

(No Model.)

F. G. HUMPHREY.
COAL CHUTE.

No. 461,632.

Patented Oct. 20, 1891.

Fig. 1

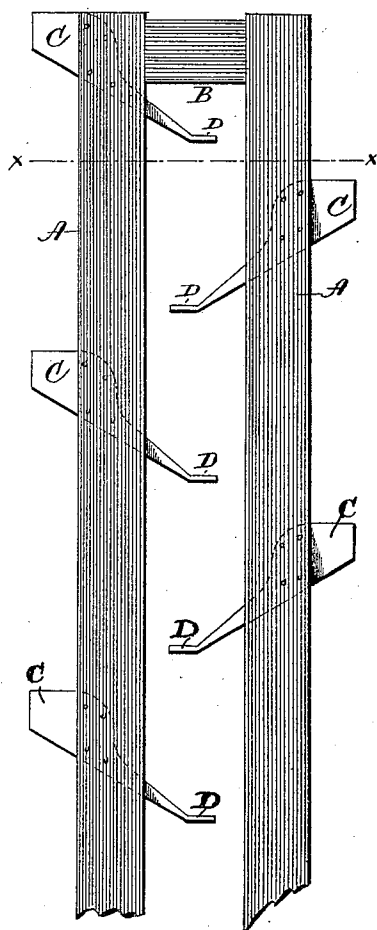


Fig. 3

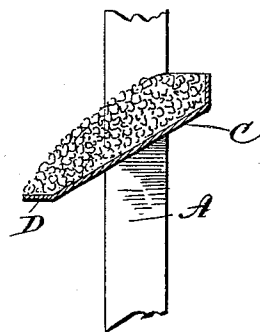
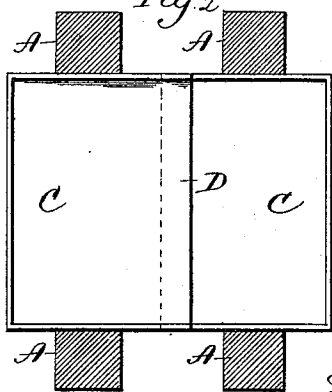


Fig. 2



Witnesses.

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FREDERICK G. HUMPHREY, OF WATERBURY, CONNECTICUT.

COAL-CHUTE.

SPECIFICATION forming part of Letters Patent No. 461,632, dated October 20, 1891.

Application filed June 15, 1891. Serial No. 396,250. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK G. HUMPHREY, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new Improvement in Coal-Chutes; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a broken view in side elevation of a chute constructed in accordance with my invention; Fig. 2, a view thereof in transverse section on line *xx* of Fig. 1; Fig. 3, a broken view showing one of the pans in vertical section as it appears when it is filled with coal.

My invention relates to an improvement in coal-chutes for delivering coal from elevators into bins, the object being to provide a simple and convenient mode of transferring coal by gravity, which will prevent it from being broken, as it is when it is allowed to fall abruptly from high places.

With these ends in view my invention consists in an upright frame or staging in combination with a series of alternating oppositely-inclined pans extending under each other and constructed to retain enough coal to form a yielding rolling cushion for any coal which is thrown into the upper end of the chute after they have been once filled.

As herein shown, the frame-work or staging consists of four heavy posts A, arranged at the four corners of an oblong figure and suitably connected together by braces B, one of which is shown in Fig. 1 of the drawings. I wish it understood, however, that I do not limit myself to any particular way of constructing this frame-work.

A series of alternating oppositely-inclined pans or pockets C, with their inner ends extending beyond each other, are supported in the said frame-work in any suitable manner.

As herein shown, the sides of the pans are attached by bolts to the inner faces of the corresponding posts, which are thus united by the pans in pairs. The inner ends of the pans are constructed with horizontal lips or plat-
forms D, which arrest the coal and cause it

to pile up in the pans, as shown in Fig. 3, and thus form what virtually amounts to a rolling cushion for any coal thrown into the upper end of the chute after the pans have once been filled. Under this construction the coal, instead of shooting from one pan to the other down the length of the chute, first fills all of the pans, and then rolls or gently drops, as it were, from one pan to the other, the excess of coal in each pan softly dropping into the pan below, and so on until the bin is reached. In this way the coal may be delivered from a great height with the minimum of breakage and by an apparatus which is extremely simple to construct and keep in repair. The particular form of the pans may be varied, as desired; but they should be arranged so that the accumulation of coal in one pan may never reach the elevation of the pan above it, for should this occur the chute would fill up from top to bottom and prevent the passage of coal through it. I would therefore have it understood that I do not limit myself to the exact construction shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention. For instance, the frame-work might be suspended from a tramway or other support, so as to permit the chute to be moved along a line of cars or from one bin to another, such construction being too apparent to require illustration.

I am aware that a coal-chute having a vertical series of alternating oppositely-inclined surfaces to break the sheer fall of the coal, the whole body of which is thrown from one surface to the one below it, and so on down through the chute, is old. I do not, therefore, claim a chute having alternating oppositely-inclined surfaces, broadly, but only when they are made to permanently retain a body of coal, as and for the purpose specified.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a coal-chute, the combination, with an upright frame-work, of a vertical series of alternating oppositely-inclined pans, each constructed at its inner end with a retaining-lip to permanently hold a body of coal, substan-

tially as described, and whereby, after the
pans have once been filled, the coal in each
of them forms a rolling cushion for the coal
subsequently thrown into the chute to fall
5 upon, so that it gently drops from one pan to
the one below it, and so down through the
chute.

In testimony whereof I have signed this
specification in the presence of two subscrib-
ing witnesses.

FREDERICK G. HUMPHREY.

Witnesses:

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J. H. GUERNSEY.