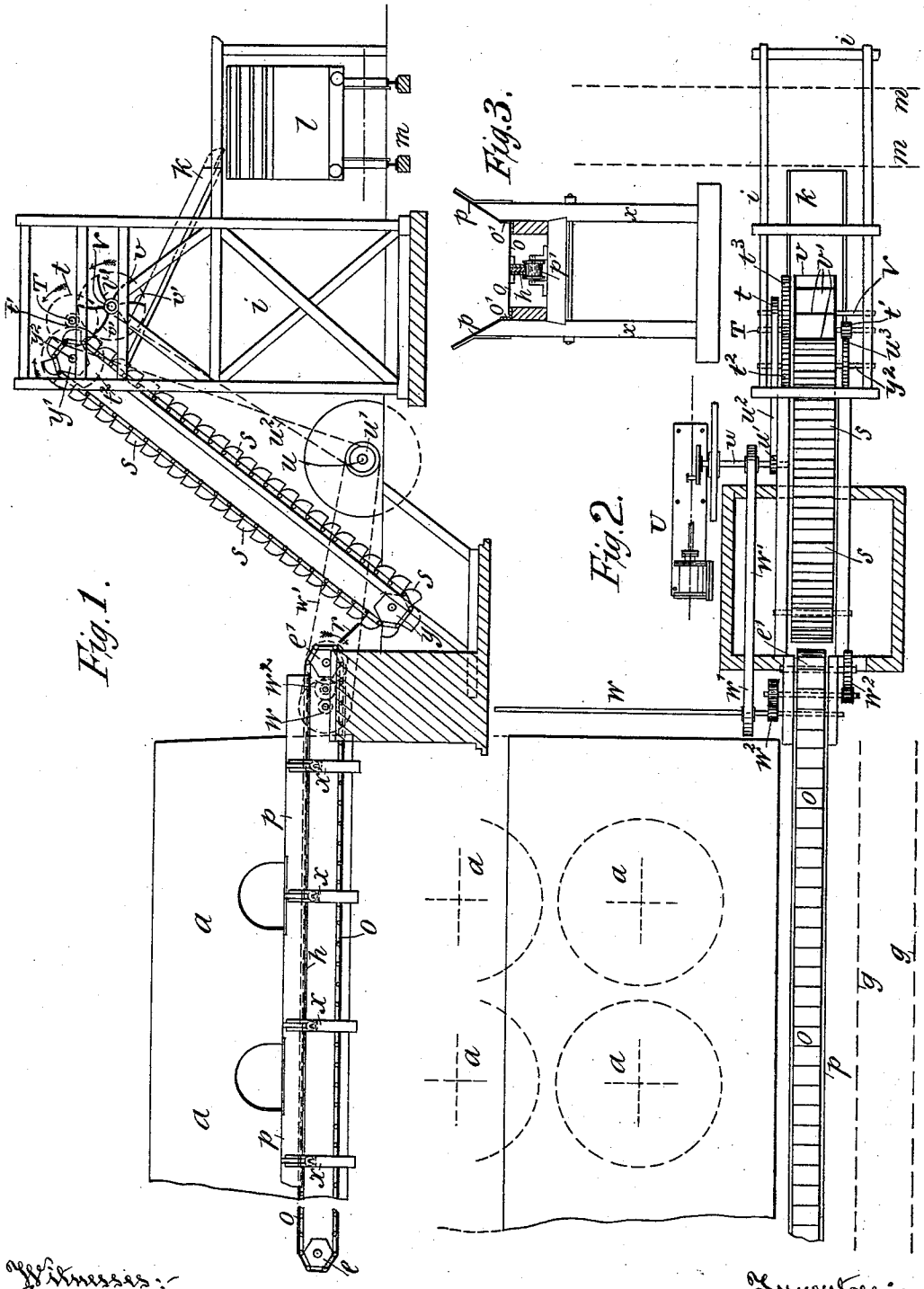
(No Model.)

A. M. CHAMBERS & T. SMITH.

APPLIANCE FOR LOADING COKE.

No. 479,556. Patented July 26, 1892.



Witnesses:-
J. C. Wilson
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Inventors:-
Arthur Marshall Chambers,
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by
Whitman & Wilkinson, Attys.

UNITED STATES PATENT OFFICE.

ARTHUR MARSHALL CHAMBERS AND THOMAS SMITH, OF CHAPELTOWN, ENGLAND.

APPLIANCE FOR LOADING COKE.

SPECIFICATION forming part of Letters Patent No. 479,556, dated July 26, 1892.

Application filed August 4, 1891. Serial No. 401,624. (No model.)

To all whom it may concern:

Be it known that we, ARTHUR MARSHALL CHAMBERS and THOMAS SMITH, engineers, subjects of the Queen of Great Britain, residing at Chapeltown, in the county of York, England, have invented new and useful Improvements in Appliances for Loading Coke from Ovens into Wagons, of which the following is a specification.

Our invention relates to improvements in appliances for loading coke from ovens into wagons, and the object of our improvements is to provide means by which the coke is automatically and continuously delivered quickly and without injury from the ovens in which it is burned into the wagons by which it is to be conveyed away. We attain this object by the mechanism and appliances illustrated in the accompanying drawings, in which—

Figure 1 is a front view of our improved apparatus in connection with a row of coke-ovens. Fig. 2 is a plan view of the same. Fig. 3 is a transverse section, on a larger scale, of the traveling platform and its supports.

Similar letters refer to similar parts throughout the several views.

Our invention is shown applied to coke-ovens in which the coke is withdrawn from the ovens by mechanism for which Thomas Smith obtained a patent in the United States of America, dated February 24, 1891, and numbered 446,936, for apparatus for extracting coke from ovens; but it may be applied to coke-ovens from which the coke is withdrawn by hand or other means.

o is a horizontal platform of plates riveted to the endless chain *h*, passing round the drums *e e'*. The drum *e'* is driven by a steam-engine U, driving a shaft *w*, by pulleys and belt *w'*, the shaft *w* driving the drum *e'* by toothed wheels w^2. The coke is discharged from the plates *o* upon the plate or chute *r*, which delivers it into the inclined endless chain of carriers or buckets *s*, which passes around drums *y y'*, the upper one of which *y'* is mounted upon the shaft y^2, carried in bearings in the frame *i*. A shaft T is mounted upon the frame *i*, and carries at one end a pulley *t* and at the other end a pinion *t'*, meshing with a toothed wheel u^3 upon a shaft y^2 of a drum *y'*. The opposite end of the shaft y^2 carries a toothed wheel t^2 for the purpose hereinafter set forth.

v designates a drum having curved partitions *v'*, forming buckets around the periphery thereof. The said drum is mounted upon a shaft V in the frame *i* in position to receive the coke from the endless carrier *s*. Upon one end of the shaft T is mounted a toothed wheel t^3, meshing with a toothed wheel t^2 on the shaft y^2. The belt u^3 from the pulley *u'* upon the main shaft *u* of the engine U passes around the pulley *t* upon the shaft T, turning it in the direction indicated by the arrow, and by the pinion *t'* and a toothed wheel u^3 driving the shaft y^2 of the carrier *s*, which latter, through the toothed wheels t^2 and t^3 and shaft T, communicates motion to the drum *v*.

The direction of rotation of the aforesaid parts is indicated by the arrows in Fig. 1, and from an inspection of the drawings it will appear that the coke is delivered from the upwardly-inclined carrier *s* upon the concave side of the curved partitions of the drum *v*, where it is retained by the concavity of the said partition until the rotation of the drum has lowered it very near to the chute or screen *k*, down which it passes into the wagon or car *l*, running upon rails at *m*. Thus it will be seen that the coke is lowered very easily from the upwardly-inclined carrier *s* to the screen *k* by the drum *v*, and the danger of breaking the coke by falling from the carrier to the screen is entirely obviated.

In Fig. 3 the plates *o* are shown traveling upon angle-irons *o' o'*, forming part of a longitudinal trough *p*, fixed in front of the ovens *a*, into which trough the coke falls and is prevented from being scattered. The plates *o* are bolted or riveted to an endless chain *h*, which is supported upon rollers *p'*, carried by the frames *x*.

By our invention the coke from coke-ovens is very quickly and continuously automatically delivered from the ovens into the wagons by which it is conveyed away, and great saving is effected in the cost of so conveying and delivering, as compared with that of the methods ordinarily adopted, while the coke

is not liable to injury, and is therefore of greater value.

We are aware that endless traveling platforms have long been used for the purpose of conveying materials of different kinds from place to place, and we do not claim, broadly, the use of such traveling platform; but

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

An apparatus of the class herein described, comprising the longitudinal trough *p*, fixed in front of a series of coke-ovens, angle-irons *o' o'*, arranged within the said trough, the horizontal traveling platform of plates partly supported upon the angle-irons *o' o'* and carried by the endless chain *h*, anti-friction rollers mounted beneath the said traveling platform and partly supporting the latter, the drums over which the endless chain passes, the shaft *w*, geared to one of the said drums and also to the steam-engine U, the chute *r* to conduct the coke from the horizontal carrier to the inclined carrier, with the upwardly-inclined carrier to receive the coke from the horizontal platform of plates, drums over which the said carrier passes, a drum *v*, having curved partitions to receive the coke from the inclined carrier and lower it onto the screen *k*, the shaft T, geared to the shaft of the upper drum of the inclined carrier, the gear-wheels t^2 and t^3, communicating motion from the inclined carrier to the drum *v*, and the engine U, connected by the belt u^2 with the shaft T, substantially as described.

In testimony whereof we have hereunto set our hands in the presence of two witnesses.

ARTHUR MARSHALL CHAMBERS.
THOMAS SMITH.

Witnesses:
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