(No Model.)

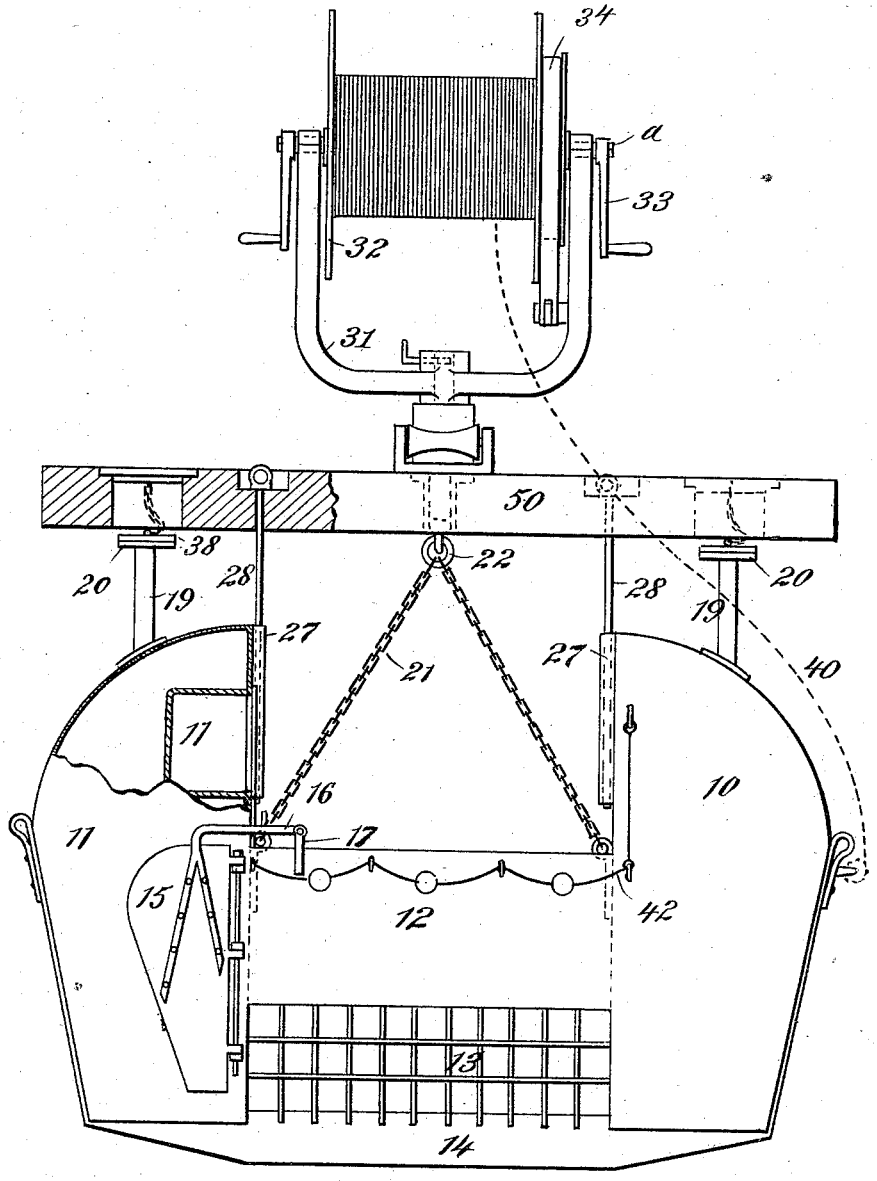
3 Sheets—Sheet 1.

A. RUST.

REEL LIFE BUOY.

No. 385,323. Patented June 26, 1888.

Fig. 1



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(No Model.) 3 Sheets—Sheet 2.

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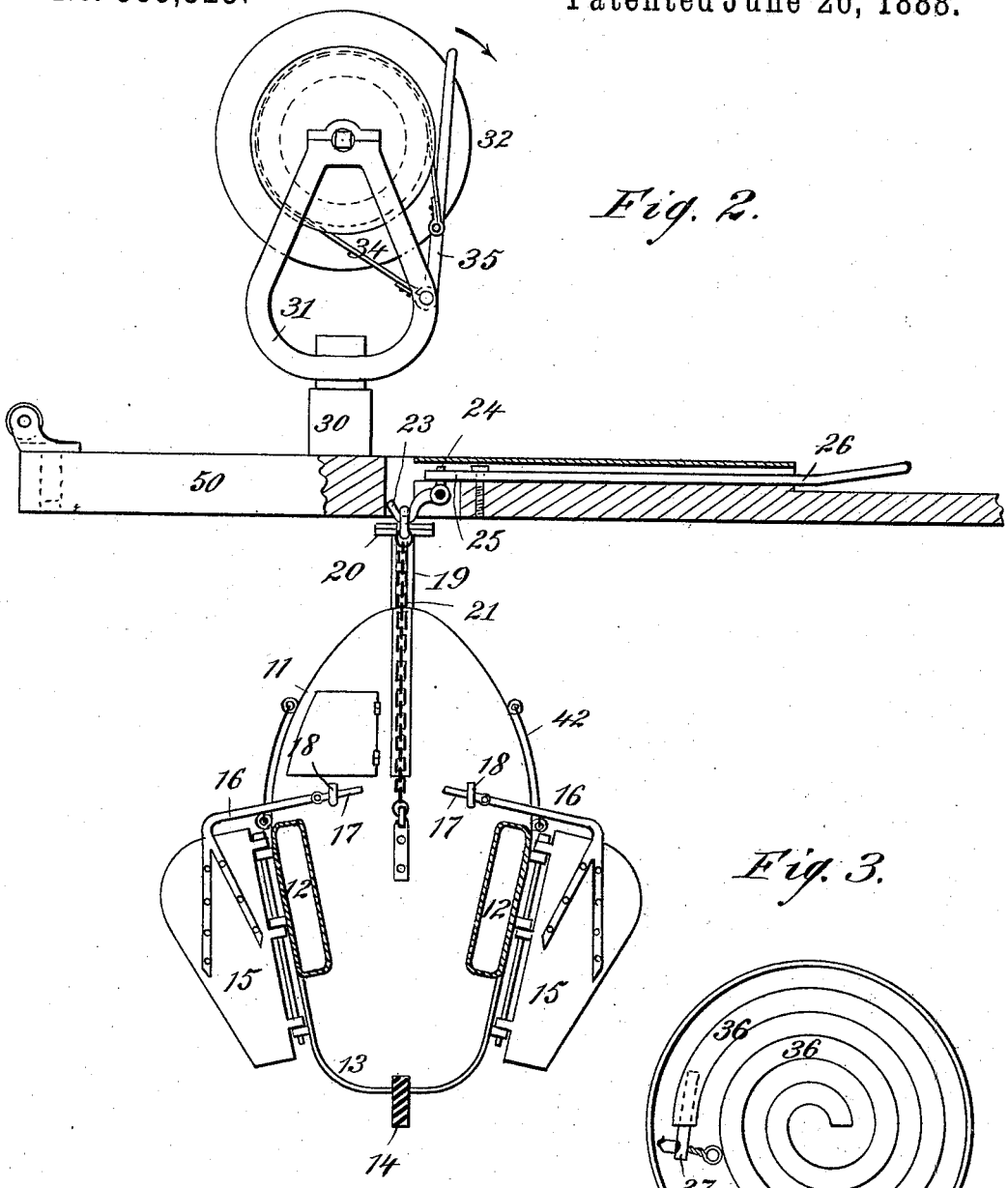
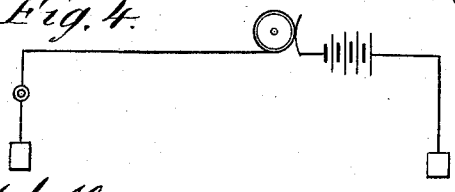


Fig. 2.

Fig. 3.

Fig. 4.



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3 Sheets—Sheet 3.

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REEL LIFE BUOY.

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Fig. 5.

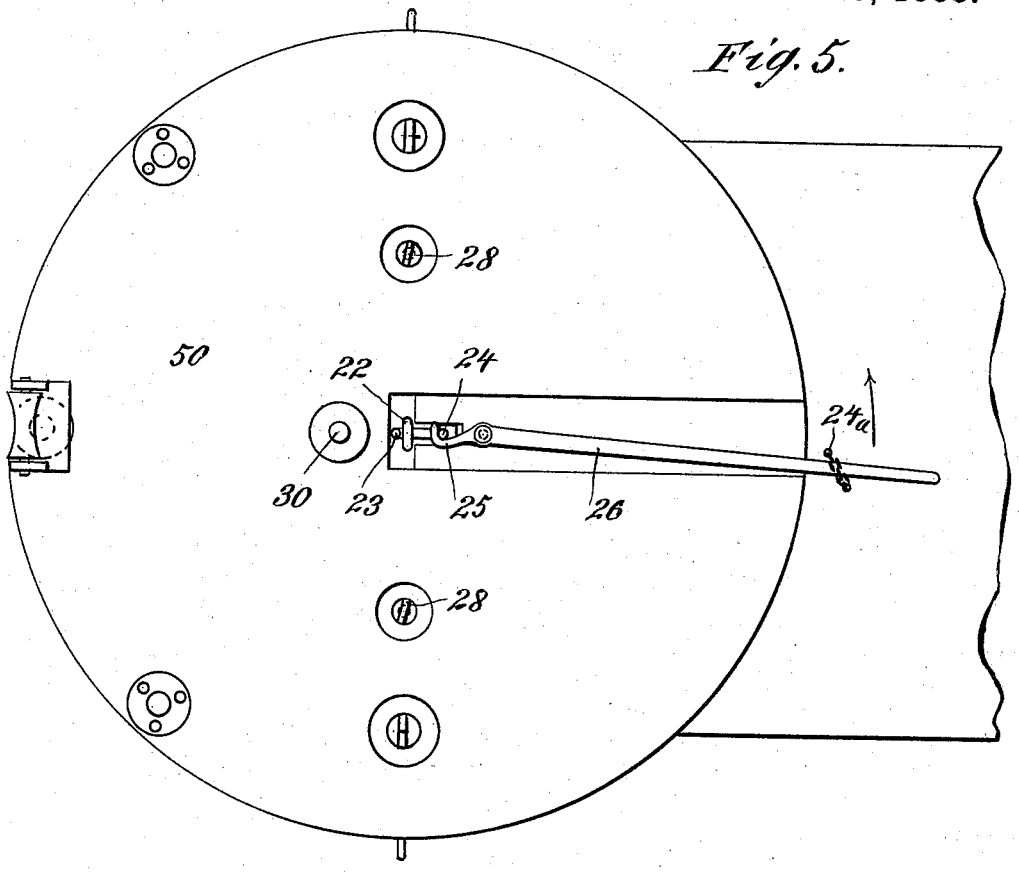
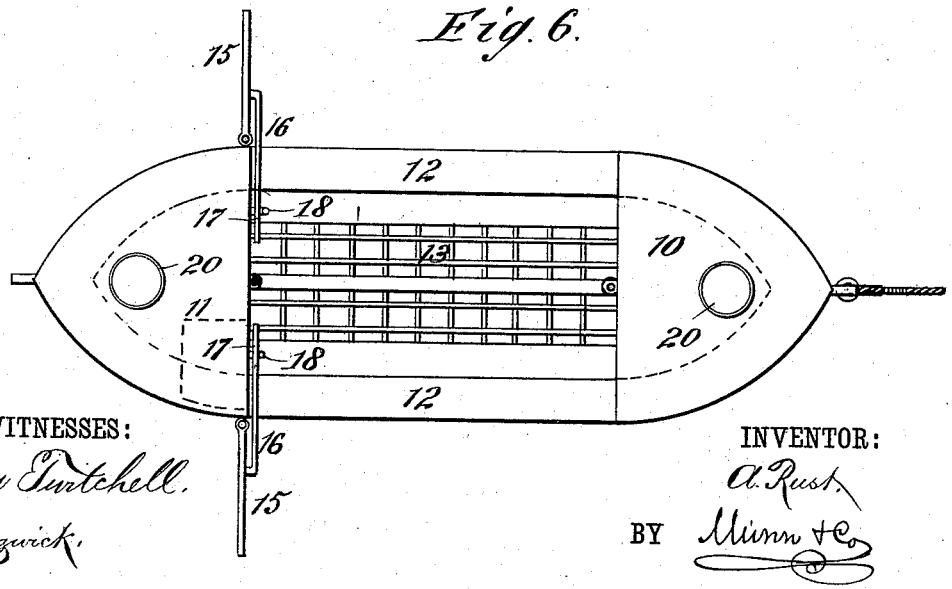


Fig. 6.



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UNITED STATES PATENT OFFICE.

ARMISTEAD RUST, OF THE UNITED STATES NAVY.

REEL LIFE-BUOY.

SPECIFICATION forming part of Letters Patent No. 385,323, dated June 26, 1888.

Application filed January 21, 1887. Serial No. 225,022. (No model.)

To all whom it may concern:

Be it known that I, ARMISTEAD RUST, of the United States Navy, domiciled at Leesburg, in the county of Loudoun and State of Virginia, and at present stationed at the Brooklyn navy-yard, in the State of New York, have invented a new and Improved Reel Life-Buoy, of which the following is a full, clear, and exact description.

This invention relates to a novel form of life-buoy and to a life-buoy-operating mechanism.

The main objects of the invention are, first, to so construct the buoy and connect it with the vessel that it may be readily dropped into the water and moved or held to or in a position in close proximity to any person who may have fallen overboard from the vessel in connection with which the buoy is arranged; second, to provide for the drawing of the buoy to the vessel; and, third, to provide for a means of communication between the occupant of the buoy and the officers of the ship, all as will be hereinafter more fully explained, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side view of my improved form of life-buoy, representing the same as it appears when suspended from a platform that is secured to the vessel, portions of the platform and life-buoy being broken away to disclose the construction of the parts. Fig. 2 is a central cross-sectional elevation of the buoy, which is represented as it appears when suspended from the platform, which platform is shown in partial section. Fig. 3 is a detail view representing one of the port-fire boxes and its contents. Fig. 4 is a diagram illustrating a means for signaling telegraphically between the buoy and the vessel. Fig. 5 is a plan view of the platform beneath which the buoy is suspended, the reel being removed; and Fig. 6 is a plan view of the buoy.

The buoy illustrated in the drawings above referred to is preferably made of metallic plates riveted together to form the walls of a forward air-tight compartment, 10, and a rear air-tight compartment, 11, which two end compartments are connected by the walls of shallow side air-tight compartments, 12, which, however, extend only a little above the vertical centers of the compartments 10 and 11, and do not extend to the bottoms of the compartments, this bottom portion being inclosed by a grating, 13, that is secured to a heavy metal keel, 14, and to the side and end compartments, as best shown in Figs. 1 and 2, the space between the sides 12 of the buoy and above the keel being of sufficient size to hold a man without cramping him.

To the forward portion of each side of the compartment 11 there is hinged a fin, 15, said fins being provided with lever-arms 16, to the ends of which arms there are hinged catches 17, which, when folded out, may be thrown into engagement with keepers 18, that are secured to the forward wall of the compartment 11, and when these catches are in engagement with the keepers 18 the fins 15 will be held in the position in which they are shown in Figs. 2 and 6; but when the catches are disengaged the fins may be folded back to the position in which they are shown in Fig. 1.

Standards 19 are secured to the upper walls of the compartments 10 and 11, and each of these standards carries a box, 20, the purpose of which will be hereinafter explained.

A suspending-chain, 21, is secured to the buoy, as best shown in Fig. 1, and this chain 21 carries a ring, 22, designed for engagement with a hook, 23, that is pivotally mounted in a platform, 50, the hook being formed with an upwardly-extending spur, 24, which, when the parts are in the position shown in the drawings, is engaged by a hook, 25, that is formed upon a pivotally-mounted lever, 26, said lever being held against accidental displacement by a pin, 24^a, the position of which is best shown in Fig. 5.

The approaching walls of each of the compartments 10 and 11 are provided with tubes 27, that are arranged to receive rods 28, which are passed downward through properly-located apertures that are made in the platform 50, these rods serving to steady the buoy when the vessel is rolling.

The platform 50 is provided with a vertical post or standard, 30, upon which there is swiveled the frame 31 of a reel, 32, the axle of the reel being mounted so that it will turn in its

bearing with a minimum amount of friction, and the ends of this reel-axle are squared to receive crank-arms 33. In connection with the reel I arrange a brake-strap, 34, one end of said strap being connected to the frame 31, while the other is connected to a lever, 35, that is fulcrumed on the frame, the arrangement being such that by throwing the lever 35 in the direction of the arrow shown in connection therewith in Fig. 2 the brake-strap may be brought into action, so as to hold the reel against any rotary motion upon its bearings.

The boxes 20 carry a coil of signal-fire, preferably of the kind known as "port-fire," and in the ends of these coils, one of which is shown at 36 in Fig. 3, there are secured friction-primers 37, that are arranged for connection with the covers 38 of the boxes 20, said covers being upheld by lanyards or chains, as illustrated in Fig. 1.

Within the rear compartment of the buoy there is arranged a locker, in which there would ordinarily be stored a signaling-pistol, some hard bread, and a bottle of whisky or other proper stimulant. Life-lines are arranged as shown at 42 in Figs. 1 and 2, which lines may be stretched across above the sides of the buoy in case of extremely rough weather.

A light wire rope, 40, is secured to the forward end of the buoy and to the reel, the reel being in such proportion to the size of the rope as to provide for the winding of about a half a mile of the rope.

In practice the platform 50 would be arranged so that it would extend out beyond the stern of the vessel, the buoy being suspended from beneath the platform, as illustrated in Figs. 1 and 2. In the day-time the friction-primers would be disconnected from the covers of the boxes 20; but at night the engagement should be re-established. The buoy being suspended, as described, and the wire rope 40 having been carefully wound upon its reel, (the cranks 33 being disconnected from the axle *a*,) the buoy will be in position for use, and immediately upon the cry of "man overboard" the lever 26 is thrown in the direction of the arrow shown in connection therewith in Fig. 5, which movement will permit of the tilting of the hook 23, so as to allow for the dropping of the buoy into the water at the stern of the vessel. When the cry of "man overboard" is raised, upon which cry, as before stated, the buoy is dropped, the officer of the deck will stop and reverse the engine, or proceed to heave his vessel to, as the case may be. The man stationed at the life-buoy, as soon as he has thrown the lever 26, will grasp the brake-lever, and if the man fell overboard from forward the brake-lever will be thrown so that the buoy will be drawn along with the vessel, but if the man fell overboard from aft the reel should be allowed to turn freely, so as to pay out the wire rope to the buoy, the buoy being held stationary through the action of its fins 15. As soon as the man at the brake of the reel sees that the buoy has been reached by the person who fell overboard, he should apply the brake, so that the buoy will be towed forward with the vessel. Immediately upon entering the buoy the rescued person should disconnect the catches 17, so as to allow the fins to fold back to the position in which they are shown in Fig. 1. The idea of applying the brake in case the man fell overboard from forward is to tow the buoy forward, for in so falling overboard from forward there will be a ship's length between the man and the buoy, and if the sea is rough the man will not be able to reach the buoy unless it is so drawn forward; but, being between the ship and the buoy and in line with them, it will be readily seen that if the buoy is slightly drawn ahead it will soon be moved to a position in close proximity to the man, after which the brake should be eased up until it is seen that the buoy has been reached by the man who so fell overboard.

If the buoy has to be dropped at night, the primers will, as before stated, be properly connected, so that when the buoy is dropped the port-fires will be lighted, and at this time the manipulation of the buoy is the same as at any other, except that when the buoy is reached by the man his first duty should be to take the pistol from the locker and fire a signal, so that the brake may be at once applied to the reel.

The following are among the advantages arising from such a buoy and operating mechanism as have been above described: A means for recovering the man and buoy without lowering a boat is provided. A means for keeping the buoy stationary in the water is provided. A means for controlling the position of the buoy is provided. A means for signaling from the buoy to the ship is provided. The occupant of the buoy is protected from sharks, this protection being brought about by means of the grating or netting 13. The occupant of the buoy is safer after once getting within the buoy than he would be in an ordinary ship's boat. The buoy can be dropped immediately, and in dropping the port-fires will be automatically lighted. The buoy has great buoyancy and cannot capsize, and if in case by any accident the wire rope should break, the man has food and stimulant enough to keep him alive several days; and, lastly, I claim that the chances are greater in favor of a man getting on this buoy than on one of the old-fashioned ones, and that the risk of losing other lives by lowering a life-boat at sea in a storm is entirely avoided.

There are often times when it would be very difficult and extremely dangerous to lower any boat at sea—times when it would be madness to do so; but at such times the reel life-buoy could be used as well as at any other time without endangering the lives of a whole boat's crew or that of a single man, and all, even more would have been done by its use than could possibly have been achieved by the use of one or more of the life-buoys now in

use and a boat's crew. By its use the officer of the deck is enabled to give his whole attention to stopping the vessel. The reel life-buoy may also be used in a storm to render valuable assistance to a vessel in distress at sea. By means of a small mortar or howitzer a line can be thrown to the sinking ship and the buoy hauled over by the line or a larger one. Then the crew—one or two at a time—can be hauled on board the rescuing ship.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the vessel having a swiveled frame and a reel carried thereby, of the vertically-swinging buoy-supporting hook pivoted to the vessel below the reel, the horizontally-movable releasing-lever pivoted to the vessel and having a hook or projection engaging a lug or arm on the hook, the life-buoy suspended over the vessel's side by the said hook, and the line or cable connecting the reel and buoy, substantially as set forth.

2. The combination, with the vessel, the buoy, and the suspending and releasing mechanism, of a signal composition or material carried by the buoy, and an igniting device connected with the vessel and with the said signal, whereby when the buoy falls the signal will be ignited by the severance of the connection between it and the vessel, substantially as set forth.

3. The combination, with the vessel, the platform extending beyond the edge thereof, and having a reel and a supporting and releasing mechanism, of the buoy having the port-fire box containing a coil signal-fire provided with a friction-primer, and a cover for the box connected to said primer and secured by a lanyard or chain to the platform, whereby when the buoy is released and falls the cover will be pulled off and the friction-primer operated to ignite the coil, substantially as set forth.

4. The combination, with the vessel having a platform, 50, the reel, the buoy suspending and releasing mechanism, and apertures provided with removable covers, of the buoy suspended beneath the platform and provided with port-fire boxes below said platform-apertures and containing coils of signal-fire provided with friction-primers, covers for the said boxes connected to said primers, and chains or lanyards connecting the aperture-covers with the port-fire covers, whereby the covers may be removed and the friction-primers disconnected during the day, substantially as set forth.

5. In a life-saving buoy for vessels, a port-fire box to be carried by the buoy and having a coil of fire provided with friction-primer, and a cover for the box, to which the coil is connected, the said cover being adapted to be connected with the vessel and removed by the falling of the buoy to ignite the coil, substantially as set forth.

6. The combination, with a vessel having a reel and a buoy suspending and releasing mechanism, of a buoy, a line leading from the reel to the buoy, and rearward-swinging fins normally held extended at the sides of the buoy, and means for releasing the fins to allow their free ends to swing rearward, whereby when the buoy falls into the water the extended fins will cause the line to unwind from the reel without moving the buoy forward, and said fins may be released and allowed to swing rearward when the occupant desires the buoy to be drawn to the vessel, substantially as set forth.

7. The combination, with a life-buoy, of fins 15, hinged to the sides of the buoy to swing rearward, arms 16, extending inward from said fins, hinged catches 17 on the inner ends of the said arms, and keepers 18 on the buoy, with which said catches are in engagement to normally hold the fins extended, substantially as set forth.

ARMISTEAD RUST.

Witnesses:
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C. SEDGWICK.