C. E. KIRTLAND.

Mechanism for Casting the Lead on Vessels.

No. 162,755. Patented May 4, 1875.

Fig. 1,

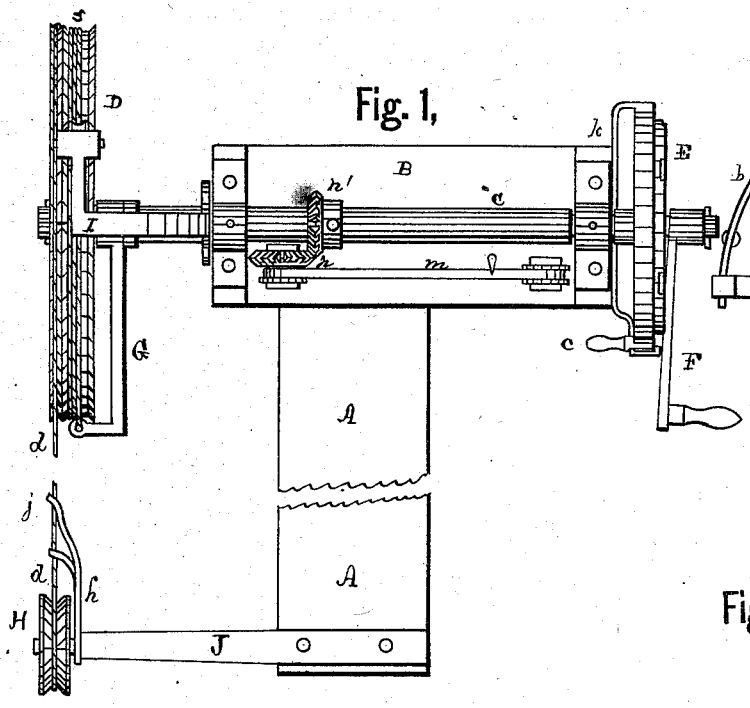


Fig. 3.

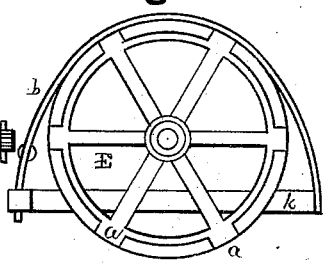


Fig. 5,

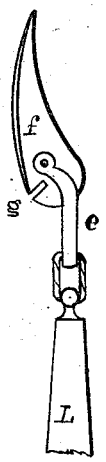


Fig. 2.

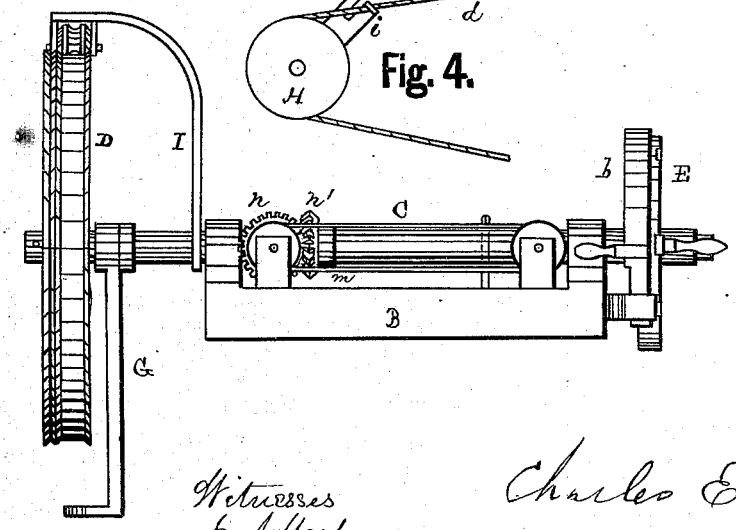
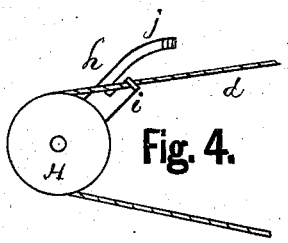


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES E. KIRTLAND, OF MILWAUKEE, WISCONSIN.

IMPROVEMENT IN MECHANISMS FOR CASTING THE LEAD ON VESSELS.

Specification forming part of Letters Patent No. **162,755**, dated May 4, 1875; application filed February 10, 1875.

To all whom it may concern:

Be it known that I, CHARLES E. KIRTLAND, of Milwaukee, Wisconsin, have invented new and useful Machinery for Casting the Lead on Vessels, of which the following is a full description, reference being had to the accompanying drawings.

Figure 1 is a plan; Fig. 2, an elevation of the parts shown; Figs. 3, 4, and 5, details.

The object of my invention is to construct a machine by the use of which the lead can be cast more efficiently, and obtaining deeper soundings than when done by hand.

In the drawings, A represents the rail of a vessel; B, a piece of plank to which the main part of my device is secured, and which, when in use, is to be fastened to the rail A. C is a shaft, supported in suitable bearings upon B. D is a wheel on the outer end of the shaft C, which projects beyond the side of the vessel. E is a wheel secured upon the other end of the shaft C. In the side of this wheel are a number of recesses, *a*. F is a crank, placed loosely upon the end of C, by means of which, when engaged in one of the recesses *a*, the wheel E can be turned, carrying with it the shaft C and wheel D. *b* is a brake passing over the wheel E. One end is secured to the bar *k*, which is fastened to B. The other end is loose, and has a handle, *c*. G is an arm placed loosely on the shaft C. Its outer end is bent, and in it is a hole through which the cord or cable to which the lead is secured passes, the object being to keep the said cord or cable *s* in its proper place relatively to the wheel D. This cable may be made of wire, and is to be wound upon the wheel D, the periphery of which is recessed to receive it. This wheel also has a groove to receive the cable *d*, which passes over both D and H. I is an arm, the inner end of which is secured to B and the other end is located over the wheel D, and may be provided with a roller, its object being to keep the cable *s* in place on D. H is a wheel or pulley upon the arm J, which is secured to the rail A at any convenient distance—say, one hundred feet, more or less—forward of the part B, which is to be located near the stern of the boat. *h* is a tripping device. One end is loosely placed upon the arm J. It is divided into two parts, *i j*. The cord or cable *d* passes through *i*, and *j* is a finger-like extension located above *d*, as shown in the drawings, and for the purpose of tripping the lead, as hereinafter described. L is the lead. It is flexibly secured to the part *e* in the form of a stirrup, between the upper ends of the arms of which the part *f* is pivoted. *f* is provided with a notch, *g*, by which it can be hung on *d*. *m* is a belt passing over two rollers, one of which will be driven, when the shaft C revolves, by means of the wheels *n n'*. This belt is to be graduated so as to indicate the depth of the water at the time of casting the lead.

The wheel D may be about two feet in diameter, and the other parts in proportion. Other sizes can be adopted.

In use, the cable to which the lead is attached is to be wound up on the wheel D, and the lead is to be suspended from the cord or cable *d* by means of the part *f* and notch *g*. Then, by rotating the wheel D, as described, the lead will be carried forward along with the cable *d*, which passes around both wheels D and H, and must be tight enough to move with the wheel D. When the part *f* reaches the finger *j* its upper end will be thrown back, *f* will become disengaged from *d*, and the lead will drop into the water. At the same time the operator must release the crank F from the wheel E, which will permit all of the cable to which the lead is attached to come into use, if necessary.

The operator can so adjust the belt *m* that a given point shall be at an index, *r*, when the lead just touches the water. Then, the belt being properly graduated and moving with the descent of the lead, the depth to which it, the lead, enters the water will be indicated on the belt.

I use a lead weighing about fourteen pounds. If the operator will keep his hand upon the handle *c* of the brake, pressing it gently upon the wheel E, he will be able to tell when the lead reaches the bottom, and can at once stop the rotation of the wheels; and if some line should be given out after the lead has reached the bottom he can, when he draws up the lead, tell exactly when it leaves the bottom.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. A machine for casting lead on vessels, having shaft *c*, crank F, wheels D and H and line *s*, combined, substantially as and for the purpose herein specified.

2. The device *e f*, in combination with the lead L, substantially as and for the purpose specified.

3. The wheels D and H and cord or cable *d*, in combination with the tripping device *h*, substantially as and for the purposes specified.

4. The wheel D, lead-line *s*, and the wheel H, cable *d*, in combination with the loose arm G and shaft C, as and for the purpose set forth.

5. The wheel D and shaft C, in combination with the wheels *n* and *n'*, and belt *m*, substantially as specified.

CHARLES E. KIRTLAND.

Witnesses:

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