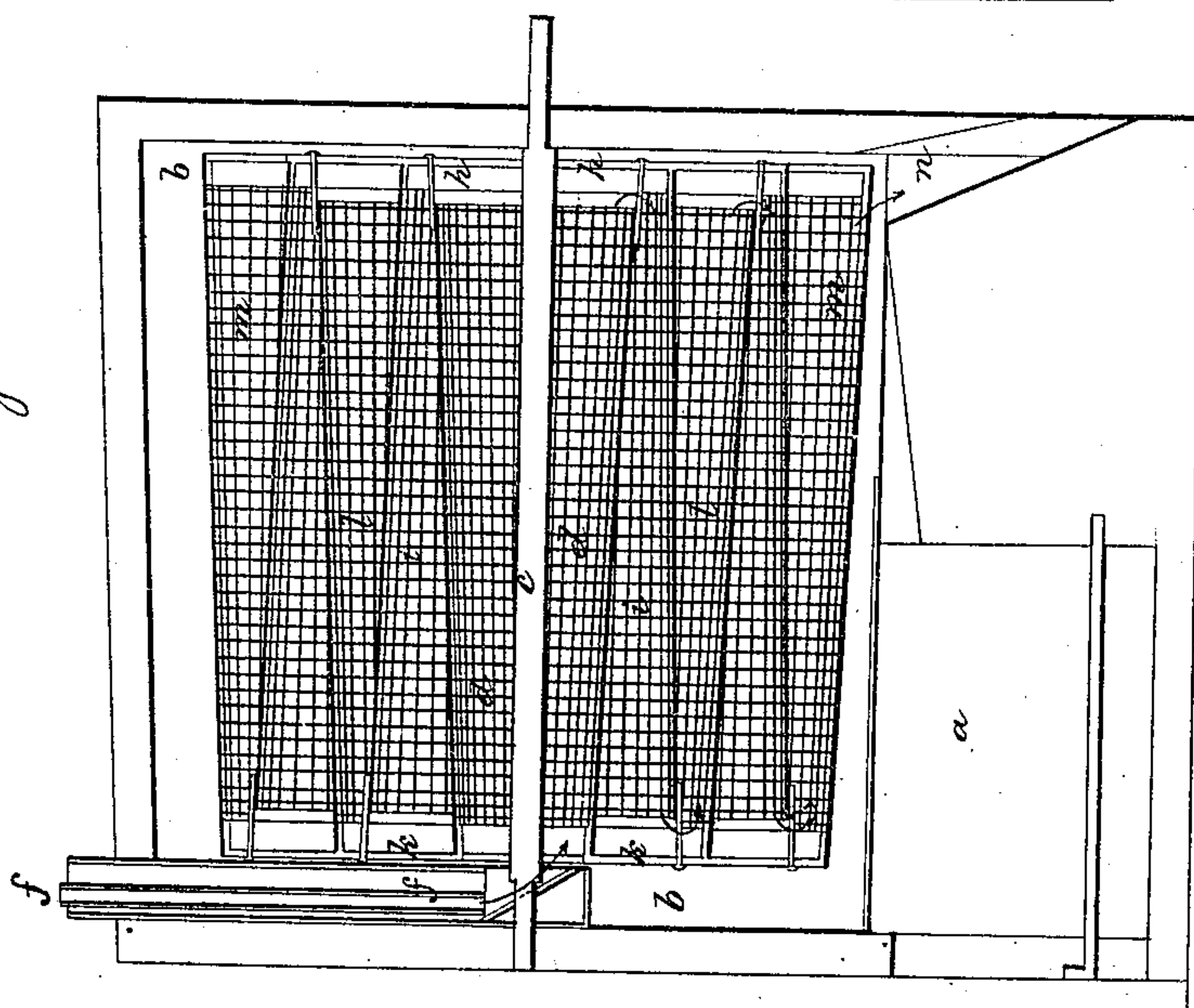
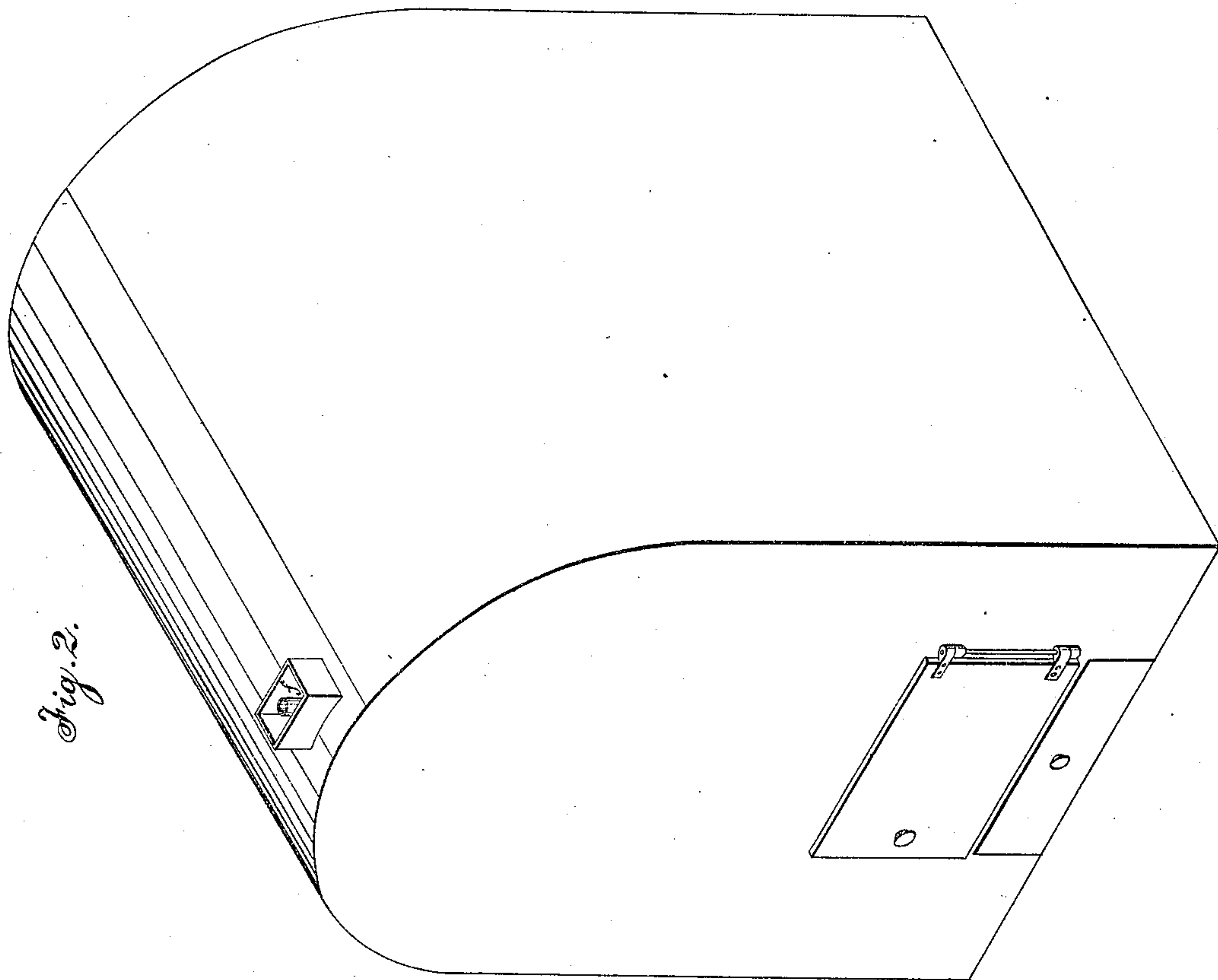


E. KNAUR & S. BEAVER, Jr.
GRAIN DRIER.

No. 5,517.

Patented Apr. 18, 1848.



UNITED STATES PATENT OFFICE.

E. KNAUR, OF VALLEY FORGE, AND S. BEAVER, JR., OF GREAT VALLEY, PENNSYLVANIA.

GRAIN-DRIER.

Specification of Letters Patent No. 5,517, dated April 18, 1848.

To all whom it may concern:

Be it known that we, ELIAS KNAUR, of Valley Forge, in the county of Chester and State of Pennsylvania, and SAMUEL BEAVER, Jr., of Great Valley, in the county of Chester and State of Pennsylvania, have invented new and useful Improvements in Machinery for Drying Grain, and that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a vertical section through the apparatus, and Fig. 2, an outside view of the kiln.

The same letters indicate like parts in all the figures.

The nature of our improvements consists in arranging a series of hollow frustums of cones concentrically one within another, the base of each alternate one being placed at opposite ends so that they can all be supported on one shaft, and the grain which is to be dried shall enter the center one and thence pass from end to end without any spiral conductors till it is perfectly dry when it is discharged at the lowest point, and during its progress through the machine it is gradually spread more and more till it issues from the machine.

In the drawing (*a*) represents a furnace above which there is a chamber of brick work (*b*) that incloses the frustums above named. The shaft (*c*) which is horizontal has its bearings in the outer wall through which it passes at one end, and at this end it is geared to the power by which it is

turned. The first or inner frustum (*d*) has its smaller end surrounded by a stationary collar (*e*) that connects with a vertical pipe (*f*) through which the grain is supplied. This pipe is surrounded by the chimney for conveying off the smoke and steam. This inner frustum extends out nearly to the other end of the chamber (*b*) and is connected to an iron disk (*h*) that forms the smaller section of the frustum of the second frustum (*i*) to which disk it is attached by rods that extend from it to said disk leaving a space between them for the descent of the grain as shown by the arrows. The base of the second frustum (*i*) is similarly attached to the disk (*h*) of the third frustum (*l*), and any number may be similarly connected, all having the shaft (*c*) for their common axis.

The grain passes out from the base of the last frustum (*m*) through a spout (*n*) perfectly dried. It will be observed that the grain is gradually spaced more and more from the point where it enters to the point of discharge as it is made drier. All the cones are punched with holes like a sieve or are formed of a wire net work.

What we claim as our invention, and desire to secure by Letters Patent, is—

A series of hollow frustums of cones, having a common axis and placed relatively as herein described, for drying grain so that the grain shall enter the center and pass down through each one of the sieves, in the manner and for the purpose above set forth.

E. KNAUR.

SAML. BEAVER, JR.

Witnesses:

MAURICE RICHARDSON,

JOHN ACKER.