

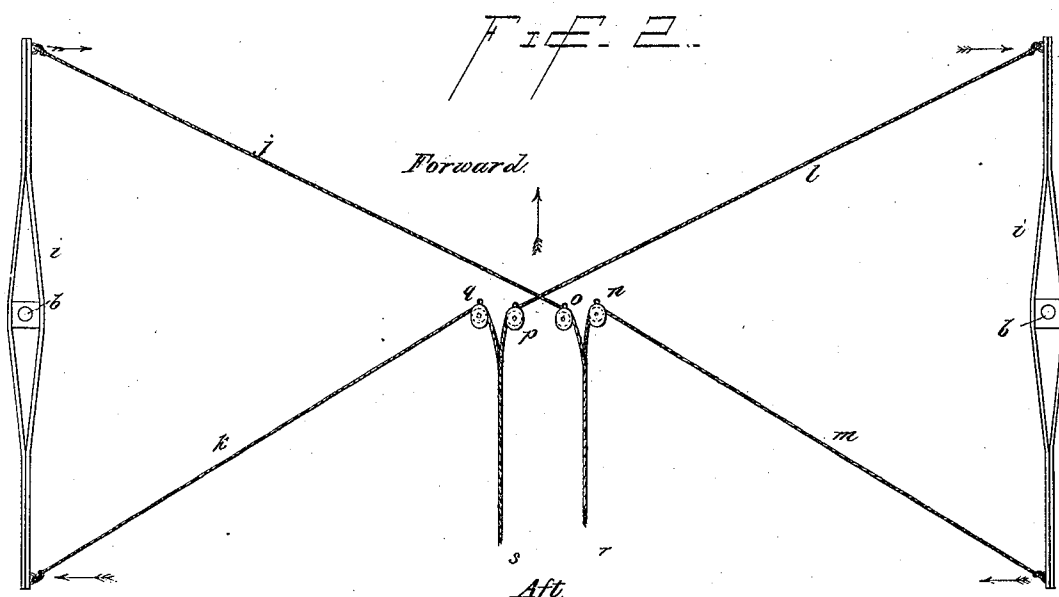
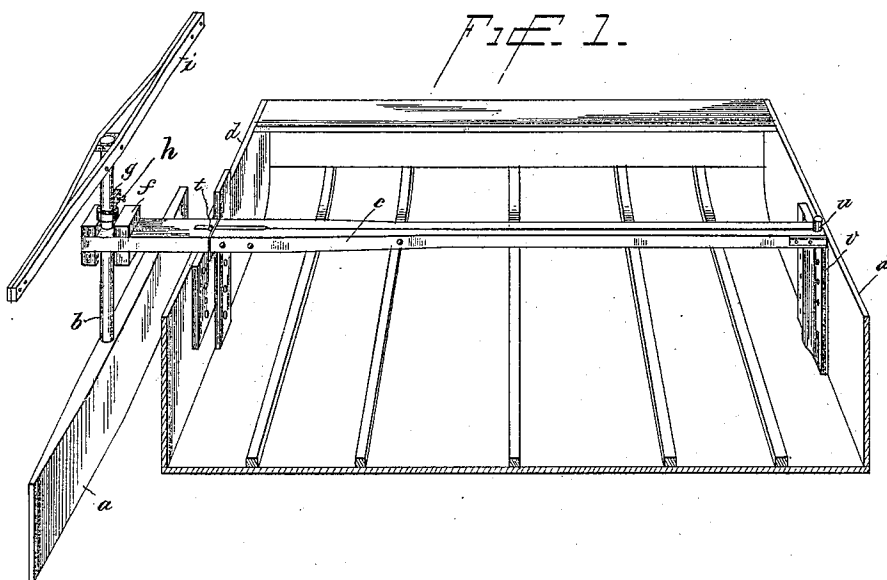
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J. R. & J. B. WILSON.
APPARATUS FOR STEERING TOWS.

No. 510,749.

Patented Dec. 12, 1893.



WITNESSES.

Arthur A. Curb.

Samuel H. Weyer.

INVENTORS.

Joseph R. Wilson and
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by Frank L. Ayer,
Attorney.

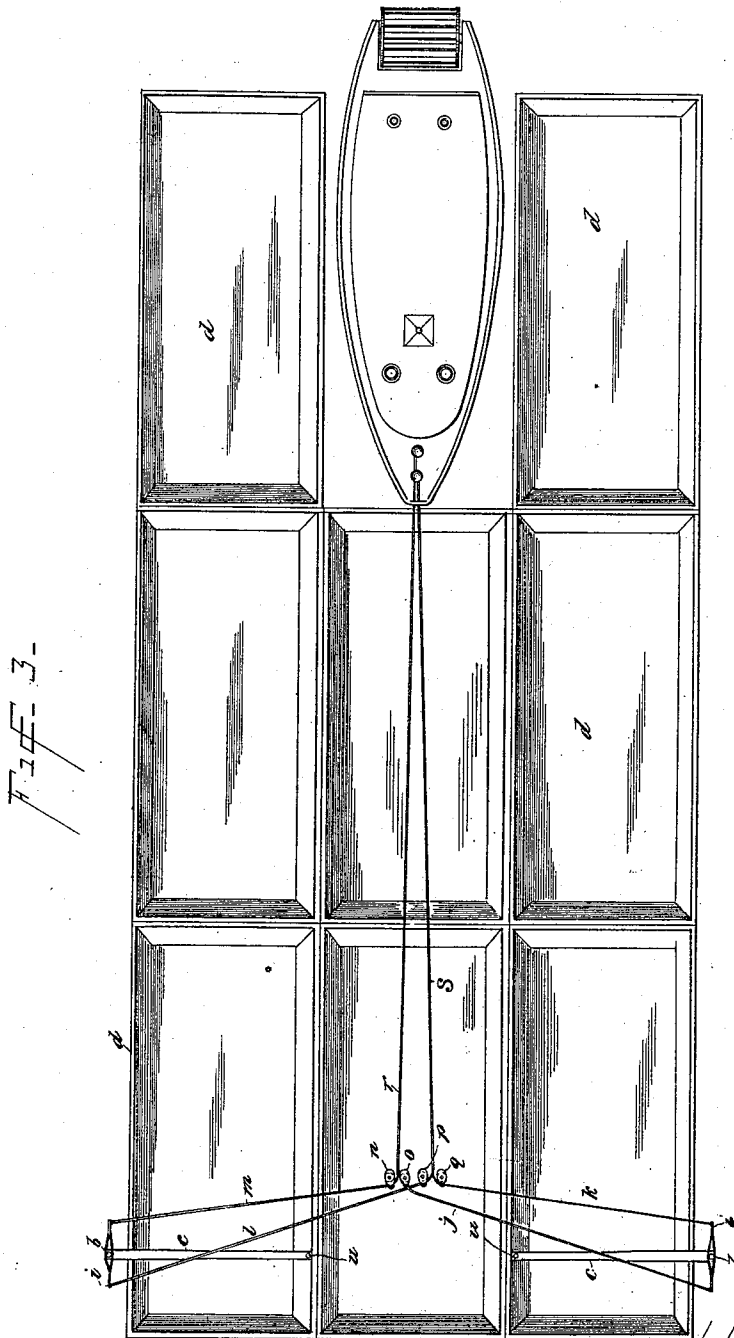
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UNITED STATES PATENT OFFICE.

JOSEPH R. WILSON AND JOSEPH B. WILSON, OF SHORT CREEK, WEST VIRGINIA.

APPARATUS FOR STEERING TOWS.

SPECIFICATION forming part of Letters Patent No. 510,749, dated December 12, 1893.

Application filed January 5, 1892. Serial No. 417,074. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH R. WILSON and JOSEPH B. WILSON, citizens of the United States, residing at Short Creek, in the county of Brooke and State of West Virginia, have
5 invented certain new and useful Improvements in Apparatus for Steering Tows; and we do hereby declare the following to be a full, clear, and exact description of the invention,
10 which will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in methods of and apparatuses for steering tows of cargo boats.

15 In many waters of this country, and more especially, on the rivers in the central and western parts, a very common mode of transporting bulky materials, such as coal, oil, ore or lumber, is by means of tows composed of
20 many flat boats, and pushed by one or more steamers, usually of the stern-wheel variety. The flat boats employed are of a general rectangular shape, and are so secured together as to make one homogeneous mass; with the
25 pushing steamer placed within a recess or opening at the after part of the tow, made by the omission of one or more flat boats; thereby making the entire tow in every way like a single large boat. One of the greatest difficulties in
30 this method of transportation, lies in the inability to properly steer the tow, as for instance when approaching a sharp bend or curve in the river. This inability arises partially from the position of the towing steamer,
35 which is secured at one extremity of the tow, and partially from the small size of the steamer as compared with the size of the tow. By means of this inadequacy in steering the tow, its size is reduced, to limit this objection, to a
40 point far below that which could be economically pushed by the steamer, as the tow has to be kept at a certain minimum width, owing to the narrowness of the rivers, and is necessarily kept at a reduced length, to enable it
45 to be readily maneuvered.

It is the object of our invention to do away with these objections, and by our invention tows can be very much lengthened and at the same time be more readily steered and ma-
50 neuvered than heretofore.

Our invention consists generally in the employment of suitable rudders or other steering devices, at the forward part of the tow, to be operated and directed from the pushing steamer placed at the rear of the tow.

In order to better comprehend the nature of our invention, attention is called to the accompanying drawings, in which—

Figure 1, is a view of one of the steering rudders in position. Fig. 2, is a plan view of the rudders and controlling devices; and Fig. 3, is a top view of the tow, showing our device in operation.

In all of the several views like parts are designated by identical letters of reference.

On the outside of each of the leading outside boats of the tow, and as far forward as conveniently possible is mounted a rudder, *a*. This rudder *a*, is rectangular in form and is preferably of the balance type as shown in the drawings, but it can be made in the form of an ordinary rudder. This rudder is mounted upon the stock or spindle *b*, which is in turn rotatably mounted upon a support *c*, passing completely across the boat and which is secured to the two gunwales *d* and *e*, by means of the pivot *u*, and the pin *t*. The rudder stock, passes up through the bearing on the outer end of the horizontal support *c*, and is secured thereto. In order to allow the rudder to be worked in different depths of water and with boats of different drafts the rudder is mounted as shown in Fig. 1. The spindle *b*, of the rudder passes through the bearing *f*, and is capable of moving freely up and down therein. A ring or similar device *g*, encircles the rudder stock above the bearing *f*. This ring is secured to the stock by means of the pin or similar device *h*. As the ring *g*, is of larger diameter than the bearing *f*, the rudder will be supported by means of the aforesaid ring, but will be free to rise upon meeting with any obstruction. By placing the ring upon different parts of the stock *b*, the rudder *a*, will be adapted to different depths of water and different drafts of boats. Rigidly secured to the upper extremity of the rudder stock *b*, and parallel with the rudder *a*, is a tiller or yoke *i*, to the extremities of which are secured suitable controlling ropes or chains *j*, *k*, *l*, *m*, the

ropes *j* and *k* leading from the port or left rudder, and the ropes *l* and *m* leading from the starboard or right rudder. These ropes pass through suitable pulleys or blocks *n*, *o*, *p* and *q*, secured to the center of the forward part of the tow, and from thence lead aft to the pushing steamer. The lines *j* and *m* are connected together after passing through the blocks *o* and *n*, and form the controlling rope *r*, while the lines *k* and *l*, after passing through blocks *q* and *p*, form the line *s*. Both lines *r* and *s*, continue back to the pilot house or other convenient point on the steamer, or any place on the tow, where they are attached to a suitable steering wheel, tiller or steam windlass or capstan, where they can be readily and quickly handled. It will be seen that upon pulling the line *r*, and slacking the line *s*, the rudders will be turned in the direction of the arrows, and the tow's head will be turned to the right. The opposite effect will ensue, upon hauling upon the line *s*, and slacking upon the line *r*. When it is not desired to use these rudders, as for instance when loading the tow, the pin *t*, on the outer end of the standard *c*, is removed, thus allowing the standard to move backward revolving upon the pivot *u*, and allowing the rudder *a*, to lie against the side of the boat out of the way.

We have described our invention as applied to tows that are pushed by a steamer; but it can be as well used in connection with a towing steamer in which latter case the rudders would be situated upon the after end of the tow.

We have described our invention as applied to tows composed of a number of flat boats with a towing steamer in the rear thereof, but it may as well be applied to tows of other boats, such as canal boats, or to a single large boat, or to rafts of logs, and with the

steamer upon either side as well as upon the rear extremity.

Having now described our invention, what we claim as new therein is as follows:

1. An improved device for steering tows consisting of a rudder placed on each side of the forward part of the tow, and outside thereof in combination with suitable controlling mechanism for controlling said rudders, consisting of ropes extending to and operated from the towing steamer at the rear of the tow.

2. An improved device for steering tows consisting of a rudder mounted upon each side of the forward part of the tow, and outside thereof suitable tillers or yokes rigidly secured to the aforesaid rudders and controlling ropes, substantially as described, leading to the rear of the tow, and so arranged that both rudders will simultaneously partake of the same movement.

3. An improved device for steering tows consisting of two rudders *a*, mounted at each side of the front of the tow, a tiller or yoke *i* for each rudder, the ropes *l* and *k* leading from opposite ends of opposite rudders and passing through suitable blocks and verging into the controlling rope *s* and the ropes *j* and *m* connecting with opposite ends of opposite rudders, passing through suitable blocks and connecting with the controlling rope *r*, said controlling ropes extending to the steamer, and the mechanism upon the steamer for operating said ropes whereby the rudders will be moved simultaneously in one direction or the other.

JOSEPH R. WILSON.
JOSEPH B. WILSON.

In presence of—
D. Z. PHILLIPS,
THOS. D. BENNETT.