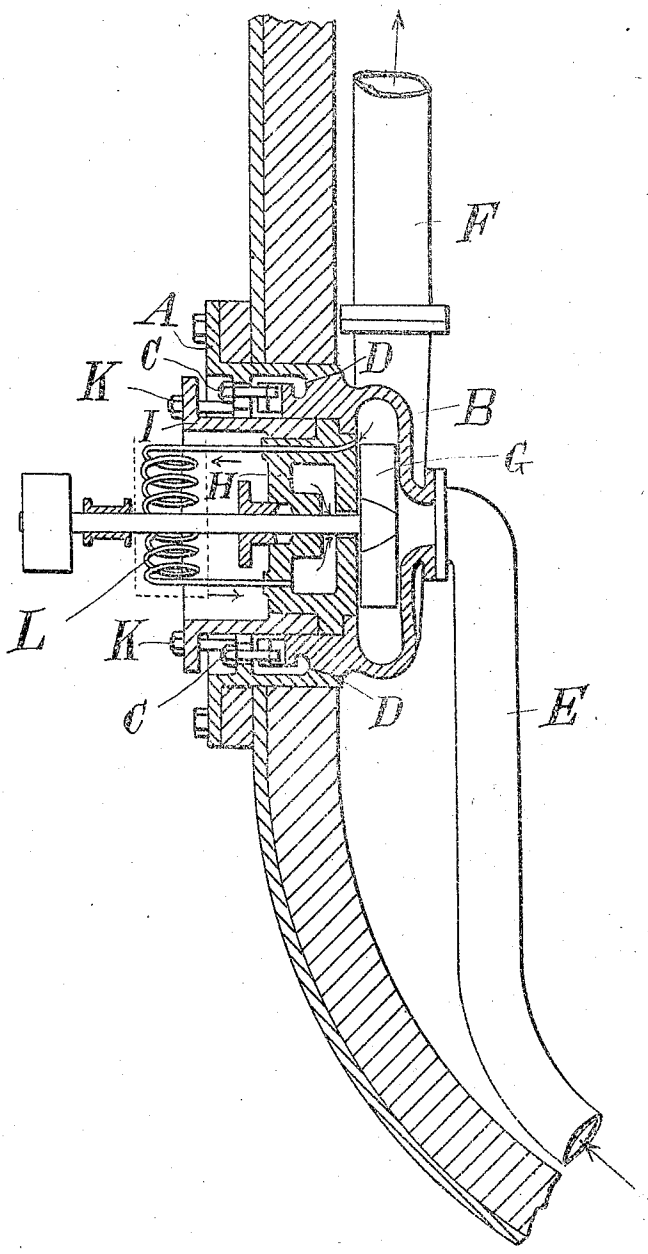
E. MORTERUD.

DIGESTER FOR THE PRODUCTION OF CELLULOSE.

APPLICATION FILED FEB. 25, 1908.

966,112. Patented Aug. 2, 1910.



Witnesses.

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UNITED STATES PATENT OFFICE.

EINAR MORTERUD, OF TORDERÓD, NEAR MOSS, NORWAY.

DIGESTER FOR THE PRODUCTION OF CELLULOSE.

966,112. Specification of Letters Patent. Patented Aug. 2, 1910.

Application filed February 25, 1908. Serial No. 417,687.

To all whom it may concern:

Be it known that I, EINAR MORTERUD, a subject of the King of Norway, residing at Torderód, near Moss, in the Kingdom of Norway, have invented certain new and useful Improvements in Digesters for the Production of Cellulose; 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 letters of reference marked thereon, which form a part of this specification.

This invention relates to digesters and devices connected therewith for the production of cellulose.

In order to obtain a great output and a uniform product and to utilize the chemicals and the heat in the best possible manner, it is necessary to carry out the process in such way, that a uniform temperature and uniform digesting solution is maintained, and it has been proposed to secure these conditions by way of mechanical circulation devices in the form of a pump and pipes leading to and from the digester. However, these arrangements are connected with difficulties on account of the high pressures and the corrosive nature of the liquid.

According to the present invention the circulation is effected by means of a pump mounted inside of the digester. All the inconveniences arising from the pressure are thereby avoided and regard need be had only to the effect of the chemicals on the material of the pump, and the construction and arrangements may be chosen according to the prevailing circumstances.

The pump may be disposed anywhere on the inner side of the wall of the digester below the fluid level, the suction conduit being carried downward below a grate at the bottom of the digester and the pressure conduit upward, suitably until just below the fluid surface a strainer being preferably also located here. The pump is preferably so constructed as to enable its vital parts, wheel, spindle etc. to be removed from the outside to be inspected and exchanged.

The accompanying drawing shows a vertical section through a form of pump embodying the invention.

In an aperture in the wall of the digester an annular frame A has been inserted, to which frame the pump casing B has been secured by bolts C. A conic tightening surface D is provided between the pump casing and the annular frame.

E and F are the pipes conducting fluid from the bottom to the pump respectively from the pump to the top of the digester.

The wheel G of the pump is mounted in a hollow cover H which is retained in its position by a ring I and bolts K.

L is a pipe with a cooling serpent arranged for purposes mentioned in another patent application.

Claims.

1. A fluid circulating device for cellulose digesters comprising an annular frame mounted in an opening in the wall of the digester, a casing mounted within the digester and secured to the frame, a pumping device, a bearing therefor mounted in the casing, a retaining member for the bearing secured to the frame, a pressure conduit and a suction conduit in the digester communicating with the casing.

2. A circulating pump for a cellulose digester comprising a pump body and a frame, the latter being adapted to be secured to the outside of the digester and entering an opening in the wall and the body adapted to be secured on the inner part of said frame.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

EINAR MORTERUD.

Witnesses:

AUG. OLSEN,

J. M. MARTER.