

(No Model.)

J. LEACH.
HOISTING APPARATUS.

No. 462,145.

Patented Oct. 27, 1891.

Fig. 1.

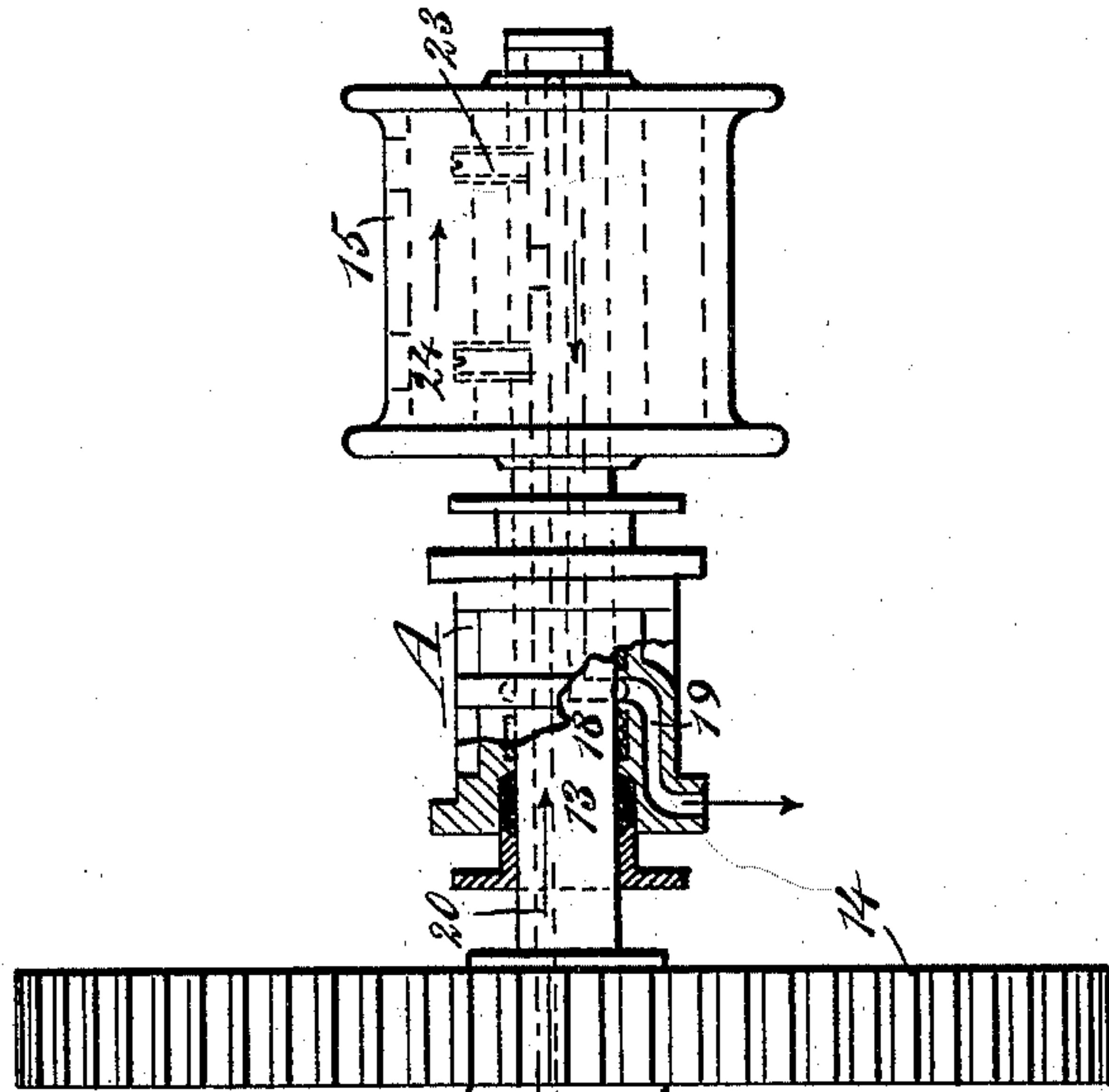


Fig. 2.

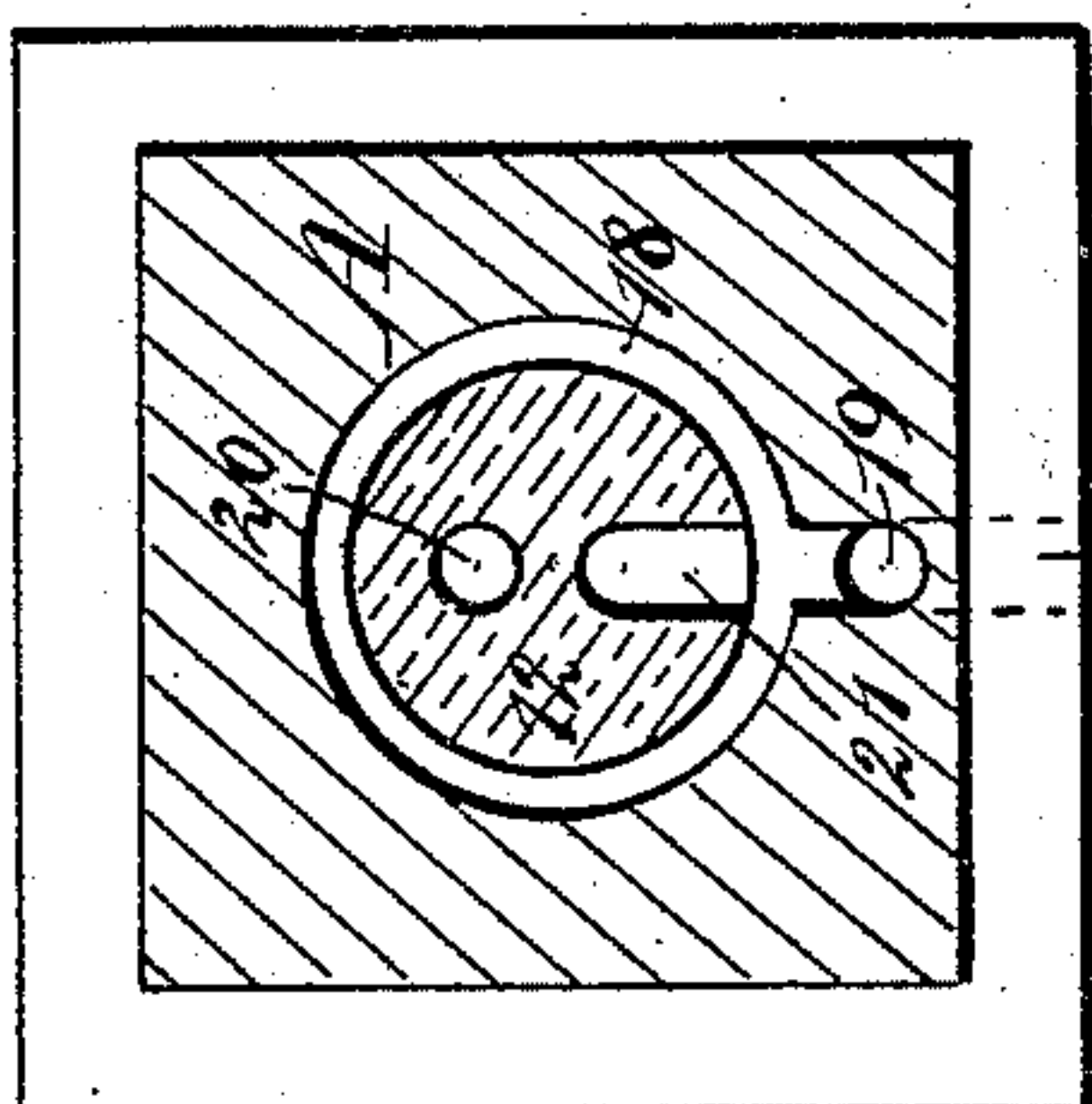
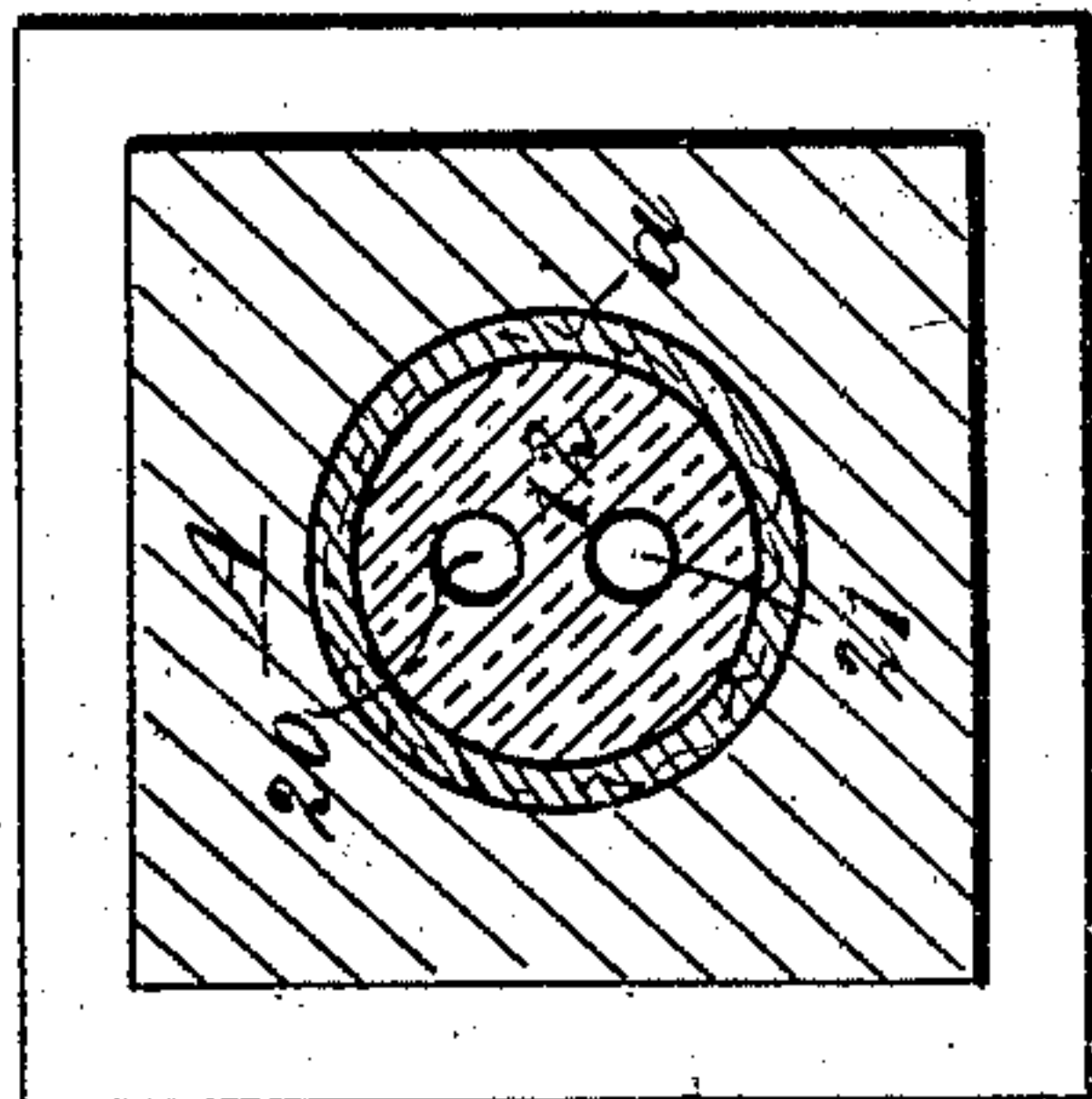


Fig. 3.



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HOISTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 462,145, dated October 27, 1891.

Application filed April 3, 1891. Serial No. 387,541. (No model.)

To all whom it may concern:

Be it known that I, JOHN LEACH, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful
5 Improvement in Hoisting Apparatus, of which the following is a full, clear, and exact description.

My invention relates to an improvement in hoisting apparatus, and has for its object to
10 so improve the construction of such machines that the drums will be kept cool under all circumstances, and the rope adapted to be wound upon or from the drums thereby prevented from becoming scorched or injured from the
15 action of heat, which in the present construction of hoisting apparatus is rapidly and intensely generated.

The invention consists in the novel construction and combination of the several
20 parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the
25 views.

Figure 1 is a partial side elevation and a partial sectional view of the drum-section of the apparatus. Fig. 2 is a transverse section
30 taken upon the line 2 2 of Fig. 1, and Fig. 3 is a similar section taken on the line 3 3 of Fig. 1.

The central winding-drum 10 is made hollow or provided with an interior chamber 11, and to the ends of the said central drum shafts 12 and 13 are secured, one of the shafts being provided with a spur-gear 14 or other form of gear adapted to be driven from a suitable motor. Each shaft has secured there-
40 on, near its outer end, a whip-drum 15, the whip-drums being provided with an interior chamber 16, formed around a hub 17, which hub extends from end to end and engages with the shaft. Each shaft is journaled in a
45 bearing A, and the wearing-surfaces of the bearings or the surfaces engaging with the shaft are mainly composed of an anti-friction material, preferably hard wood. The wood is introduced in the bearings in the shape of
50 sleeves, as illustrated at *a*, and the sleeves are arranged at each side of the center of the

bearings, and between the opposed edges of the sleeves an annular groove or channel 18 is produced in the inner surface of said bearing, as is best shown at the left in Figs. 1 and 55 2. Each bearing A is further provided with a channel 19 in its under side, the said channel being produced in the outer face of the bearing and carried upward until it joins the annular groove or channel 18. Each shaft is
60 provided with two preferably parallel channels 20 and 21. The channel 20 extends from a point near the outer end of the shaft through to the inner end thereof and communicates with the interior of the central drum 10 by
65 means of an opening 22 produced in the end of the drum and registering with said channel 20, as is likewise illustrated in Fig. 1. The channel 21 of the shaft connects with the channel 20 at its end, and the channel 21 is of less
70 length than this parallel channel, as the inner end of the channel 21 is adapted to connect with the annular channel 18 in the box or bearing.

In operation cold water is forced in any
75 suitable or approved manner into the mouth of the channel 19 of one box or bearing A, from which the water passes to the annular channel 18 of the box and finds its way from said channel into the shorter shaft-channel
80 21, from whence it flows into the longer channel 20, and thence through the thimble 23, connecting the channel 20 with the interior of the whip-drum, down through a second
85 thimble 24, from the whip-drum into the channel 20 again, and through the channel 20 into the central drum. The two thimbles 23 and 24 are employed to graduate the circulation of water in the whip-drum, and between the
90 thimbles the channel 20 is divided by a partition 25. The thimbles are inserted into the hub and shaft through openings produced in the whip-drum, which openings are normally closed by suitable plugs. After the water leaves the central drum it passes out through
95 the shaft at the opposite end of the central drum, through the opposite whip-drum, and out through the channel 19 in the bearing for this latter shaft.

It will thus be observed that a free circula-
100 tion of water may at all times be maintained within the drums, which will continually

maintain the outer surface of the drums at such a low temperature as not to scorch or injure in the slightest degree the ropes carried by the drums.

5 When the drums are not cooled as above set forth, the friction caused by the rope rapidly winding upon or unwinding from the drum generates such an intense heat as to quickly render the best Manila rope useless, 10 and when the drums are being constantly used—as, for instance, upon shipboard in handling freight—the loss of Manila rope under the old construction of drums is exceedingly great.

15 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a shaft provided with connected channels and a bearing for 20 the shaft provided with an inlet-channel and an annular intersecting channel in its inner face, the said annular channel connecting with a channel in the shaft, of a drum mounted upon the shaft, provided with an interior 25 chamber, and channels connecting the cham-

ber with one of the channels in the shaft, as and for the purpose set forth.

2. In a hoisting apparatus, the combination, with a central drum provided with an interior chamber, a shaft connected with the drum, 30 provided with two longitudinal channels therein, one of which is connected with the interior of the central drum, the channels in the shaft being connected, and a journal-box for the shaft, provided with an inlet-channel, 35 and an interior annular channel connecting with the inlet and also connecting with the shaft-channel not having direct connection with the central drum, of a whip-drum mounted upon the shaft, provided with an interior 40 chamber encircling a central hub, and thimbles connecting one of the shaft-channels with the interior of the whip-drum, the said channel being provided with a partition between the thimbles, as and for the purpose specified. 45

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Witnesses:

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