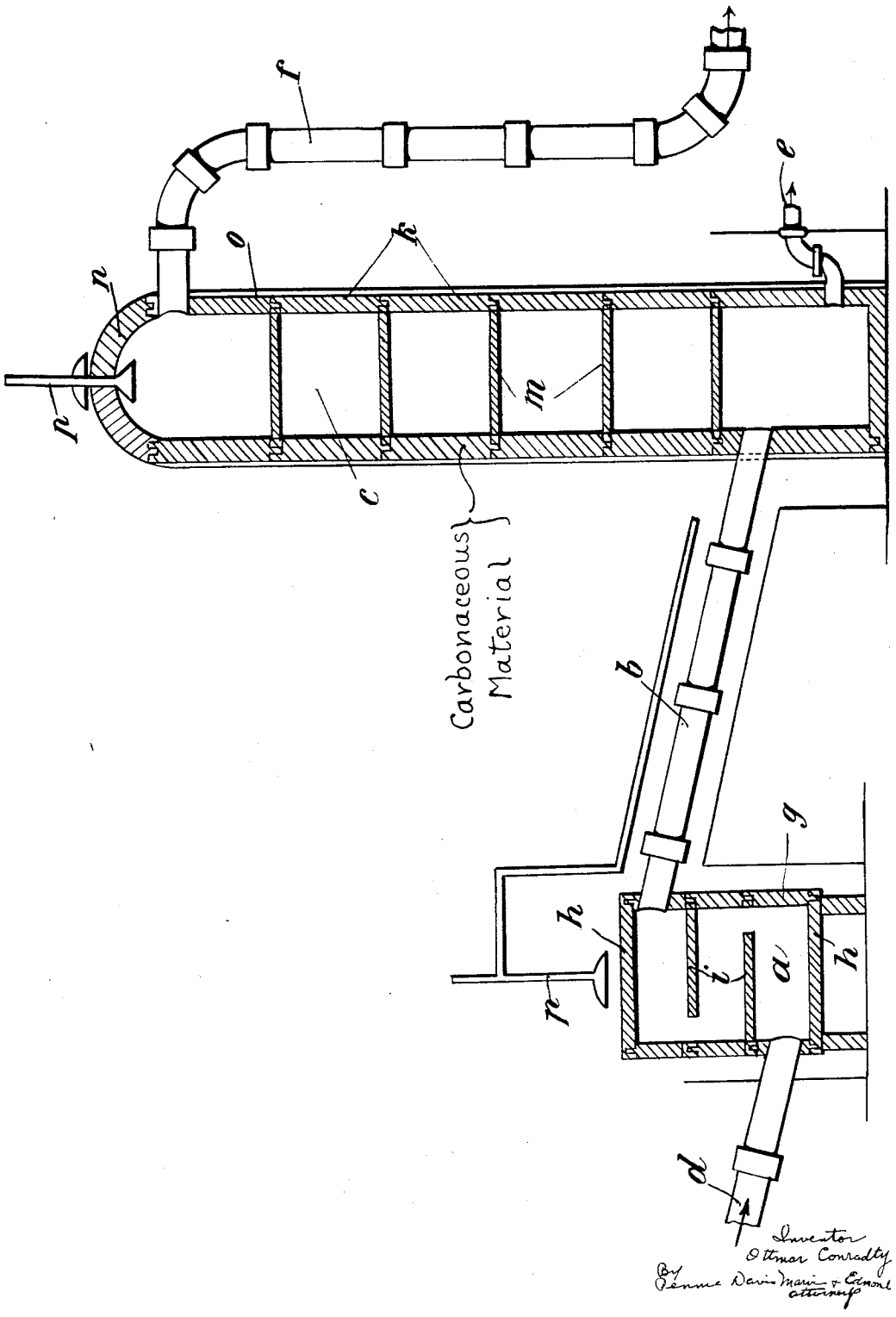
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CONDENSING APPARATUS

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CONDENSING APPARATUS

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1 Claim. (Cl. 23—283)

My invention relates to improvements in condensing apparatus.

In the chemical industry frequently condensing apparatus or condensing towers or the like are needed. Such condensing apparatus must be made from a material which is not affected by the condensed products, for which reason ordinarily the towers or receptacles are made from clay, which is not affected by acid. However, for many purposes the said material is objectionable because it is a bad conductor of heat, and high conductivity for heat is not less important than the resistance to acids. Further, condensing receptacles and chambers have been made from metal. However, for condensing acids and the like metal cannot be used because it is rapidly corroded, and because the metal combines with the product of the condensation. Platinum and other noble metals cannot be used because they are too expensive.

The object of the improvements is to provide a condensing apparatus which resists the action of acid, and which is adapted to conduct heat, and with this object in view my invention consists in constructing condensing apparatus from coal or graphite. Both materials have a high conductivity for heat, and they are absolutely proof against the action of acids.

An important advantage of condensing apparatus made from coal or graphite is that by reason of the high conductivity for heat the dimensions of the said condensing apparatus can be considerably reduced as compared to condensing apparatus made from clay, stoneware and the like. Further, condensation is completed within a comparatively short period of time. Another advantage of the manufacture of condensing apparatus from coal or graphite is that the said material is not destroyed at the parts located near the intake end by the high temperature of the vapors.

In order that the invention be more clearly understood an example embodying the same has been illustrated in the accompanying drawing showing a condensing tower and a cooling chamber connected therewith in sectional elevation.

In the example shown in the drawing the apparatus comprises a cooling apparatus *a* connected by a pipe *b* with a condensing apparatus *c*, the vapors being passed into the cooling apparatus *a* through a pipe *d*, and the products of the condensation being removed through a pipe *e*. The gas is withdrawn from the top of the tower *c* through a pipe *f*.

The cooling apparatus consists of a cylindrical casing composed of cylindrical members *g*, top and bottom plates *h* and deflecting partitions *i*, the said parts *g*, *h* and *i* consisting of coal or graphite. The tower *c* is composed of superposed cylindrical members *k*, foraminated partitions *m* and a head *n*. The said parts *k*, *m* and *n* consist of coal or graphite. In most cases the rigidity of the cylindrical members *k* is sufficient to support the tower *c*. But in some cases I provide additional supporting means such as a jacket *o* or a frame work made from metal.

The cooling chamber *a* and the tower *c* are cooled by means of water supplied through pipes *p*.

In the preferred form also the pipes *d*, *b* and *f* and *e* are made from coal or graphite.

I claim:

A heat exchanging apparatus for condensing or refrigerating acid gases comprising a plurality of hollow cylindrical sections formed of carbonaceous material, said sections being stacked vertically upon each other to form a hollow tower, adjacent sections being attached by means of an annular tenon on one section interfitting with an annular mortise on the adjacent section.

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