

C. Perley,

Windlass.

N^o 29,990.

Patented Sep. 11, 1860.

Fig. 1.

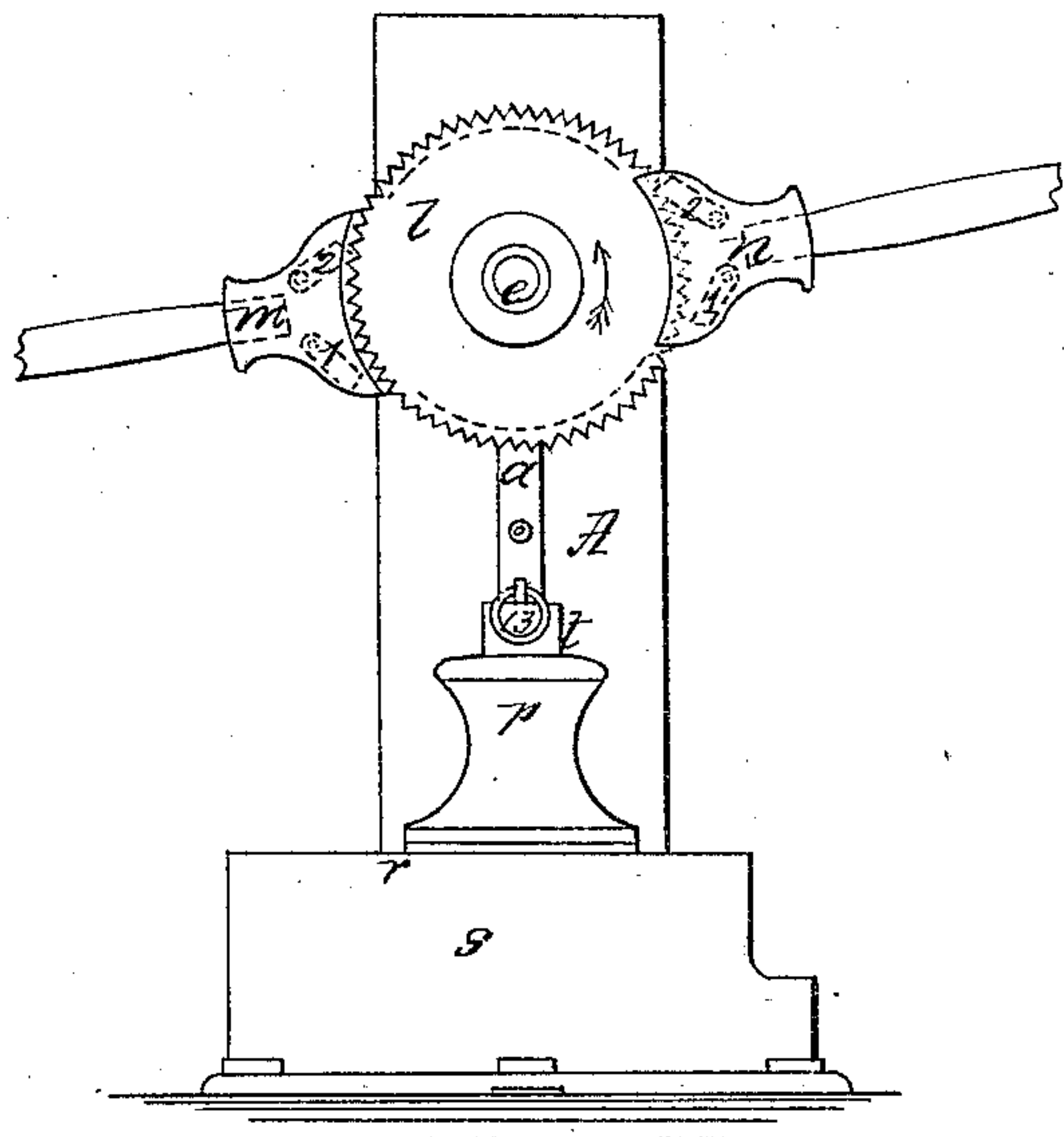


Fig. 2.

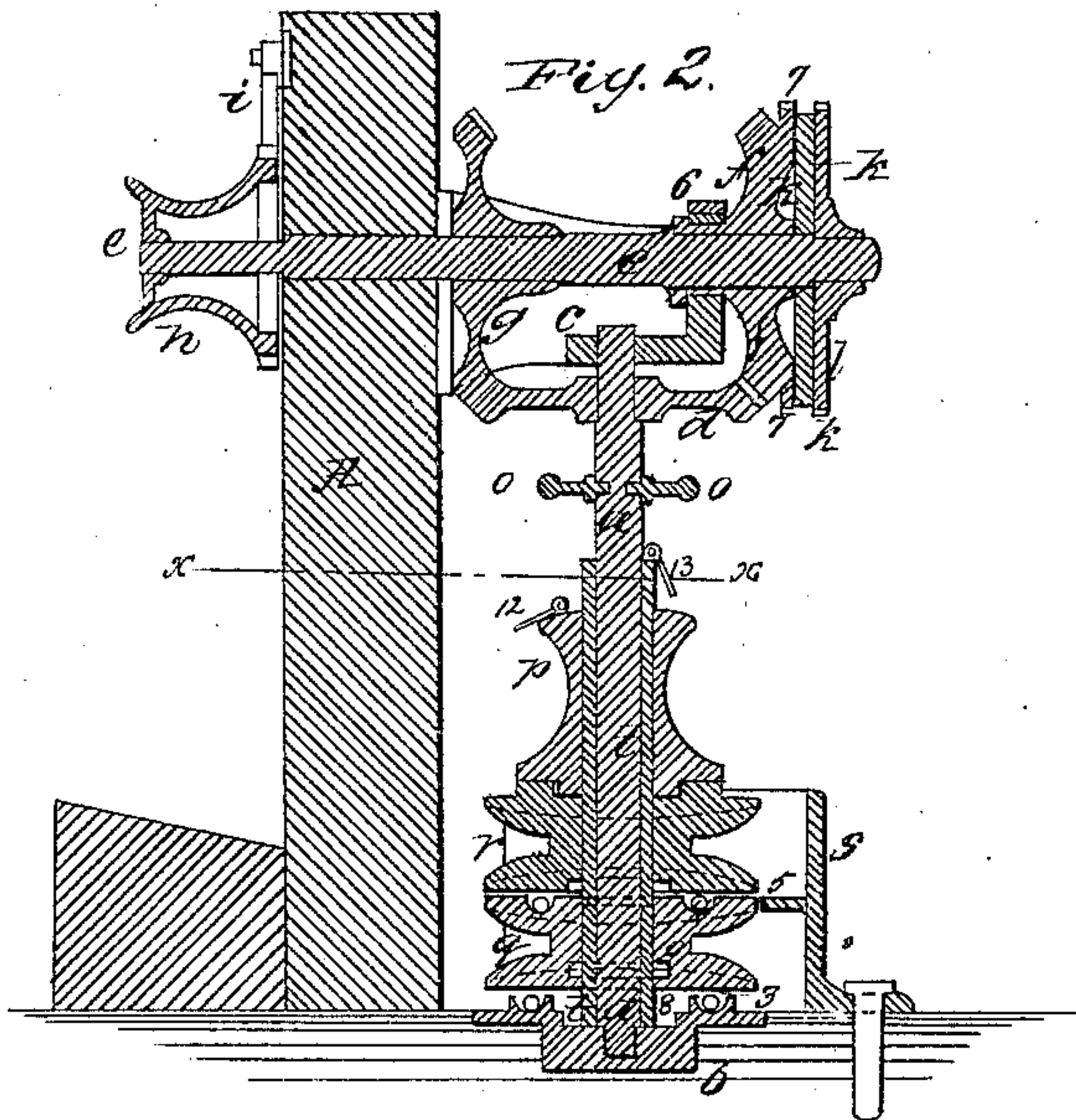


Fig. 3.

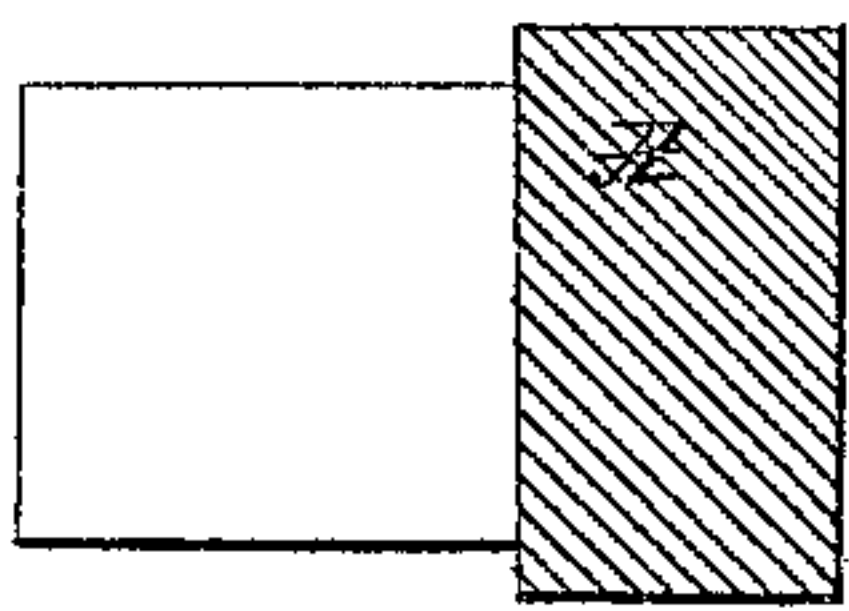


Fig. 4.

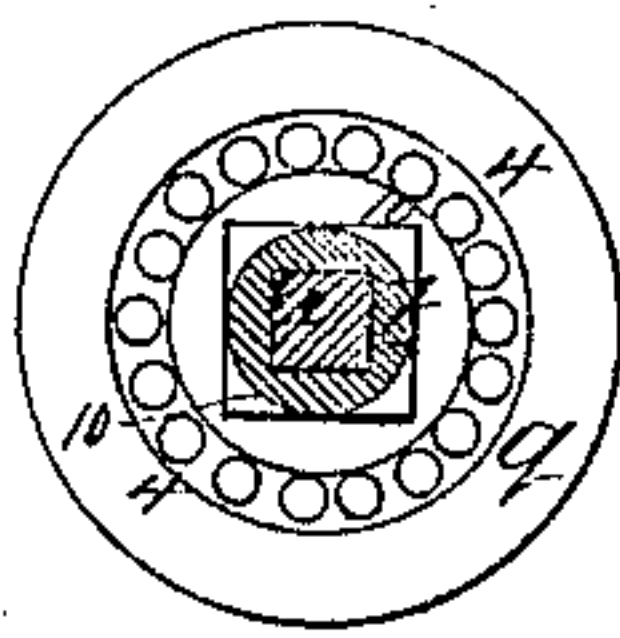
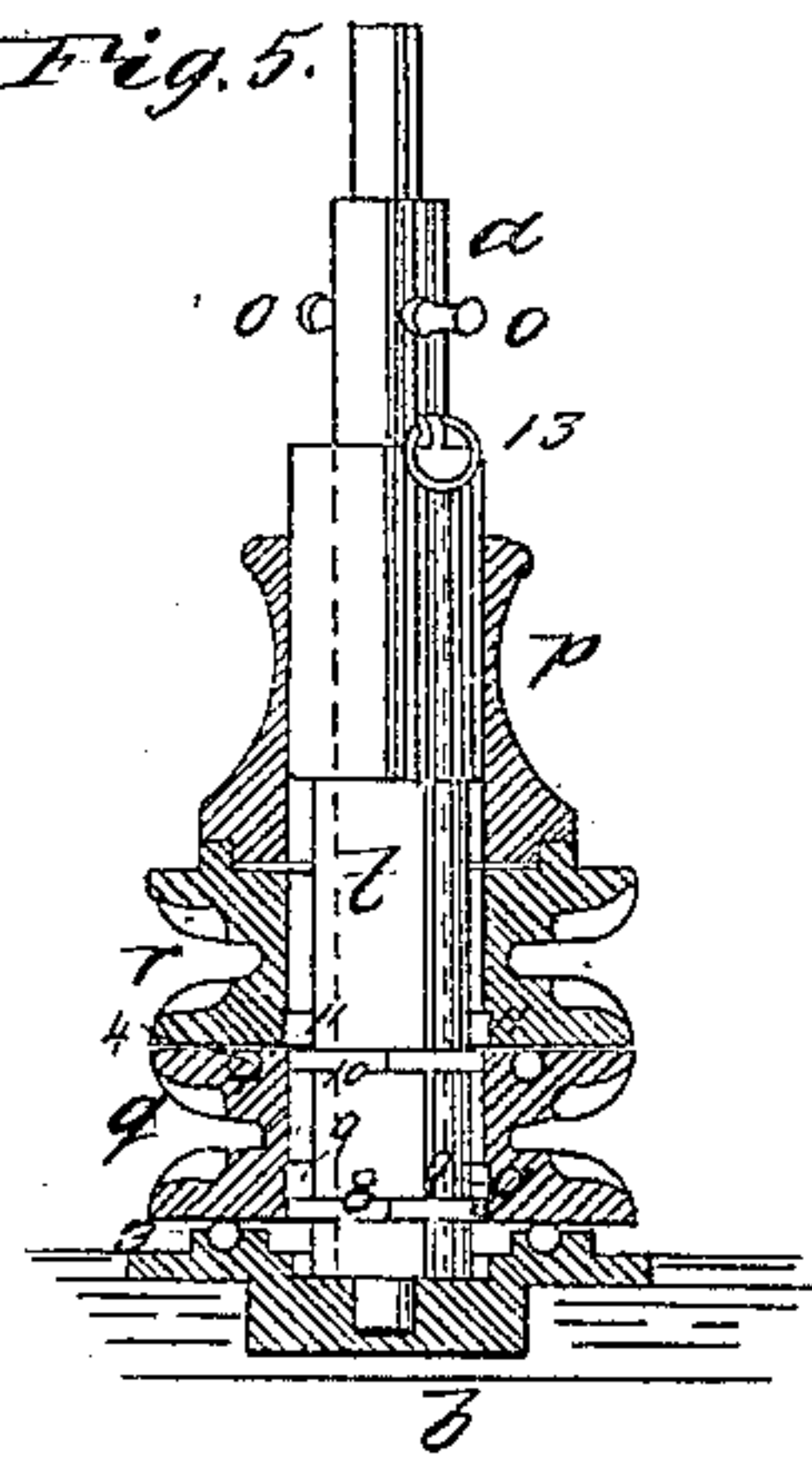


Fig. 5.



Witnesses

Lemuel H. Snell

Chas. H. Smith

Inventor

Charles Perley

UNITED STATES PATENT OFFICE.

CHARLES PERLEY, OF NEW YORK, N. Y.

VERTICAL SHIP'S WINDLASS.

Specification of Letters Patent No. 29,990, dated September 11, 1860.

To all whom it may concern:

Be it known that I, CHARLES PERLEY, of the city and State of New York, have invented and made certain new and useful Improvements in Means for Working Chain Cables, which I term the "Compound vertical windlass;" and I do hereby declare that the following is a full, clear, and exact description of the nature and operation of the same, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1, is a front elevation. Fig. 2, is a vertical section and Fig. 3, is a plan below the line *x, x*.

Similar marks of reference indicate the same parts.

The nature of my said invention consists in the arrangement of two or more heavers or vertical windlass barrels on an upright shaft in such a manner that said heavers can be revolved in either direction and either connected to or disconnected from said vertical shaft, whereby one or more chains can be drawn in either direction or can remain stationary while the vertical windlass is used for other purposes.

In the drawing *a*, is a vertical shaft sustained at the lower end in the step *b*, and at the upper end by the journal box *c*, and this shaft may reach from one deck to another or may be fitted against a stanchion or bit as represented at *A*. In order to give motion to this shaft *a*, and the parts connected thereto, any suitable heaver or other device may be adopted, but I have represented what is believed to be the best device for this purpose, viz., a double acting lever brake.

d, is a miter wheel on the upper end of the shaft *a*, taking the wheels *f* and *g* the latter of which is on the horizontal shaft *e*, and the former (*f*) is on a sleeve around said shaft *e*, that revolves within the journal box *6*.

h, is a disk loose on the shaft *e*, between the wheel *f*, and a ratchet wheel *l*, which wheel is fitted permanently to the shaft *e*. On the disk *h*, hand-spike or brake sockets *m*, *n*, are provided within which are pawls 1, 1, and 2, 2. The socket *m*, and pawls it contains projects over and acts on the ratchet teeth 7 formed on the wheel *f*, and the socket *n*, and its pawls act on the ratchet wheel *l*.

h, is a windlass or winch barrel that may be used when desired, and *i*, is a pawl that

can be thrown over as usual to prevent the parts running back when revolved in either direction. The operation of this part is, that upon the levers or brakes in the sockets *m*, *n*, being worked, the pawls 2, 2, are operative, while those marked 1, 1, hang away from the wheels and are inactive see dotted lines Fig. 1, and these pawls 2, 2, revolve the wheel *l*, and shaft *e*, in the direction of the arrow Fig. 2, and the shaft *a*, is revolved in the direction of the arrow Fig. 3, the wheel *f* being active in keeping up the motion while the pawl of *n*, returns over the teeth, and the reverse. If the disk *h* and sockets *m*, *n*, receive a semi rotation the pawls 2 2, drop out of gear and those marked 1, 1, take the ratchets *l*, and 7, and hence both ratchets are propelled in the opposite direction by the oscillation or working of the brakes, and the winch *h*, and the shaft *a*, are turned the other way; hence the heavers on this shaft *a*, can be made to turn either way and draw in or give out the chain cable.

The heavers *q*, and *r*, are formed as circular grooved barrels adapted to take the links of the chain with which they are to be used, said barrels having lugs passing between the pairs of links so that they will not slip. The barrel *q*, is sustained by and revolves upon balls 3, 3, in a circular groove in *b*, and the heavier *r*, revolves upon similar balls 4, 4, in surface of *q*. The shaft *a*, is either square as shown or may be provided with a feather or groove so that the sleeve *t*, would always turn with the same but might receive an end-wise movement. This sleeve *t*, is formed square through a greater portion of its length and receives the sliding coupling winch *p*. This winch *p* is formed with a square taking a socket in *r*, (the same as in my patent of Aug. 4th 1857) so that when in the position shown in Fig. 2, this winch *p*, and heaver *r*, are coupled together and will always revolve together until the winch *p* is raised and sustained, the ring 12 and pin *o*, being used for this purpose, and when thus disconnected the heaver *r*, can remain stationary or revolve as the chain that passes around the same runs out, and is independent of the lower heaver *q*, and of the socket *t*, because said socket *t*, is round at this part as seen in the detached Figs. 4 and 5.

To couple or uncouple the lower heaver *q*, I make use of the sleeve *t*; the hole in the

heaver is square, and a square part 8 is left near the lower end of the sleeve and another at 10, on the level of the upper part of the heaver *q*. When the socket *t*, is lowered so as to rest on *b*, the squares 6 and 8 take the square hole in the heaver *q* to rotate the same, but when the sleeve *t* is raised and the ring 13, hooked onto the pin *o*, the square 10, is raised out of the heaver *q*, into a recess 11, in the lower end of *r*, and the square 8, is raised into a recess 9 in the heaver *q*, so that the shaft *a*, and sleeve *t* can turn without the heaver, or the heaver *q* turn without the shaft or sleeve.

s, is a vertical guard within which the chain cables are passed, and 5, is a flange within this guard upon which the upper chain travels.

The chain locker pipes, stoppers and hawser pipes that are fitted in vessels, and with which the present vertical windlass has to be properly located, are to be of any usual or desired character and form no part of this present invention.

The barrel *p*, is for use in any ordinary heaving operation similar to an ordinary capstan.

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

1. The arrangement of the brake sockets *m*, *n*, pawls 1, 2, and wheels *d*, *f*, *g*, and *l*, substantially as specified whereby the shaft *a* can be rotated by the double brakes in either direction as set forth.

2. The sleeve *t* and heaver *q*, arranged in the manner and for the purposes specified.

3. The heavers *q*, and *r*, fitted on a vertical shaft and arranged substantially as specified, so that either or both heavers can be connected to, or disconnected from said shaft, and thereby allow for raising or giving out either or both chain cables, or using the said shaft for a capstan independent of the chain heavers, as set forth.

4. The vertical guard *s*, and flange 5, constructed and arranged as specified to separate and guide the respective chains and keep them in place as set forth.

In witness whereof I have hereunto set my signature this thirteenth day of August 1860.

CHARLES PERLEY.

Witnesses:

LEMUEL W. SERRELL,
CHAS. H. SMITH.