

A. Beckers,

Steering Apparatus.

No. 36,936.

Patented Nov. 18. 1862.

Fig. 2.

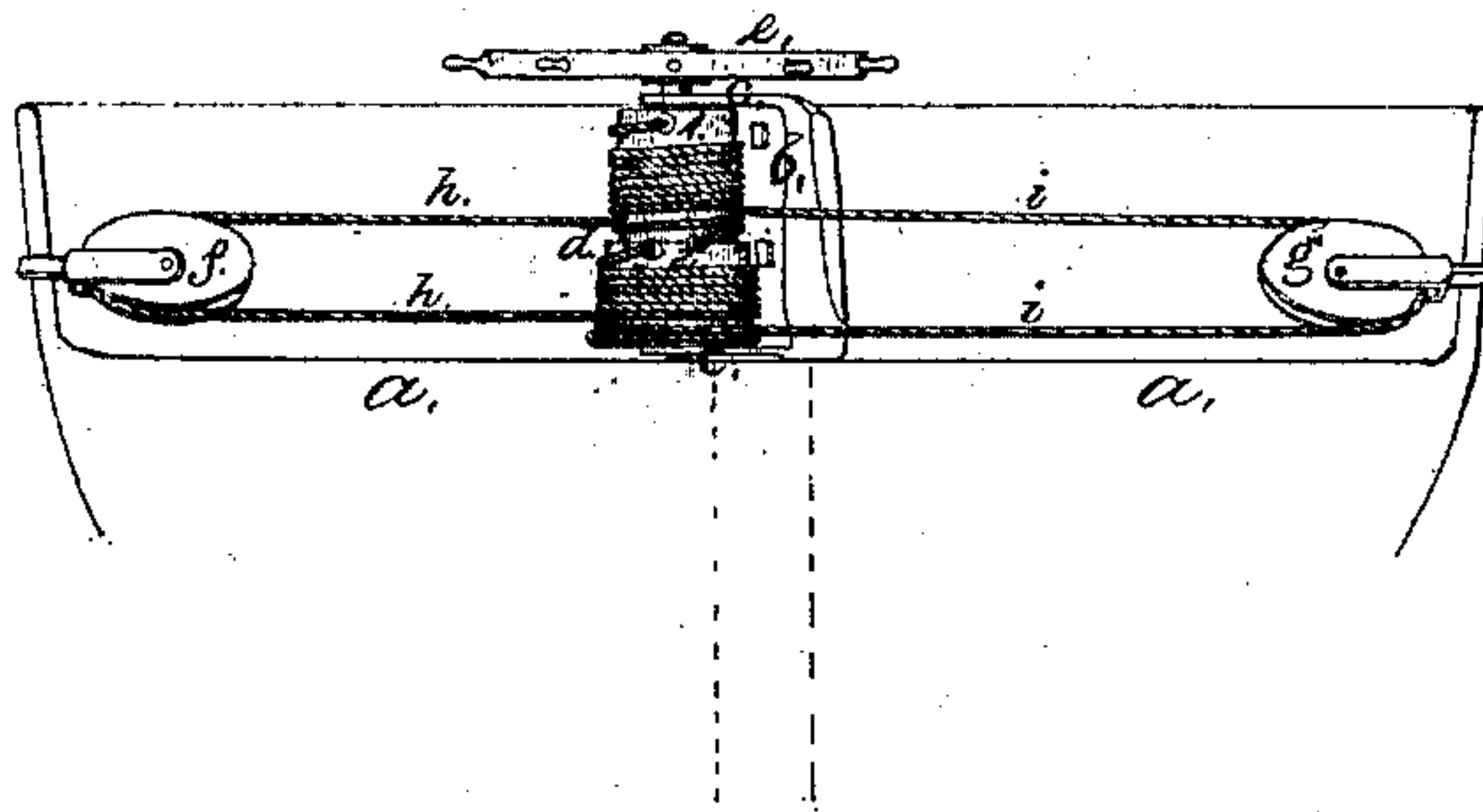
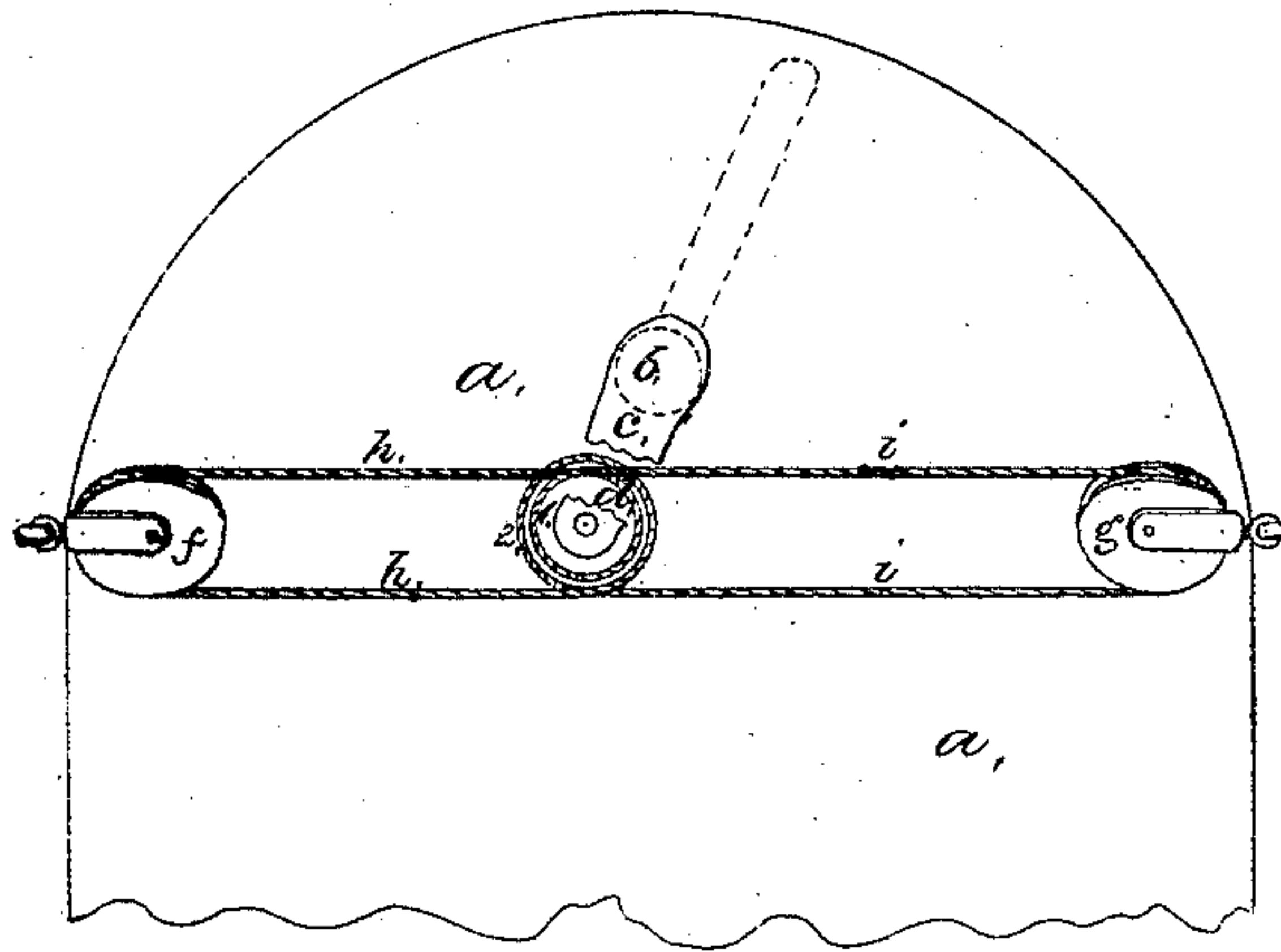


Fig. 1.



Witnesses.

A. Beckers

Lemuel W. Serrell

Chas. H. Smith

UNITED STATES PATENT OFFICE.

ALEXANDER BECKERS, OF HOBOKEN, NEW JERSEY.

IMPROVED STEERING APPARATUS.

Specification forming part of Letters Patent No. 36,936, dated November 18, 1862.

To all whom it may concern:

Be it known that I, ALEXANDER BECKERS, of Hoboken, in the county of Hudson and State of New Jersey, have invented, made, and applied to use a certain new and useful Improvement in Steering Apparatus; 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 drawings, making part of this specification, wherein—

Figure 1 is a plan of said apparatus, and Fig. 2 is an elevation of the same.

Similar marks denote the same parts in each figure.

The nature of my said invention consists in a double drum moving with the tiller, and to which drum the ends of ropes or chains are attached, that pass through fixed blocks at or near the bulwarks, the double drum being of unequal diameter. The rope or chain toward one side is shortened as the other rope or chain is lengthened by the rotation of the said drum, and thereby the rudder is moved.

In the drawings, *a* represents the deck or a portion of the vessel. *b* is the rudder-head, of any usual construction. *c c* are tiller-arms, extending from the rudder head or stock, and *d* is a barrel between said arms *c c*, which drum is made double, with two different sizes of cylindrical barrels, 1 and 2. *e* is a hand-wheel, (removed in Fig. 1,) that is employed for rotating said drum.

f and *g* are blocks or sheaves attached to bulwarks or in any convenient place, and *h* and *i* are ropes or chains attached at their ends to the barrels 1 and 2. The ropes *h* and *i* pass off in opposite directions, and go to the blocks *f* and *g*, and the respective ends of each rope *h* or *i* are attached on opposite sides of the barrels or drum. By this arrangement the ends of each rope *h* or *i* being coiled around the respective barrels 1 and 2 in opposite directions, and the extreme ends of the rope attached to the said barrels, and said rope passing through the block or sheave, said drum can be rotated, and if the barrels 1 and 2 were the same size the rope would only pass away through the block or sheave as unwound from one side of the barrels and wound up on the other side without producing any effect; but, the barrels being of unequal diameter, if the drum is rotated in such a direction, for instance, that the rope *l* is unwound from the rrel 1 and wound upon the larger barrel, 2,

the rope *h* will be taken up by the one barrel faster than it will be given off by the other barrel; hence the bight through the block *f* will be shortened, and, this block being a fixture, the barrel or drum and tiller will be drawn toward said block *f*.

In this steering apparatus the part of the rope *i* leading off from the barrels in the opposite direction to the rope *h*, the reverse effect will be produced. The rope *i* will be given off by the larger part, 2, of the drum faster than it will be taken up by the smaller part, 1, hence lengthening the bight that passes through the sheave *g*. When the barrels are rotated in the other direction, the ropes are given off at the parts where they had been previously wound on, and wind on where they had previously been given off; hence the action is reversed, and the drum and tiller will be moved in the opposite direction, and the barrels 1 and 2 being each cylindrical and moving together, the action in increasing the length of bight in one rope equals that in decreasing the length of bight in the other, so that there is no slack rope or chain, but the tiller is moved steadily one way or the other.

By this device a large leverage can be obtained over the rudder, and there is but little friction, the parts being simple in construction, cheap, and durable.

The sheaves *f* and *g* might be attached to arms projecting above the deck from a rock-shaft crosswise of the vessel, so that said sheaves would move forward or aft, according to the arc described by the drum on the tiller-arms, in order that the ropes or chains may always draw squarely and not be affected by the arc described by said tiller. The ropes *h* and *i* passing away from opposite sides of the barrels 1 and 2, the action of the waves on the rudder is balanced at the steering-wheel, except so far as that the diameter of one barrel being greater than the other gives one a greater leverage than the other.

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

The barrels 1 and 2 on the arms *c c* or tiller, in combination with the ropes or chains *h* and *i* and sheaves or blocks *f* and *g*, substantially as and for the purposes set forth.

In witness whereof I have hereunto set my signature this 13th day of October, 1862.

Witnesses: ALEX. BECKERS.

LEMUEL W. SERRELL,
CHAS. H. SMITH.