Jan. 5, 1926. 1,568,307

P. F. ACOCELLA

AUTOMOBILE BARGE

Filed August 20, 1924 3 Sheets-Sheet 1

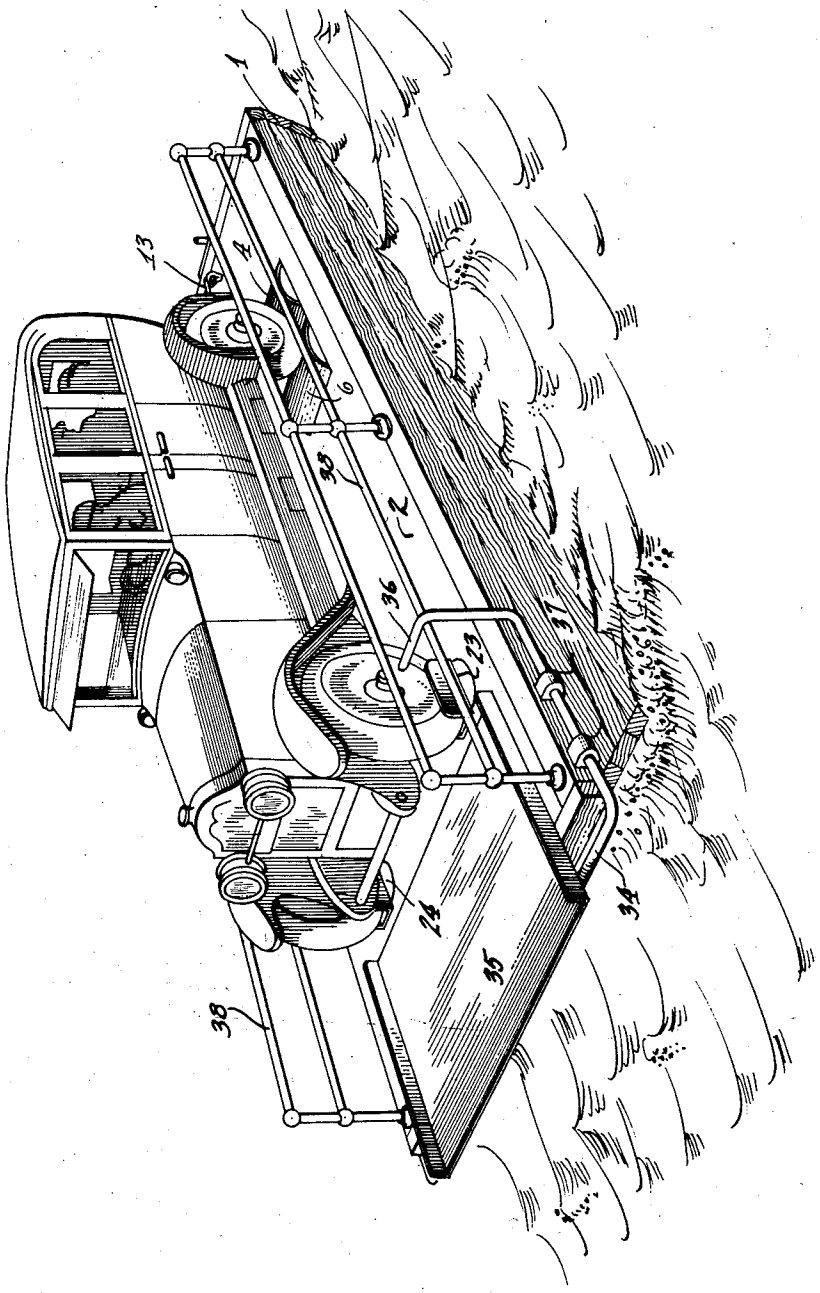


Fig. 1

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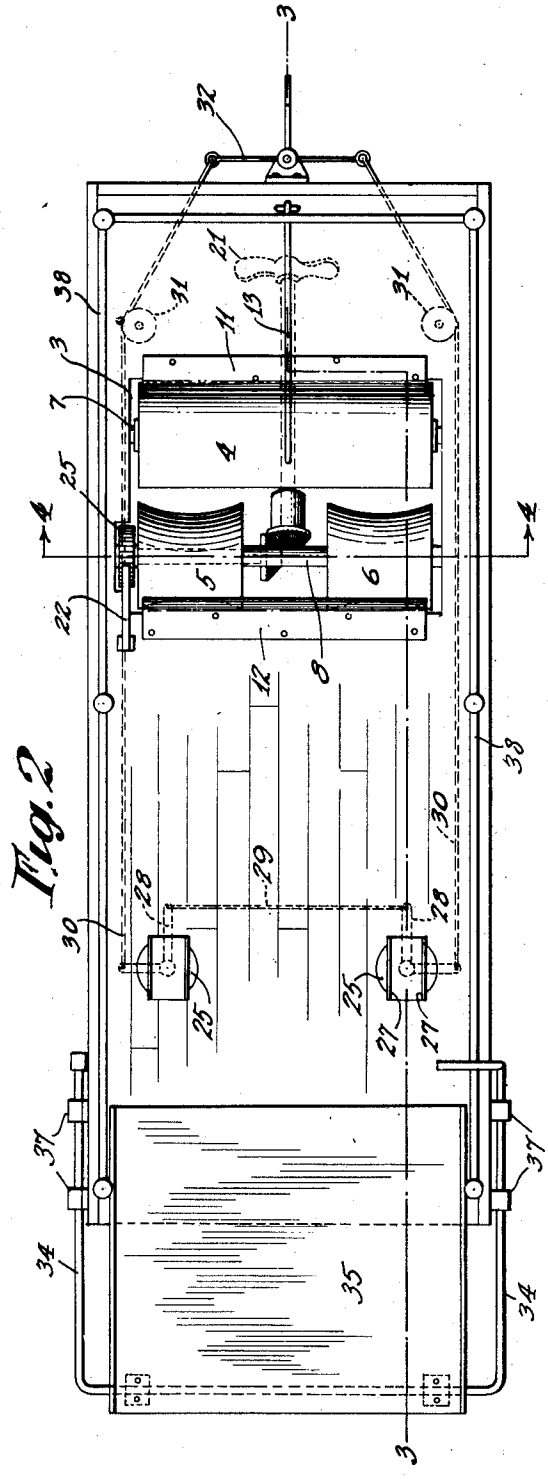


Fig. 2

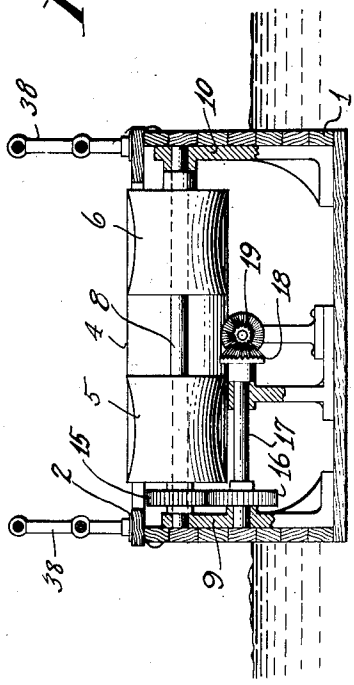


Fig. 4

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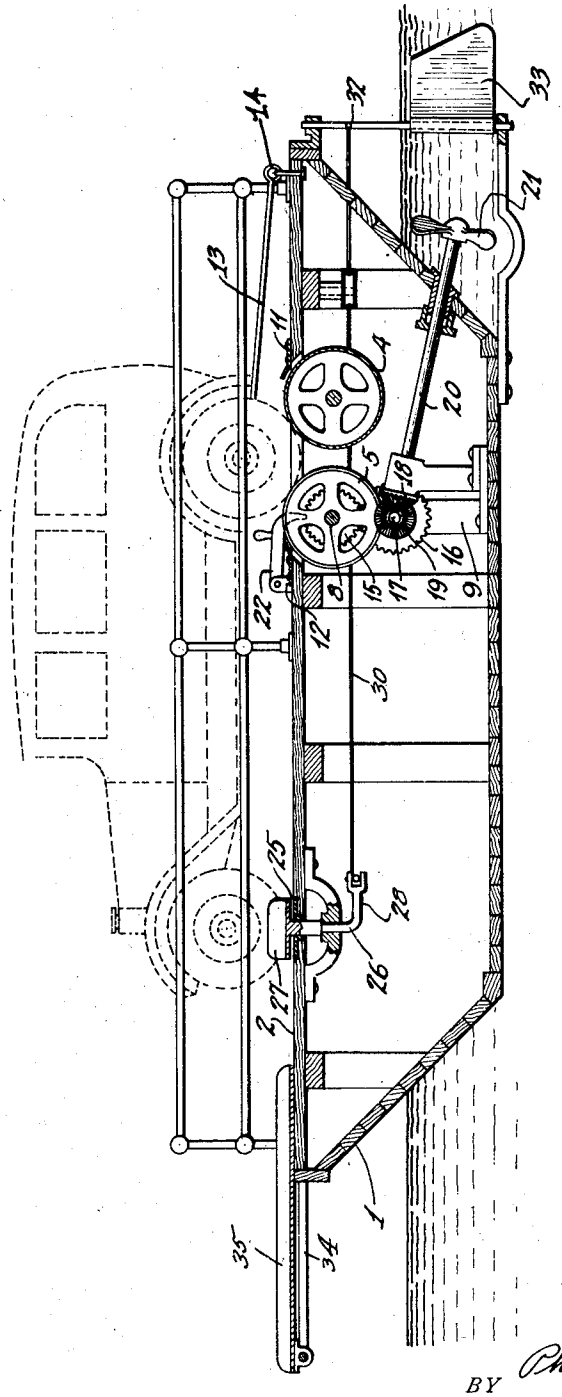


Fig. 3

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UNITED STATES PATENT OFFICE.

PHILIP F. ACOCELLA, OF BROOKLYN, NEW YORK.

AUTOMOBILE BARGE.

Application filed August 20, 1924. Serial No. 733,038.

To all whom it may concern:

Be it known that I, PHILIP F. ACOCELLA, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented a certain new and useful Automobile Barge, of which the following is a specification.

This invention relates to marine vessels and the object of the invention is to provide a boat or barge on which an automobile may be driven so that when in place on the barge the motor of the car may be utilized as the prime mover for the propeller of the boat. The invention may be employed as a pleasure craft for the navigation in inland waters, but is of particular utility as a ferrying medium for the transportation of automobiles across streams, rivers or lakes.

In its preferred practical form, the barge of this invention comprises a suitable hull which is preferably of batteau form provided with a suitable deck and of sufficient displacement to support the weight of an automobile. Mounted for rotation on axes extending transversely of the barge and preferably in a position to extend slightly above the deck are a plurality of rollers, at least one of which is geared by any suitable driving connections to one or more propellers normally submerged below the stern of the boat. These rollers are so placed that when a car is driven on to the boat, it may be stopped in a position wherein the rear wheels of the car will rest upon the rollers, so that if the power unit of the car is operated to rotate the rear wheels thereof, the rotation of said rear wheels will be imparted to the rollers and through the rotation thereof the propeller is operated to propel the boat. Suitable means is provided to normally preclude the car from driving off of the rollers though further means is provided to lock the rollers against rotation when it is desired to drive the car from the boat in order that sufficient traction may be obtained to effect movement of the car.

An important feature of the invention resides in the provision of steering devices which are adapted to be engaged by the front wheels of the car when in position on the boat. These steering devices have suitable connection with a rudder so that through manipulation of the steering wheel of the car, as in the act of driving, the steering devices are operated to control the direction of movement of the boat. In practice, the boat may be provided with a suitable canopy or closure above decks, so as to house the car or cover the same during transportation. I may also associate with the boat a suitable gangplank or gangplanks whereby the car may readily board or leave the boat.

Features of the invention, other than those specified, will be apparent from the hereinafter detailed description when read in conjunction with the accompanying drawings and claim.

The accompanying drawings illustrate one practical embodiment of the invention, but the construction therein shown is to be understood as illustrative, only, and not as defining the limits of the invention.

Figure 1 is a perspective view of the automobile barge of the present invention.

Figure 2 is a plan view of the boat shown in Figure 1; and,

Figures 3 and 4 are sections on the lines 3—3 and 4—4, respectively, of Figure 2.

Referring to the drawings, 1 designates the hull of the boat which may be constructed from any suitable material and of any appropriate shape or contour. However, for the purpose of illustration, the hull is of batteau form and is of sufficient size and displacement to adequately support the weight of an automobile. The boat is provided with a deck 2 having an opening 3 slightly aft of amidships and in this opening is positioned a plurality of rollers 4, 5 and 6. The roller 4 is mounted on a shaft 7 which extends transversely of the boat in horizontal position and said roller is of a length exceeding the length of the rear axle of the car adapted to be carried by the boat. Said roller is moreover mounted to freely rotate on the horizontal axis and is preferably journalled in antifriction bearings so that the rotation may be as near frictionless as possible.

The rollers 5 and 6 are shorter than the rollers 4 and are fixedly secured end to end on a common shaft 8, which is journalled at its opposite ends in standards 9 and 10.

The shafts 7 and 8 are positioned at such distance apart and the rollers 4, 5 and 6 are of such diameter that when a car is driven on to the deck of the boat, the rear wheels of the car may ride upon and be supported by said rollers. When the car is at rest on the barge, the right rear wheel will be supported conjointly and will bear upon the

rollers 4 and 5 while the left rear wheel will cooperate with the rollers 4 and 6. The plates 11 and 12 cooperate with the respective rolls to facilitate the passage of the car into and out of cooperation with the rolls.

It will appear from the description, as thus far advanced, that when a car is in cooperative relation with the rolls as shown in Figures 1 and 3, the operation of the power plant of the car to impart rotation to the rear wheels will result in rotation of the rolls 4, 5 and 6, so that these rollers will rotate at a speed controlled by the car operator. In order to preclude the car from inadvertently leaving the rollers, I preferably anchor a chain 13 to an eyebolt 14 in the deck, as shown in Figure 3, while the opposite end of the chain is provided with a hook adapted to be engaged with the rear axle housing of the car to preclude forward movement of such car so long as the hook is associated therewith.

Fixed to the shaft 8 is a gear 15 which meshes with the gear 16 fixed on the counter shaft 17. This counter shaft 17 also carries a bevel gear 18 meshing with a bevel gear 19 fixed, in turn, upon the propeller shaft 20. As shown in Figure 3, the propeller 21 has a direct connection through the propeller shaft with the gear 19, but in practice, the barge may be made twin screw if desired in a manner which will be apparent to nautical engineers.

When the parts are assembled as described, the operation of the power unit of the car will furnish power to drive the propeller and the speed of operation of the propeller may be controlled by the car operator in regulating the speed of his motor.

When the boat has reached its distance and it is desired to drive the car from the boat, the hook associated with the chain 13 is released from the axle and a dog 22, shown best in Figure 3, is brought into cooperation with the gear 15 to lock the rollers 5 and 6 against rotation. The car may be thereupon driven off the boat. An important feature of the invention resides in the novel manner of steering the boat and this is accomplished by means of steering devices 23 and 24, with which the front wheels are adapted to cooperate while the rear wheels are in cooperative relation with the rollers 4, 5 and 6. Each of these steering devices is in the form of a small turntable 25 mounted in the deck of the boat for rotation on a vertical spindle 26. Each turntable has at its opposite sides upstanding flanges 27 spaced apart the width of the tire and these turntables are a distance apart equal to the distance apart of the front wheels of the car, so that the wheels, when the car is at rest on the barge, will seat within and be supported by the turntables, as best shown in Figure 1.

To the lower end of each of the spindles 26 is secured a bell crank 28. Two arms of these bell cranks are tied together by a link 29, while the other arms of the bell cranks are attached to rudder lines 30. These rudder lines lead aft and after passing around sheaves 31 pass to the rudder yoke 32 with which the rudder 33 is associated. The boat is steered by simply turning the steering wheel of the car, as in the act of driving, this operation being effective to rotate the turntables which, in turn, actuate the rudder lines to shift the rudder 33.

The boat may be provided with suitable gangplanks fore and aft of which the forward gangplank is shown for the purpose of illustration. Any suitable construction may be employed in this connection, but in the particular form shown, a push rod 34 is secured to the outer end of the gangplank 35 and is bent to extend along the opposite sides of the boat and thence upwardly and inwardly to provide handles 36 whereby the gangplank may be pushed outwardly to engage with the dock or landing or withdrawn into the position shown in Figure 1. The rod 34 is guided as shown at 37 for sliding movement, so as to support the weight of the gangplank when in projected position. The boat is also shown as provided with railings 38 extending along the sides thereof and similar railings or chains may extend across the front and back of the boat. Stanchions of the railings 38 may be made to extend upwardly an appreciable distance and carry a suitable awning or canopy or the boat may be provided with a suitable canopy or cover to completely house the car if so desired.

The boat may, if desired, be made sufficiently large to carry more than one car so that one car will serve to propel the boat while additional cars are transported, while the power units thereof remain idle or the driving rollers may be duplicated for additional cars and all geared to the common propeller shaft.

The boat of this invention may be used purely as a pleasure craft but is particularly useful in ferry service for the purpose of transporting cars across bodies of water, such as rivers, lakes or streams.

The accompanying drawings show the invention in its preferred form, but it is to be understood as fully commensurate with the appended claim.

Having thus fully described the invention, what I claim as new and desire to secure by Letters Patent is:

A boat embodying a hull having a deck, a portion of which is cut away, shafts extending transversely of the boat below the deck and carrying rollers adapted to occupy the cut out portion of the deck and to collectively form a support for the rear wheels of a car, whereby rotation may be imparted to the rollers through operation of the rear

wheels, a propeller, a shaft on which the propeller is mounted, and gearing for connecting the propeller shaft to at least one of the transverse shafts in combination with a pair of turntables adapted to individually engage and support the front wheels of the car and mounted for rotation on vertical spindles, a bell crank on each spindle, a tie rod connecting one arm of each bell crank to the corresponding arm, a rudder at the rear of the boat, and cables for securing the free arms of said bell cranks to the rudder to permit steering of the boat from the steering wheel of the car.

In testimony whereof I have signed the foregoing specification.

PHILIP F. ACOCELLA.