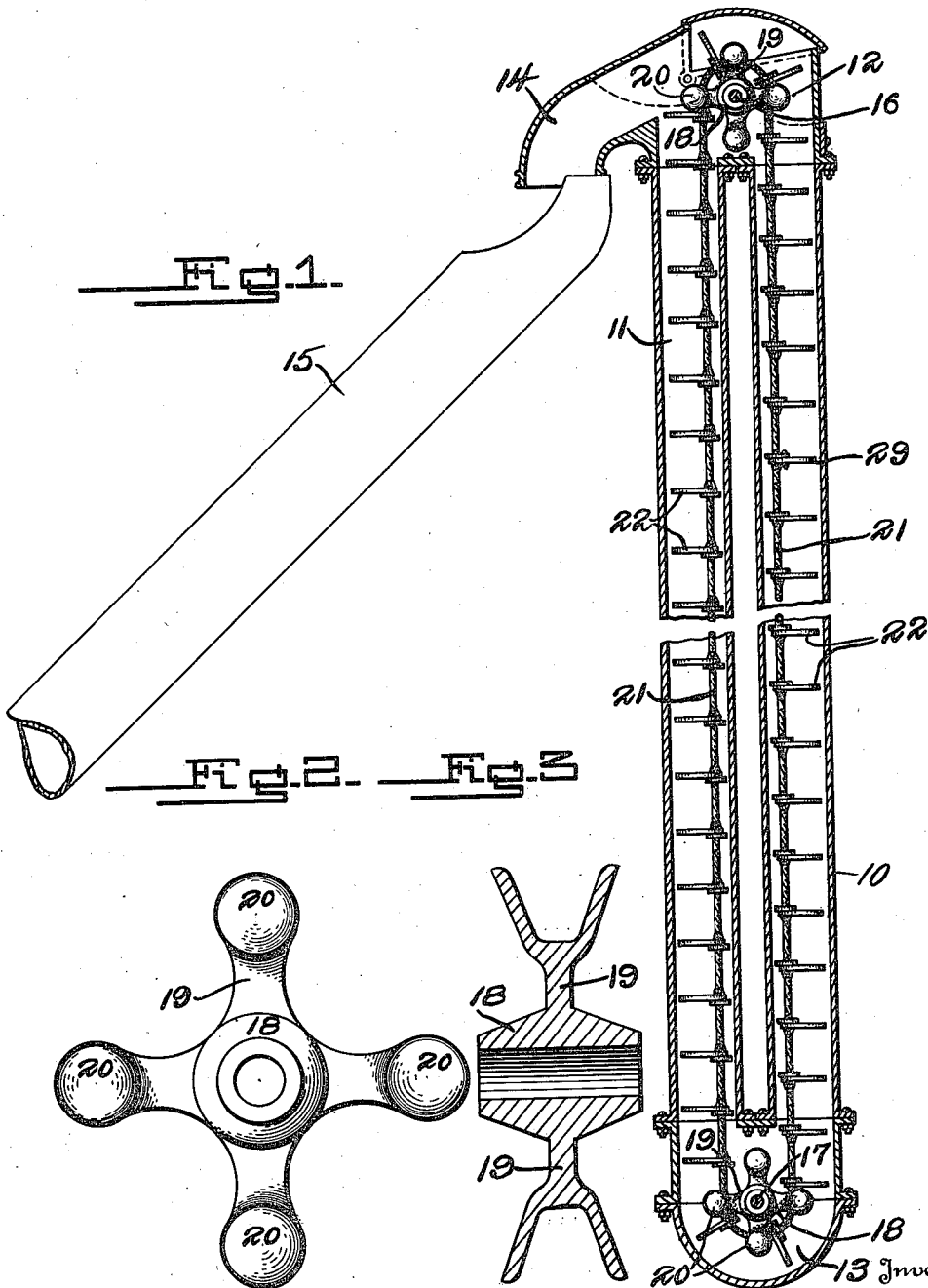


C. M. LEFLER.
GRAIN ELEVATOR.
APPLICATION FILED OCT. 19, 1917.

Patented Apr. 22, 1919.

3 SHEETS—SHEET 1.

1,301,142.



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Fig. 4.

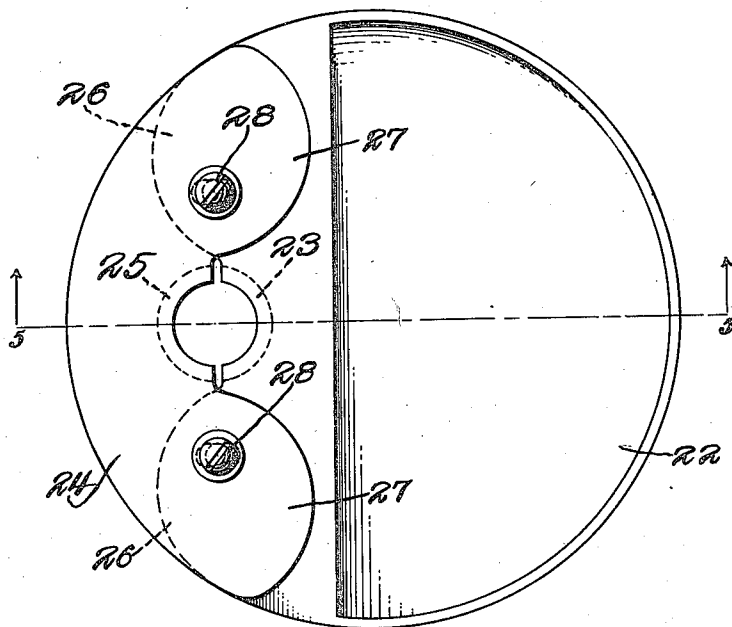


Fig. 5.

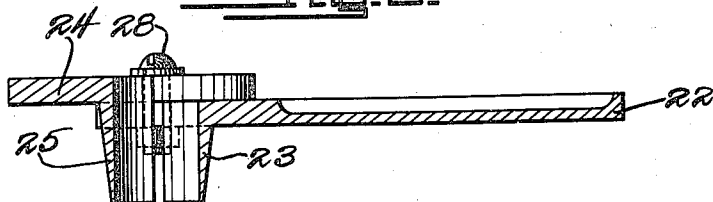
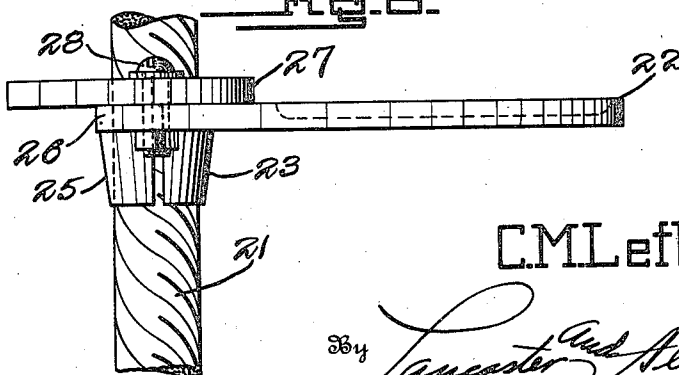


Fig. 6.



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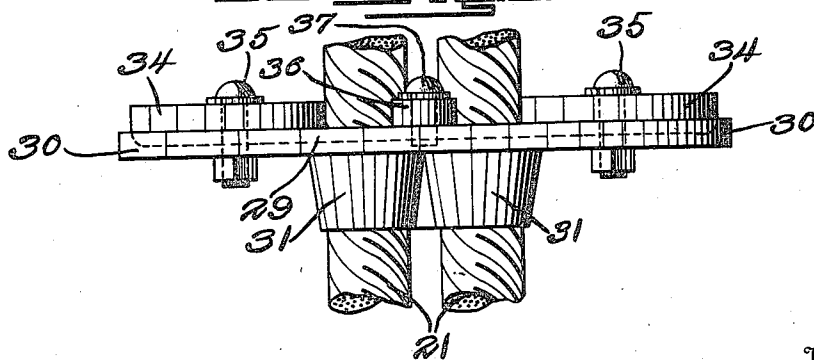
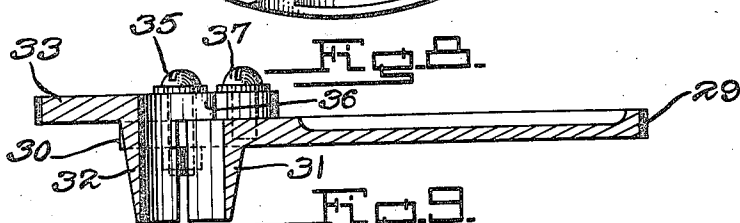
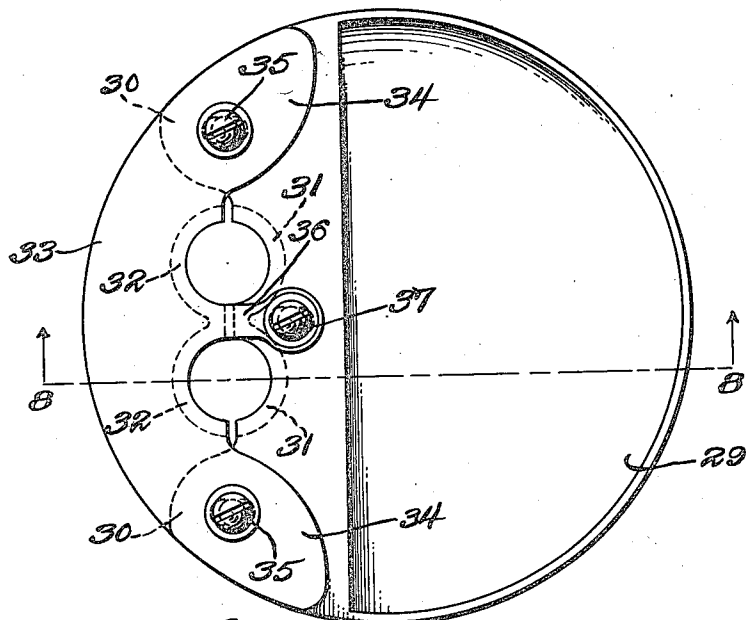
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Fig. 7.



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UNITED STATES PATENT OFFICE.

CHARLES M. LEFLER, OF WINSTON, MONTANA.

GRAIN-ELEVATOR.

1,301,142.

Specification of Letters Patent.

Patented Apr. 22, 1919.

Application filed October 19, 1917. Serial No. 197,482.

To all whom it may concern:

Be it known that I, CHARLES M. LEFLER, a citizen of the United States, and a resident of Winston, in the county of Broadwater and State of Montana, have invented certain new and useful Improvements in Grain-Elevators, of which the following is a specification.

The present invention relates to elevators or conveyers, and has reference particularly to an improved form of grain elevator for use on threshers and the like.

An object of the present invention is to provide an elevator or conveyer of this type wherein a rope or cable may be employed in lieu of the usual chain which embodies a novel construction of cup or splicer; which is provided with a novel means for connecting the ends of the rope or cable admitting of the quick application and removal of the cable to the rope wheels; and to provide a device of this character which is relatively simple in construction and which may be economically manufactured.

The above, and various other objects and advantages of this invention will be in part described, and in part understood, from the following detailed description of the present preferred embodiment, the same being illustrated in the accompanying drawings, wherein:—

Figure 1 is a longitudinal section through a conveyer or elevator constructed according to the present invention.

Fig. 2 is a detail enlarged side elevation of one of the rope or drive wheels employed.

Fig. 3 is a transverse section through the same, the section being taken through a pair of the opposed spokes of the wheel.

Fig. 4 is a top plan view of one of the cups or buckets employed, the view being taken on an enlarged scale.

Fig. 5 is a diametrical section through the same taken substantially on the line 5—5 of Fig. 4.

Fig. 6 is a side elevation of the bucket or cup as applied to the rope or cable.

Fig. 7 is a detail top plan view of a modified form of the cup or bucket adapted to be secured upon the overlapping or meeting ends of the cable.

Fig. 8 is a transverse section through the same taken substantially on the line 8—8 of Fig. 7.

Fig. 9 is an inner side view of the modi-

fied form of cup or bucket having the overlapping ends of the cable secured thereto.

In the accompanying drawings, the stack or casing is disclosed in such form as may be applied to a thresher or the like, and comprises an up-leg or tube 10 and a down-leg or tube 11, which intercommunicate at their upper and lower ends by elbows or semi-cylindrical casings 12 and 13 respectively. Material, such as grain or the like, may be delivered in any suitable manner to the lower casing 13, and the upper casing or elbow 12 is provided with a laterally extending spout 14 through which the grain or other material is delivered from the stack into a delivery chute or pipe 15 which communicates at its upper ends with the spout 14.

Transverse shafts 16 and 17 are arranged respectively in the upper and lower ends of the stack and extend transversely there-through. Either one of the shafts 16 or 17 may be driven in any desired manner for imparting movement to the conveyer. Mounted on each shaft 16 and 17 is a rope or cable wheel comprising a hub 18 having radially extending spokes or arms 19 the outer ends of which are provided with rope receiving forks 20 forming a peripheral way or groove in the rope wheel. A rope or cable 21 is trained over the wheels and passes through the up and down legs 10 and 11 of the stack.

Arranged at suitable spaced intervals along the rope or cable 21 are cups or buckets 22, each of which comprises as shown in Figs. 4, 5 and 6, a relatively flat plate which may be formed from sheet steel having a depression or cup in its upper side adapted to receive a quantity of grain or other material therein, and which is provided at its inner edge with a transverse concavity or recess and a marginal depending flange 23 bordering the recess. The flange 23 forms one-half of a socket, and the other half is formed by the provision of a clamping plate 24 adapted to overlap the inner edge of the cup or plate 22, and which has in its forward edge a transversely extending concavity or recess complementary to the recess in the plate 22 and having a depending flange 25 at the marginal edge of the recess forming a complementary socket section opposed to the socket section 23. As shown in Fig. 6, the rope or cable 21 is adapted to

pass vertically through the socket formed between the sections 23 and 25. The overlapping ends of the plates 22 and 24 provide connecting ears 26 and 27 respectively, through which bolts 28 are secured for holding the plates together and clamping the flanges 23 and 25 against the opposite sides and about the rope or cable 21. The plates or cups 22 are of a configuration conforming to that of the interior of the legs 10 and 11 and are adapted to pass freely through the same.

The modified form of the cup or bucket is adapted for connecting the ends of the cable 21 together and is shown in Figs. 7, 8 and 9 as comprising a body plate 29 having at its rear edge lateral rearwardly projecting ears 30 and formed with transverse recesses in its rear edge between the ears. The plate 29 is also provided at the marginal edges of said recesses with depending marginal flanges 31 forming socket sections adapted to cooperate with depending flanges 32 carried upon a clamping plate 33. The clamping plate 33 is provided at opposite sides with attaching ears 34 which overlap the ears 30 of the plate 29 and which are secured thereto by bolts 35. The plate 33 is provided intermediate its ends and between the flanges 32 thereof with a forwardly extending lug 36 enlarged at its free end and adapted to overlap thereat the rear edge portion of the plate 29. A bolt 37 secures the lug 36 to the plate 39 to reinforce the same and provide a division member between the socket for firmly clamping the respective ends of the rope or cable 21 therein.

As shown particularly in Fig. 3, the rope or cable wheel has the forked arms 20 thereof of sufficient width to receive therein the laterally arranged strands of the cable, and the arms are sufficiently flared to engage the strands of the cable for maintaining the latter at all times upon the rope wheels. The forks 20 of the rope wheels are adapted to engage against the undersides of the cups or plates 29 for imparting longitudinal movement to the endless conveyer.

In operation, when one of the shafts, 16 or 17, is turned with its rope wheel, the arms of the rope wheel engage about the cable 21 to retain the latter in its true position within the tubes or legs 10 and 11 of the stack. The arms of the rope wheel also engage against the rear or undersides of the buckets 29 and 22 and move the buckets longitudinally through the tubes 10 and 11. The material is discharged into the lower end or casing 13 of the stack and is engaged by the cups or buckets and raised through the legs 10 into the upper casing 12 from which the grain or other material is discharged through the spout 14 into the tubes 15. By forming the cups or buckets in two

sections as above disclosed, the cups or buckets may be applied or removed to and from the cable 29 without disturbing the positions of any of the adjacent buckets, and the socket portions of the buckets may be so proportioned as to bind firmly against the opposite sides of the cable and to clamp the buckets firmly thereon.

It is of course understood that various changes and modifications may be made in the details of construction and design of the above specifically described apparatus without departing from the spirit of this invention, such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:—

1. In a conveyer, the combination of a cable, a flat plate having a depression in one side forming a bucket and provided with a recess in its inner edge adapted to receive the cable therein, a second plate adapted to overlap the rear edge portion of the first plate and having a recess in its forward edge for receiving said cable therein, and means for securing said plates in overlapping relation to bind the cable therebetween.

2. In a conveyer, the combination of a cable, and a bucket secured to the cable, said bucket comprising a pair of plates, one of the plates having a depression in one side forming a bucket and having a socket portion in one edge to receive the cable therein, a second plate having a socket portion in one end adapted to receive the cable therein, said plates having overlapping ears, and means for securing said ears together to bind the plates against the cable.

3. In a conveyer, the combination of a cable, a plate provided with a depression in one side forming a cup and having a socket portion at its inner edge, and a clamping plate adapted to be secured in overlapping relation upon the inner edge portion of the first plate and having a socket portion therein for binding engagement against the opposite side of the cable to clamp the latter between the plates.

4. In a conveyer, the combination of a conveyer pocket provided with a flat rear edge portion having a pair of spaced apart socket sections formed thereon and ears spaced outwardly from said sections, a clamping plate having complementary socket sections adapted to be secured in overlapping relation upon the first plate, said plate being adapted for engagement about the opposite sides of the cable ends to bind the latter between the plates.

5. In a conveyer, the combination of a plate having in its rear edge transverse socket recesses for the reception of the overlapping ends of a cable therein, a clamping plate having spaced apart socket recesses in

its forward edge for engagement against the opposite sides of the cable ends and provided with a lug between the socket recesses for overlapping engagement with the first plate, and means for securing said plates in overlapping relation and for securing the lug to the first plate.

6. In a conveyer, the combination, of a conveyer bucket having a flat rear portion provided with a socket recessed therein, a pair of ears extending outwardly from said rear edge upon each side of said recess, a substantially semi-cylindrical socket member depending from the under surface of said flat edge portion and alining with said recess, and a plate having ears on one edge adapted to overlap and be secured to said bucket carried ears, said plate provided with a socket recess and depending socket member for coaction with the bucket carried socket member and recess to bind the bucket upon an operating cable.

7. In a conveyer, the combination of a plate, having in its rear edge transverse socket recesses for the reception of the overlapping ends of a cable, substantially semi-cylindrical socket members depending from

the under surface of said plate about said recesses, a clamping plate having spaced-apart socket recesses in its forward edge for engagement against the opposite sides of the cable ends, means for connecting said clamping plate and said first named plate in overlapping relation, and a plurality of depending substantially semi-cylindrical socket members carried by said clamping plate and adapted for coaction with said first named socket member.

8. In a conveyer, the combination, of a conveyer plate, having a rear flat edge portion provided with transverse socket recesses in its rear edge for the receipt of the overlapping ends of a cable therein, a clamping plate having spaced apart socket recesses in its forward edge for engagement against the opposite sides of the cable ends, a lug formed upon said clamping plate between said socket recesses for overlapping engagement with the flat rear edge of said conveyer bucket, means for securing said clamping plates in overlapping engagement with said flat rear edge portion and for securing the lug to said flat rear edge portion.

CHARLES M. LEFLER.