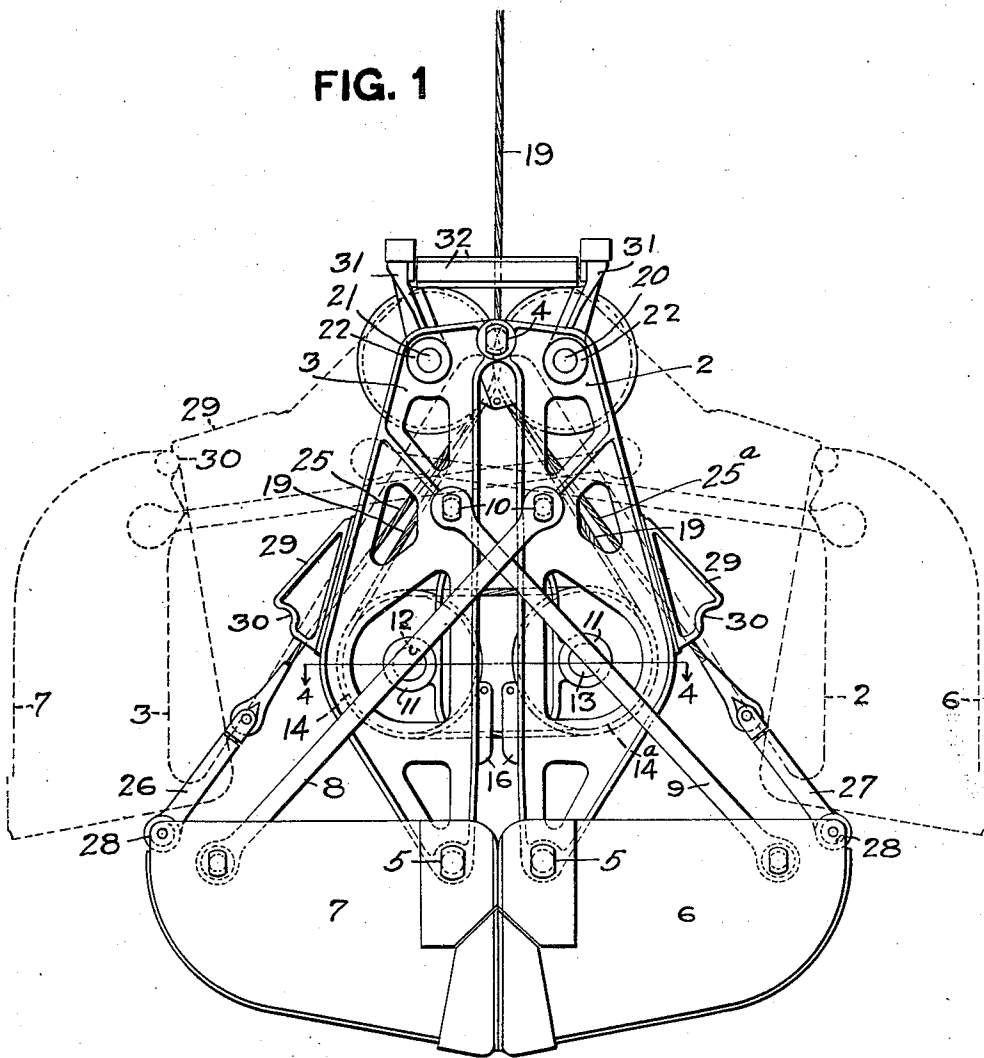


L. J. ROBB.
CLAM SHELL BUCKET.
APPLICATION FILED DEC. 27, 1909.

1,046,334.

Patented Dec. 3, 1912.

3 SHEETS-SHEET 1.



WITNESSES.

G. R. Keller
Robert C. Fottner

INVENTOR.

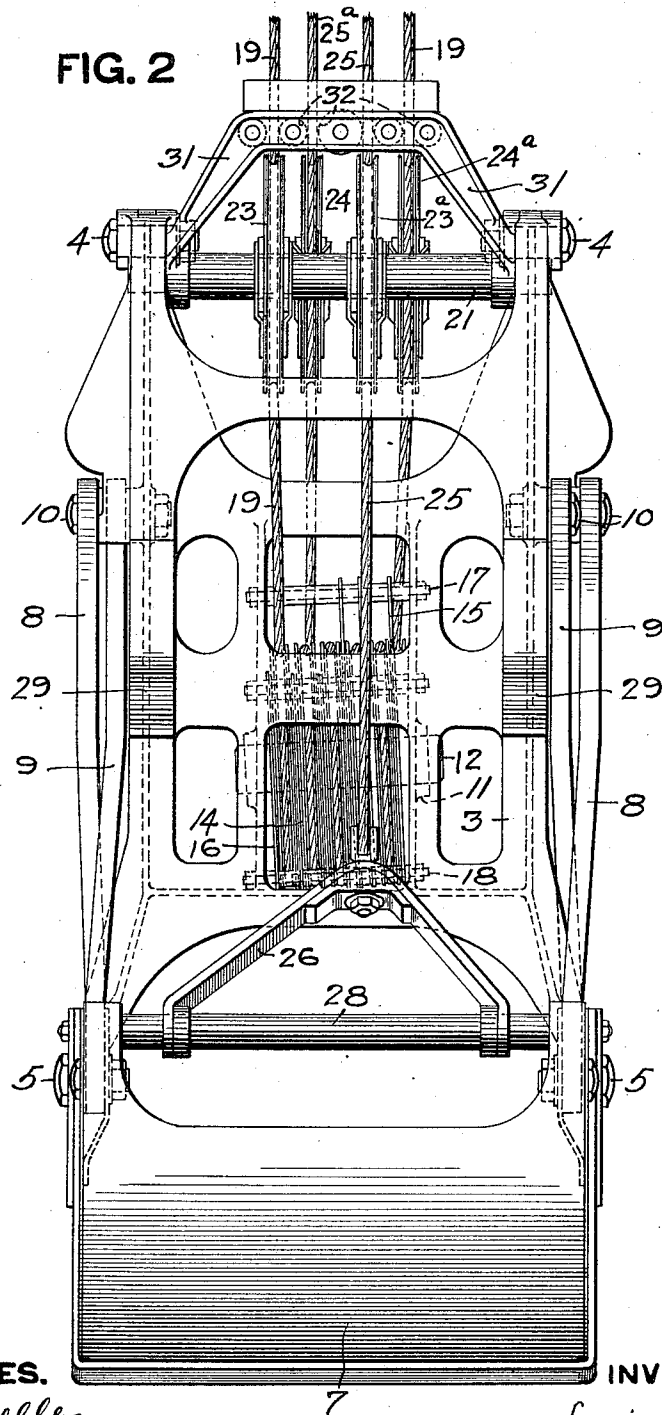
Lewis J. Robb
By Kay & Fottner
attorneys

L. J. ROBB.
CLAM SHELL BUCKET.
APPLICATION FILED DEC. 27, 1909.

1,046,334.

Patented Dec. 3, 1912.

3 SHEETS—SHEET 2.



WITNESSES.

J. R. Keller
Robert C. Feltner

INVENTOR.

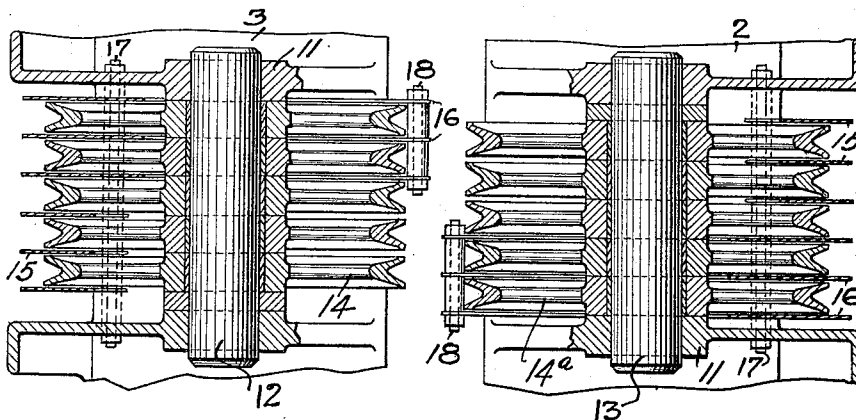
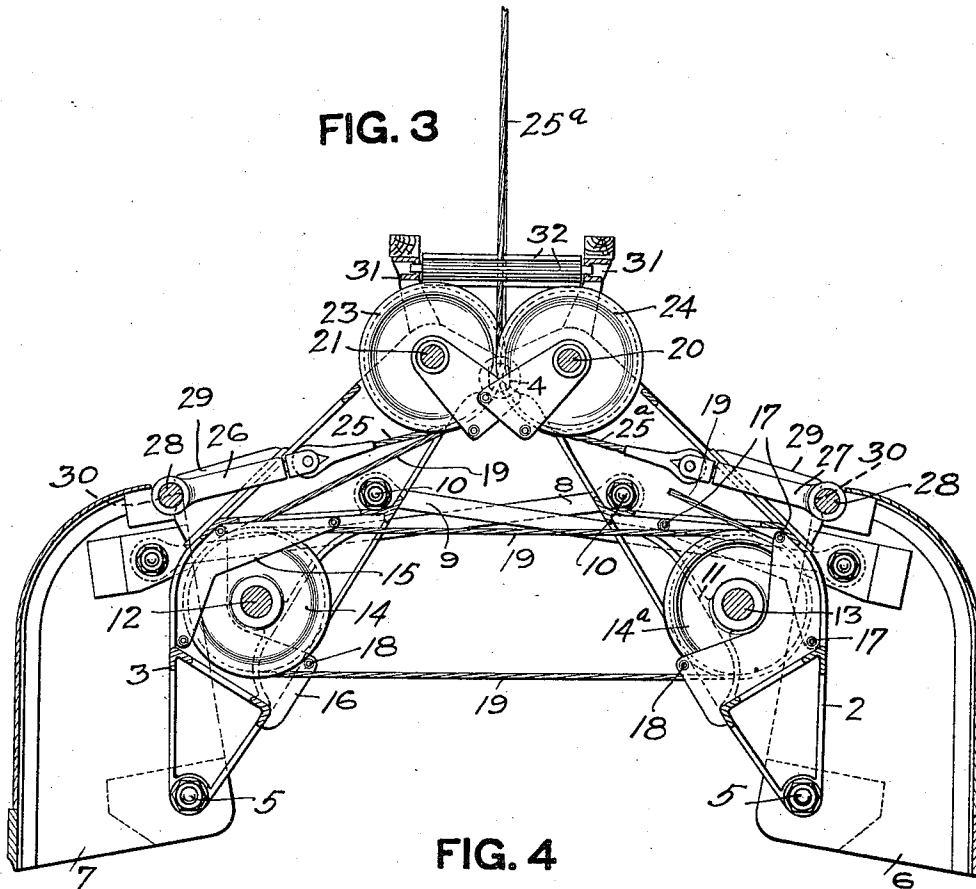
Lewis J. Robb
R. Kay & Feltner
attorneys

L. J. ROBB.
CLAM SHELL BUCKET.
APPLICATION FILED DEC. 27, 1909.

1,046,334.

Patented Dec. 3, 1912.

3 SHEETS—SHEET 3.



WITNESSES.

J. R. Keller
Robert C. Totten

INVENTOR.

Lewis J. Robb
By Kay & Totten
attorneys

UNITED STATES PATENT OFFICE.

LEWIS J. ROBB, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO HEYL & PATTERSON INC., OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

CLAM-SHELL BUCKET.

1,046,334.

Specification of Letters Patent.

Patented Dec. 3, 1912.

Application filed December 27, 1909. Serial No. 534,923.

To all whom it may concern:

Be it known that I, LEWIS J. ROBB, a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Clam-Shell Buckets; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to clam-shell buckets. The object of my invention is to provide a strong and durable bucket of this character with a large capacity, and at the same time one that is simple in construction and not liable to get out of order.

To these ends my invention comprises the novel features hereinafter set forth and claimed.

In the accompanying drawings Figure 1 is a side elevation of my improved bucket when closed; Fig. 2 is an enlarged end view; Fig. 3 is a side elevation showing the bucket open; and Fig. 4 is an enlarged detail of the sheaves of the closing cable.

In the drawings the numerals 2 and 3 designate swinging frames which are hinged together by the bolts 4. These frames may be made of suitable castings with ribs and webs for strengthening the same and to form bearings for the sheaves supported thereby as fully hereinafter set forth. The frames 2 and 3 are pivoted as at 5 to oppositely arranged trays 6 and 7, the pivotal connection of the frames with said trays being at or adjacent to the inner and upper ends of said trays. Levers or arms 8 and 9 are pivotally secured to the outer ends of the trays and at their opposite ends said arms 8 and 9 are pivotally connected to frames 2 and 3 respectively as at 10. Mounted in bearings 11 in the frames 2 and 3 are the shafts 12 and 13, the said shafts being arranged at an angle to the said frames and diagonally with reference to each other. These shafts 12 and 13 are secured within the bearings by suitable keys or other fastening devices. Mounted to rotate freely on the shafts 12 and 13 are the sheaves 14 and 14^a, respectively. Guide plates 15 and 16 extend between the sheaves 14 and 14^a to guide the cables and prevent their slipping from the sheaves. The plates 15 are secured by the bolts 17 connected to the swinging frames, and the plates 16 are connected by the bolts 18. The hoist or closing cable 19 passes down and around one of the

sheaves 14 and then passes over and around one of the sheaves 14^a, said cable passing from one to the other of the said sheaves until it passes to the last one of the said sheaves and up therefrom to the derrick or crane from which the derrick is suspended. By having the sheaves mounted on shafts diagonally to each other, and the one set of sheaves 14 out of line with the other set of sheaves 14^a, as clearly illustrated in Fig. 4, the cable passes from the sheaves 12 to the sheaves 13 in such a way that there is less liability of the cable slipping from the sheave and the pull is more direct.

Shafts 20 and 21 are secured in the bearings 22 in the swinging frames at the upper ends thereof and sheaves 23, 23^a and 24 and 24^a are mounted on said shafts 21 and 22, respectively. The hoist or closing cable 19 engages the sheave 23 and the sheave 24^a, and the opening or holding cables 25, 25^a engage the other two sheaves 23^a and 24, as clearly indicated in Fig. 3. The cables 25 and 25^a are secured to the yokes 26 and 27, respectively. The yokes 26 and 27 are supported by the shafts 28 which are mounted in the outer ends of the trays 6 and 7. The yokes 26 and 27 are out of line with each other so far as the connecting point of the cables 25 and 25^a therewith is concerned, and for this reason the sheaves 23^a and 24 engaged by the cables 25 and 25^a are out of line with each other and can overlap as indicated in Figs. 1 and 2.

Secured to the swinging frames 2 and 3 or formed integral therewith, if desired, are the stop blocks 29, said blocks having the recesses 30 to receive the shafts 28 when the bucket is opened as indicated in Fig. 2.

Brackets 31 are supported by the swinging frames 2 and 3, said brackets forming bearings or supports for the guide-rollers 32 between which the cables 19 and 25, 25^a pass, said rollers reducing the wear on said cables and guiding and holding the same in proper alinement with the sheaves.

Fig. 1 shows the position of the parts when the bucket is closed and Fig. 2 when the bucket is open. In its open position, the swinging frames assume the position indicated and the sheaves 14 and 14^a separate the cable 19 being slacked sufficiently to allow for this movement of the swinging frames. On the other hand the cables 25

and 25^a are drawn up and the shafts 28 are brought up into engagement with the recesses 30 in the stops 29. The guide-plates 15 and 16 prevent the cables from slipping from the sheaves and this slipping of the cables is further prevented by the arrangement of the sheaves diagonally to each other.

What I claim is:

1. The combination of oppositely arranged trays, hinged frames pivoted to said trays at the inner ends of said trays, arms pivotally connected to said trays beyond the point of attachment of said frames thereto and connected at their opposite ends to the swinging frame of the opposite tray, sheaves on said frames, a hoist or closing cable engaging said sheaves, opening cables connected to the outer ends of said trays beyond said points of connection of the said arms thereto, and stops on said frames with which the outer ends of said trays engage.

2. The combination of oppositely arranged trays, hinged frames pivoted to said trays at the inner ends of said trays, arms pivotally connected to said trays beyond the points of attachment of said frames thereto and connected at their opposite ends to the swinging frame of the opposite tray, sheaves on said frames, a hoist or closing cable en-

gaging said sheaves, opening cables connected to the outer ends of said trays beyond said points of attachment of said arms thereto, rods extending across the outer ends of said trays, and stops on said frames with which said rods are adapted to engage.

3. The combination of oppositely arranged trays, hinged frames pivoted to said trays at the inner ends thereof, arms pivotally connected to said trays beyond the points of attachment of said frames thereto and connected at their opposite ends to the swinging frame of the opposite tray, sheaves on said frames, a hoist or closing cable passing from one sheave to the other and the two lines of said cable extending therefrom upwardly, sheaves carried by said frames with which said hoist or closing cable engages above said first named sheaves, opening cables connected to the outer end of said trays, and sheaves on said frames with which said opening cables engage.

In testimony whereof, I the said LEWIS J. ROBB have hereunto set my hand.

LEWIS J. ROBB.

Witnesses:

ROBERT C. TOTTEN,
J. F. WILL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."