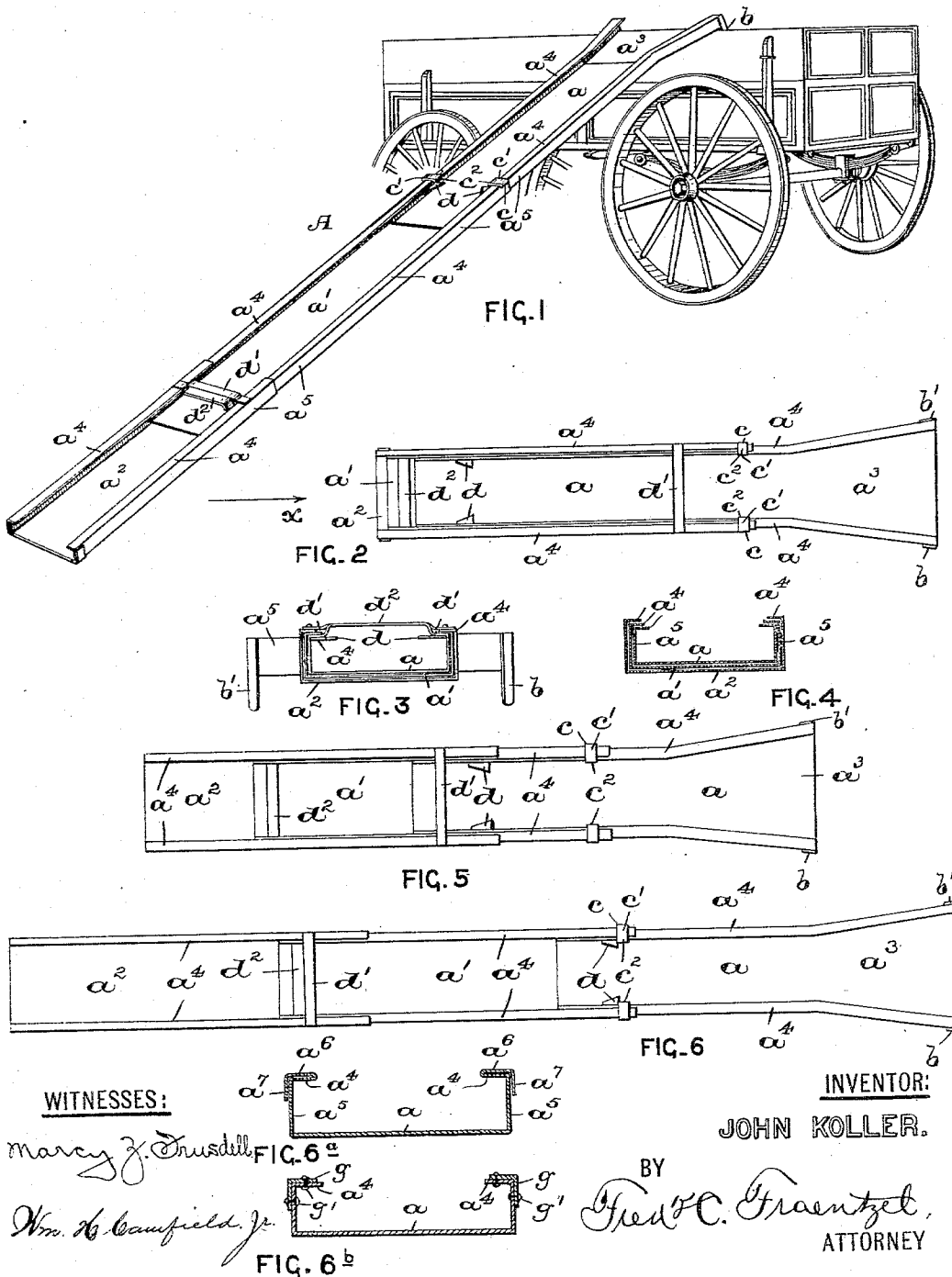


J. KOLLER.
SECTIONAL CHUTE FOR COAL WAGONS.

No. 556,934.

Patented Mar. 24, 1896.



(No Model.)

2 Sheets—Sheet 2.

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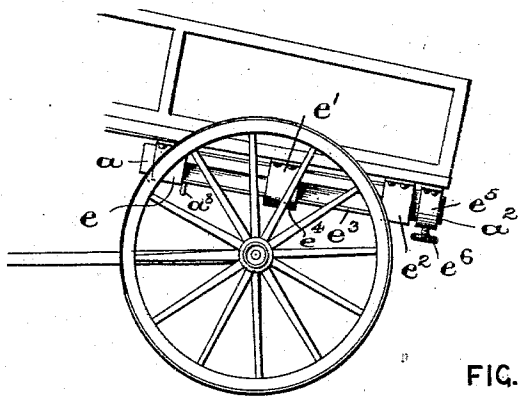


FIG. 7

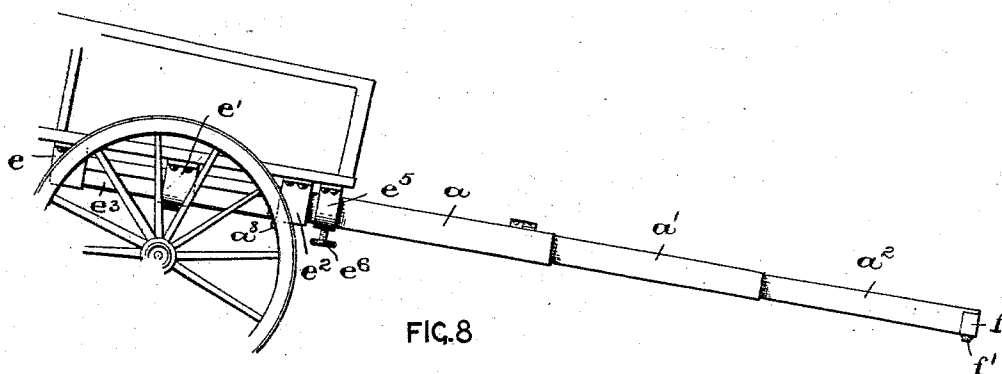


FIG. 8

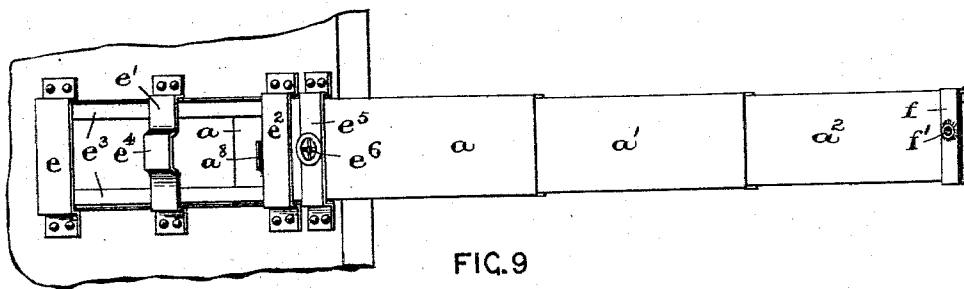


FIG. 9

WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN KOLLER, OF NEWARK, NEW JERSEY.

SECTIONAL CHUTE FOR COAL-WAGONS.

SPECIFICATION forming part of Letters Patent No. 556,934, dated March 24, 1896.

Application filed June 18, 1895. Serial No. 553,181. (No model.)

To all whom it may concern:

Be it known that I, JOHN KOLLER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Sectional Coal-Chutes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in coal-chutes adapted to be carried on a wagon, and the invention has for its primary object to provide a chute, comprising sliding chute-sections, preferably telescopically arranged, whereby the sections of the chute can be closed upon each other or they may be extended to considerably lengthen the entire chute when in use to any desirable lengths.

My invention is especially designed to provide a sectional coal-chute, which shall be of a simple, cheap, durable and operative construction and which can be conveniently carried on the wagon, is easily handled and is always ready for use.

To these ends the invention consists in the novel construction of sectional chute herein set forth, its several sections being preferably telescopically arranged, whereby one section can be made to slide over another section, said sections being provided with suitable means to prevent bending and jamming, and also with suitable means to limit the sliding movement of the several sections one upon the other.

The invention furthermore consists in certain other novel arrangements and combinations of parts, such as will be hereinafter more fully described, and finally embodied in the clauses of the claim.

The invention is illustrated in the accompanying sheets of drawings, in which similar letters of reference are employed to indicate corresponding parts.

In said views, Figure 1 is a perspective view of the body of a wagon and my novel form of coal-chute, illustrating its use in connection with the wagon. Fig. 2 is a plan view of the

coal-chute having its sections closed. Fig. 3 is an end view of the same, looking in the direction of arrow x in Fig. 2; and Fig. 4 is a cross-section of the chute. Fig. 5 is a plan view of the chute with its telescopically-arranged sections partly extended, and Fig. 6 is a similar view of the chute with the sections thereof extended their entire lengths. Fig. 6^a is a sectional view of one of the chute-sections, illustrating more particularly an arrangement of strengthening the upper edges of the chute-section; and Fig. 6^b is a similar view of still another construction of strengthening said edges. Fig. 7 is a side view of part of a wagon having a tilting body provided with a support in which I have arranged my novel construction of chute. Fig. 8 is a similar view of said parts illustrated in said Fig. 7, but showing the sections of the chute extended when the wagon-body has been tilted. Fig. 9 is a bottom view of the sectional chute with its sections extended and illustrating one manner of securing said support to the bottom of the body of the wagon.

Referring to said drawings, A represents my novel construction of coal-chute, comprising therein the sliding sections a , a' , and a'' , said section a being preferably widened at its free end a^3 and having the downwardly-extending lugs or fingers b and b' for securely holding the upper end of the chute on the edge of the tail or the side boards of the wagon, as will be clearly understood from an inspection of Fig. 1. The several sections are of slightly-varying widths, as will be seen from Figs. 3 and 4, being provided with the inwardly-extending edges a^4 , bent at right angles or approximately so to the sides a^5 of each chute-section, extending longitudinally the entire length of said sides, whereby the several parts of the one section embrace the parts of the second section and the parts of this second section embrace the parts of the third section, &c., and in this manner one section is made to slide upon the other, whereby the coal-chute can be entirely closed, as in Fig. 2, to produce a chute of the ordinary length, or the sections can be extended at pleasure and a chute of varying lengths can be made, as clearly illustrated in Figs. 5 and 6.

It is very essential that the inwardly-projecting edges a^4 shall be made to extend lon-

gitudinally along the entire length of the sides a^5 of the several chute-sections, since when the sections are drawn out as far as possible, as indicated in Fig. 6, said edges still overlap each other for some distance to prevent the sagging of the sections of the chute. Furthermore, said edges serve to stiffen the chute-sections and prevent their being forced out of shape when roughly handled.

As will be seen from an inspection of Fig. 6^a of the drawings, each section of the chute may have its inwardly-extending edges a^4 doubled upon themselves, as at a^6 , and then bent down along the outer and upper edges of the sides a^5 , as at a^7 , whereby a perfect and stiff and a strong edge is the result, which cannot be forced out of shape, and therefore forms a true guide for the sections to slide one upon the other, as will be clearly understood. In lieu of this construction of strengthening means for the edges of the sides of each section I may provide the top of the edges a^4 with a suitable strengthening-plate g , which is bent down along the sides a^5 of the section in the manner of an angle-iron and can be secured to the chute-section by means of rivets or pins g' , as will be clearly seen from Fig. 6^b. One of said chute-sections, as a' , has secured to its sides in any well-known manner a pair of angle-irons c , which are formed with the inwardly-extending portions c' and the downwardly-extending parts c^2 , which, when the two sections a and a' are extended and move one over the other, come in contact with suitable projections d , formed on the inner sides of the section a , thereby producing suitable stops to prevent the entire separation of the said two sections.

Similar angle-irons and projections may be formed on the sections a^2 and a' of the chute to prevent the entire withdrawal or the separation of said two sections, but in the drawings I have illustrated said section a^2 provided with a suitable cross piece or bar d' , and the section a' with a similar cross piece or bar d^2 , which are suitably secured to the upper edges of said sections and are brought in contact to form a stop, when said sections are extended their entire length, as clearly represented in Fig. 6. These cross-bars d' and d^2 serve the additional purpose of greatly strengthening the sides of the sections of the chute and prevent the bending thereof when the chute is put to rough usage.

In Figs. 7, 8, and 9 I have illustrated my novel construction of chute applied directly to the under side of the body of a wagon. In this instance the body of the wagon, which is capable of being tilted, has secured thereto in any well-known manner suitable braces e, e' , and e^2 and cross-plates or bars e^3 , which form a suitable support in which the sectional chute A is arranged to be withdrawn therefrom in the manner illustrated in Figs. 8 and 9, when the body of the wagon is tilted. The middle brace e^2 of said support has a downwardly-extending part e^4 to permit the passage of a

downwardly-extending lug or stop a^8 formed on the under side at or near the end of the chute-section a , which, when the chute is slipped inwardly in its support, when not in use, limits the inward movement of the chute by bringing the same against the brace e (see Fig. 7) and limits the outward movement of the section a by coming against the edge of the brace e^2 , as shown in Figs. 8 and 9. An additional brace e^5 , provided with a screw e^6 and means for operating the same, is secured to the bottom of the body of the wagon in such a manner that when the sections are closed and are in their inoperative positions in the support, as illustrated in Fig. 7, the end of the screw e^6 can be placed against a strong band f , which may be provided with a countersunk boss or enlargement f' to hold the chute in place in its support and prevent the loss thereof.

From the above description it will be evident that my novel form of sectional coal-chute can be quickly adjusted in position on the wagon and made of any desirable length to meet the requirements presented.

Of course it will be evident that changes may be made in the arrangements and combinations of the parts herein shown and described without departing from the scope of my present invention, and hence I do not limit my invention to the exact arrangements and combination of such parts as herein shown, as it will be clearly evident that the right-angled portions or edges a^4 of each section, instead of being flat, may be arched, and the base of each section, instead of being straight, as shown, may be curved, and other means from that herein shown for limiting the sliding movement of the several chute-sections may be employed.

In the drawings herewith presented I have shown the chute comprising therein three sliding sections, but it will be evident that the chute may be made of two or more than three sections, according to the length of the chute desired.

Having thus described my invention, what I claim is—

1. A sectional chute, consisting essentially, of sliding sections having inwardly-projecting portions a^4 , extending longitudinally along the entire length of the sides of each section, whereby said sections can be made to slide in a telescopic manner one over the other, and means connected with said sections to limit the sliding movement thereof, each chute-section having a strengthening means on said portions a^4 , and said strengthening means being turned down upon the sides of the chute-sections, in the manner of an angle-iron, substantially as and for the purposes set forth.

2. A sectional chute, consisting essentially, of sliding sections having inwardly-projecting portions a^4 , extending longitudinally along the entire length of the sides of each section, whereby said sections can be made

to slide in a telescopic manner one over the other, and means connected with said sections to limit the sliding movement thereof, consisting of angle-irons, as *c*, and stops or projections *d*, each chute-section having a strengthening means on said portions *a*⁴, and said strengthening means being turned down upon the sides of the chute-sections, in the manner of an angle-iron, substantially as and for the purposes set forth.

3. A coal-chute section, as *a*, having the sides *a*⁵, and the inwardly-extending portions *a*⁴, said portions being doubled on the top and turned down on the side *a*⁵, to strengthen the sides of the chute-section, substantially as and for the purposes set forth.

4. The herein-described sectional coal-chute, comprising therein, the sliding sections *a*, *a*¹ and *a*², having inwardly-projecting portions *a*⁴, extending longitudinally along the entire length of the sides of each section,

whereby said sections can be made to slide in a telescopic manner one over the other, angle-irons *c* on said section *a*¹ and projections or stops *d* on the section *a*, a cross-bar *d*¹ on said section *a*¹ and a cross-bar *d*² on said section *a*², said angle-irons *c* and projections *d*, and the cross-bars *d*¹ and *d*² being adapted to limit the sliding movement of said sections, each chute-section having a strengthening means on said portions *a*⁴, and said strengthening means being turned down upon the sides of the chute-sections, in the manner of an angle-iron, substantially as and for the purposes set forth.

In testimony that I claim the invention set forth above I have hereunto set my hand this 17th day of June, 1895.

JOHN KOLLER.

Witnesses:

FREDK. C. FRAENTZEL,
WM. H. CAMFIELD, Jr.