

W. D. Grimshaw,

Sheet 1-3 Sheets.

Capstan,

No 60,505,

Patented Dec. 18, 1866.

Fig. 2.

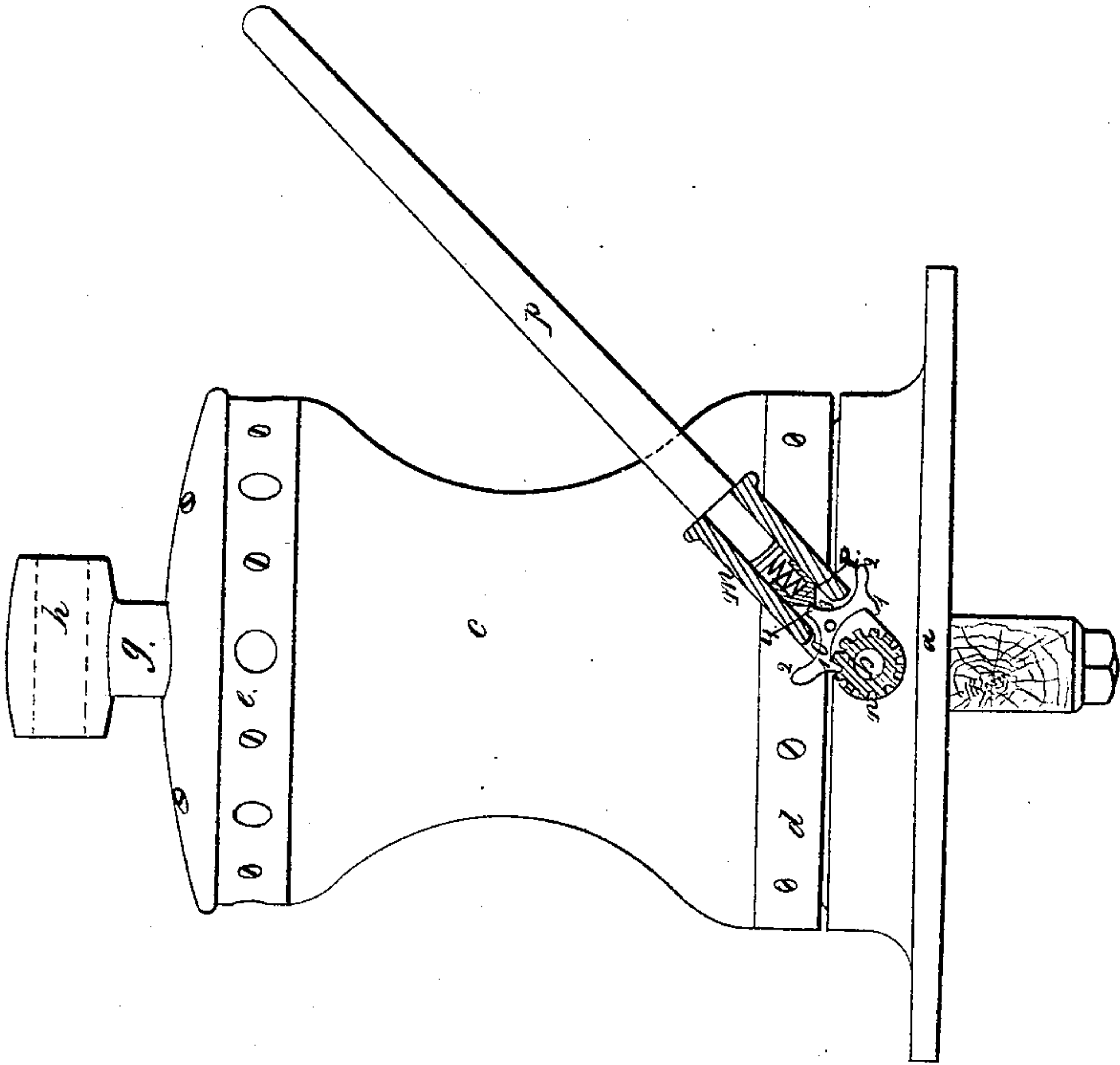
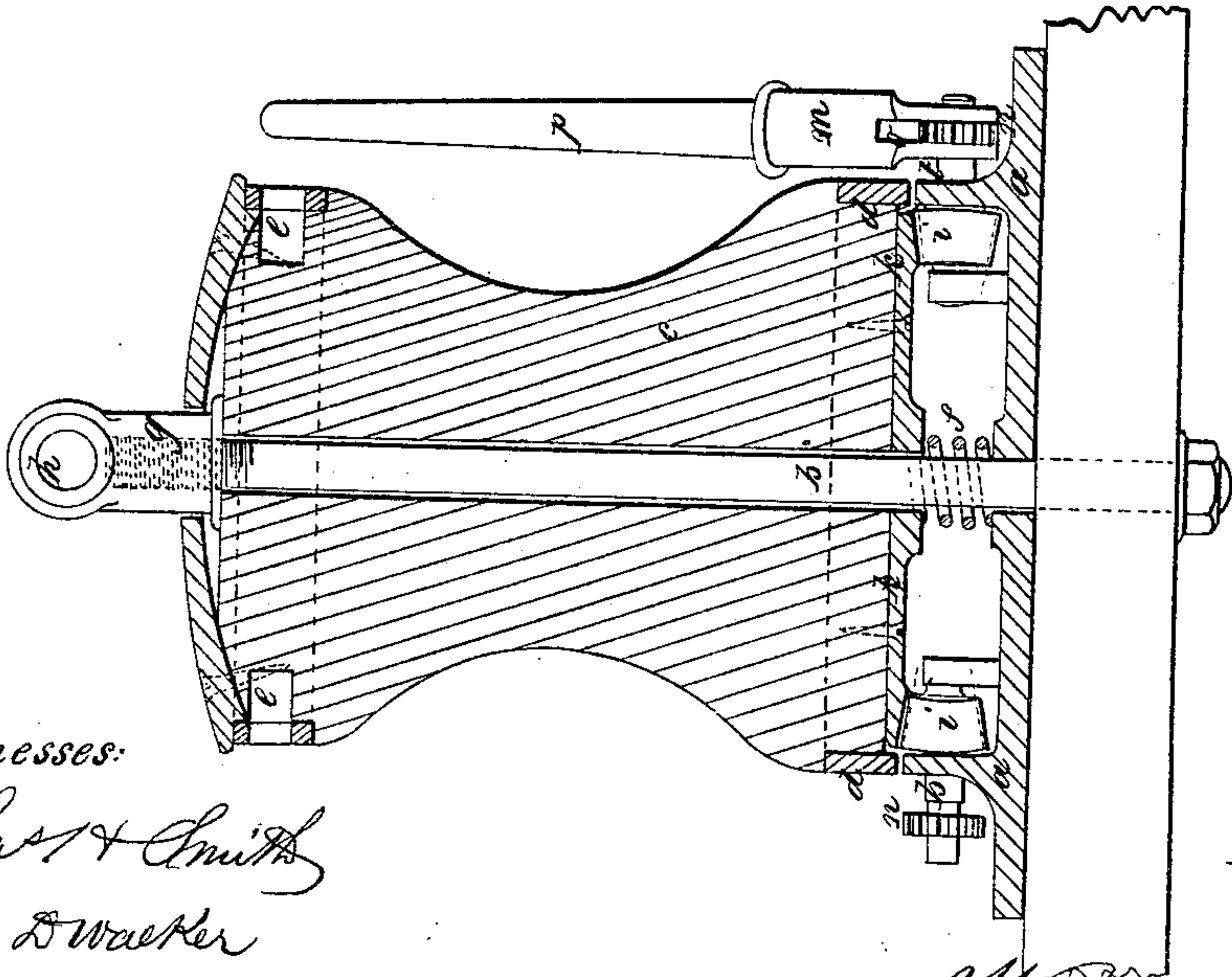


Fig. 1.



Witnesses:

Chas. & Smith  
Geo. D. Walker

Inventor:

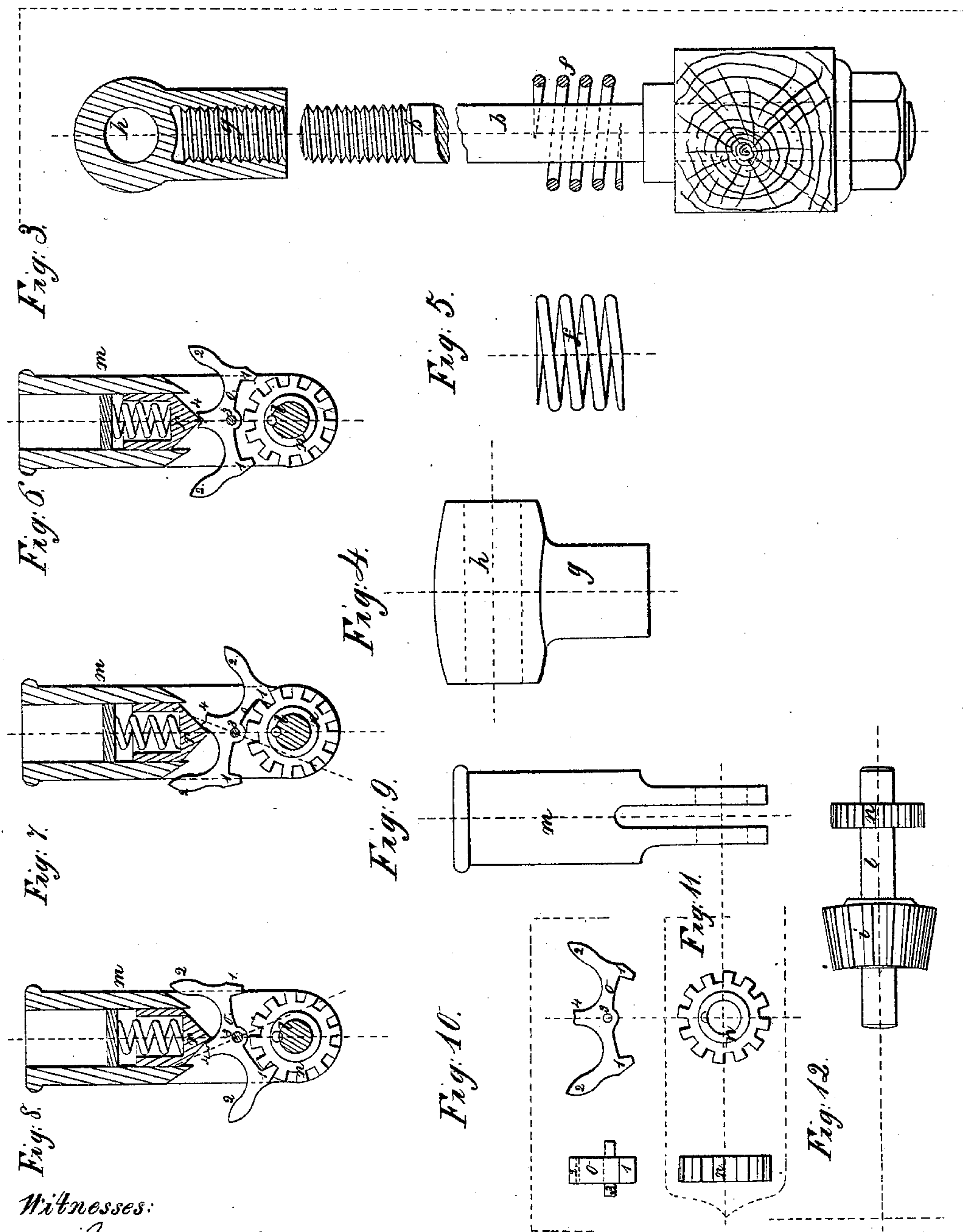
William D. Grimshaw

Sheet 2-3 Sheets.  
W. D. Grimshaw,

Canstan,

No 60,505,

Patented Dec. 18, 1866.



Witnesses:

Chas. D. Smith  
Geo. D. Walker

Inventor:

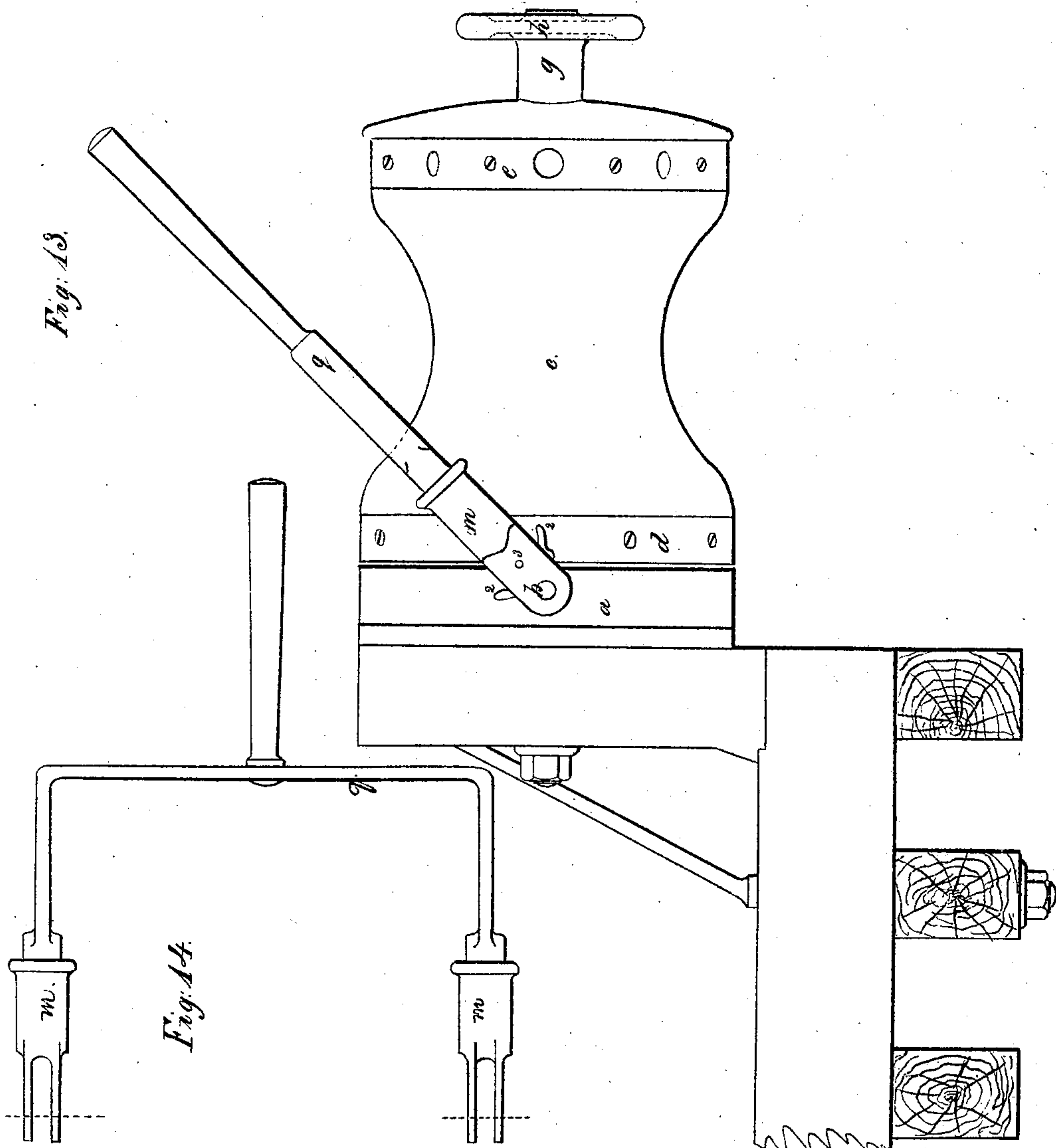
William D. Grimshaw

W. D. Grimshaw, *Sheet 3-3 Sheets.*

Capstan,

No 60,505,

Patented Dec. 18, 1866.



Witnesses:

Chas. H. Smith  
Geo. B. Maeker

Inventor:

William D. Grimshaw



# United States Patent Office.

## IMPROVED CAPSTAN.

WILLIAM D. GRIMSHAW, OF NEWARK, NEW JERSEY.

*Letters Patent No. 60,505, dated December 18, 1866.*

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, WILLIAM D. GRIMSHAW, of Newark, in the county of Essex, and State of New Jersey, have invented, made, and applied to use a certain new and useful Improvement in Capstans, &c.; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a vertical section of the said capstan.

Figure 2 is an elevation of the capstan and section of the handspike socket.

Figures 3 to 12 represent the details of the separate parts; as referred to hereafter; and

Figure 13 is the capstan in a horizontal position; and

Figure 14 is a plan of the double lever to actuate the capstan.

The nature of the said invention consists in a friction-brake to control the rotation of the capstan, said brake consisting of a screw that presses the capstan down upon its base, and a spring that raises the same when the screw is slackened. I also provide a peculiarly-constructed pawl for giving motion from a handspike socket to the gearing that rotates the capstan.

In the drawing, *a* is the metallic base bolted to the deck or timbers receiving the same, *b* is the main shaft, see figs. 1 and 3, passing through the base *a* and bolted to the timbers, as seen in fig. 1, in a vertical position, or in fig. 13, in a horizontal position. *c* is the capstan barrel formed with a metal flange or ring, *d*, over the base *a*, and with the head *e*, for the handspikes to be introduced as usual. The weight of the capstan is sustained by the spring *f*, figs. 1, 3, and 5, so that the ring *d* does not touch upon the base *a*; but in order to produce friction at that point, and so control the revolution of the capstan while a rope or chain is running out, I make use of the screw-nut *g*, at the end of shaft *b*, controlled by a handspike inserted in the pipe-shaped head *h*, (see figs. 1, 2, 3, and 4,) or by the hand-wheel seen in fig. 13. When the nut *g* is screwed down the spring *f* is compressed, and the surfaces of *a* and *d* in contact produce the friction, and when the nut *g* is slackened the spring *f* again relieves the friction. This friction apparatus has a great extent of surface, being of larger diameter than the capstan barrel, and is not liable to be injured in use. Upon the under side of the capstan barrel is a wheel, *k*, acted upon by the pinions *i i*, that are mounted upon the shafts *l l*, (see figs. 1 and 12,) and the shafts *l* carry outside the base *a* the ratchet-wheels *n*, that are in the forks of the handspike sockets *m*. These sockets, *m*, are to be worked back and forth by the levers or handspikes *p*, (see figs. 1 and 2,) or they may be worked by a forked or double lever, *q*, as seen in figs. 13 and 14. The pawls *o*, introduced in the forks of the handspike sockets *m*, are formed as shown in figs. 2, 6, 7, 8, and 10, with the heads *1 1*, to take the teeth of the ratchet-wheel *n*, and with the arms *2 2*, by which the pawl may be moved by the foot. *3* is the fulcrum-pin of the pawl, and *r* is a sliding-pointed spring-socket, acting as in figs. 7 and 8, to keep either of the heads, *1*, of the pawl *o*, into contact with the teeth of the wheel *n*, so that the capstan will be rotated in one direction or the other, or when the point of *r* enters a notch at *4*, in the pawl *o*, it is held in a central position, as seen in fig. 6, so that neither heads *1* is in contact with the wheel *n*, so that the capstan barrel will be free to revolve under the control of the friction. Fig. 11 shows the wheel *n*, and fig. 9 a side view of the handspike socket. This invention, when on a vertical shaft, forms a capstan, and when placed upon a horizontal, forms a windlass or winch.

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

1. The combination of the shaft *b*, spring *f*, nut *g*, barrel *c*, and ring *d*, with the base *a*, in the manner and for the purpose specified.

2. I claim the pawl *o*, constructed in the manner specified, in combination with the pointed spring-socket *r*, wheel *n*, and handspike socket *m*, as and for the purposes set forth.

In witness whereof I have hereunto set my signature, this first day of November, A. D. 1866.

WILLIAM D. GRIMSHAW.

Witnesses:

GEO. D. WALKER,

CHAS. H. SMITH.