

The following observations on this hot-blast system are submitted:

**Cost of Installation**—It may be stated that the cost of installing this system is, approximately, 50 per cent less than that of the ordinary hot-blast U-pipe stove; also that Kiddie's system can be applied to

tion pipe therein, the wear and tear is reduced to the lowest limits. In other systems the air jackets are so constructed as to extend too close to the flames and, as a consequence, the steel plates soon become burned and the stay bolts tear through the plates by reason of the excessive expansion and contraction of the latter.

On referring to the accompanying diagram it will be noted that the lowest part of the double horizontal flue leading from the dust chamber to and over the furnace is kept sufficiently high above the charge in the furnace to prevent any burning of the steel plates taking place, thus insuring long life to these plates and avoiding what in other systems is a heavy cost for renewals. The outer jacket, being in sections, can in case of need be readily taken apart, while all the joints, having outside flanges, are equally accessible at all times.

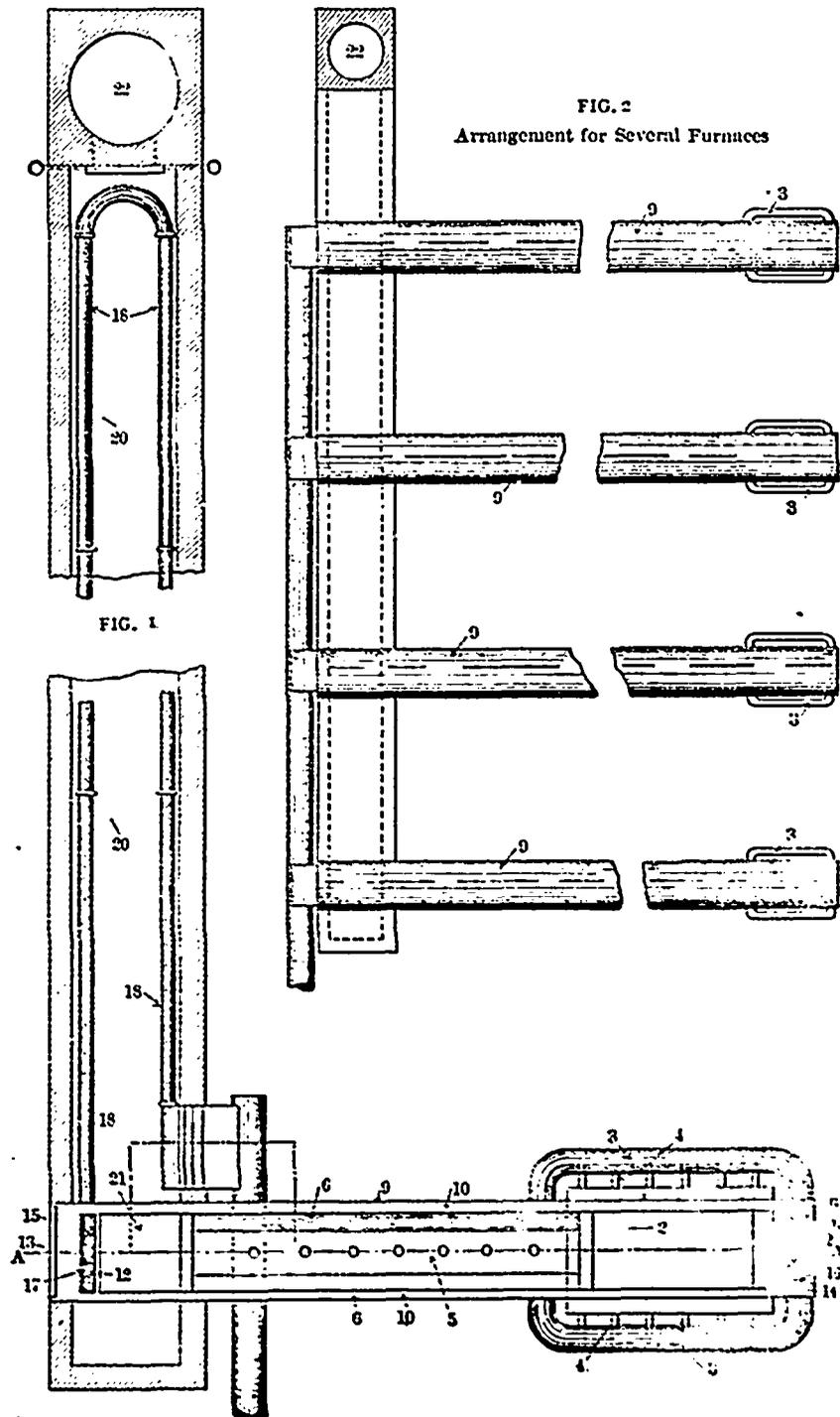
**Smelting Economy**—The saving of coke and the superior oxidizing power of this system is exhibited by the following average results of the first two months' hot-blast practice as compared with cold blast under similar furnace conditions:

**Running With Hot Blast**—The charge consisted of 37 per cent roasted ore, containing 6.32 per cent sulphur and 4.08 per cent copper; and 63 per cent raw ore, containing 16 per cent sulphur and 4.08 per cent copper; coke used, calculated on the ore smelted, 9.36 per cent; coke used, calculated on the mixture smelted, 7.70 per cent. The matte produced contained 42 per cent copper; sulphur to copper—3.04 sulphur to 1 copper.

**Running With Cold Blast**—The charge consisted of 63.62 per cent roasted ore, containing 6.32 per cent sulphur and 4.08 per cent copper; and 36.38 per cent raw ore, containing 16 per cent sulphur and 4.08 per cent copper; coke used, calculated on the ore smelted, 13.93 per cent; coke used, calculated on the mixture smelted, 12.97 per cent; matte produced contained 42 per cent copper; sulphur to copper—

2.41 sulphur to 1 copper.

These records show that as compared with cold-blast practice the hot blast made a saving of 32.91 per cent coke on ore smelted, and 40.43 per cent on charge, while the tonnage smelted was practically the same. As regards oxidation, the respective percentages of



any modern blast copper furnace, without disturbing the brick work of the furnace, above the feed floor.

**Wear and Tear**—Owing to the comparatively low temperature, viz., 400 to 600 deg. F., of the gases passing through the dust chamber and the long travel and small cross-section area of the heating or absorp-