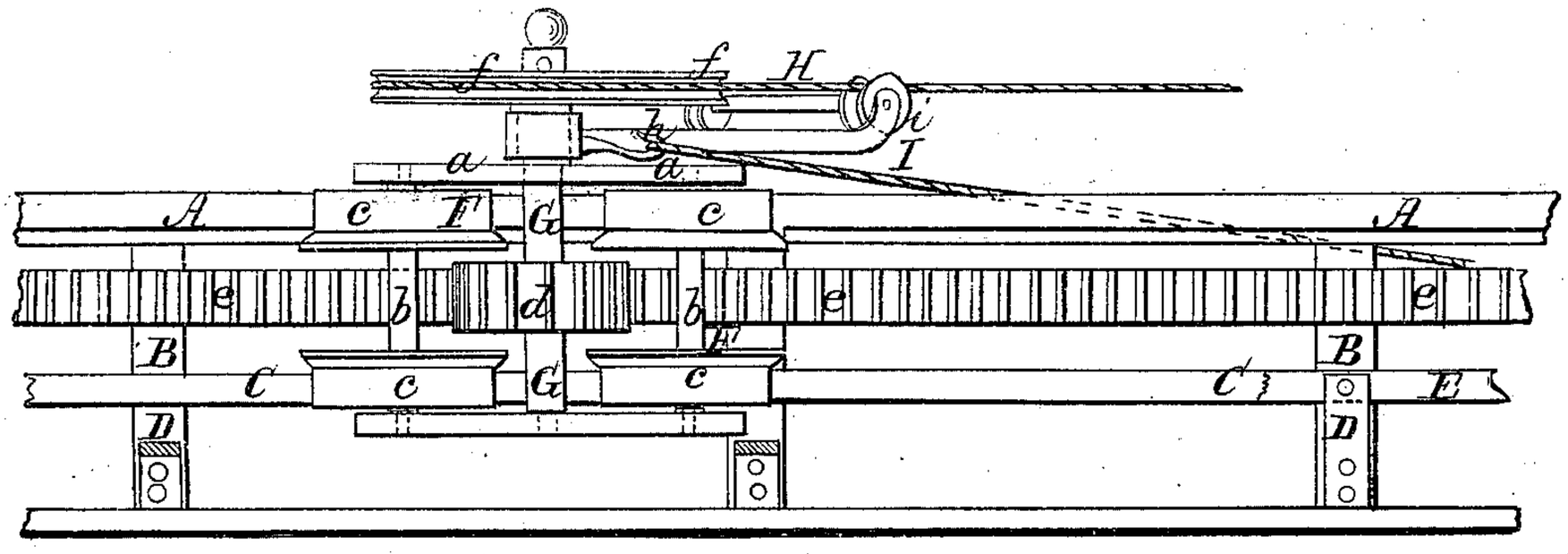
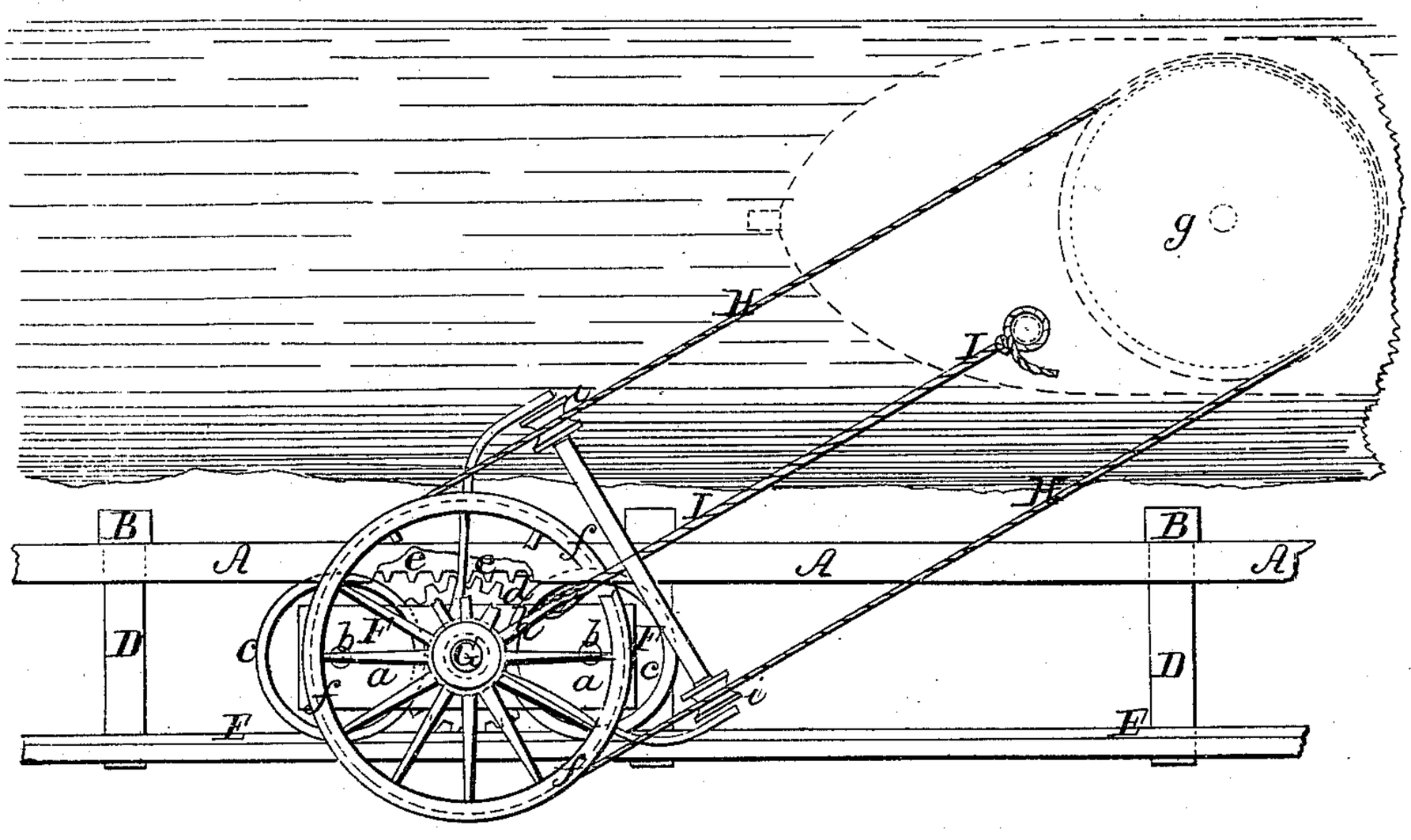
J. B. Calman.

Towing.

No. 106,547. Patented Aug. 23, 1870.





Witnesses;
Edinchman
Inakl Brooks

Inventor;
J. B. Calman
per Munn & Co

United States Patent Office.

JOHN B. CALNAN, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO HIMSELF AND VARANUS P. PARKHURST, OF TEMPLETON, MASSACHUSETTS.

Letters Patent No. 106,547, *dated August* 23, 1870.

IMPROVED DEVICE FOR PROPELLING CANAL-BOATS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOHN B. CALNAN, of New Haven, in the county of New Haven and State of Connecticut, have invented a new and improved Device for Propelling Canal-Boats; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a side elevation of my improved device for propelling canal-boats.

Figure 2 is a plan or top view of the same.

Similar letters of reference indicate corresponding parts.

My invention relates to the mode of propelling a canal or other boat by means of a drum, or suitable mechanism, on the boat, communicating with a draft-carriage or pinion meshing in a rack, which extends along the shore of the canal or stream; and

It consists—

First, in connecting the driving mechanism on the boat with the draft-carriage on shore, by means of a band, rope, or chain, which, while maintaining communication between the said mechanism and draft-carriage, and transmitting motion from the one to the other, will also allow the boat to sway freely back and forth, or from side to side in the canal, and to respond to its rudder.

Secondly, in the combination, with the boat, driving mechanism, draft-carriage, and band, rope, or chain which connects the same, of an independent draft or tug-rope or chain, fastened at one end to the boat, and at the other to the draft-carriage, substanstantially as hereinafter set forth.

Thirdly, in a band-supporting device, substantially as hereinafter described.

Fourthly, in the construction of the draft-carriage, and its combination with the rack and bed, over which it moves.

In the drawing—

The draft-carriage is represented at F. It consists of the upper and lower plates *a a*, which support vertical axles *b*, that carry flanged wheels *c c*. These wheels serve to support the carriage, and to aid it in its movement by lessening friction.

The flanges of the lower wheels rest upon rails C and E, and the faces of these wheels lie between and are in contact with the inner faces of the rails. The flanges of the upper wheels are underneath an upper rail, A, against which the faces of these wheels bear.

The rails A and C are supported on posts B, while the rail E is supported by brackets D projecting from the posts.

The bed or track upon which the carriage runs, instead of being thus made, may, however, be constructed and arranged in any suitable manner.

In the carriage is also arranged a vertical shaft, G, which has its bearings in the plates *a*, carrying a pinion, *d*, that meshes with a rack-bar, *e*, fastened to the posts B, and extending parallel with the lower rails.

The upper end of the shaft extends above the carriage, and has mounted upon it a grooved wheel, *f*, the revolutions of which will cause the rotation of the shaft and its pinion *d*, and, consequently, the movement of the carriage along the rack *e*.

The carriage is connected with the boat by means of a flexible band, rope, or chain, H, which passes from a drum, *g*, on board the boat, around the wheel *f*, so that, when the drum is revolved in the proper direction, it will cause, through the medium of the band H, the rotation of wheel *f* and band G, and the consequent forward movement of the carriage above explained.

When the carriage is thus moved forward the boat will be drawn after it, either by means of the band H, or, which I prefer, by means of an independent tug or draft-rope or chain, fastened at one end to the boat, and at the other to a bar or hook, *h*, swiveled on the shaft G.

The hub H is supported near the wheel *f* by means of a frame or arms projecting from the swivel-bar *h*, so that it may be free from danger of dropping from the wheel, and, in order to avoid friction at that point, it passes over friction-rollers *i* that have their bearings in the band-supporting frame or arms.

By making the band H of a flexible material a great advantage is gained, as the boat is free to sway back and forth, to move from side to side, and to respond to the rudder.

If the band should be slack, the band-supporting device prevents it from dropping from the wheel *f*, while, as both this device, and the tug or bar-draft *h* are swiveled, they also have all needed freedom of motion. The tug-rope or chain I also is flexible, of course.

Power is applied to the drum on the boat by suitable mechanism, either by a small steam-engine or otherwise. The carriage may run on horizontal axles, like an ordinary truck, if preferred, and its construction, as well as that of the track, may be greatly varied without affecting my invention.

What I claim, and desire to secure by Letters Patent, is—

1. The combination, with the driving mechanism on the boat, and the draft-carriage, of a flexible band, rope, or chain, connecting the same, substantially as described, so that, while motion is communicated from the driving mechanism to the draft-carriage, through said band or chain, the boat may be free to move

from side to side, and to respond to its rudder, as set forth.

2. The combination, with the driving mechanism, draft-carriage, and flexible band connecting the same, of an independent tug-rope or chain, attached at one end to the draft-carriage, and at the other end to the boat, substantially as and for the purposes set forth.

3. The combination, with the draft-carriage, the driving mechanism in the boat, and the band or rope connecting the same, of a band-supporting device, for upholding the band or rope at or near the point where it passes around the wheel of the carriage, as shown and set forth.

4. A band-supporting device swiveled upon the draft-carriage, so as to vary its position in accordance with the change in the position of the boat and the flexible band, substantially as set forth.

5. The combination of the draft-carriage, constructed as herein described, with the rails upon which it runs, and by which it is supported both vertically and laterally, as shown and set forth.

JOHN B. CALNAN.

Witnesses:
W. G. ROBINSON,
HENRY ROGERS,
E. DOWNES,
M. DILLON.