

CONVEYING APPARATUS FOR CHARGING BINS, HOPPERS, &c.

APPLICATION FILED DEC. 30, 1910.

Patented Mar. 11, 1913.

3 SHEETS—SHEET 1.

1,055,926.

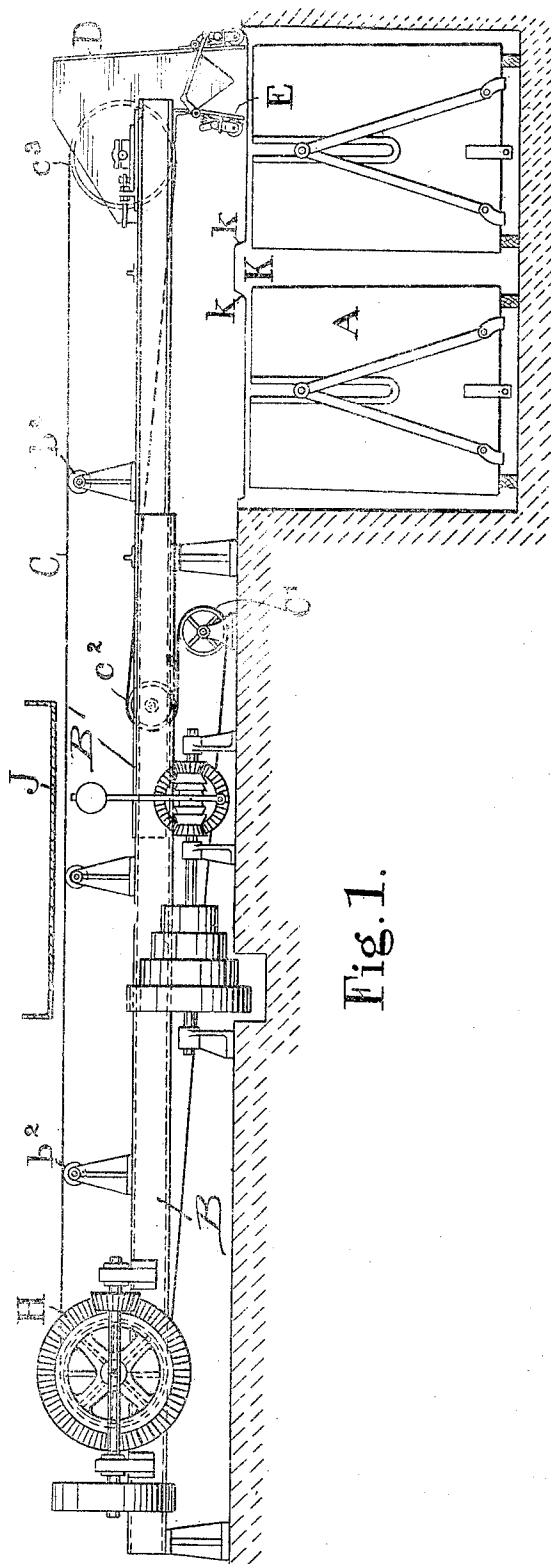


Fig. 1.

WITNESSES.

W. H. Kepp
Chas. Kepp

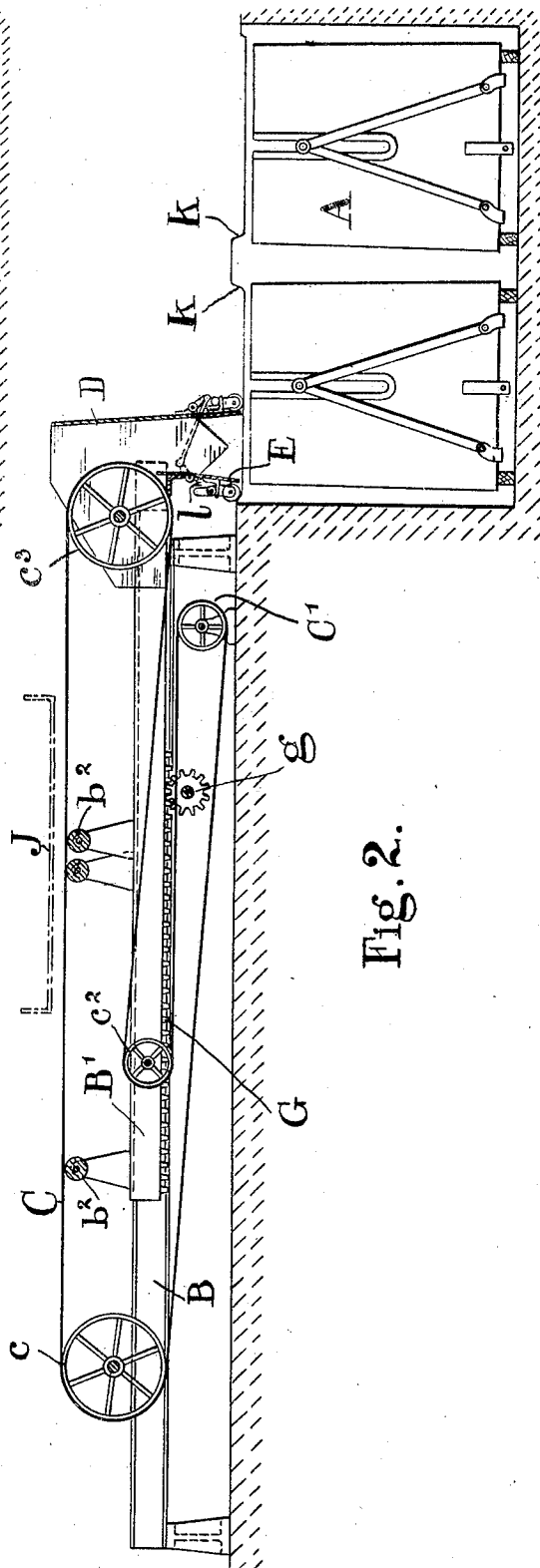


Fig. 2.

INVENTOR

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CONVEYING APPARATUS FOR CHARGING BINS, HOPPERS, &c.

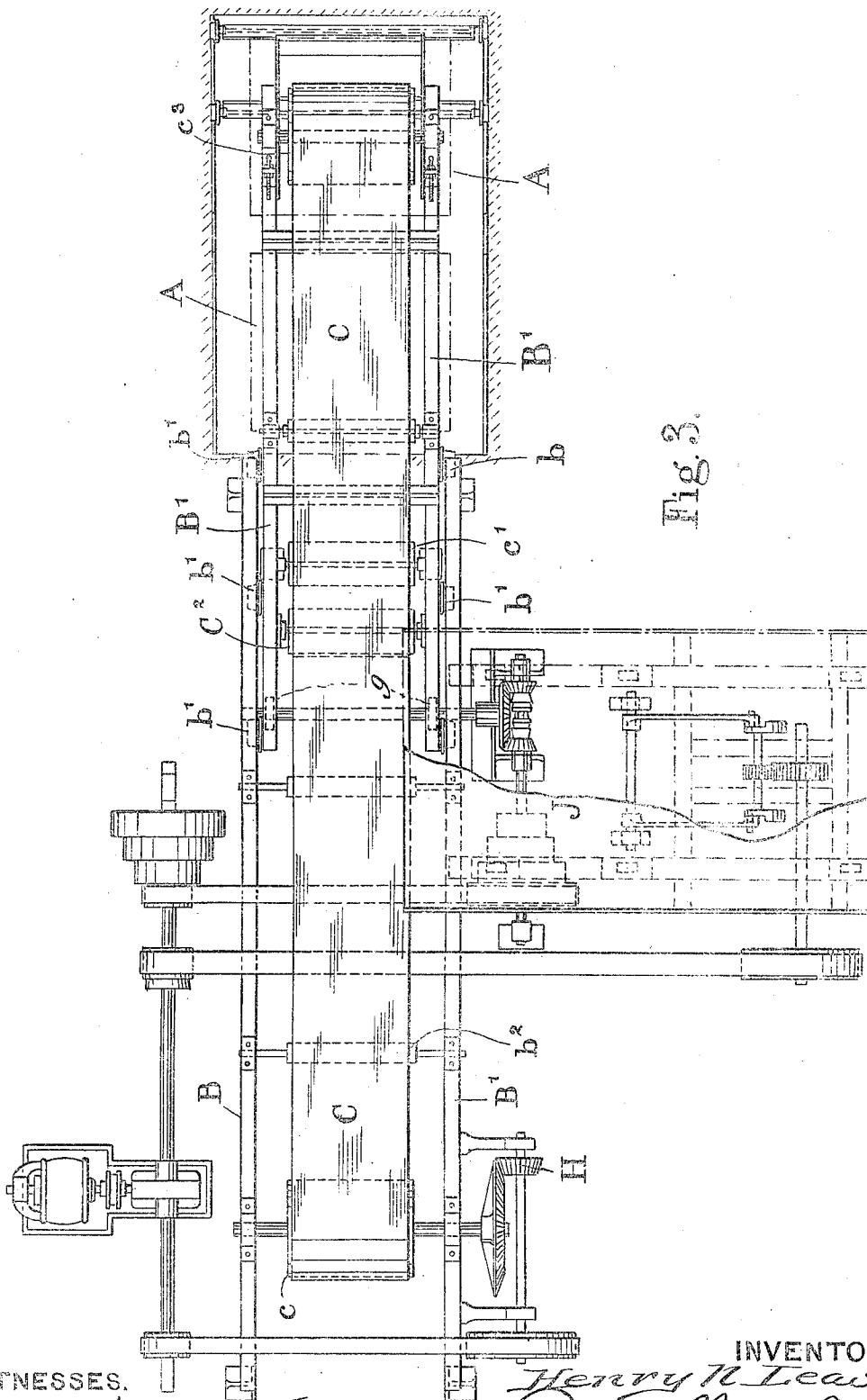
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3 SHEETS-SHEET 2.

1,055,926.

Fig. 3.



WITNESSES.

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3 SHEETS—SHEET 3.

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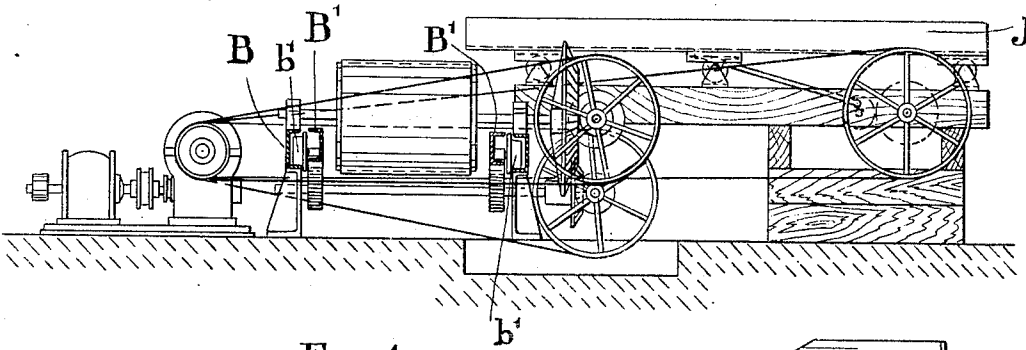


Fig. 4.

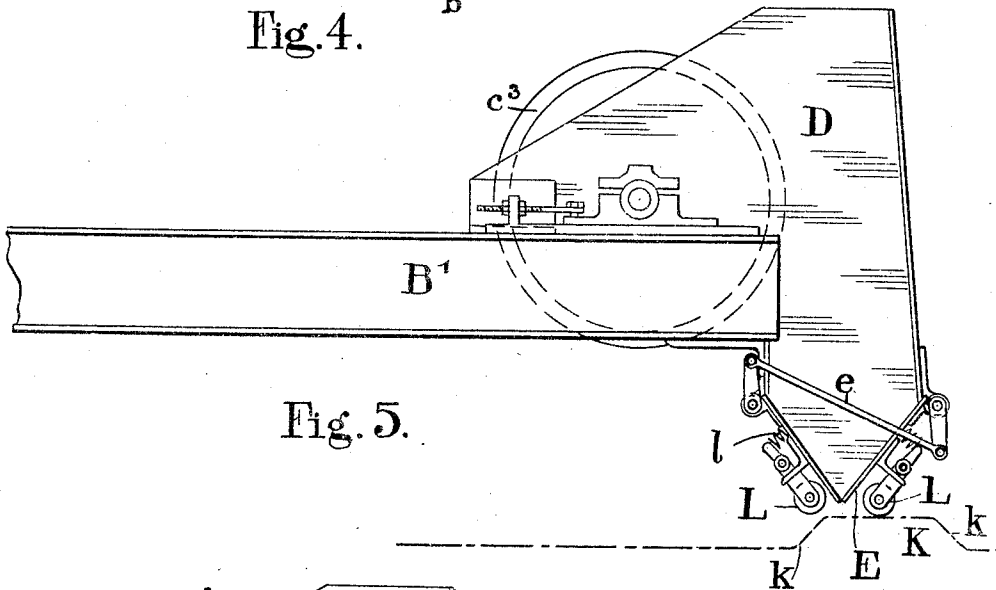


Fig. 5.

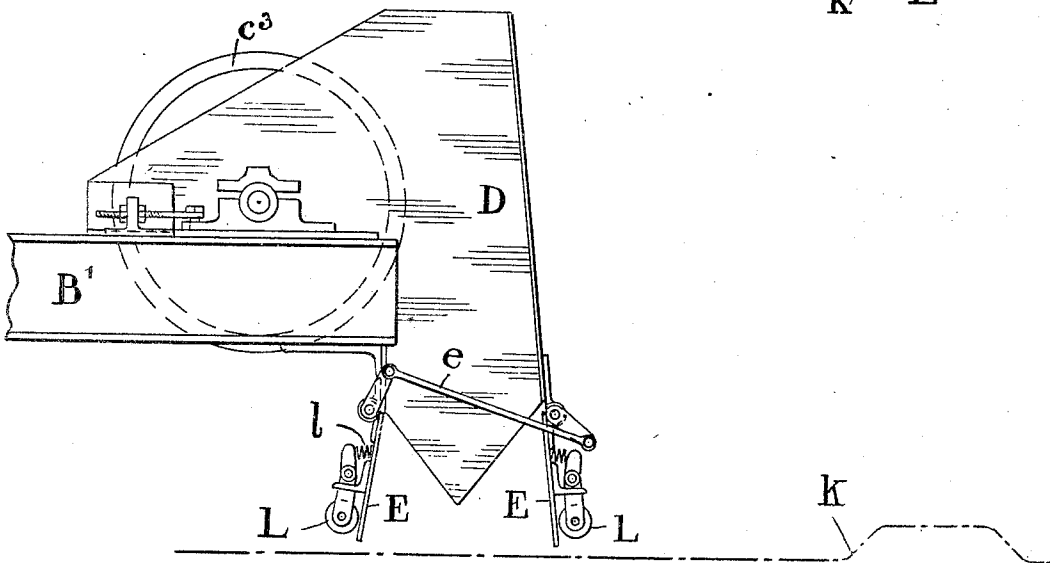


Fig. 6.

WITNESSES
[Signature]
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UNITED STATES PATENT OFFICE.

HENRY NORMAN LEASK, OF EGREMONT, ENGLAND.

CONVEYING APPARATUS FOR CHARGING BINS, HOPPERS, &c.

1,055,926.

Specification of Letters Patent.

Patented Mar. 11, 1913.

Application filed December 30, 1910. Serial No. 600,011.

To all whom it may concern:

Be it known that I, HENRY NORMAN LEASK, a British subject, residing at Egremont, county of Chester, England, have invented certain new and useful Improvements in Conveying Apparatus for Charging Bins, Hoppers, and the Like, of which the following is a specification.

This invention relates to apparatus for conveying materials from one particular source to a number of different destinations and is applicable among other things for feeding fuel from one or more feed chutes or supplies to a number of different containers or bins adapted to receive same.

The invention consists essentially of a conveyer of band, plate or similar type the frame of which is capable of being moved longitudinally or otherwise or extended into different positions and the end of which is provided with a chute or hopper into which the material is fed and by which it is directed into the bin, container or receptacle adapted to receive same, the hopper moving with the conveyer and preferably being provided with doors at the bottom adapted to be automatically opened and closed by stops, cams or the like at the mouths of the bins, receptacles or containers.

The invention is applicable to any organization, with which it may be operated but has been devised particularly for feeding fuel to bins, containers, receptacles or the like adapted in turn to feed the fuel to the furnace or furnaces to be supplied with fuel or other material, and is especially applicable to the feeding of refuse to the furnaces of refuse destructors. The invention may be applied to this type of apparatus in any convenient way. For instance suitable bins, receptacles or containers may be arranged over the mouths or doors of the furnaces to be supplied which are preferably fed from the top, the containers or receptacles being preferably provided underneath with doors or closures adapted to close both the bottom of the container and the furnace opening at the same time. Or instead of being fed to receptacles over the furnace the fuel may be fed to transportable skips or the like adapted to be moved to a position over the furnace and then discharged. Such an arrangement is shown in the accompanying drawings by way of example and the invention will be fully described with reference thereto.

Figure 1 is a side elevation showing the conveyer extended. Fig. 2 is a similar view showing the conveyer drawn back. Fig. 3 is a plan of same. Fig. 4 is an end elevation of same. Fig. 5 is a side view of discharge hopper, closed. Fig. 6 is a similar view, discharging.

Arranged at a suitable level above the containers, receptacles or bins A adapted to feed the fuel to the furnace is mounted, in such a manner that it can be extended, the frame B B' of a traveling band or conveyer C upon the end of which is provided a hopper or chute D into which the fuel or refuse is fed by the conveyer C. This hopper or chute D is preferably provided as shown with a door or doors E at the bottom adapted to be opened and closed by means of stops, cams, inclines or the like λ , but such doors may if desired be dispensed with. The part B of the conveyer frame is stationary and mounted on any suitable base or foundation. The part B' is mounted or supported in the part B so as to be extensible with regard thereto. As shown the part B' is provided with rollers b' running in channels or runways formed in the part B and with a rack G operated by a pinion g driven from any suitable source of power or by hand.

The conveyer C is carried by four pulleys two fixed c c' and two movable c^2 c^3 , the movable pulleys being carried by and moving with the extensible part B' of the frame. The main pulleys c , c^3 are mounted respectively at the inner end of the fixed frame B and the outer end of extensible frame B'. The other pulleys c' , c^2 are guide pulleys, the former being fixed. The latter, moving with the extensible frame B', acts as a jockey pulley to take up the slack of the conveyer when the frame B' is moved and compensate for its movements. The main pulley c is preferably the driving pulley of the conveyer C being driven from any convenient source of power, such for instance as an electric motor or through suitable gearing such as H. The other main pulley c^3 is mounted in the feed hopper D and the conveyer passing thereover, delivers the fuel to the hopper. Rollers b^2 are preferably provided to support the conveyer between the pulleys c and c^2 .

The fuel or refuse is fed to the conveyer C from a fixed position or positions and is moved forward by the conveyer to the hop-

per D. It may be fed to the conveyer by means of screens the finer portions being first sifted out, and the residue delivered to the conveyer, or vice versa, the finer material may be delivered to the conveyer and the residue delivered beyond it. Or the fuel may be fed to the conveyer by one or more reciprocating or propulsion tables J such as shown in the drawings.

10 The hopper D for delivering the fuel to the bins or containers A may be open at the bottom or may be provided with a door or doors E adapted to close the hopper when desired. The doors E are preferably ar-
15 ranged so that when the hopper passes from one bin or container A to another they automatically close so that nothing is allowed to fall onto the dividing walls of or between the containers or bins. This may be ac-
20 complished as shown by means of guides K having inclined or cam portions *k* adapted to engage the extremities of the doors E or arms or runners L thereon to close the doors when the conveyer is being moved from one
25 receptacle A to another. Where two doors are employed they are preferably connected together by a suitable link arrangement such as *e* so that the closing or opening of either door simultaneously closes or opens the
30 other. The closing arrangement of the doors is preferably constructed with one or more spring devices *l* to obviate accidents should any obstruction prevent the complete closing of the door or doors.

35 The conveyer is arranged in such a position that it feeds first into one bin, hopper or skip, and when this bin is full or when a sufficient quantity of a particular character of fuel or refuse is fed into it the conveyer
40 is moved forward or extended, the door E of the chute automatically closing until above the mouth of the next container or receptacle A when the door automatically opens and the fuel or refuse is fed to the
45 next bin. This operation can be repeated till all the bins are filled or may go on continuously where the bins are stationary and are being emptied at the same time.

One advantage of the apparatus is the
50 facility with which the fuel supplied to a refuse destructor can be mixed instead of as is often the case, the necessity of dumping a great quantity of one particular kind of

refuse which may not be of a high calorific power into one furnace.

What I claim as my invention and desire to protect by Letters Patent is:—

1. In an apparatus of the class specified, the combination with a plurality of receptacles, of a conveyer having an adjustable
60 delivery extremity to feed material to any one of the receptacles, and a discharge hopper on the said adjustable delivery ex-
tremity.

2. In an apparatus of the class specified, 65 the combination with receptacles, of a longitudinally extensible frame having a conveyer means associated therewith provided with a delivery extremity disposable over
70 any one of the receptacles, and a discharge hopper on the said delivery extremity.

3. In an apparatus of the class specified, a plurality of receptacles, an extensible
75 frame having a conveying means with a discharge hopper on its delivery extremity, a table mounted on the frame and provided with guide and jockey rollers, and a travel-
ing band cooperating with the frame, the rollers operating to allow the effective
80 length of the band or table to be varied.

4. In an apparatus of the class specified, the combination with a plurality of recep-
85 tacles, of an extensible conveyer to operate with said receptacles, a discharge hopper at the delivery extremity of the conveyer
and having doors, and means for automati-
cally closing and opening the hopper doors.

5. In an apparatus of the class specified, the combination with a plurality of recep-
90 tacles, of a longitudinally extensible conveyer having on its delivery extremity a discharge hopper provided with opening and
closing means, yielding devices cooperating with the closing means to prevent damage
95 thereto in case of obstruction to tight closing of said means, and cam means engaged by said opening and closing means when the
conveyer is moved.

In testimony whereof I have hereunto set my hand in presence of the subscribing wit-
10 nesses.

HENRY NORMAN LEASK.

Witnesses:

JOHN WILLIAM THOMAS,
MALCOLM SMETHURST,
J. OWDEN O'BRIEN.