J. W. Dixon.

Paper Making Process.

No. 51,432. Patented Dec. 12, 1865.

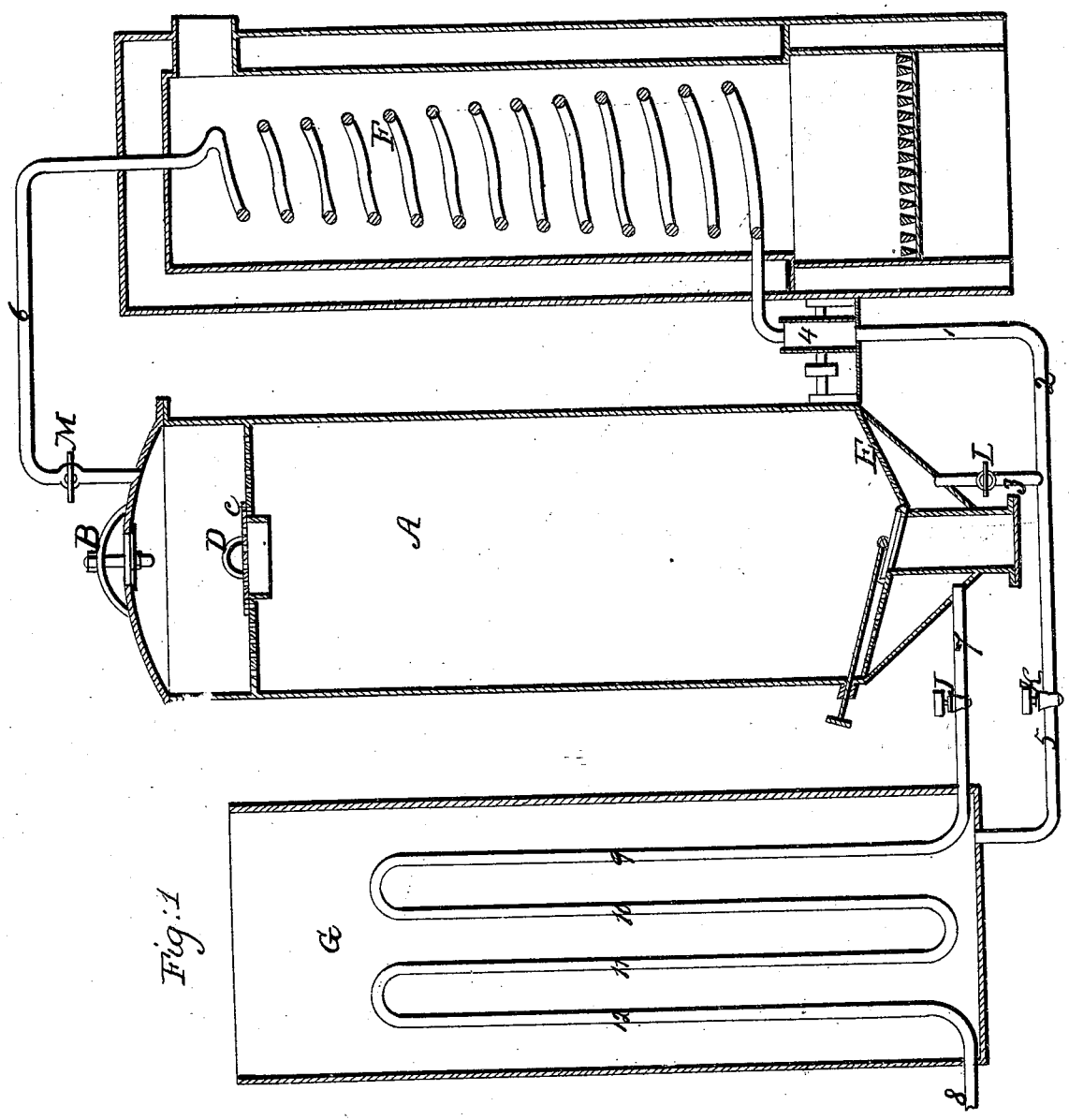

Fig: 1

Witnesses
Wm. W. Harding
Geo Buckley

Inventor:
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UNITED STATES PATENT OFFICE.

JOHN W. DIXON, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVED PROCESS FOR MAKING PAPER-PULP FROM CORNSTALKS.

Specification forming part of Letters Patent No. **51,432**, dated December 12, 1865.

To all whom it may concern:

Be it known that I, JOHN W. DIXON, of the city of Philadelphia and State of Pennsylvania, have invented a new and useful Process of Making Pulp out of Cornstalks; and I do hereby declare the following to be a full and and exact description of the same.

It has long been desired to make pulp for paper out of cornstalks, and various plans have been tried.

My improvement consists in employing highly-heated water under pressure forced to circulate through the mass to be pulped.

The annexed drawing exhibits an apparatus well adapted to carrying on my process.

A represents the pulp-digester, which is a boiler made of strong iron, (capable of resisting a pressure of from one hundred to three hundred pounds,) say four feet diameter and twelve feet high. It is furnished with a man-hole cover, B, and a perforated diaphragm, C, a central removable cover, D, and a lower perforated diaphragm, E, with a sliding valve, as described fully in a former application for patent made by me.

F is a conical coil built in a furnace, and connecting at its lower extremity with the lower part of the pulp-digester A by means of the tubes 1, 2, and 3. At 4 a rotary pump is placed in the course of this tube. The upper part of the coil F is connected by the tube 6 with the interior of the digester A at its top.

G is an arm or wooden tank—say four feet diameter and ten or twelve feet high—open or closed. The tube 7 passes from the lower part of the digester A through the walls of the tank G, and thence coils up and down a number of times in that tank, and passes out through the valve of the tank at 8. The interior of the tank is connected by the tube 4 with the tube 2 and the pump.

The operation of this apparatus is as follows: The digester A is to be filled with the cornstalks or sorghum-stalks to be pulped through the man-hole B. The cocks T and K are closed and the cocks L and M opened; a fire is made under the coil F and the digester and coil filled with fresh water. Fire is then applied under the coil F and maintained until the desired pressure—say from eighty pounds to two hundred pounds—is obtained. The pump 4 is then started and made to circulate the highly-heated water from the bottom of the digester through the heating-coil F into the top. After this liquid has circulated some time the cock L is to be closed and the cock T is opened. Thus the liquid will pass through the coil of pipe 9, 10, 11, and 12, and escape at 8. The tank is filled with fresh water, which is heated by the liquid passing through the coil. The cock K being opened, the water thus heated in the tank passes on through the tubes 5 and 2, the pump 4, and the coil F into the top of the digester A. By this means the water filled with gummy and other matters can be freely removed and its temperature imparted to a fresh supply of water and passed out. After the contents of the boiler A have been thus changed the cocks T and K are to be closed and the cock L opened, whereupon the circulation produced by the pump will be resumed, as at the first, from the bottom to the top, and so continued until the liquid becomes again surcharged with gummy matter.

By this means the vegetable material can be pulped without mechanical aid in from five to twelve hours, depending on the pressure used.

What I claim as my invention, and desire to secure by Letters Patent, is—

The process of making pulp from cornstalks by digesting them in highly-heated water under pressure, substantially as described.

JOHN W. DIXON.

Witnesses:
M. G. HUBBARD,
J. WM. KREPPS.