

No. 733,988.

PATENTED JULY 21, 1903.

C. MITTAG.
FEEDING DEVICE FOR CONVEYERS.

APPLICATION FILED DEC. 31, 1902.

NO MODEL.

Fig. 1

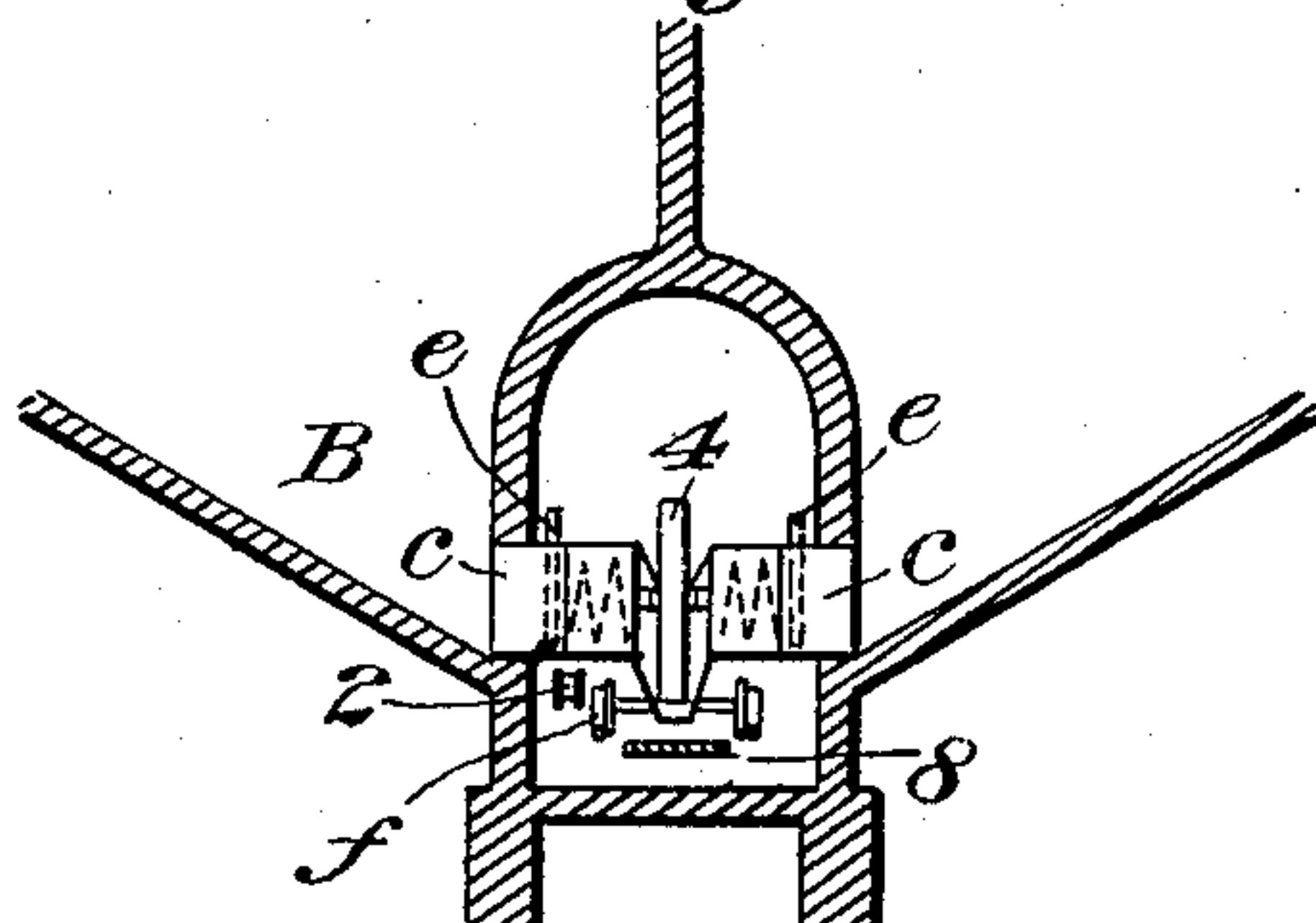


Fig. 2

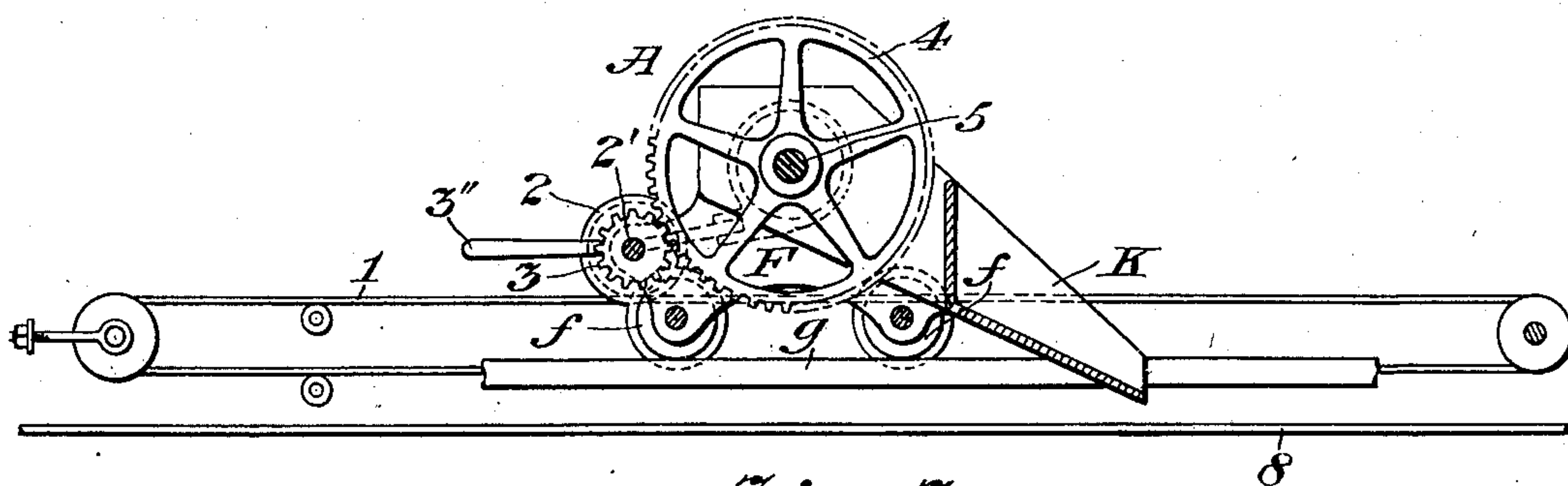


Fig. 3

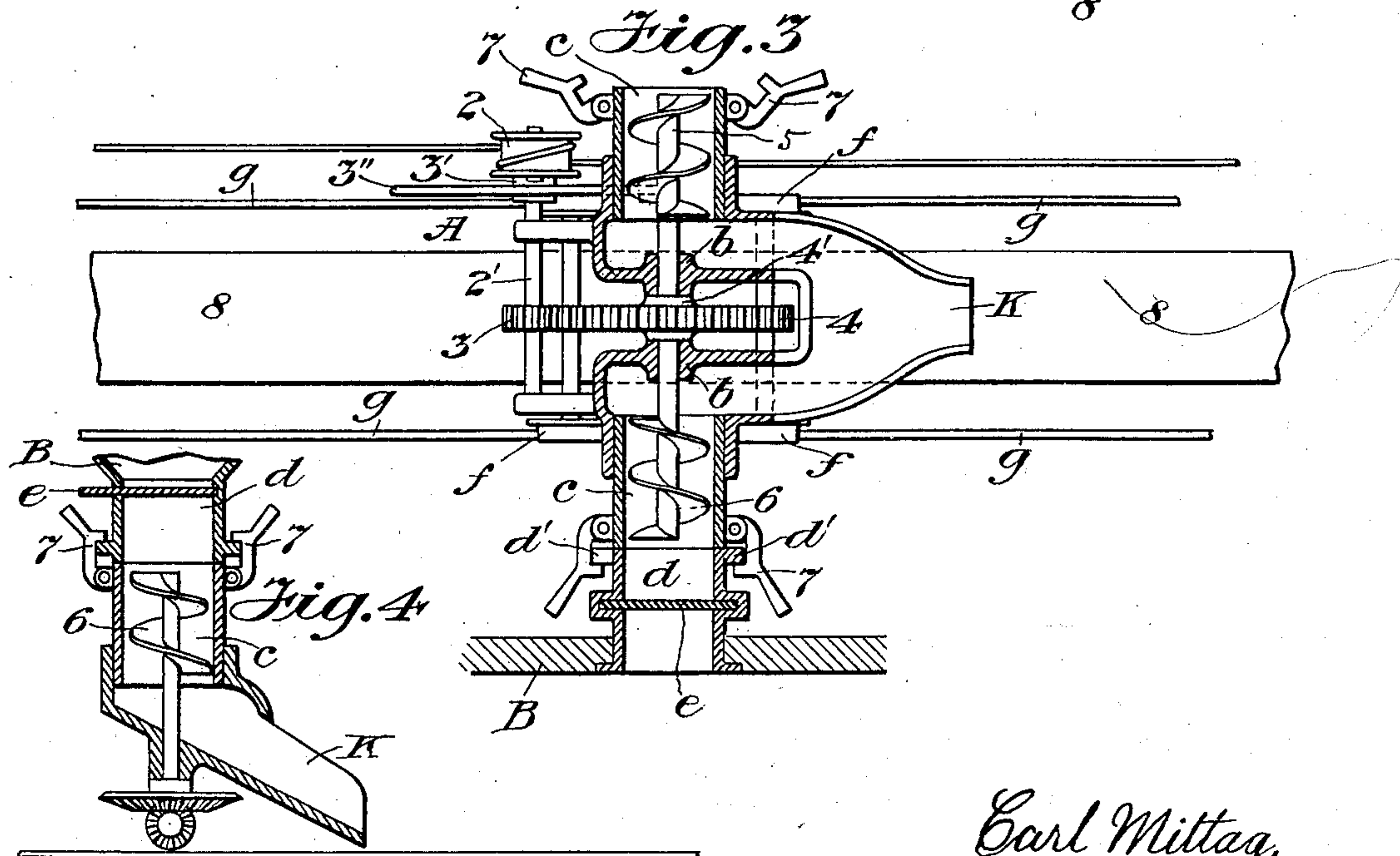
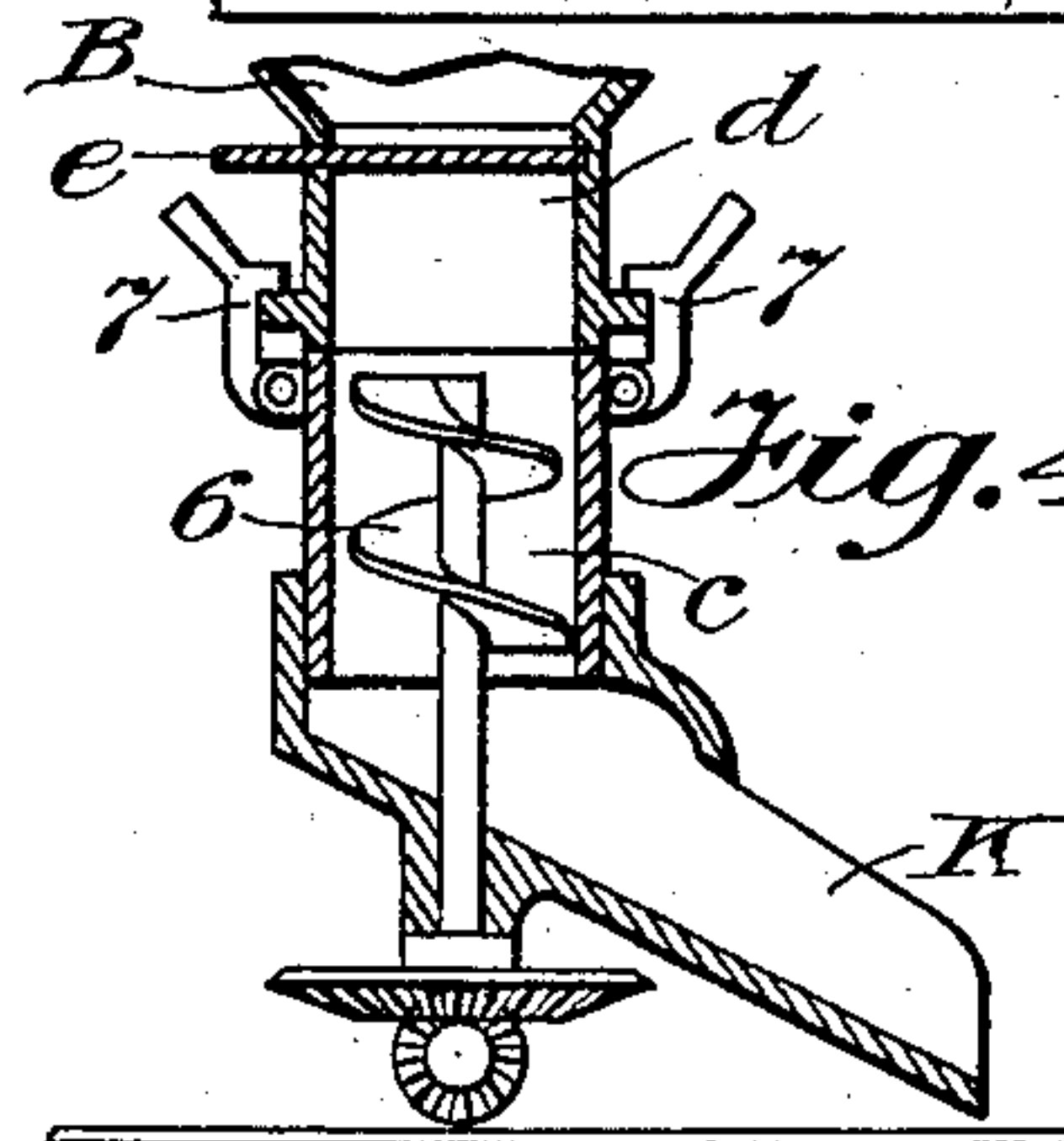


Fig. 4



Witnesses
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UNITED STATES PATENT OFFICE.

CARL MITTAG, OF ST. GEORGE, NEW YORK.

FEEDING DEVICE FOR CONVEYERS.

SPECIFICATION forming part of Letters Patent No. 733,988, dated July 21, 1903.

Application filed December 31, 1902. Serial No. 137,277. (No model.)

To all whom it may concern:

Be it known that I, CARL MITTAG, a subject of the Emperor of Germany, and a resident of St. George, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Feeding Devices for Conveyers, of which the following is a specification.

My present invention pertains to means for feeding substances to conveyers, and more especially relates to mechanism which may be moved to various positions relatively of bins or pockets and may be operated to regulate and control the quantity of substance supplied from said bins to a conveyer, which delivers said substance at a dump, where it may be received by cars, carts, or other suitable vehicles for distribution to different points.

For the purposes of this specification my invention is described and illustrated as operatively combined with a "belt conveyer," commonly so called, which is used to convey dry substances, such as cement or other material physically analogous therewith, from bins to the distributing-point. Ordinarily screw conveyers are used for this purpose in combination with bins which flare upwardly and outwardly. At or near the lower part of the bins gates are located, preferably equidistant one from another, and each may be opened as required in order to permit the cement to pass from a bin to the conveyer. It frequently occurs, however, that only a sufficient quantity of cement passes through the gateway to form an arched cavity in the mass which is contained within the bin, the remainder of the mass being, to use a trade term, "hung up" or maintaining for a time its former position around the cavity thus formed. Eventually, however, the mass falls, filling the cavity and also passing through the gateway in such a quantity as to completely clog the screw of the conveyer. It should be stated also that the supply of cement to the conveyer gradually diminishes in quantity during the time of the formation of the before-mentioned cavity. Thus it will be seen that the supply of cement to the conveyer varies in quantity from none to that which chokes the conveyer and renders it inoperative, and it should also be said that the be-

fore-mentioned irregularity of supply prevents the use of belt conveyers or other forms similar thereto, as the latter might be frequently broken or seriously damaged by avalanches of cement suddenly falling thereon.

My invention is intended and adapted to regulate the feed of the cement or other substance to the conveyer, and thereby to avoid the clogging of the latter. It will also be seen that the use of any practical form of conveyer may be rendered feasible if the cement or other substance be never supplied thereto in quantity beyond the capacity thereof.

In the drawings, Figure 1 is a transverse vertical section of two bins and of a belt conveyer, the section being taken on the lines of gateways, one of which is shown in each bin. A feeding device which embodies my invention is shown, in a general way, in position at said gateways. Fig. 2 is a side elevation, and Fig. 3 is a top plan view, partly in section, on a larger scale, of my invention and a portion of a belt conveyer, a portion of a bin being shown in Fig. 3; and Fig. 4 is a vertical longitudinal section of a modification of my invention, a part of a single bin being also shown.

Corresponding parts in all the figures are denoted by the same reference characters.

Referring to the drawings, 1 designates a power-transmission element, herein shown as a cable, which passes around a flanged drum 2, which rotates upon a shaft 2', which is mounted in the frame of the machine, said frame being herein referred to in a general way as A. The inner end of the hub of the drum 2 may be formed as a member of a clutch of any suitable form and may be slid by means of a lever 3'', either into or out of engagement with a clutch member 3', which is fixed upon the shaft 2'. A spur-pinion 3 is fixed upon the shaft 2' and meshes with a spur gear-wheel 4, which is fixed upon a rotatable shaft 5, which is journaled in boxes b b, the hub 4' of the wheel 4 being engageable by the boxes b to prevent longitudinal movement of the shaft 5 and of members mounted thereon. Outwardly of each box b a helically-radial vane, herein termed a "feed-screw" 6, is mounted, one of the pair being preferably arranged in a right-hand and the other in a left-hand direction on and

around the shaft 5. Cylindrical sleeves *c c*, which are fixed upon the frame A, respectively, surround the feed-screws 6. Latches 7 7, herein shown as four in number, are pivoted in pairs, the members thereof oppositely positioned at the outer ends of the sleeves *c* and are adapted to severally engage flanges *d' d'*, which are formed on chutes *d d*, which lead from the bins B B, respectively, and which are severally dimensionally adapted to register with the sleeves *c*, respectively. A gate *e* is slidably mounted in each chute *d*, one only of the former being shown. The whole device, as shown, is mounted upon a truck F, which has flanged wheels *f f*, which are adapted to run upon rails *g g*. A delivery-chute K, which, as shown, is bifurcated to pass on both sides of the portions of the frame A, to which are attached the journal-boxes *b*, receives the fed material from the sleeves *c* and delivers it to the conveyer 8.

In the form of the device shown in Fig. 4 a single feed-screw 6 is arranged to rotate within a sleeve *c*, which may register with a chute *d*, which communicates with a bin B, which is suspended above the feeding device. The latter may be either mounted on a truck (not shown) or fixed in position by members attached to the frame A. It should be noted that the feed-screws 6 should be of such pitch that their surfaces will engage the fed material with sufficient friction to prevent the latter from moving through the sleeves *c* except in conformity with the rotations of the feed-screws 6.

The operation and advantages of my invention will be readily understood by those skilled in the art to which it appertains. A feeding device may be positioned as before mentioned and secured to chutes *d* by means of latches 7. Power being applied to the feed-screws 6 by means of the cable 1, drum 2, pinion 3, and wheel 4, the gates *e* may be opened and the contents of the bins B may be fed outwardly through the chutes *d* and sleeves *c* by means of the feed-screws 6 and will fall into the chute K, down which it will gravitate to the conveyer 8, the quantity of material fed to said conveyer being regulated by the feeding device as aforesaid.

I do not desire to be understood as limiting myself to the details of construction and arrangement as herein described and illustrated, as it is manifest that variations and modifications may be made in the features of construction and arrangement in the adaptation of the device to various conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variation and modification as properly fall within the scope of my invention and the terms of the following claims.

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

1. A feeding device for conveyers, and comprising a frame; a shaft rotatably mounted thereon; a feed-screw mounted on and rotating with the shaft; a sleeve surrounding the feed-screw; a chute adapted to register with the sleeve; means for attaching the sleeve to the chute; and a delivery-chute adapted to receive material fed through the sleeve.

2. A feeding device for conveyers, and comprising a frame; a shaft rotatably mounted thereon; a plurality of feed-screws mounted on and rotating with the shaft; and sleeves respectively surrounding the several feed-screws.

3. A feeding device for conveyers, and comprising a frame; a shaft rotatably mounted thereon; a plurality of feed-screws mounted on and rotating with the shaft; sleeves respectively surrounding the several feed-screws; and chutes respectively adapted to register with the several sleeves.

4. A feeding device for conveyers, and comprising a frame; a shaft rotatably mounted thereon; a plurality of feed-screws mounted on and rotating with the shaft; sleeves respectively surrounding the several feed-screws; chutes respectively adapted to register with the several sleeves; and means for respectively attaching the sleeves to the several chutes.

5. A feeding device for conveyers, and comprising a frame; a shaft rotatably mounted thereon; a plurality of feed-screws mounted on and rotating with the shaft; sleeves respectively surrounding the several feed-screws; chutes respectively adapted to register with the several sleeves; means for respectively attaching the sleeves to the several chutes; and a delivery-chute adapted to receive material fed through the sleeves.

6. A feeding device for conveyers, and comprising a frame; a shaft rotatably mounted thereon; a plurality of feed-screws mounted on and rotating with the shaft; sleeves respectively surrounding the several feed-screws; chutes respectively adapted to register with the several sleeves; means for respectively attaching sleeves to the several chutes; and a bifurcated delivery-chute adapted to receive material fed through the sleeves.

7. A feeding device for conveyers, and arranged to be positioned at any one of a number of chutes, and comprising a frame; a shaft rotatably mounted thereon; a feed-screw mounted on and rotating with the shaft; a sleeve surrounding the feed-screw; a vehicle on which the device is mounted; and rails guiding said vehicle to position the device at any one of a number of chutes.

8. A feeding device for conveyers, and arranged to be positioned at any one of a number of chutes, and comprising a frame; a shaft rotatably mounted thereon; a feed-screw mounted on and rotating with the shaft; a sleeve surrounding the feed-screw; a chute adapted to register with the sleeves; means

for attaching the sleeve to the chute; a vehicle on which the device is mounted; and rails guiding said vehicle to position the device at any one of a number of chutes.

5 9. A feeding device for conveyers, and arranged to be positioned at any one of a number of chutes, and comprising a frame; a shaft rotatably mounted thereon; a feed-screw mounted on and rotating with the shaft; a sleeve surrounding the feed-screw; a delivery-chute adapted to receive material fed through the sleeve; a vehicle on which the device is mounted; and rails guiding said vehicle to position the device at any one of a number of chutes.

10. A feeding device for conveyers, and arranged to be positioned at any one of a number of chutes, and comprising a frame; a shaft rotatably mounted thereon; a sleeve surrounding the feed-screw; a chute adapted to register with the sleeve; means for attaching the sleeve to the chute; a delivery-chute adapted to receive material fed through the sleeve; a vehicle on which the device is mounted; and rails guiding said vehicle to position the device at any one of a number of chutes.

11. A feeding device for conveyers, and arranged to be positioned at any one of a number of chutes, and comprising a frame; a shaft rotatably mounted thereon; a plurality of feed-screws mounted on and rotating with the shaft; sleeves respectively surrounding the several feed-screws; a vehicle on which the device is mounted; and rails guiding said vehicle to at once position the device at a plurality of chutes, less than the total number of said chutes.

12. A feeding device for conveyers, and arranged to be positioned at any one of a number of chutes, and comprising a frame; a shaft rotatably mounted thereon; a plurality of feed-screws mounted on and rotating with the shaft; sleeves respectively surrounding the several feed-screws; chutes respectively adapted to register with the several sleeves; a vehicle on which the device is mounted; and rails guiding said vehicle to at once position the device at a plurality of chutes, less than the total number of said chutes.

13. A feeding device for conveyers, and arranged to be positioned at any one of a number of chutes, and comprising a frame; a shaft rotatably mounted thereon; a plurality of feed-screws mounted on and rotating with the shaft; sleeves respectively surrounding the several feed-screws; chutes respectively adapted to register with the several sleeves; means for respectively attaching the sleeves to the several chutes, a vehicle on which the device is mounted; and rails guiding said vehicle to at once position the device at a plurality of chutes, less than the total number of said chutes.

14. A feeding device for conveyers, and arranged to be positioned at any one of a number of chutes, and comprising a frame; a shaft rotatably mounted thereon; a plurality of feed-screws mounted on and rotating with the shaft; chutes respectively adapted to register with the several sleeves; means for respectively attaching the sleeves to the several chutes; a delivery-chute adapted to receive material fed through the sleeves; a vehicle on which the device is mounted; and rails guiding said vehicle to at once position the device at a plurality of chutes, less than the total number of said chutes.

15. A feeding device for conveyers, and arranged to be positioned at any one of a number of chutes, and comprising a frame; a shaft rotatably mounted thereon; a plurality of feed-screws mounted on and rotating with the shaft; sleeves respectively surrounding the several feed-screws; chutes respectively adapted to register with the several sleeves; means for respectively attaching sleeves to the several chutes; a bifurcated delivery-chute adapted to receive material fed through the sleeves; a vehicle on which the device is mounted; and rails guiding said vehicle to at once position the device at a plurality of chutes, less than the total number of said chutes.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

CARL MITTAG.

Witnesses:

CHAS. H. DAVIDS,
J. C. PYBAS.