

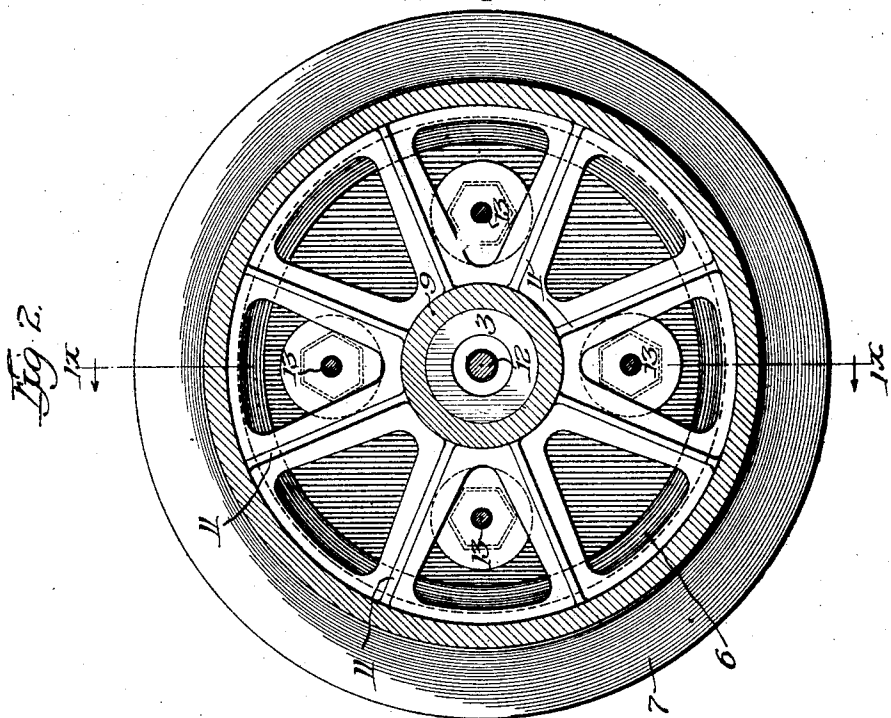
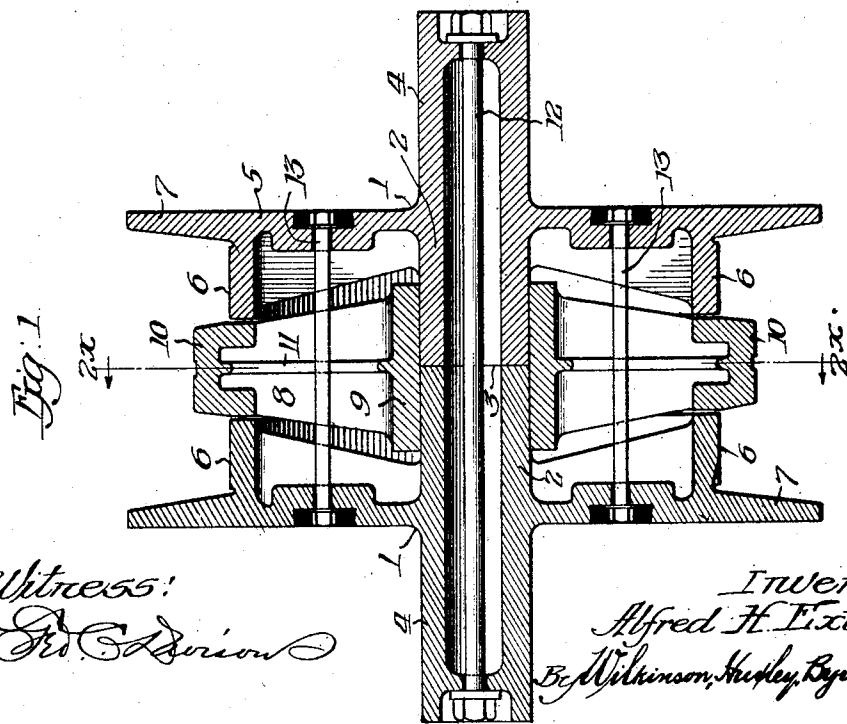
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A. H. EXTON

TUMBLER FOR ENDLESS CHAIN MACHINES

Filed Aug. 21, 1922



Witness:
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UNITED STATES PATENT OFFICE.

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TUMBLER FOR ENDLESS-CHAIN MACHINES.

Application filed August 21, 1922. Serial No. 583,439.

To all whom it may concern:

Be it known that I, ALFRED H. EXTON, a citizen of the United States, residing at Chicago Heights, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Tumblers for Endless-Chain Machines, of which the following is a specification.

This invention relates to a tumbler, sheave, pulley, or the like, employed for guiding an endless chain of buckets or other link-like machine elements, and is designed primarily for use under extreme loading and wearing conditions, such, for instance, as would be encountered in bucket chain dredging apparatus.

The object of the invention is to provide a tumbler or sheave construction which is especially adapted for production by the art of casting, and particularly from metal requiring subsequent heat treatment to bring the metal into its best structural condition; and to which end, the thickness of the walls of the casting is necessarily restricted within certain dimensions.

According to the present invention, the tumbler is composed of two main members comprising axially abutting hub portions with radial web-like members, preferably in the form of disks, extending from the hub portions, and rim members supported by said radial members preferably within the extreme circumference of the latter in order to leave confining flanges beyond the rim members; and an intermediate member located between said main members and comprising a binding sleeve which surrounds and confines the inner ends of the hub members, radial spokes carried by said sleeve, and a rim portion lying between the rim portions of the main members, and preferably of greater radial dimension than the latter in order to provide a peripheral rib or boss on the tumbler. A tie rod passing axially through the hub portions of the main members holds the latter in abutment against each other within the sleeve of the intermediate member, and additional tie rods located in annular series at a radially intermediate distance from the center and passing through the radial portions of the main members may be employed for additional security.

In the accompanying drawing, in which

the preferred embodiment of the invention is shown by way of illustration—

Figure 1 is an axial section and Figure 2 a section on the line 2*—2* of Figure 1 showing the preferred embodiment of the invention.

1 represents main members, 2 the hubs thereof which are in abutment at 3 and have outwardly extending trunnions or journals 4, and 5 represents radial portions of said main members constructed with cylindrical rim portions 6 located within the extreme radial dimension of said radial members in order to leave confining flanges 7. 8 represents the intermediate member which comprises a binding sleeve 9 surrounding the meeting ends of the hub portions 2, and preferably shrunk thereon, and 10 represents the rim portion of said intermediate member which is sustained from the sleeve 9 through the medium of spokes 11. Rim portion 10 of the intermediate member lies at a greater distance from the axis of the tumbler than do the rim portions 6 of the main members 1, and thereby constitutes a cylindrical protrusion of the rim of the tumbler that is adapted to serve not only as a radial support for a flexible chain running over the tumbler but a lateral guide therefor as well. A tie rod 12 at the axis of the tumbler and additional tie rods 13 at radially intermediate points in the radial portions 5 of the main members will preferably be employed to hold the main members together. But in sustaining this relation to the intermediate members, the main members, in the illustrative embodiment shown, are out of contact with the intermediate member except at the hub, being spaced therefrom throughout their radial portions and rim portions.

The design of the tumbler is such that the several members can be produced by the art of casting and the thickness of walls is at all points restricted within dimensions that permit of proper and effective heat treatment of the castings.

I claim:

1. A tumbler of the character described, composed of an intermediate member which comprises a central sleeve and a rim portion supported upon said sleeve, and a pair of main members on opposite sides of said intermediate member constructed with axially

aligned hub portions fitting within said sleeve, radial portions carried by said hub portions, rim portions carried by said radial portions, and tie rods passing through the radial portions of the main members holding the hub portions together within the sleeve.

2. A tumbler of the character described, composed of an intermediate member which comprises a central sleeve and a rim portion supported upon said sleeve, and a pair of main members on opposite sides of said intermediate member constructed with axially aligned hub portions fitting within said sleeve, radial portions carried by said hub portions, rim portions carried by said radial portions, and tie rods passing through the radial portions of the main members holding the hub portions together within the sleeve; said hub portions abutting within the sleeve to limit the action of the tie rods and holding the rim portions of the main members spaced from the rim portion of the intermediate member.

3. A tumbler of the character described, comprising outer members each constructed with a rim portion, an inwardly extending portion and a cylindrical hub portion sup-

porting the same, and a member intermediate of said outer members constructed with a rim portion, an inwardly extending portion and a cylindrical supporting sleeve therefor; the sleeve being constructed to fit concentrically with the hub portions and hold them in axial alignment and unite all of the members in a rigid unitary structure; thereby adapting said hub portions to support the tumbler as a whole.

4. A tumbler of the character described, comprising main members constructed with hub portions carrying radial portions and a member intermediate said main members comprising a concentric portion fitting said hub portions and an intermediate rim portion supported upon and radially spaced from said concentric portion; said concentric portion comprising a sleeve fitting externally upon said hub portions; said hub portions being in abutment within said concentric portion; and said main members carrying rim portions on either side of but spaced from said intermediate rim portion.

Signed at Chicago Heights, Illinois, this fifth day of August, 1922.

ALFRED H. EXTON.