S. GLOVER & J. WEST.

COKE DISCHARGING APPARATUS FOR VERTICAL RETORTS.

APPLICATION FILED SEPT. 9, 1910.

991,499. **Patented May 9, 1911.**

Fig. 5.

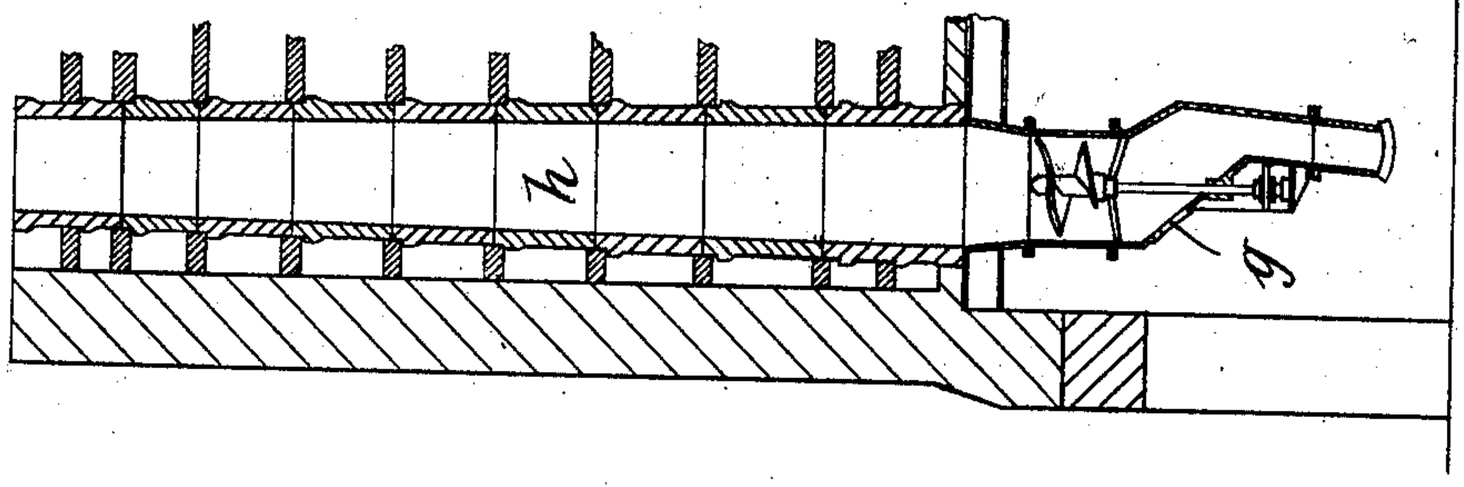


Fig. 2.

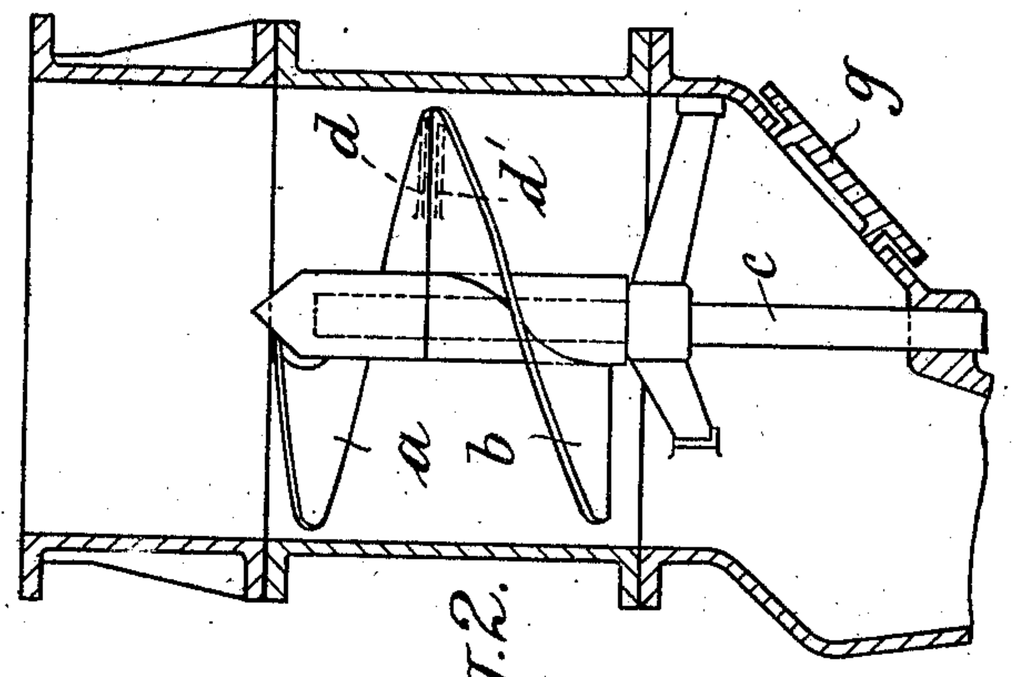


Fig. 4.

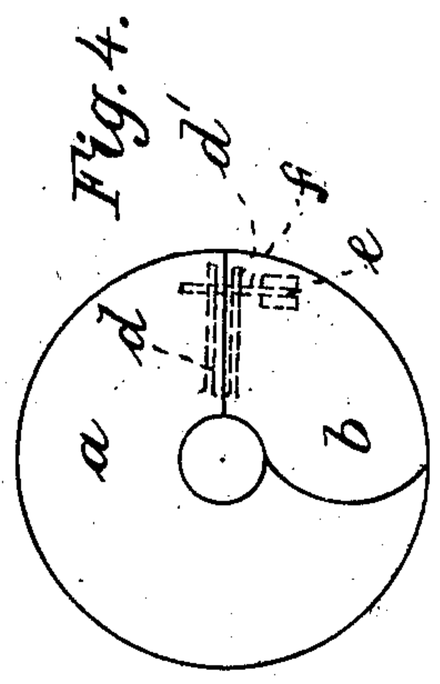


Fig. 1.

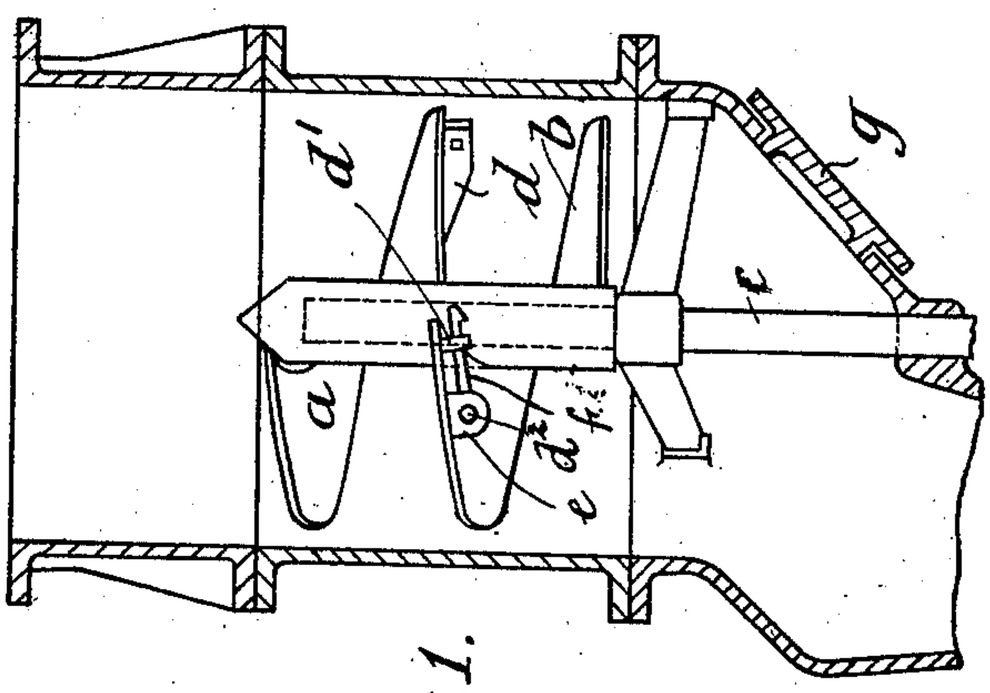
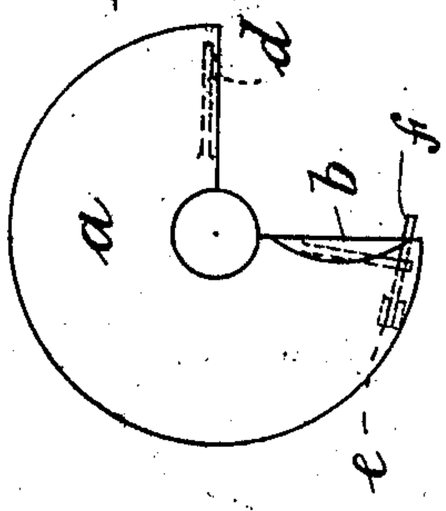


Fig. 3.



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COKE-DISCHARGING APPARATUS FOR VERTICAL RETORTS.

991,499. Specification of Letters Patent. **Patented May 9, 1911.**

Application filed September 9, 1910. Serial No. 581,209.

To all whom it may concern:

Be it known that we, SAMUEL GLOVER and JOHN WEST, subjects of the King of Great Britain and Ireland, residing at "Olive-mount," St. Annes, St. Helens, and "The Firs," Park Road, Southport, both in the county of Lancaster, England, have invented certain new and useful Improvements in Coke-Discharging Apparatus for Vertical Retorts, of which the following is a specification.

This invention relates to improvements in the construction of a helix or worm discharging apparatus applied for the purpose of discharging the coke from vertical retorts used in the distillation of coal shale and the like, and has for its object the construction of the helix or worm in two sections so that one section can be partly rotated on its axis or spindle to such an extent that a free space is made which will permit the inspection of the retort and a ready access to the retort when it is required to be scurfed or cleared from carbon deposits on the interior of the retort; the scurfing tools being inserted through the space made between the two sections of the worm.

When the worm is in action for discharging the retort, the two sections are joined together and held together by a catch which can be released in a ready manner through an inspection hole provided in the coke chamber.

In order that our invention may be readily understood, we shall proceed to describe the same in reference to the accompanying drawings.

Figure 1 shows the worm when divided. Fig. 2 shows the two sections of the worm coupled together by a catch. Fig. 3 is a plan of Fig. 1 and shows the opening obtained by separating the two sections of the worm. Fig. 4 is a plan of Fig. 2. Fig. 5 is a sectional elevation of a vertical retort and shows the application of the improved coke discharging apparatus.

Referring to Figs. 1 to 5 the worm is made in two parts *a* and *b*, the part *a* being free to revolve on the shaft or axis *c*, but the part *b* is secured to the shaft *c*. The motion of the shaft *c* when the two parts *a* and *b* are coupled together causes the worm to revolve as though it was constructed in one piece.

d and *d'* are lugs cast on the faces of the parts *a* and *b*; *e* is the eye bearing for the pin d^2 which holds the catch *f*.

g is an inspection door in the coke receiving chamber below the worm discharging apparatus and through which access is made to the worm for the purpose of releasing or fixing the catch *f* when it is required to separate the two sections of the worm, and which also permits the inspection of the retorts and the insertion of the scurfing tools.

h is a vertical retort to which the improved discharging apparatus is applied.

What we claim and desire to secure by Letters Patent is:—

In combination, a helix composed of two sections, each of said sections extending through a portion only of a complete annulus, whereby there will be a space formed between the ends of each section and a shaft, one of said sections affixed to said shaft and the other of said sections being rotatably mounted upon said shaft, whereby said other section may be rotated to cause the space formed between its ends to register with the space formed between the ends of said first section, and means for holding said second section against rotation with one of its ends engaging one of the ends of said first section to form a continuous helix.

In testimony whereof we have affixed our signatures, in presence of two witnesses.

SAMUEL GLOVER.
JOHN WEST.

Witnesses:
MALCOLM SMETHURST,
GEORGE WEAVER.