

EDMUND SAVAGE.

Improvement in Machinery for Propelling Boats.

No. 126,906.

Patented May 21, 1872.

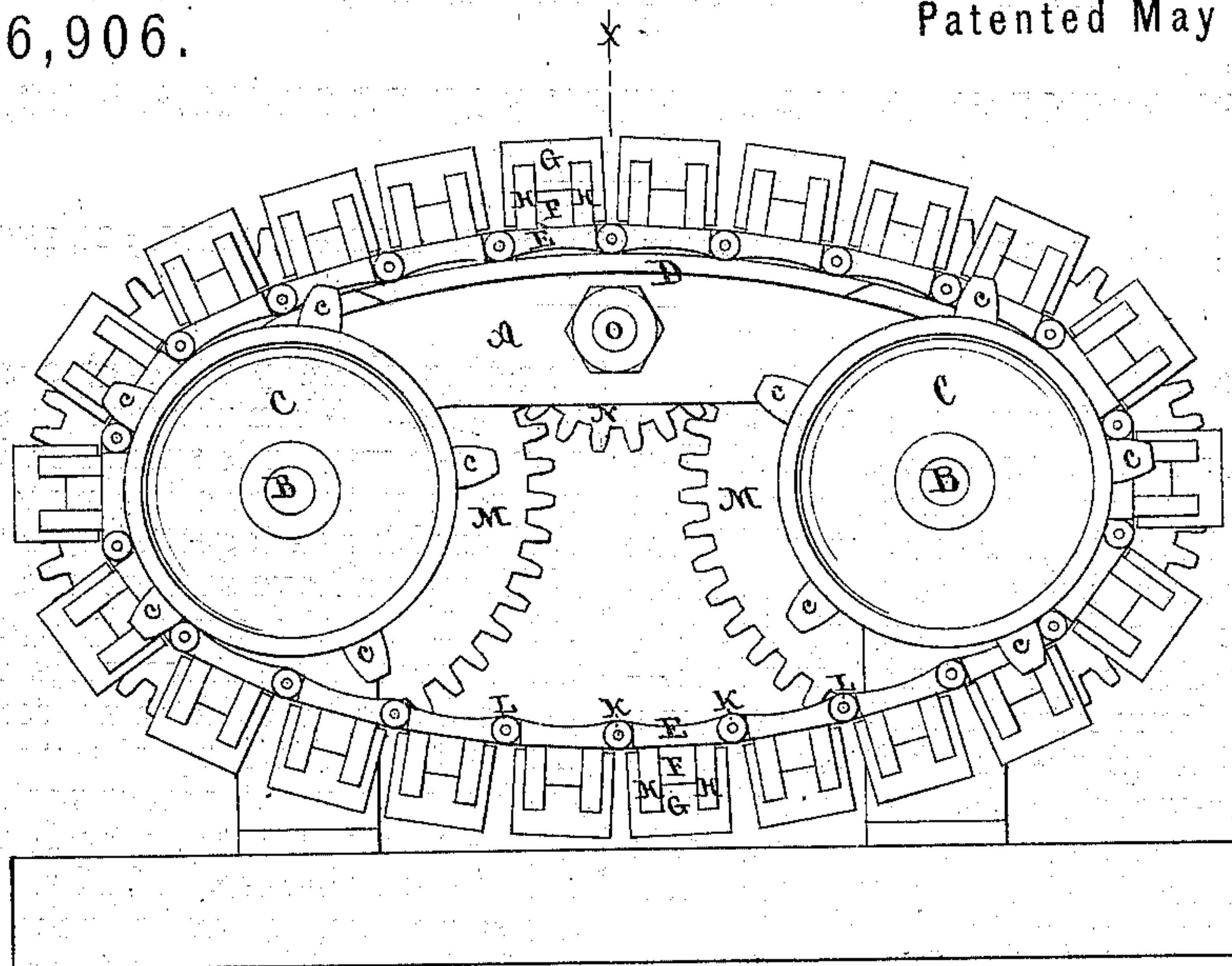


Fig. 1.

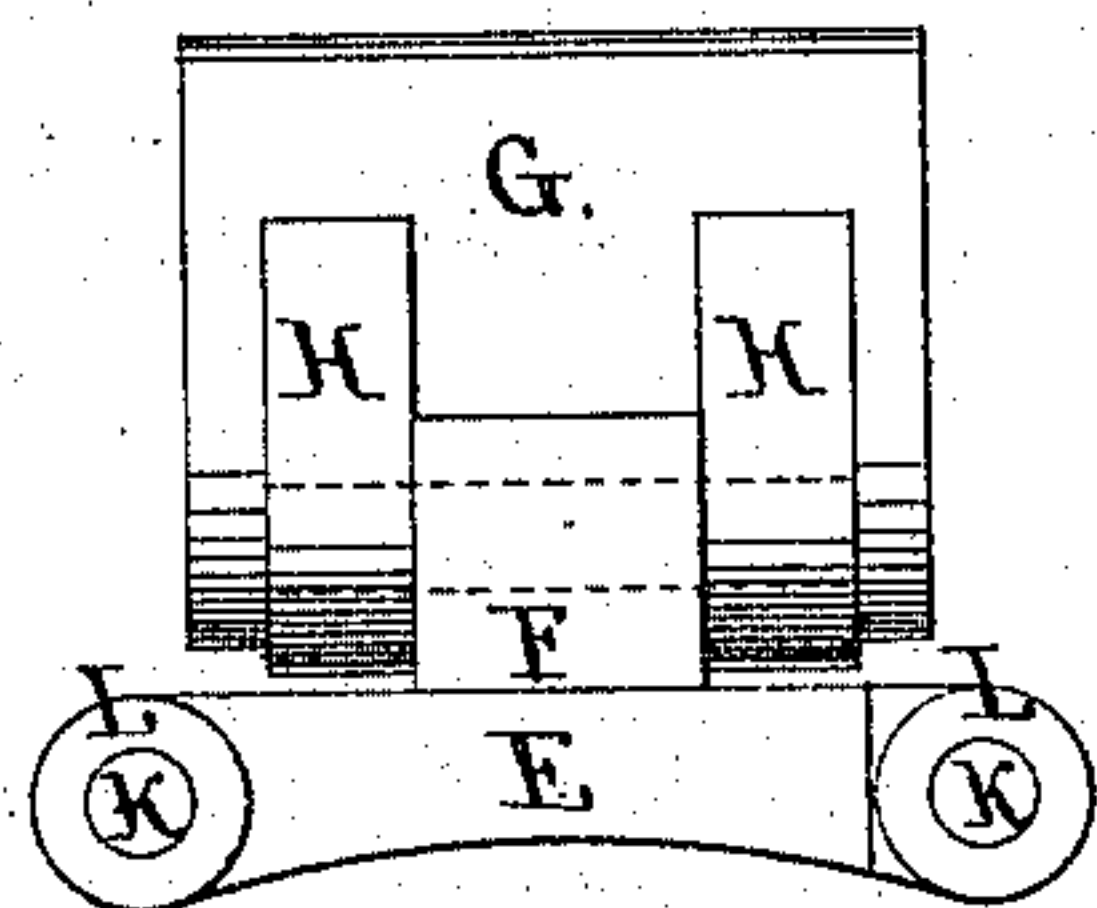


Fig. 3.

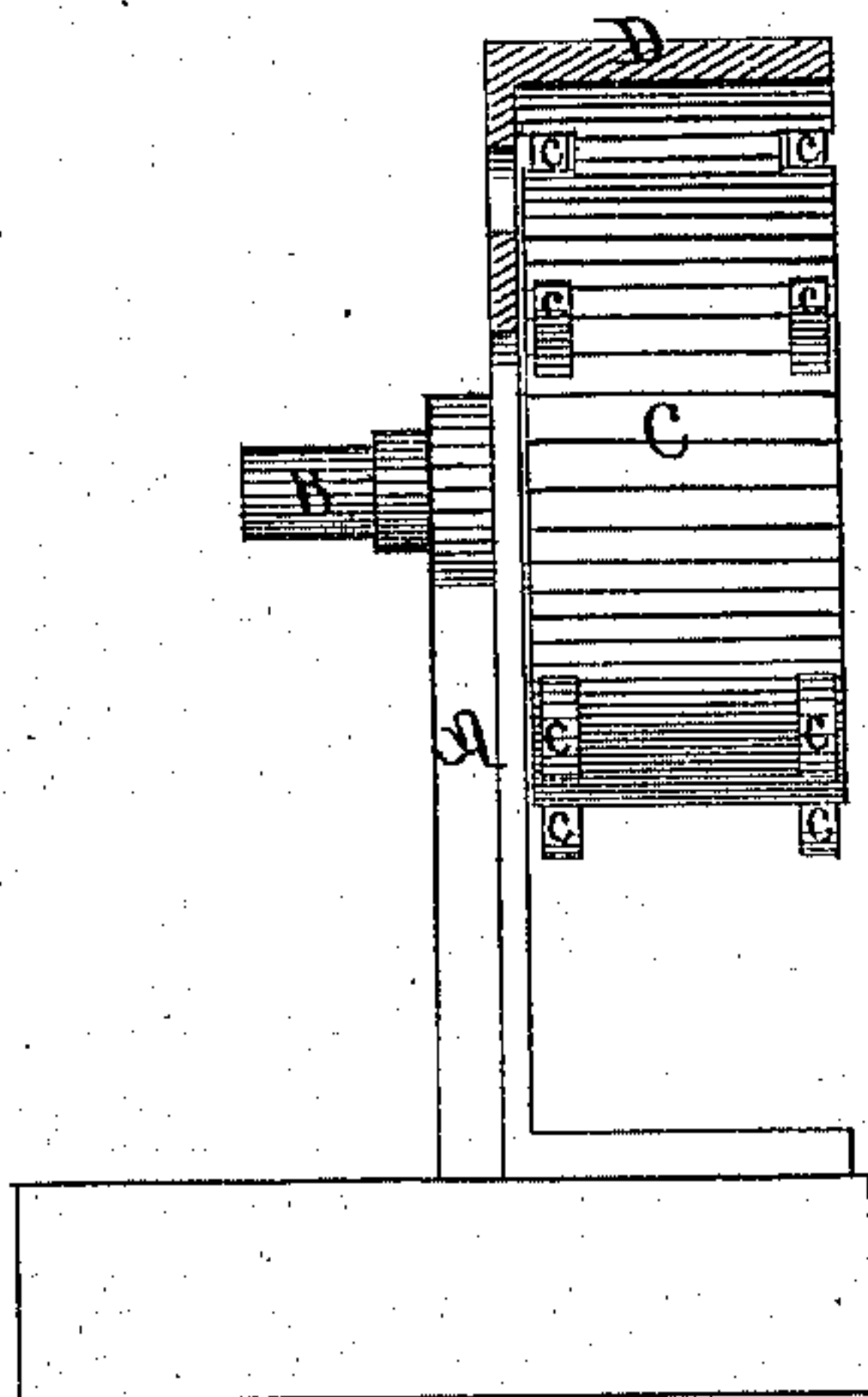


Fig. 2.

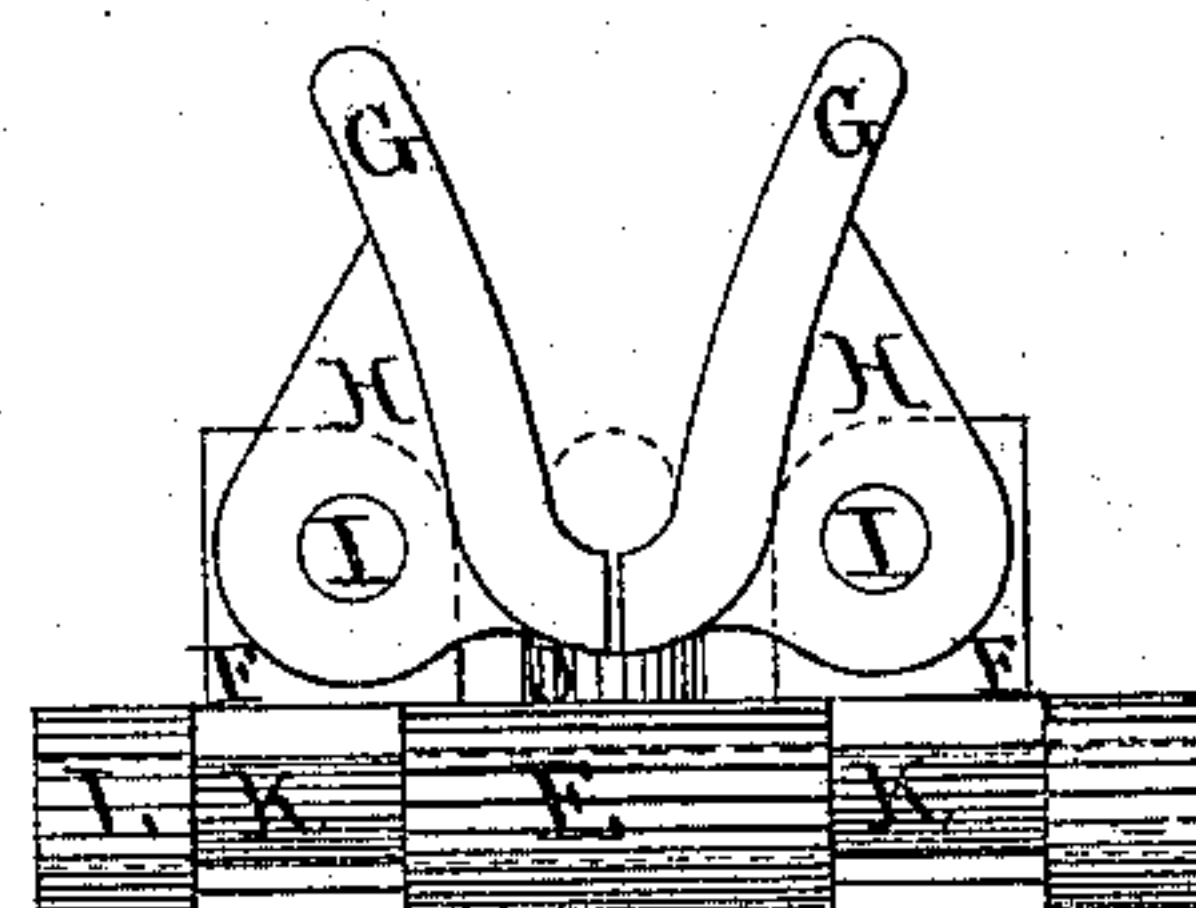


Fig. 4.

Witnesses.

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EDMUND SAVAGE, OF ALBANY, NEW YORK.

IMPROVEMENT IN MACHINERY FOR PROPELLING BOATS.

Specification forming part of Letters Patent No. 126,906, dated May 21, 1872.

To whom it may concern:

Be it known that I, EDMUND SAVAGE, of the city and county of Albany and State of New York, have invented certain Improvements in Machinery for Propelling Boats, of which the following is a full and exact description, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a front elevation; Fig. 2, a transverse section through the line X X, the endless chain and gear-wheels being removed therefrom; Fig. 3, an enlarged and detached side view of one of the links of the endless chain; and Fig. 4, an end view of the same.

The nature of my invention relates to the system of propelling boats in shallow water by means of a submerged cable; and consists of a combination of devices in which the appliances for gripping the cable are placed upon an endless chain, which is carried over two "spurred" wheels and an arched guide; the object of it being to lessen the amount of slack in the cable required for carrying it over the "clip-drum" now used, while an equal or greater length of cable is subjected to the action of the "grippers."

The frame A has two bearings for receiving the shafts B B, to which the wheels C C, having "spurs" or projections *c c*, are secured. D is an arched guide attached to the frame A, and placed over and between the wheels C C, to sustain the endless chain, as shown in Fig. 1; it should be made of such a radius as to conform as nearly as possible to the curve assumed by the cable when lifted from the bed of the stream and passed over the endless chain. The endless chain is composed of the links E E, each of which is made with a "male" and "female" end to fit into each other. The under side of the links is curved to fit the periphery of the wheels C C; their upper sides are provided with two lugs, F F, to which the "clips" or "grippers" G G are hinged by means of the ears H H and pins I I. The centers of these pins are placed on a plane a little below the center of the cable, as shown in Fig. 4, so that when a strain is thrown upon the cable the sides of the "grippers" are thrown closer

together, thereby increasing their hold upon the cable. When the "grippers" are out of action their weight is sustained by the spring J, made of rubber or other material. The links E E are hinged together by means of the pins K K, which have at each end the friction-rollers L L for the double purpose of reducing the friction of the links while moving over the guide D, and providing a means for actuating the endless chain by the "spurs" *c c*, which are brought into contact with the rollers L L by the rotation of the wheels C C and impart the motion thereto. M M are gear-wheels of the same size, secured to the inner ends of the shafts B B, which, with the pinion N, revolving on the stud O, maintain a coincident speed and the same relative positions of the wheels C C. Through the medium of these gears the motive power is applied. When the cable is laid between the "clips" or "grippers," as shown by the dotted line in Fig. 4, its own weight, and the strain thrown upon it in propelling the boat, tends to draw it down closer into the groove formed by the "clips;" this action closes the "clips" nearer together, and causes them to gripe the cable with a stronger hold; and as the wheels C C revolve, carrying the endless chain with them, the boat is propelled at a speed proportioned to the velocity of the wheels. Additional adhesion to the cable may be obtained, when required, by placing pressing-wheels upon it at each end of the arched guide D, and forcing the cable deeper into the bite of the "clips."

I am aware that "clips" have heretofore been used for the same purpose, in combination with drums or pulleys to which they were attached; but in order to subject a sufficient length of the cable to the action of the "clips" to accomplish the object drums of large diameters are required, which involves the necessity of a great amount of slack in the cable, especially where many boats are propelled upon the same cable, thereby greatly impairing the utility of the system. My improvement greatly reduces the height to which the cable must be carried by the "clips," and consequently lessens the amount of slack required.

I do not, broadly, claim the use of "clips" or "grippers" for propelling boats on cables; but What I do claim as my invention is—

1. In combination with an endless chain the "clips" or "grippers" G G, or their equivalents, when constructed and arranged to operate substantially as and for the purposes herein specified.

2. The combination of the endless chain having "clips" or "grippers" G G, with the wheels C C having "spurs" c c, and the arched guide D, as and for purposes set forth.

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Witnesses:

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