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F. C. LINN

2,101,684

SPINNING BUCKET DRIVE

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Fig. 1.

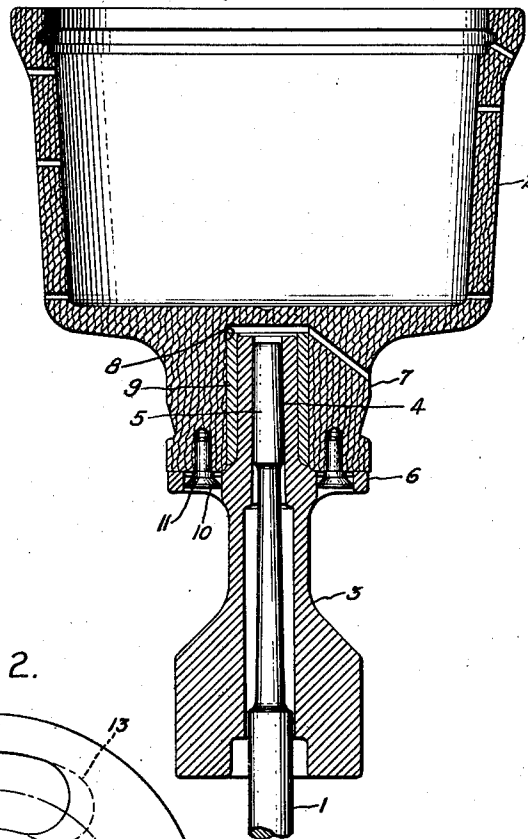


Fig. 2.

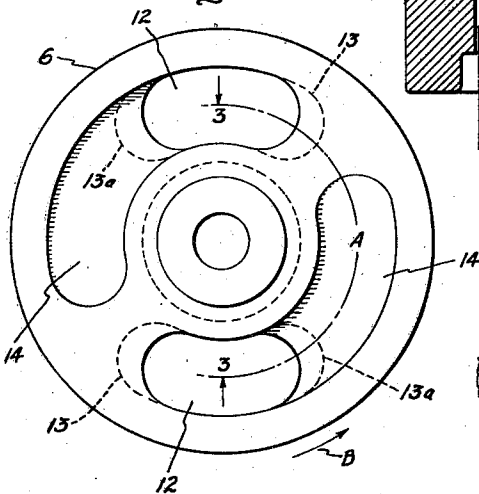
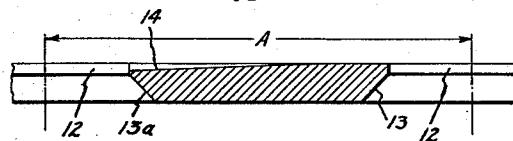


Fig. 3.



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SPINNING BUCKET DRIVE

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2 Claims. (Cl. 287—53)

The present invention relates to drives for spinning buckets, such as for example rayon spinning buckets, and has for its object to provide an improved construction and arrangement in drives of this type.

For a consideration of what I believe to be novel, and my invention, attention is directed to the following specification and the claims appended thereto.

In the drawing, Fig. 1 is a vertical sectional view of a construction embodying my invention; Fig. 2 is a top plan view on an enlarged scale of an adapter which forms a part of the drive, and Fig. 3 is a developed length of the construction taken on the line 3—3, Fig. 2, the distance A in Fig. 3 corresponding to the distance A in Fig. 2.

Referring to the drawing, 1 indicates a vertical driving shaft, which may be the shaft of an electric motor, and 2 indicates a rayon spinning bucket of suitable construction driven by the shaft 1 through an adapter 3. The adapter comprises a metal sleeve which fits over the upper end of shaft 1 and has driving connection with it as is indicated at 4, such driving connection comprising a tapered head 5 on the end of the shaft which fits into a tapered opening at the upper end of the adapter. Tapered end 5 has a tight fit in the opening so as to form a good driving connection. Spaced from the upper end of adapter 3 is a flange 6.

The bucket 2 is provided with a hub 7 having a bore 8 in which is seated preferably a bushing or liner 9. The bushing or liner is adapted to fit over the upper end of adapter 3. When the bucket is in place on the adapter, the bottom surface of hub 7 rests against the top surface of flange 6.

To effect a driving connection between the bucket and the adapter and shaft, I provide at the bottom of hub 7 depending projections 10 having under-cut beveled surfaces 11 and in the flange 6 openings 12 having beveled under-cut portions 13 and 13a at their ends with which the beveled surfaces of the projections 10 are adapted to engage. The openings 12 are of a width such that the projections 10 pass freely into them. The adapter rotates in the direction indicated by the arrow B in Fig. 2 and to assist in guiding the projections 10 into the openings 12, there are provided curved inclined surfaces 14 which slope downward toward the openings, as best shown in Fig. 3. With this arrangement, when the bucket is put in position on the adapter, the projections 10 being brought into engagement

with the surface of flange 6, the projections quickly and easily find their way to openings 12.

The projections 10 may be formed advantageously by means of metal pins which are fixed in openings in the hub and have enlarged heads beveled on their under surfaces.

I have shown the projections 10 as being on the bucket hub and the openings 12 as being in flange 6 but it will be understood that this arrangement may be reversed, the projections being on the flange and the openings in the hub.

With the above described arrangement, when the bucket is in place on the adapter, as is shown in Fig. 1, the pins provide a driving connection between the bucket and the adapter due to the engagement of the edges of the openings 12 with the sides of the pins. This forms a positive drive for the bucket. Since the heads of the pins engage the under-cut portions 13 of the openings 12, the bucket is held down firmly on its seat and prevented from vertical movement. The purpose of the under-cut portions 13a is to hold the bucket on its seat when the motor and bucket are being stopped. When the motor is stopping, the inertia of the bucket overcomes the friction between the bucket and the adapter with the result that there is a movement of the adapter relative to the bucket to bring the projections 10 to the opposite ends of the openings 12. When this occurs, the under-cut surfaces 11 of projections 10 engage the under-cut surfaces 13a so that while the bucket is being stopped, it is still held from vertical movement. After the bucket is stopped, it may be removed by lifting vertically from the adapter, the inertia of the rotor and friction of the bearings being so slight as to offer negligible resistance.

By my invention, I provide a rayon bucket drive which is simple in structure, positive in its action, and which is capable of being built at low cost.

While I have particularly described my invention as being applied to rayon spinning buckets, the invention is not necessarily limited thereto but may be used wherever found applicable.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. In combination, a vertical shaft, a flange on the shaft having openings therein under-cut at their ends, a member to be rotated having a portion which fits over the end of the shaft and engages the flange, and projections on said portion which extend into said openings, said projections being under-cut to engage with the under-cut ends of the openings, and said flange having slop-

ing surfaces for directing the projections into said openings.

2. In a rayon spinning bucket drive, the combination of a vertical shaft, a flange on the shaft
5 spaced from its upper end and having upwardly facing elongated openings therein of substantially uniform width and undercut at their two ends, a rayon spinning bucket hub provided with a bore

which fits the end of the shaft and with a flat bottom surface which engages and rests on the top surface of said flange to support said bucket on the shaft end, and projections on said hub which extend into said openings, said projections 5 being undercut to engage the undercut ends of the openings at either end of the openings.

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