

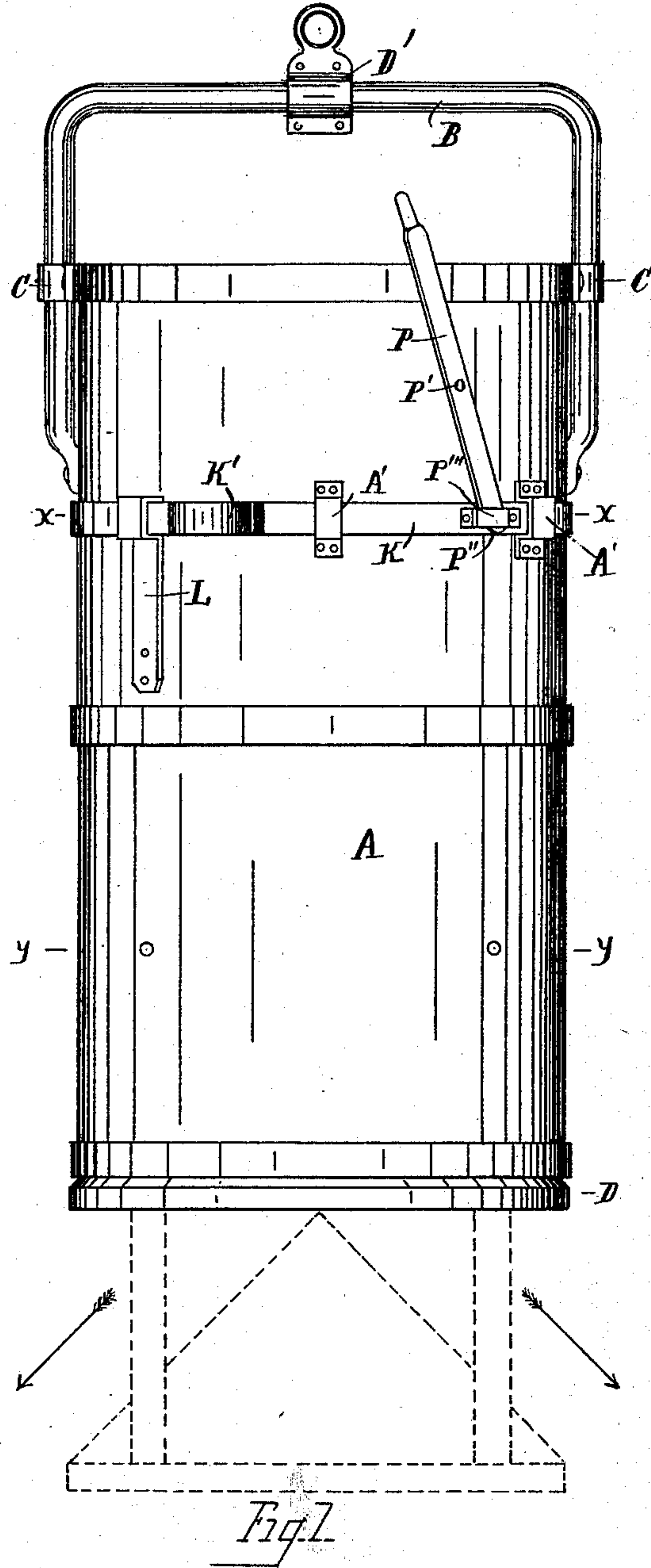
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3 Sheets—Sheet 1.

W. E. & E. S. LUDLOW.  
COAL BUCKET.

No. 413,236.

Patented Oct. 22, 1889.



WITNESSES

Carroll J. Webster  
Anna J. Lehaney.

INVENTORS

William E. Ludlow  
Edgar S. Ludlow  
By William Webster  
Atty

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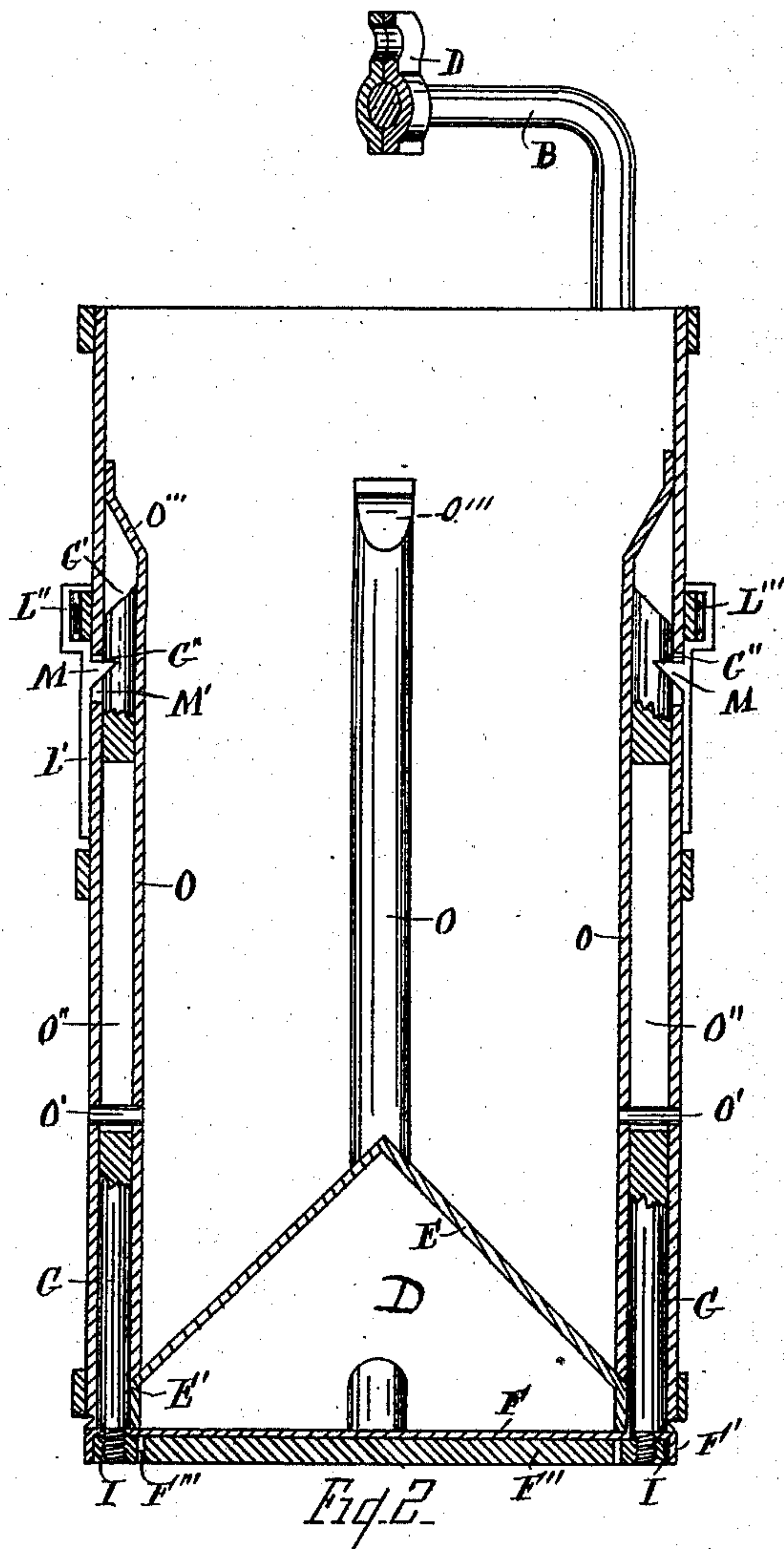
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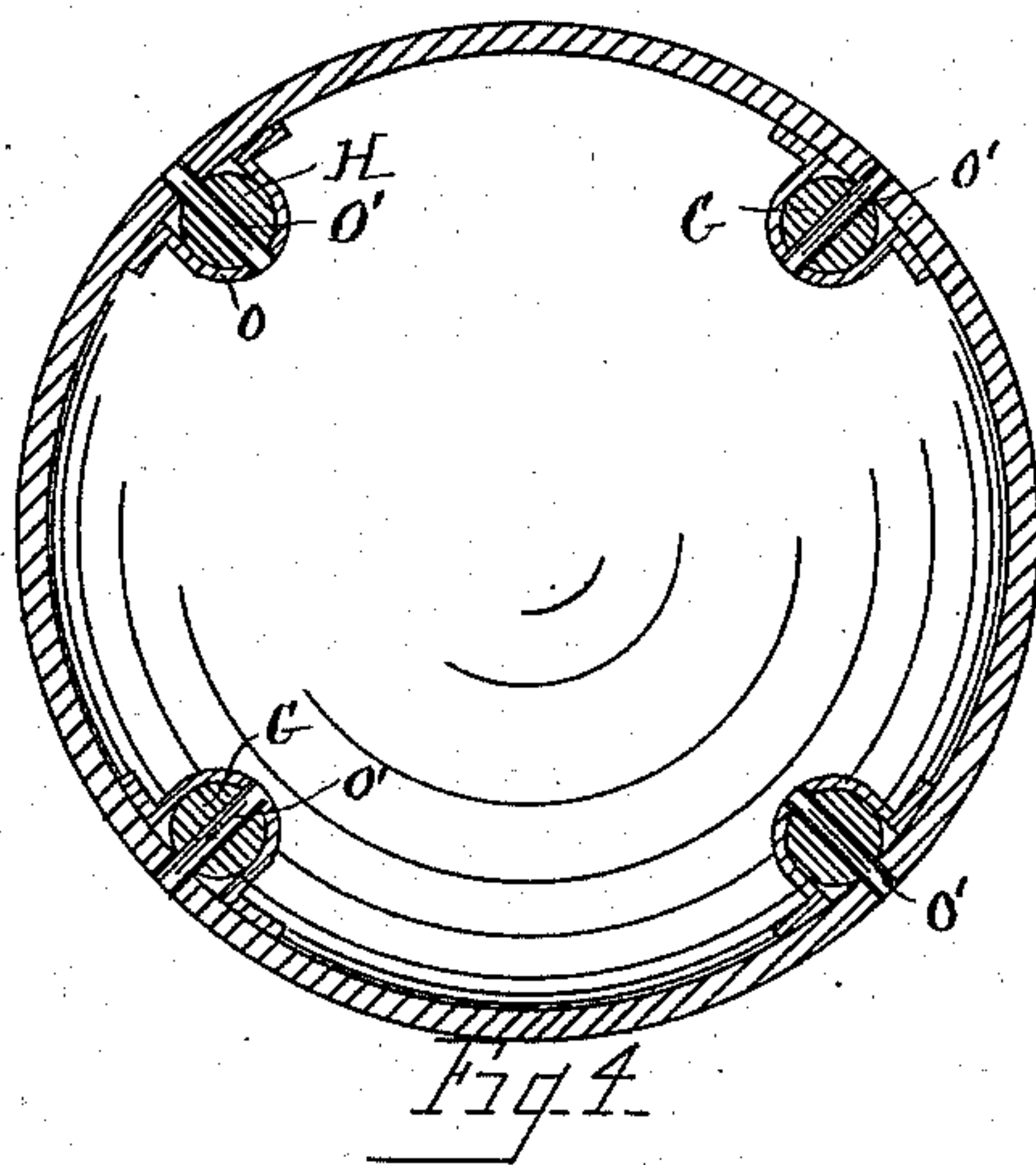
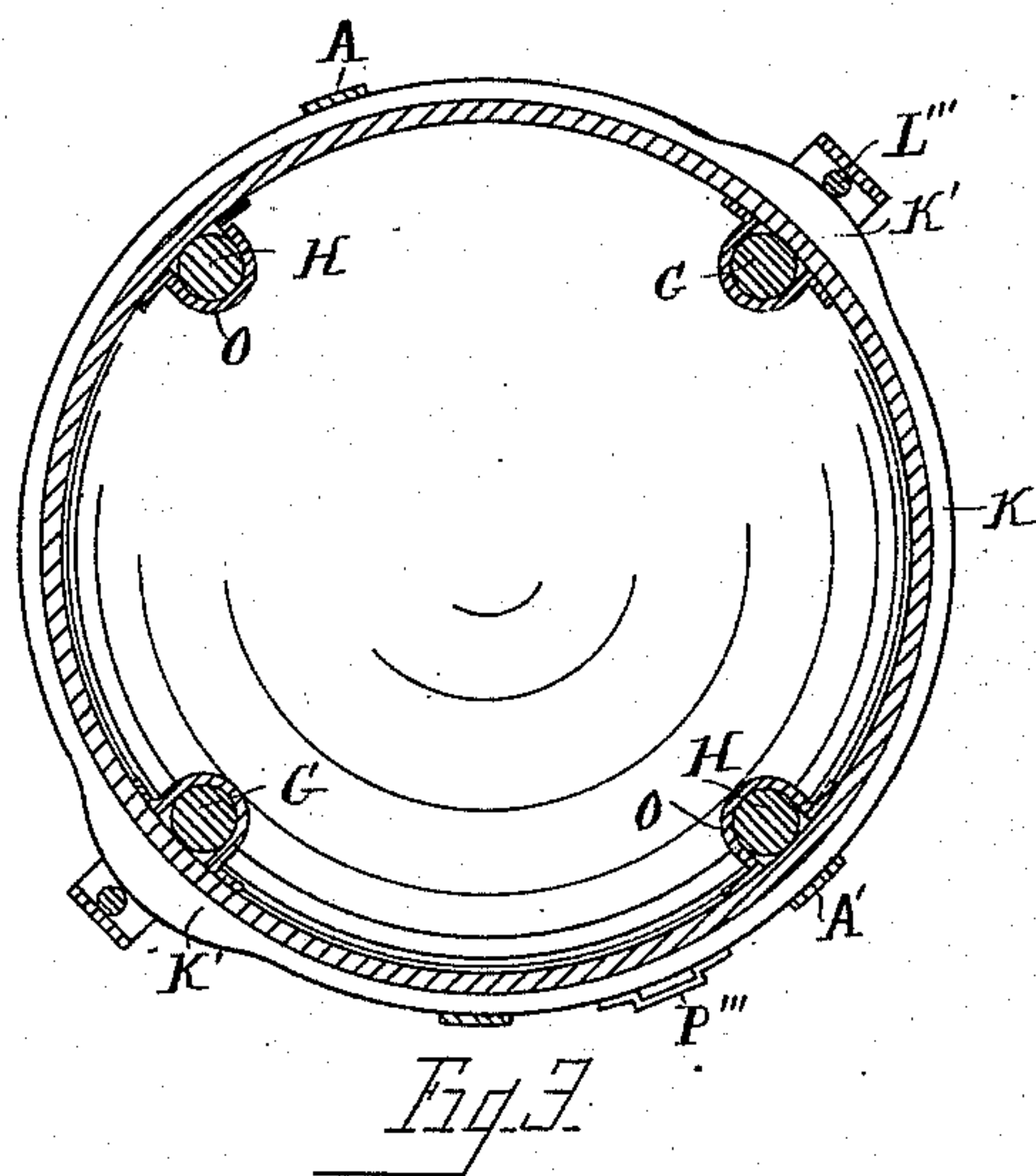
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# UNITED STATES PATENT OFFICE.

WILLIAM E. LUDLOW AND EDGAR S. LUDLOW, OF TOLEDO, OHIO.

## COAL-BUCKET.

SPECIFICATION forming part of Letters Patent No. 413,236, dated October 22, 1889.

Application filed July 1, 1889. Serial No. 316,152. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM E. LUDLOW and EDGAR S. LUDLOW, citizens of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Coal-Buckets; and we do hereby declare that the following is a full, clear, and exact description of the invention, which 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 the letters of reference marked thereon, which form part of this specification.

Our invention relates to coal-buckets, such as are designed to be used in the loading or unloading of vessels, &c., and has for its object to provide a bucket that shall, when discharged, scatter the coal circularly in the hold of a vessel, thereby obviating the necessity of dumping the coal in a pile directly underneath the hatch, which, in the latter case, would require the coal to be shoveled back by men in the hold.

In the buckets now in use, where the coal is discharged in a pile directly underneath the hatch, it will be seen that the coal being discharged in a body causes the lumps to break and create a quantity of coal-dust underneath the hatch, the men only throwing back the large lumps, thereby decreasing the value of the coal. In the construction herein shown this defect is overcome by a conical-shaped bottom, which, when let down, throws the coal circularly in the hold and at the sides of the same. Another advantage is the quickness by which the vessel can be loaded. The bail being rigid with the body of the bucket allows a greater quantity of coal to be placed therein than where the bail is pivotally secured and where the bucket is revolved to dump the coal. In the latter construction, it will be seen, in a very large bucket, that the manual labor required to turn the same would take up too much time, an object being, in loading or unloading vessels, to perform it as quickly as possible. We attain these objects in the construction herein shown, in which—

Figure 1 is a side elevation of a complete bucket, showing in dotted lines the bottom in

the position it assumes in dumping the coal. Fig. 2 is a vertical sectional view showing the catches by which the bottom is held to close the bucket. Fig. 3 is a section on lines *x x*, Fig. 1, illustrating the manner in which the catches holding the bottom closed are operated to discharge the coal. Fig. 4 is a section on lines *y y*, Fig. 1, showing the pins by which the fall of the bucket is stopped.

Like letters of reference indicate like parts.

A designates the bucket, with the usual bands or strengthening devices.

B is the bail, which is rigidly attached to the bucket.

In the drawings we have shown straps C passed over the bail at the top of the bucket and riveted, the bail being riveted to the bucket at the lower end. In the center of the bail is a loop D', by which the bucket is raised. We have shown the loop composed of two sections embracing the bail and riveted together; but it will be understood that the bail may have the top loop cast on.

D is the bottom, composed of the cone-shaped plate E and the bottom plate F. The bottom plate F is connected to the bucket by means of rods G and H. The rods are rigidly attached to the bottom by their outer ends being passed through bottom plate F and nuts I screwed thereon. Bottom piece F is flanged, as at F', and the filling-piece F'' is inserted therein. Said flange and filling-piece extend below the nuts I to form a secure resting-base for the bucket while the same is being filled. It will be seen that where the rods pass through the conical-shaped top of bottom D the bottom is cut away, as at E', also the filling-piece at F'', to allow the insertion of the nut.

K designates a band passed around the bucket and secured thereto by loops A'. Band K is provided at diametrically-opposite points with projections K', which are designed to pass under the spring-catch L and withdraw the same.

In the construction illustrated I have shown two of the projections K; but in buckets desired for a greater quantity of coal, and where more weight is required, a greater number of projections may be used.

Spring-catch L is composed of the spring



L', at whose upper end is a loop L'', which is designed to pass over the band K, and in the loop L'' is journaled an anti-friction roller L''', to lessen the friction when projections K' are passed through the same.

M is a catch rigidly attached to spring L' and passes through the perforation M' in the side of the bucket.

Rods G and H are designed to have a vertical movement in guideways O, this movement being regulated by pin O', running in the slot O'' in the rods. Guides O are provided with a slanting top O''', for a purpose hereinafter described. The tops of rods G are formed slanting, as at G', to allow the same when the bottom is being raised to press out the spring-catch L and allow the catch M to pass into the notch G'' in the rods G.

P is a lever pivoted to the bucket at P' and attached to the band at P''.

In operation, the bucket being filled and in a position to be discharged, lever P is pulled or struck over, and, by being pivoted at P' to the bucket and loosely journaled in the loop P''' on the band K, will move the band, causing projections K' to ride through the loop L'' of spring-catch L, withdrawing the latter and disengaging the catch M from its seat in the notch G'' in the rods G. Catches M being disengaged will permit the bottom to fall, and thus allow the coal to be discharged, and the pins O', working in the slots O'' in the rods G, when the bottom has fallen the desired distance, will strike the top walls of the slots, thereby arresting and holding the bottom in its lowermost position until the bucket is to be charged again, at which time its bottom rests on a car or platform and its body portion gravitates down the rods until the spring-catches engage the notches G', thereby uniting in a closed position both parts.

Top O''' of casing O, being slanting, does not form an impediment to the coal in passing out of the bucket.

It will be understood that we do not limit ourselves to the precise construction shown, as we may form the bucket, instead of round, as shown, square, or may make such other changes as taste and necessity may dictate without departing from the broad principles of our invention.

It will be understood that while we have described our invention as a coal-bucket it is equally well adapted for iron ore and other

substances with which it is desired to load a vessel.

What we claim as new, and desire to secure by Letters Patent, is—

1. A coal-bucket in which are comprised a body portion provided with ways or guides, spring-catches, and a vertically-slidable cone-shaped bottom provided with rods within said guides, which rods are adapted to engage said catches, substantially as shown and described.

2. A coal-bucket in which are comprised a body portion, a band having a projection or cam, a lever to actuate said band, a vertically-slidable cone-shaped bottom, and means whereby said bottom may be either held in contact with the body portion or permitted to drop therefrom, substantially as shown and described.

3. A coal-bucket comprising a body portion having a series of vertical guideways and pins passing through said guideways, a vertically-slidable bottom portion, and the rods rigidly connected to the bottom portion and working in the guideways, said rods being slotted centrally, in which slots work the pins, substantially as described.

4. A coal-bucket in which are comprised a body portion provided with ways or guides and spring-catches, a band having a projection or cam, a lever to actuate said band, a vertically-slidable bottom portion, and the rods rigidly secured to said bottom and working in the guideways, said rods being constructed and adapted to engage the spring-catches, substantially as shown and described.

5. In a coal-bucket, the combination, with a body portion provided with guideways and catches arranged in the upper ends of said ways, of a vertically-slidable cone-shaped bottom portion, the rods rigidly secured to said bottom working in the guideways and adapted to engage with the catches within the same, and the stops arranged near the lower ends of the guideways to limit the downward movement of the bottom portion, substantially as shown and described.

In testimony that we claim the foregoing as our own we hereby affix our signatures in presence of two witnesses.

WILLIAM E. LUDLOW.  
EDGAR S. LUDLOW.

Witnesses:

O. I. BRUMBACK,  
CARROLL J. WEBSTER.