C. H. HERSEY.

APPARATUS FOR COOLING ANIMAL CHARCOAL.

No. 182,823. Patented Oct. 3, 1876.

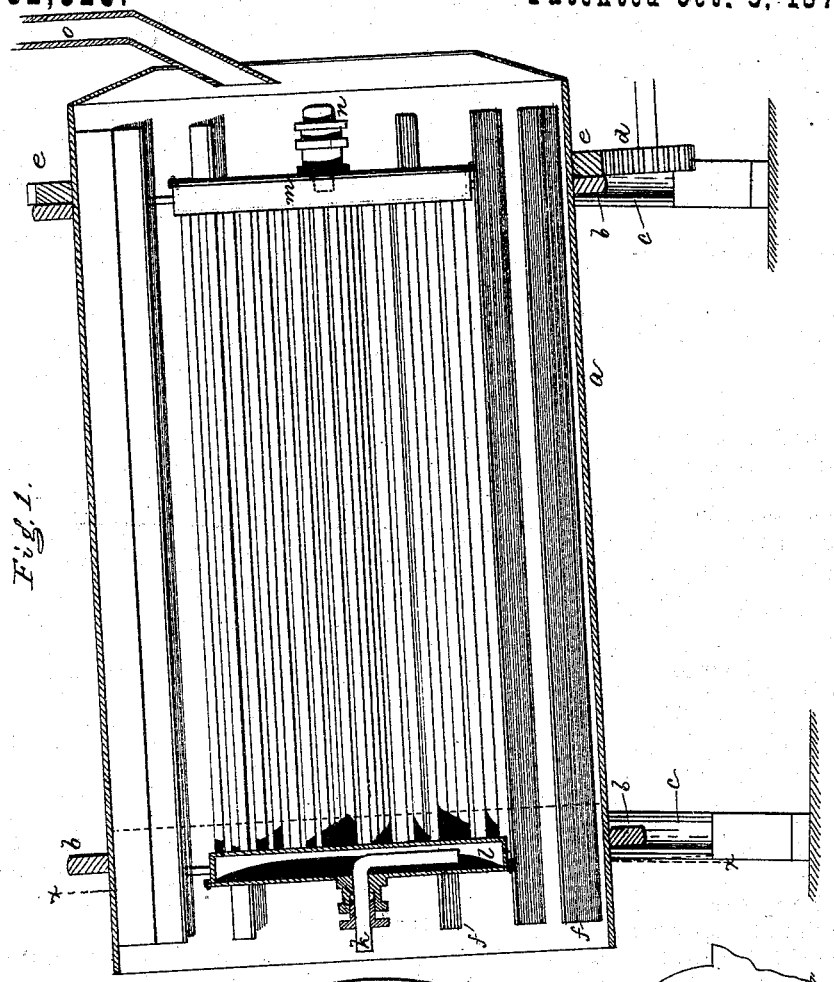

Fig. 1.

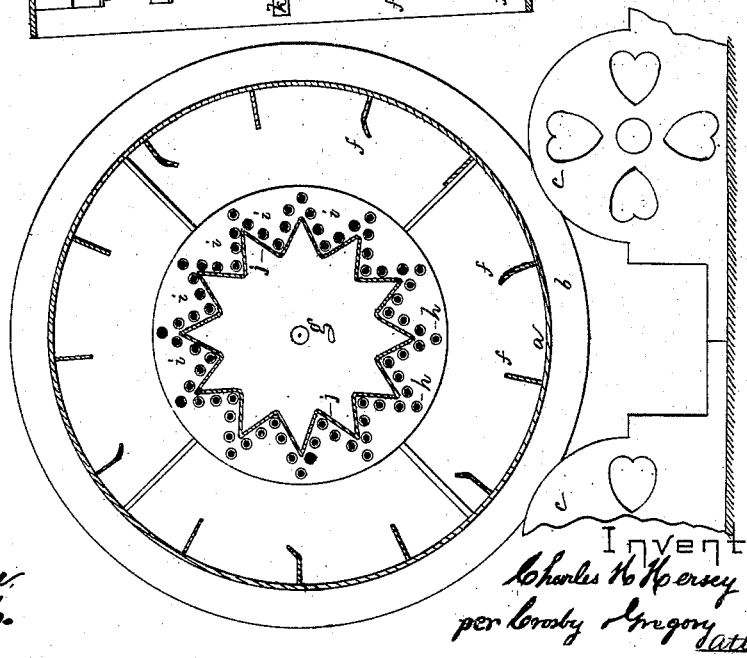

Fig. 2.

Witnesses.
L. H. Latimer
W. J. Pratt.

Inventor.
Charles H. Hersey
per Crosby Gregory Attys.

UNITED STATES PATENT OFFICE.

CHARLES H. HERSEY, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN APPARATUS FOR COOLING ANIMAL-CHARCOAL.

Specification forming part of Letters Patent No. **182,823**, dated October 3, 1876; application filed June 3, 1876.

To all whom it may concern:

Be it known that I, CHARLES H. HERSEY, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Apparatus for Cooling Animal-Charcoal, of which the following is a specification:

This invention relates to mechanism for cooling animal-charcoal or "bone-char." The char, after use in the process of manufacturing sugar, is reburned to purify it; and this invention has reference to a mechanism for cooling this char as quickly as possible, such mechanism consisting essentially in the combination, with a rotating drum, of an interior rotating cooling-cylinder, having circulating about its surface a cooling or refrigerating liquid, such as water or any ordinary cooling-mixture.

Figure 1 represents a horizontal section of a cooling apparatus provided with my invention; and Fig. 2, a transverse section.

The outer drum *a* is provided with rims *b b*, that rest on wheels *c*, so that the cylinder may be revolved by the action of a toothed wheel, *d*, that engages a cogged rim, *e*, placed at the side of one of the rims *b*. Within the drum are radial shelves *f*, adapted to take up and discharge the char as the drum rotates. These parts so far described are substantially as represented in United States Letters Patent No. 149,397, heretofore granted me for drying sugar. Within the drum *a*, and attached to and moving with it, is a cooling-cylinder, *g*, made up of a series of pipes, *h*, arranged parallel with each other, and so as to form chambers or pockets *i*, and within the series of pipes I place a shell, *j*, to prevent the passage of the char between the pipes.

Water or other cooling-liquid is led, by a suitable pipe, *k*, into a chamber, *l*, from whence it flows through the pipes *h* to a chamber, *m*, from which it is discharged at *n*. The bone-char is led to the interior of the drum *a* through a chute, *o*, and taken up by the radial shelves. The hot char is dropped onto the pipes *h* and into the chambers *i* of the cooling-cylinder, and remains in the chambers *i* until the cooling-cylinder in its change of position, owing to its rotation, discharges the char back into the drum *a*, from which it is again discharged upon the cooling-cylinder. The drum is placed in an inclined position, so that as it rotates the char will be progressively moved through the drum.

The connection between the cooling-cylinder inlet and outlet pipes and the water or cooling-liquid supply may be made in any usual way.

The pipes *h* might be arranged to form circular or curved, rather than angular, chambers *i*.

I claim—

The inclined rotating cooling-cylinder, composed of pipes *h*, to receive cooling-liquid, and arranged to form chambers *i* for the reception of char, in combination with the drum *a*, provided with shelves, to lift the char and discharge it upon the cooling-cylinder to cool it, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHAS. H. HERSEY.

Witnesses:

G. W. GREGORY,

L. H. LATIMER.