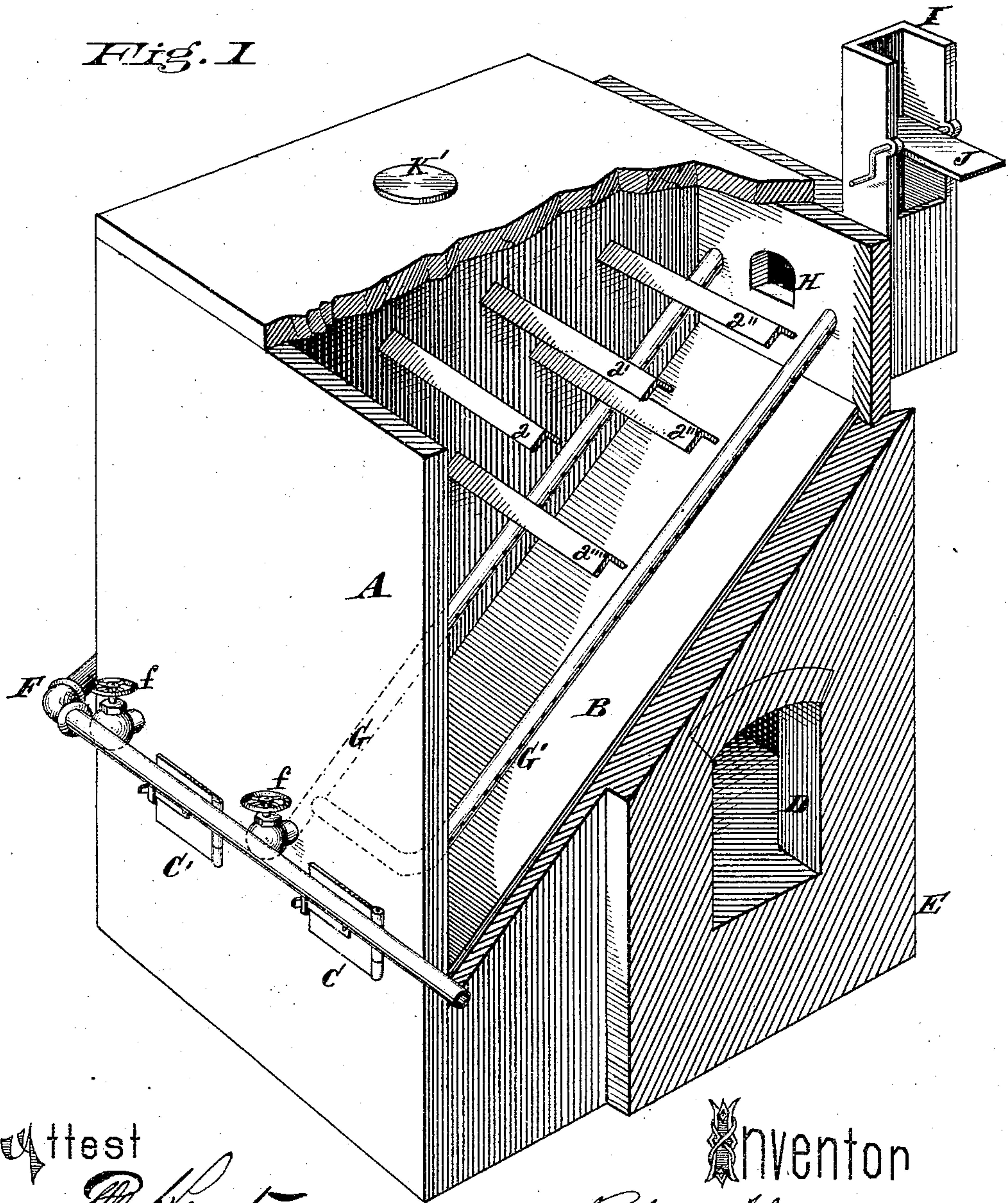


R. TEATS.  
Drying Ores.

No. 153,397.

Patented July 21, 1874.

Fig. 1



Attest  
*Edgar J. Gross*

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Fig. 2

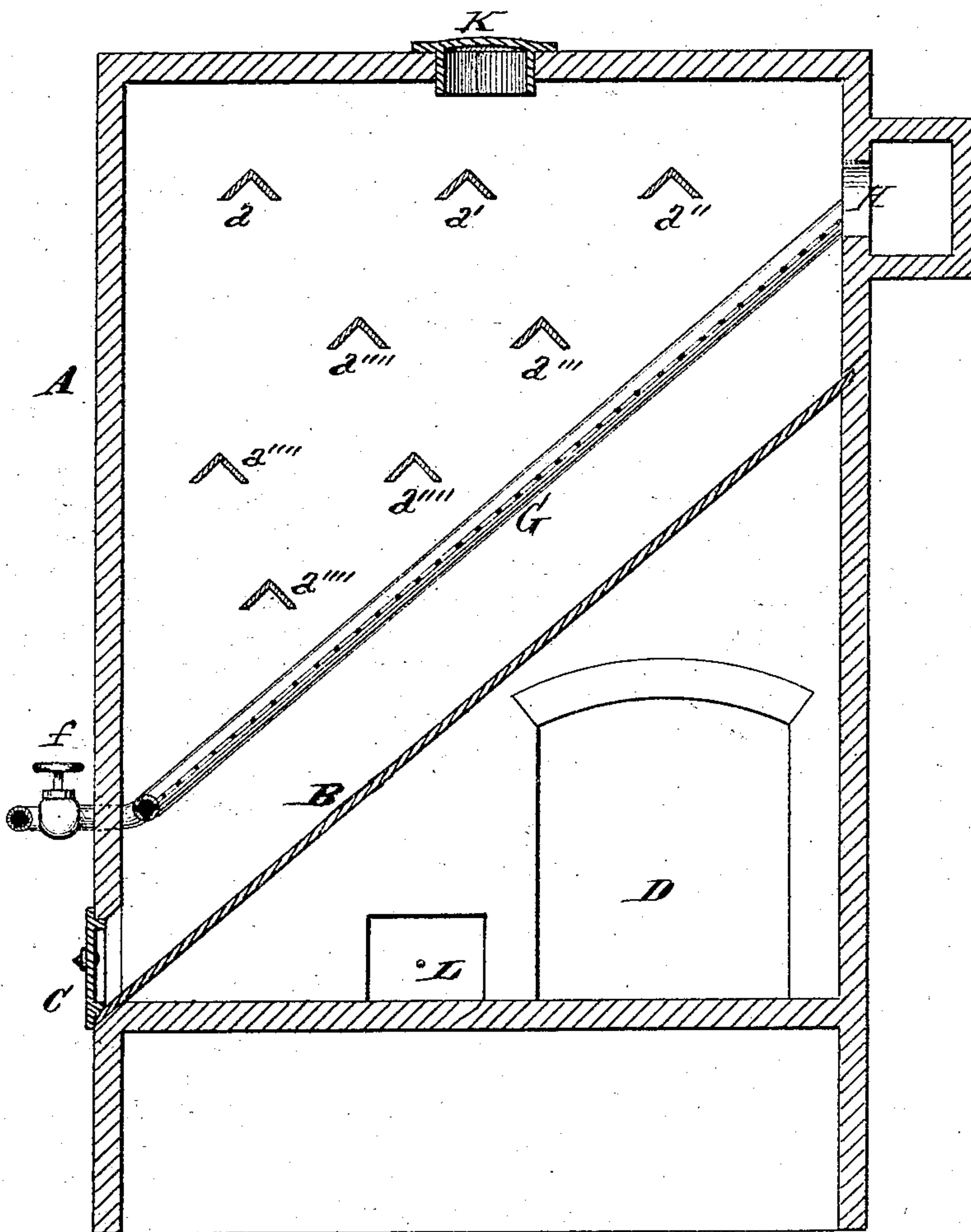
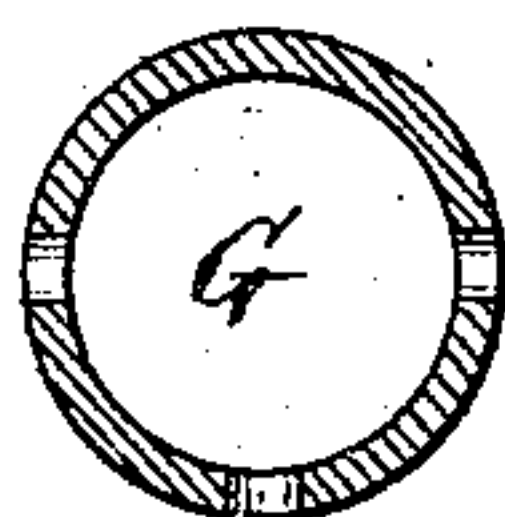


Fig. 3



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*Edgar J. Cross*

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# UNITED STATES PATENT OFFICE

ROBERT TEATS, OF CENTRAL CITY, COLORADO TERRITORY.

## IMPROVEMENT IN DRYING ORES.

Specification forming part of Letters Patent No. **153,397**, dated July 21, 1874; application filed June 22, 1874.

*To all whom it may concern:*

Be it known that I, ROBERT TEATS, of Central City, Gilpin county, Colorado Territory, have invented certain new and useful Improvements in Devices for Drying Ores, of which the following is a specification:

My invention relates to the class of dry-kilns intended for drying ore received wet from the mine or crusher, having a chamber or series of chambers with inclined iron floors or chutes; and my invention consists, in the first part, in connection with said kiln, of devices by which a blast of air is introduced into said chambers, for the purpose of rapidly taking up and carrying away the moisture, and thus drying the ore deposited therein; and my invention consists, in the second place, of transverse perforated pipes for more effectually distributing the blast, and a regulator-vent for escape into the flue of the mill of said blast, after being spent. My invention consists, in the third place, of transverse bars or angle-irons to prevent the ore from becoming packed, and also causing the blast to eddy, thereby utilizing to the fullest extent the drying quality of the blast.

Figure 1 is a broken perspective view of a dry-kiln, having my improvements attached. Fig. 2 is a vertical section through one chamber of the kiln.

A is the body of the kiln, having, in this instance, two separate chambers. B is the iron floor of one of the chambers. C C' are doors for the exit of the ore after being dried. D is the opening from the space under floor B to the chimney E, (shown in section.) and forms part of the connection from the boiler of the mill. F is the supply-pipe for air, hot or cold, leading, if hot air is wanted, from a coiled pipe in the flue leading from the boiler, and is fitted with valves *f f'*, connecting with the perforated escape-pipes *g g'*. These escape-pipes have perforations, one or more rows, on the sides or bottoms. The air being introduced under pressure, it leaves the perforations and penetrates through the ore in the chamber, which has been fed through aperture K. *a a' a'' a''' a''''* are wood or iron bars or angle-irons, resting in the walls of kiln A to prevent the ore from packing, and also to

cause the ejected blast to eddy among the particles. H is an exhaust-port for the escape of the blast, either to a chimney connected below the butterfly-valve J, the escape then being below the valve, as seen in Fig 1, or, when the valve is vertical, through flue I into the open air. When it enters from the damper to the chimney it acts as a blower, the force whereof is regulated by amount of opening of valve J. The air, as before stated, may, if preferred, be charged with caloric, and this may be done in a coiled pipe in the flue leading from the boiler, and then forced by a blower through supply-pipe F, regulated by valves *f f'* into vent-pipes G G', leaving which at the orifices, it permeates the surrounding ore, drying it, and then passes through port H. The ore may be partially heated by vapors from the fire-box passing on their way to chimney E through passage D, under the floor B. The ore is introduced through apertures K K' into the chambers A, directly from the crusher or mine, and after having been dried is taken out at door C C'. If it is thought necessary to dry ore when the mill is not running, fire may be introduced under floor B at the door L, in place of the blast of air.

I claim—

1. In combination with the kiln A, the blast-pipes F *f*, connected and operating substantially as and for the purpose specified.

2. The combination of kiln A, blast-pipes F *f*, and perforated distributing-pipes G, operating substantially in the manner and for the purpose specified.

3. In combination with the kiln A, and blast apparatus F *f* G, the bars *a a'*, &c., operating substantially as described, for the purpose specified.

4. In combination with the kiln A, and blast apparatus F *f* G, the escape-flue regulating-valve J, operating as and for the purpose stated.

In testimony of which invention I hereunto set my hand.

ROBERT TEATS.

Witnesses:

EDGAR J. GROSS,  
J. L. WARTMANN.