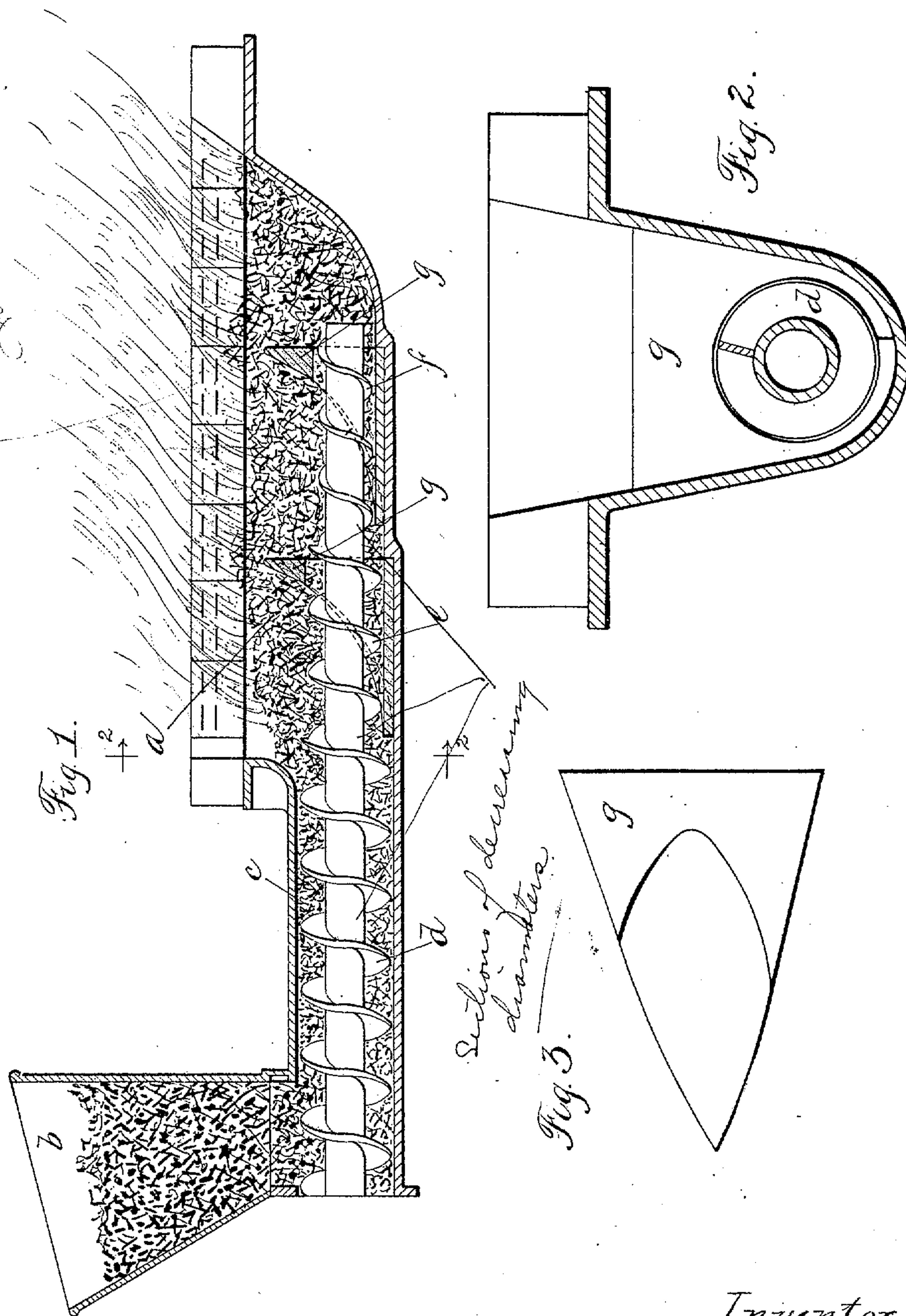


No. 876,608.

PATENTED JAN. 14, 1908.

H. C. TRIPP.
CONVEYING MECHANISM.
APPLICATION FILED APR. 26, 1901.



Witnesses:
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UNITED STATES PATENT OFFICE.

HARRY C. TRIPP, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE UNDER-FEED STOKER COMPANY OF AMERICA, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW JERSEY.

CONVEYING MECHANISM.

No. 876,608.

Specification of Letters Patent.

Patented Jan. 14, 1908.

Application filed April 26, 1901. Serial No. 57,602.

To all whom it may concern:

Be it known that I, HARRY C. TRIPP, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Conveying Mechanism, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to mechanically fed stokers and other apparatus in which conveying screws are employed for effecting the distribution of fuel, grain, etc.

My invention has a very useful application to mechanically fed furnaces, and I will therefore describe my invention particularly in connection with this application thereof without limiting myself to this use.

Furnaces to which my invention is adaptable are provided with screw conveyers for forcing fuel from hoppers to fuel retorts, and it is the object of my invention to provide means whereby the fuel may be distributed within the retort in the places desired, and whereby an unbalanced lateral distribution of the fuel is prevented. To this end I have provided sloping plates or blocks of suitable material, preferably iron, constituting deflectors through which the conveyers are passed and which serve to remove the fuel from the conveyers to direct the same upwardly. To prevent an unequal lateral distribution, I provide projected portions of the deflectors beneath the conveyers which by being placed upon the sides of the conveyers toward which the conveyers rotate, serve to equalize the distribution of the fuel and to prevent excessive quantities of fuel from being placed on those sides of the conveyers, which would otherwise happen. The deflector portions above and below the screw are preferably integrally formed, so that thereby the required distribution of the fuel is effected in vertical and lateral directions.

Heretofore where screws, each formed in sections of different diameters, have been employed for feeding coal into furnaces, the fuel has frequently been packed so tightly into the retort as to require it to be chiseled away. The reason for this faulty operation of such screw conveyers of the prior art is that the fuel is fed in a longitudinal direction only. I provide in connection with each retort a deflector or deflectors adapted to

relieve the congestion of the fuel by having a portion thereof distributed in a vertical direction which would otherwise be distributed in a longitudinal direction and be caused to pack.

While I prefer to construct a deflector in accordance with my invention, that is capable of effecting even lateral distribution of the fuel and a proper vertical distribution thereof, I do not wish to be limited to a structure that necessarily is capable of performing both functions.

I will explain my invention more fully by reference to the accompanying drawing illustrating the preferred embodiment thereof, in which,

Figure 1 is a vertical sectional view of my improved stoking apparatus; Fig. 2 is a sectional view on line 2—2 of Fig. 1; Fig. 3 is a top view of a guiding block.

Like characters of reference indicate like parts throughout the different figures.

I have illustrated a furnace designed to consume coal employing a fuel retort or receptacle *a* within which the fuel is consumed, a hopper *b* for supplying the fuel to the furnace, a fuel channel *c* intervening between the hopper and the retort, and conveying means comprising conveyer screws or sections of a screw *d*, *e* and *f* that preferably vary abruptly in diameter. The largest screw *d* forces fuel from the hopper into the retort. The intermediate screw *e* continues the propulsion of the fuel; and the final distribution thereof is effected by the screw *f*. The screws are mounted upon a common shaft and are driven by any suitable agency.

Assuming that the screws rotate in a clockwise direction, it is apparent that without counteracting means, the screws will force more fuel upon the right side of the retort than upon the left. To counteract this tendency there is provided for each of the screws *e* and *f* a deflector *g* that is preferably tapered to constitute a wedge, and which has its point or wedge end located a sufficient distance upon that side of the vertical diameter of the screw toward which it rotates, whereby the quantity of fuel thrown upon that side is decreased to secure the desired equalized distribution. The faces of the deflectors *g*, *g*, facing the main feeding screw *d*, are inclined to properly guide the fuel vertically. The deflectors *g*, *g* preferably entirely surround the feeding screws,

being provided with holes sufficiently large to contain the corresponding screws and projecting sufficiently above the screws to effect the desired upward movement of the fuel. One or more of the distributing blocks or deflectors *g* may be employed as required. These deflectors are located between the ends of the retort. The deflectors *g* well serve the purpose of effecting an upward distribution of the coal or fuel so that the amount of this matter fed in a longitudinal direction is reduced to prevent the material from packing.

It has heretofore been proposed to provide a tapering feeding screw without any auxiliary means for effecting the upward distribution of the fuel, which method has not been found to give thorough satisfaction. It will be observed that I have provided the retort or passage way with successively higher portions to correspond to the sections of the screw of decreasing diameter, that is, the bottom of the furnace is stepped to form lodging places for the deflectors. The furnace of my invention is one wherein the fuel may not be packed at the rear end of the retort as the deflectors serve to effect a sufficient vertical distribution of the fuel and remove a portion of the fuel from horizontal travel, these deflectors not serving, however, to permit longitudinal distribution of a proper amount of fuel, as the holes provided therein through which the conveyer passes are of a size to also permit the passage of the fuel.

While I have herein shown and particularly described the preferred embodiment of my invention, I do not wish to be limited to the construction shown, nor to its application to mechanically fed furnaces, as modifications may readily be made and the invention may be put to other uses without departing from the spirit thereof, but

Having thus described my invention I claim as new and desire to secure by Letters Patent:

1. The combination with a receptacle, of a conveying screw, and a deflector *g* provided with a hole through which the conveying screw passes, the said deflector being provided with an inclined surface toward which the material fed by the screw is directed, which inclined surface serves to direct the material upwardly, the said deflector terminating in a wedge beneath the screw, substantially as described.

2. The combination with a receptacle, of a conveying screw, and a deflector *g* provided with a hole through which the conveying screw passes, the said deflector being provided with an inclined surface toward which the material fed by the screw is directed, which inclined surface serves to direct the material upwardly, the said deflector terminating in a wedge beneath the screw, the said wedge being located upon one side of the vertical plane cutting the longitudinal axis of the screw, substantially as described.

3. The combination with a screw conveyer, a passage way within which the conveyer is disposed, of a deflector, having a deflecting surface located beneath the conveyer to determine the lateral distribution of the material carried by the conveyer, said deflecting surface being located upon one side of the vertical plane cutting the longitudinal axis of the conveyer, substantially as described.

In witness whereof, I hereunto subscribe my name this 8th day of April A. D., 1901.

HARRY C. TRIPP.

Witnesses:

GEORGE L. CRAGG,
HERBERT F. OBERFELL.