

(No Model.)

J. A. HOLMES.
ELEVATOR BUCKET.

No. 290,053.

Patented Dec. 11, 1883.

Fig. 3

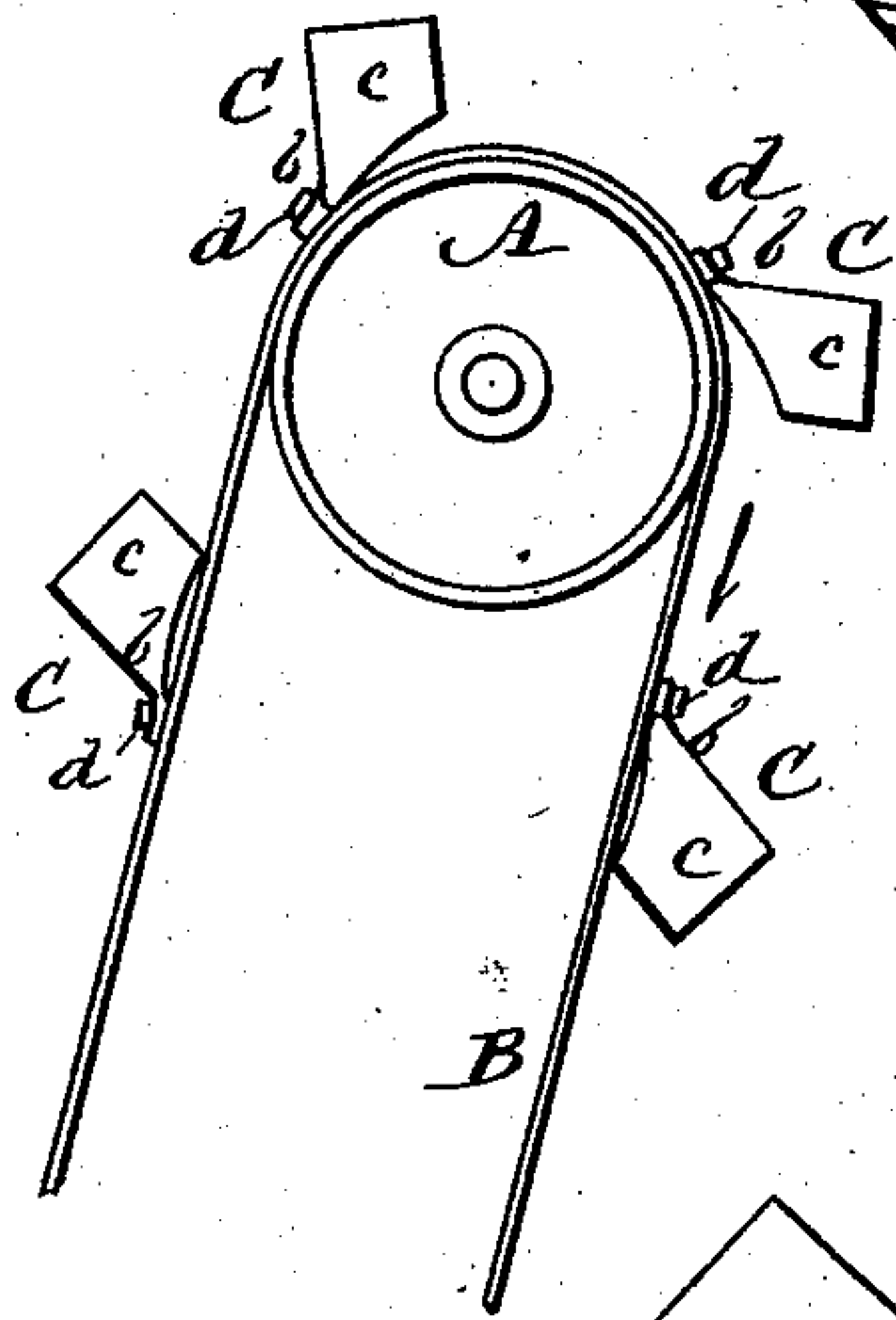


Fig. 1

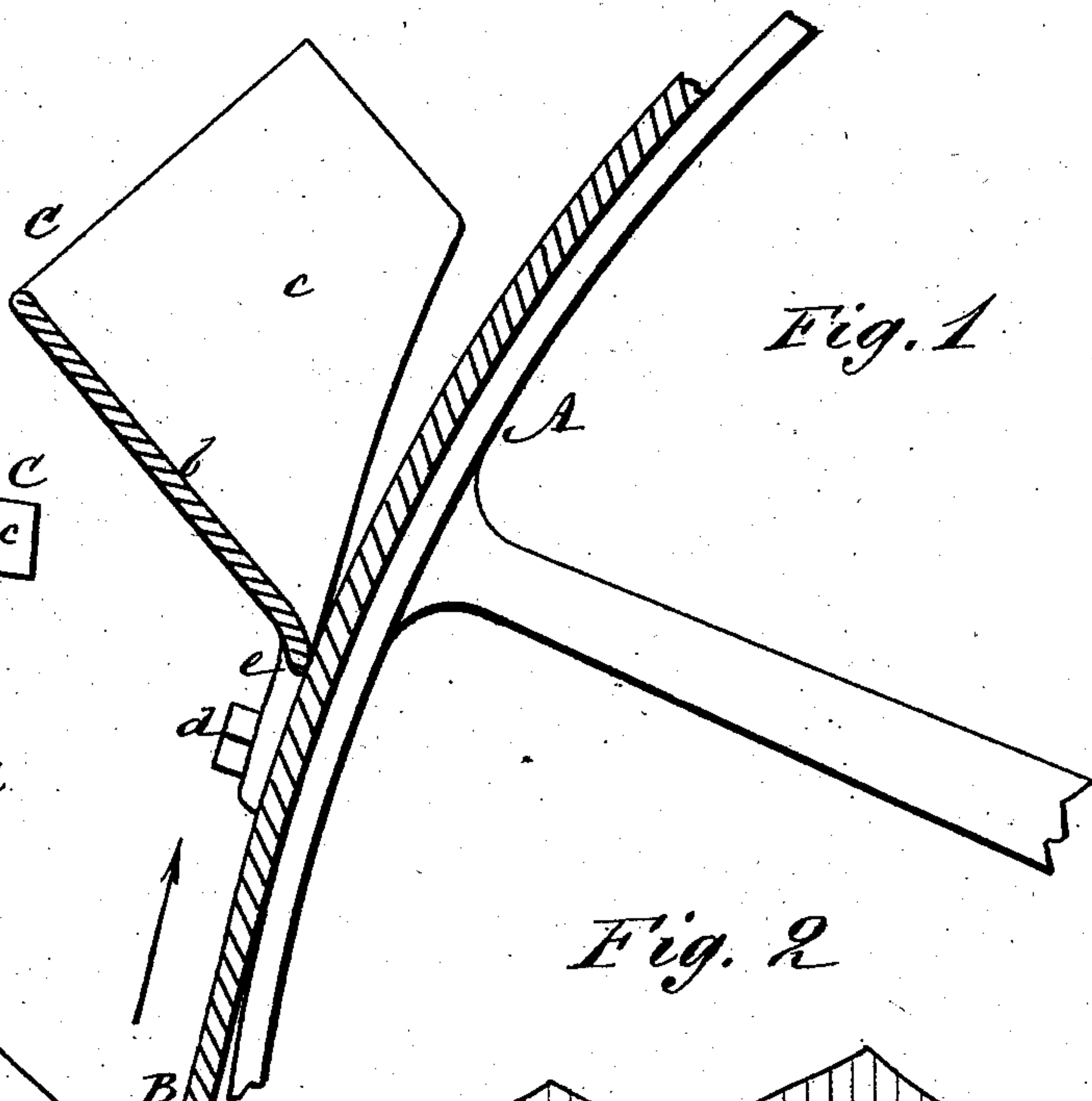
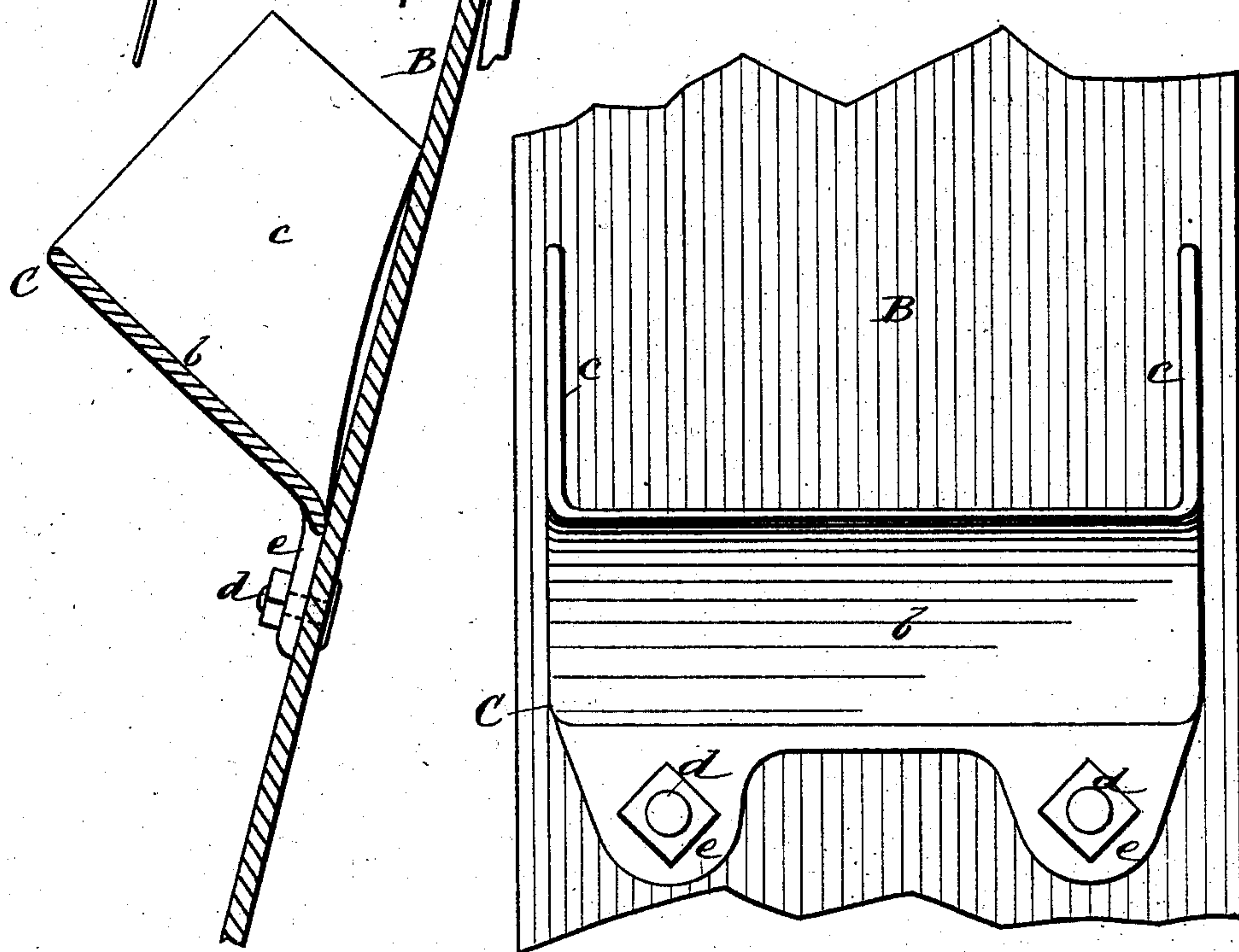


Fig. 2



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOSEPH A. HOLMES, OF GREENLAND, NEW HAMPSHIRE.

ELEVATOR-BUCKET.

SPECIFICATION forming part of Letters Patent No. 290,053, dated December 11, 1883.

Application filed October 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. HOLMES, of Greenland, in the county of Rockingham and State of New Hampshire, have invented a new and useful Improvement in Elevator-Buckets, of which the following is a full, clear, and exact description.

This invention relates to endless belt or band elevators, such as are used in mills for raising meal, grain, and other substances from one floor or story to another by means of buckets arranged at suitable distances apart on the band.

The invention consists in a bucket constructed for attachment on the outside of the endless belt or band substantially as hereinafter described, and whereby the belt itself is made to take the place of a bottom to the bucket, so that a much lighter bucket may be used than when the same, whether constructed in sections or one piece, has a bottom of its own. A quicker emptying of the buckets is provided for in an elevator of the description referred to, and the belt may be arranged to run in a nearly vertical instead of in an inclined course. The buckets, too, are prevented from clogging with or carrying round a second time the meal, grain, or other substance lifted by them; and, being secured on the outside of the belt, they may readily be removed or applied, as required. Said buckets likewise possess the merit of being cheap as well as durable and strong.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a vertical section of an endless-belt and bucket elevator in part embodying my invention. Fig. 2 is a plan view of a portion of the belt, with one of my improved buckets attached; and Fig. 3 is a diagram in illustration of the emptying action of the buckets.

A indicates the top drum or wheel (shown only in part in Fig. 1) of an endless-belt and bucket elevator; B, a portion of its belt, and CC certain of its many buckets. These buckets may be constructed either of wrought, malleable, or cast iron, or of any other suitable material. Each of said buckets C is made with a back, *b*, and sides *c c*, but without any bot-

tom-forming an integral portion of the bucket, the belt B, on the outside of which the bucket is arranged, constituting or answering as the bottom thereto. The sides *c c* are shaped on their outer edges to conform, or nearly so, to the circular travel of the belt around the drums, and the buckets are secured on or to the exterior of the belt by short bolts *d d*, arranged to pass through flanges or projections *e e* on the back *b* of each bucket, whereby the buckets can be readily attached to or removed from the belt. By the construction of the buckets without an attached bottom and their arrangement on the outside of the belt, as described, said receptacles will much more readily and quickly empty themselves of the flour, meal, or other contents as the same pass over the upper drum of the belt, inasmuch as the flexing and run of the belt will work it away from the open bottoms of the buckets, and so relieve the mass within the buckets, and give it a quick and free discharge from their open or mouth ends, as clearly shown by diagram, Fig. 3. Said construction of the buckets also effectually serves to prevent the clogging or sticking of the mass to the interior of the buckets, and so avoids the carrying of the flour, meal, or mass repeatedly up and down the elevator, there being no bucket-bottoms for the mass to stick to. The buckets, too, only having three sides, the belt answering for the fourth, can be much more readily cast or made than buckets having four sides, and can be constructed stronger or stouter at their sides without making them any heavier than buckets having four sides. The elevator also can be arranged vertically, or nearly so, and its buckets empty freely, instead of, as heretofore necessary with four-sided buckets, being set at a considerable incline, thus saving a large amount of space in mills which consist of several stories. Furthermore, by the construction and arrangement of the buckets increased simplicity, durability, and cheapness are secured for them, and the same will not require to be removed for cleaning or repair, and afterward being replaced, but will be found as durable, or more durable, than the belt which carries them.

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

1. A bucket for endless-belt elevators, con-

structed with an open bottom and raised sides and back, substantially as specified.

2. In endless-belt and outside bucket elevators, the combination, with the endless belt, 5 of buckets having an open bottom and raised sides and back, and arranged so that the belt forms an inclosure or covering to said open bottoms, essentially as described.

3. In endless-belt and bucket elevators, the 10 combination, with the endless belt B, of the

buckets C, constructed with a back, *b*, and sides *c c*, but left open at their tops, bottoms, and mouths or delivery ends, and attached at their backs or in rear thereof to the belt on the outside thereof, substantially as shown 15 and described.

JOSEPH A. HOLMES.

Witnesses:

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