

No. 658,408.

Patented Sept. 25, 1900.

M. M. SUPPES.

APPARATUS FOR HANDLING AND CRUSHING COAL.

(Application filed Mar. 20, 1900.)

(No Model.)

4 Sheets—Sheet 1.

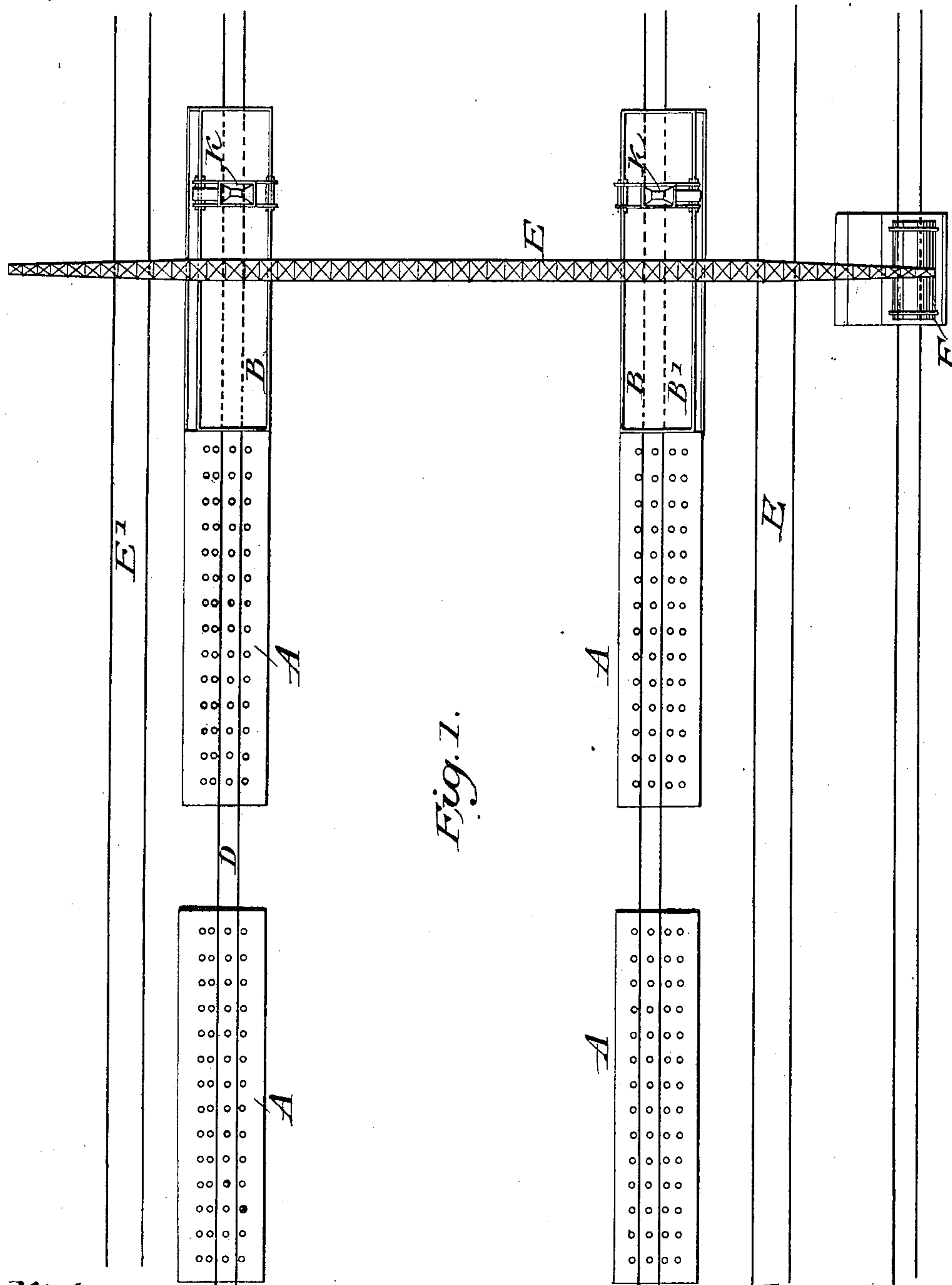


Fig. 1.

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Inventor:

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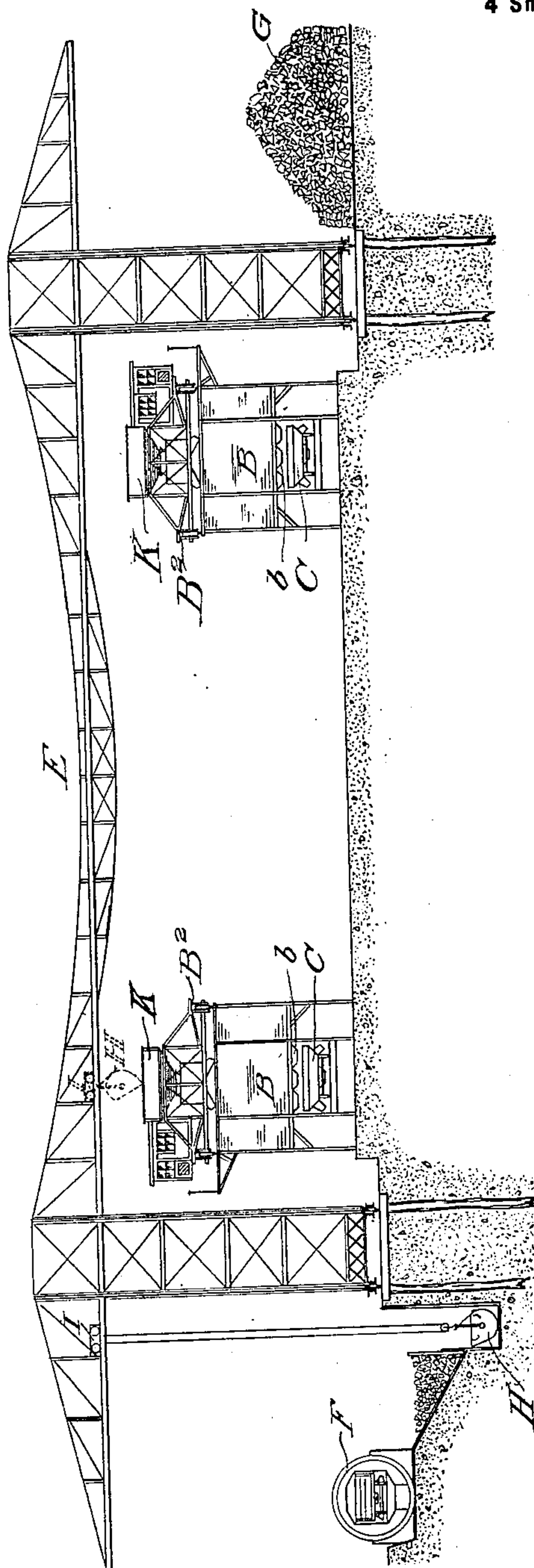


Fig. 2.

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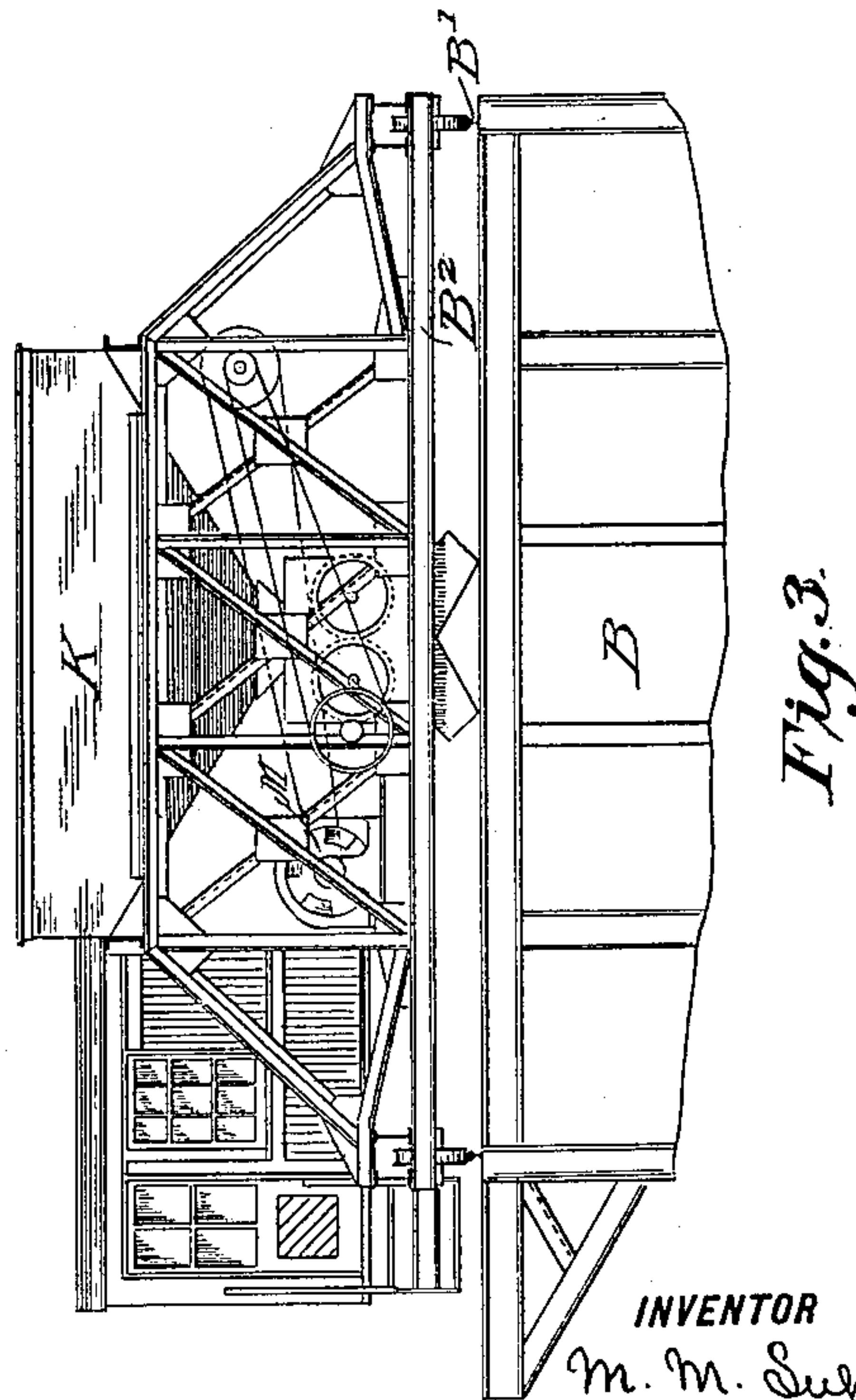
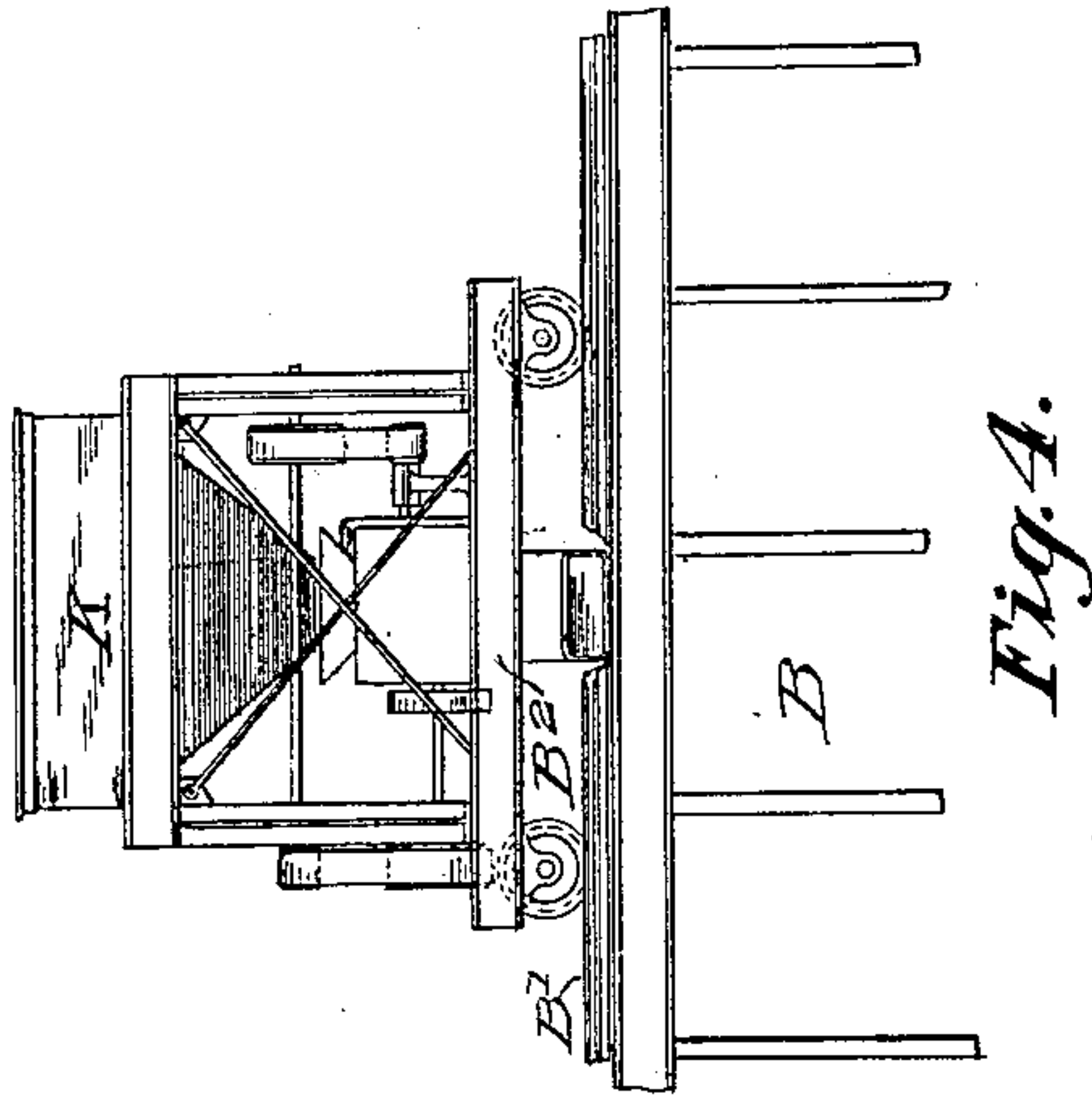
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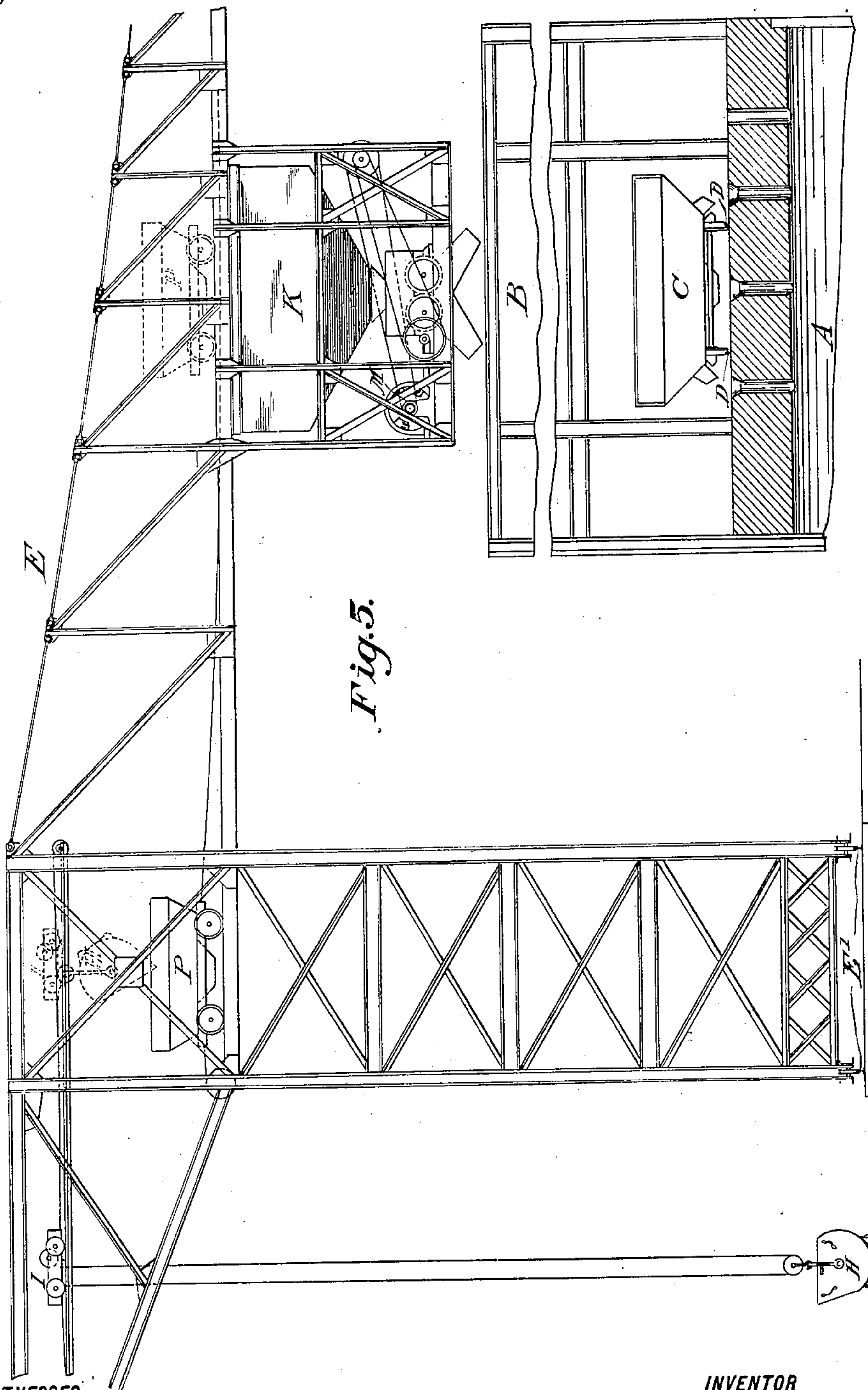


Fig. 5.

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UNITED STATES PATENT OFFICE.

MAXIMILIAN M. SUPPES, OF ELYRIA, OHIO.

APPARATUS FOR HANDLING AND CRUSHING COAL.

SPECIFICATION forming part of Letters Patent No. 658,408, dated September 25, 1900.

Application filed March 20, 1900. Serial No. 9,381. (No model.)

To all whom it may concern:

Be it known that I, MAXIMILIAN M. SUPPES, of Elyria, in the county of Lorain and State of Ohio, have invented a new and useful Improvement in Apparatus for Handling and Crushing Coal, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention has relation to apparatus for handling and crushing coal, and is particularly designed for use in connection with coke plants for crushing coal preparatory to coking.

The object of my invention is mainly to provide means whereby coal may be taken either from the receiving-pile at the coal-dumper of a coke plant or from the stock-pile and delivered to the coal-bins, which supply the crushed coal for the ovens through a portable crusher mounted to have a longitudinal traverse above the coal-bin, and thus save very considerable handling of the coal both before and after it is crushed.

With this and other objects in view my invention consists in the novel construction, combination, and arrangement of parts, all as hereinafter described, and pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a coal-crushing and coke plant embodying my invention. Fig. 2 is an end elevation of the same; Fig. 3, an end elevation of the portable coal-crusher; Fig. 4, a side elevation of the same; Fig. 5, an end elevation of a portion of the apparatus, showing a modification.

In the drawings the letter A designates coke-ovens, which are arranged in two parallel lines, and B designates bins for the crushed coal, which is delivered from said bins through chutes *b* in the bottom thereof into cars C, which run on tracks D, extending above the respective lines of ovens and underneath said bins.

E designates a cantaliver - crane which spans the bins and ovens and is mounted on tracks E'.

F indicates a coal-dumper at one end of the crane E, and G indicates the stock-pile at the opposite end.

H indicates a hoist bucket or scoop of well-

known type, which runs on a carriage I back and forth on the crane.

On the top of each of the bins B are tracks B', upon which is mounted a carriage B², which carries a coal-crusher K. The carriage B² is preferably operated by an electric motor, by means of which it can be run back and forth on the tracks B' in precisely the same manner as the carriage of an electric crane. The coal-crusher K may be of any well-known type and is preferably driven by means of an electric motor M.

By means of the hoist H coal may be taken either from the receiving-pile at the coal-dumper or from the stock-pile and delivered directly to the crusher, which in turn delivers the crushed coal to the bins B. From these bins the coal is delivered to the oven-supplying cars C as needed. The hoist H is also used to carry coal from the receiving-pile to the stock-pile. The carriage B², with the crusher, can be moved to any desired position on the bin to suit the position of the cantaliver-crane. Thus coal can be taken from any part of the stock-pile and delivered to the crusher without moving the crane on its tracks, as would be necessary with a stationary crusher. Another advantage due to the arrangement of the portable crusher over a stationary crusher is as follows: With the latter coal must be taken from the receiving or the stock pile and carried to the crusher. The crushed coal must then be elevated into the coal-bins, or if the crusher is arranged so that the coal as it is unloaded from the car passes through the crusher before going to the stock-pile all the coal in the stock-pile is crushed, and by reason of its deterioration is more liable to take fire than is the run of mine-coal. I therefore obviate the extra handling of the coal and also any necessity for crushing the coal before it goes in stock.

In the modification shown in Fig. 5 the arrangement is in general similar to that above described; but instead of mounting the coal-crusher on the bin I carry it on the crane. This arrangement avoids the necessity for a separate carriage and motor for the crushers and also enables a single crusher to be used on any one of several separate bins along the line of movement of the crane, if desired. In this arrangement the hoist-bucket may be

arranged to discharge into a car P, which runs on the crane and discharges its load either into the coal-crusher or onto the stock-pile.

5 The duplicate arrangement of crushers shown in the drawings is that which would preferably be used in large plants; but it is obvious that my invention is equally well adapted to use with a single crusher mounted on
10 its coal-bin. It is also obvious that instead of employing the cantaliver-crane shown any other suitable style of crane might be used to deliver the coal to the crusher from the receiving or stock pile. Hence I do not wish
15 to limit myself to the particular embodiment of my invention which I have herein shown and described.

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

1. In a coke plant, the combination with coke-ovens, and a coal-bin elevated above the said ovens, of a coal-crusher mounted over the said bin to traverse the same, and
25 coal elevating and conveying mechanism arranged to deliver coal to the said crusher at any point in the range of its movement.

2. In a coal-crushing plant, the combination with a bin for crushed coal, of a coal-
30 crusher mounted to traverse the top of the said bin, a crane spanning said bin, and a hoist and carrying device on said crane for delivering coal to said crusher.

3. In a coal-crushing plant, the combination with a movable crane extending from the coal-receiving to the coal stock-pile, a coal-bin spanned by said crane, a coal-crusher
35 mounted on the top of said bin to traverse

the same and a coal hoist and carriage mounted on said crane for carrying coal from the
40 receiving-pile to the stock-pile, or from either of said piles to the coal-crusher.

4. The combination of a line of coke-ovens, a crane spanning said ovens and movable in a direction parallel thereto, a coal-bin also
45 spanned by said crane, a car-track extending underneath said bin and above said ovens, a coal-crusher mounted on said bin to traverse the same, and means on said crane for elevating coal and delivering it to said crusher. 50

5. In a coke plant, the combination with coke-ovens, a coal-bin, a car-track extending underneath the said bin and above said ovens, a coal-crusher mounted on the top of said
55 bin to traverse the same longitudinally, and coal elevating and conveying mechanism also movable longitudinally of the said bin.

6. In a coal crushing and coking plant, the combination of a coal-receiving pile, a coal
60 stock-pile, a movable crane spanning the distance between the said piles and overhanging the same, an elevated coal-bin between the said coal-piles and also spanned by the said crane, a coal-crusher mounted to traverse the top of said bin, and coal elevating
65 and conveying mechanism supported on said crane and arranged to carry coal from the receiving-pile to the stock-pile, or from either of said piles to the coal-crusher.

In testimony whereof I have affixed my signature in presence of two witnesses. 70

MAXIMILIAN M. SUPPES.

Witnesses:

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D. W. LAWRENCE.