(No Model.)

F. E. SICKELS.

DUMPING SCOW.

No. 266,212. Patented Oct. 17, 1882.

Fig. 1.

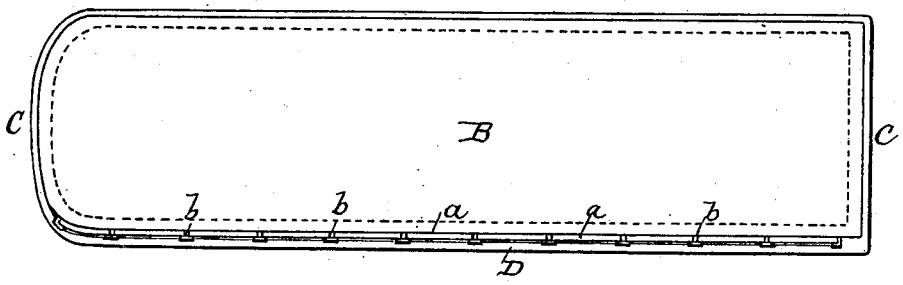


Fig. 2.

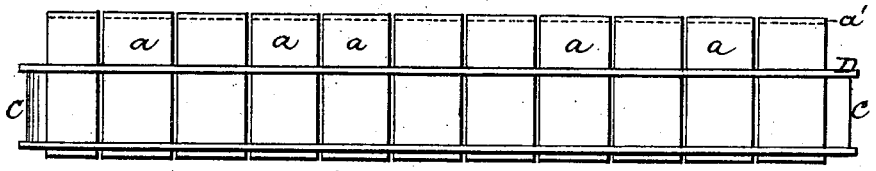


Fig. 3.

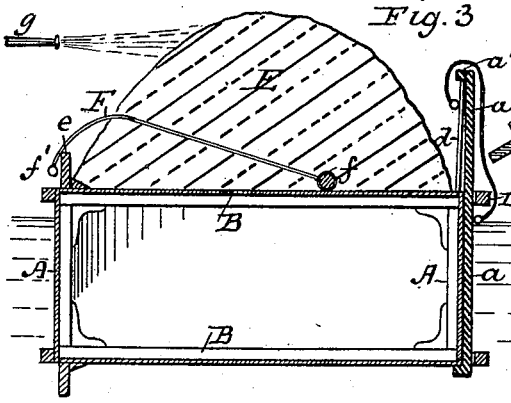


Fig. 4.

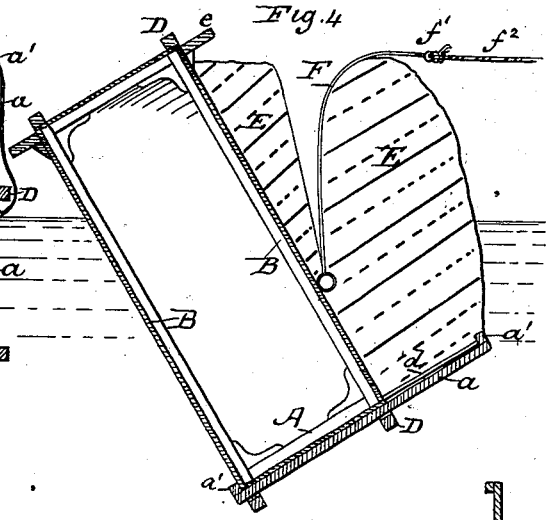


Fig. 5.

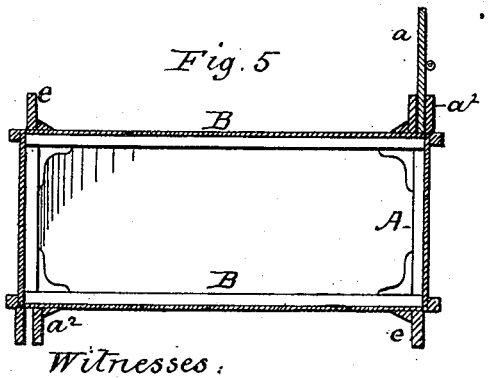
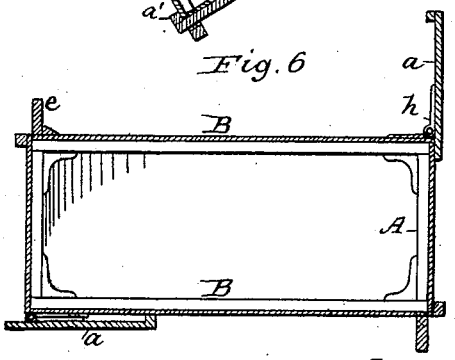


Fig. 6.



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UNITED STATES PATENT OFFICE.

FREDERICK E. SICKELS, OF NEW YORK, N. Y.

DUMPING-SCOW.

SPECIFICATION forming part of Letters Patent No. 266,212, dated October 17, 1882.

Application filed September 23, 1882. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK E. SICKELS, residing at New York city, in the county and State of New York, have invented a new and useful process and means for dumping the load of scows.

My invention relates to improvements in scows which are adapted to be overturned by rendering one side heavier than the other; and the objects of my improvements are, first, a process by which the deck-load becomes the principal means for overturning the scow; and, secondly, to provide additional means for shifting the load to one side of the scow and causing it to be overturned. I attain these objects by the process hereinafter described, and also by the means illustrated in the accompanying drawings, in which—

Figure 1 is a top view of a plan of a scow, showing one part of my invention. Fig. 2 is a side view of the same. Fig. 3 is a transverse vertical section of the same upon a larger scale, and having a deck-load to be dumped. Fig. 4 is a transverse vertical section of the same with the load in position to be discharged by the overturning of the scow. Figs. 5 and 6 are transverse vertical sections of scows, showing modifications of the attachments secured to the sides thereof.

Heretofore scows have been constructed with chambers to form compartments to receive water, by which means one side of the scow can become so much heavier than the other, or wanting in buoyancy, as to cause it to be overturned; but this mode of operation and the construction of the scow differ from my process, by which the buoyancy of the scow remains constant, and the deck-load is the principal means used to overturn the scow.

In the drawings, A designates the side walls, and B the bottom and also the deck of the scow, as these parts (the deck and bottom) take each other's place alternately after each dumping and are of identical form. The ends C can be made either straight across the scow or rounded, and form no part of my invention. To one of the sides of the hull, as shown in Figs. 1, 2, 3, and 4, is secured a series of stoppers, *a*, adapted to slide against the planking of the hull. They are in this case in the form of rectangular partitions made of planks, united at the top and bottom by cleats *a'*, and are retained against the planking by T-shaped bars *b*, secured to the deck or to the frame of the vessel, and on the outside of these stoppers are secured to the hull guard-stringers D, as a protection against collision. The stoppers *a* are of such length as to project vertically about six or eight feet above the deck when the vessel is to receive its load, and they are retained in that position by props *d*, made to stand against them, having one end resting upon the deck and the other engaging under their cleat *a'*. These props are permanently secured by ropes *d'* to the outer surface of the stoppers, so that they may be used alternately against either one of its cleats. The other side of the scow is provided with the guard-rail *e*, as commonly found in that class of vessels.

Scows capable of being overturned with their load are intended mainly to remove sweepings and débris of every kind found in large cities. These débris are generally light and cumbersome, containing barrel-hoops, old baskets, and crates, that would clog the discharging-passages found in many dumping-scows used with dredging-machines. They may be used with said machines; but their main use being to remove refuse from cities, to load them they are moored to the side of a wharf under an overhanging platform, and the débris dumped from carts directly upon their decks, where they form a large heap, as shown at E in Fig. 3. After one or more scows have been loaded they are towed by tugs to a place where they are to be unloaded, and the contents dumped by overturning the scow, as hereinafter explained. To facilitate the dumping a few means are shown in the drawings.

In Figs. 3 and 4 there is shown, lying upon the heap of débris, adjoining the bottom thereof, a canvas apron, F, made of sail-cloth, reenforced with a net-work of ropes, (or a net made of closer meshes will answer the same purpose.) To one end of this apron is secured a light beam or roller, *f*, upon which it can be rolled after using; but the roller is mainly intended to anchor or retain one end of the apron while traction is applied to the other end from over the load to overturn the scow and dump it, the side *f'* of the apron being united by di-

vergent ropes to a cable, f^2, that can be pulled by the tug taking a proper position on the side of the scow. The apron may be divided into two or more parts or lengths to facilitate the operation. The greater portion of the load is in this manner forced against the stoppers *a*, projecting upward from the side of the vessel, and the latter brought to the positions shown in Fig. 4, the load resting upon said stoppers. The equilibrium of the scow is thus destroyed. It immediately turns over, bottom upward, and the load is thus discharged. The props *d*, previously holding the stoppers *a* elevated, slip from their places and float on the water, and are taken upon the new deck (that was the bottom previously to the dumping) and set up again under the stopper-cleat *a'*, projecting now upon the deck, and the scow is ready for a new load, the apron or aprons F being about the same time rolled and also placed on deck.

To facilitate the shifting of the load from the middle of the deck to one side thereof and against the stoppers *a*, hydraulic means may be used from the tug by sending streams of water through nozzles *g* against its heaped top of débris until they lie piled compactly and heavy from the soaking against the stoppers *a*, and the equilibrium of the scow being thus destroyed it will be overturned and its load discharged. When hydraulic means are used the canvas apron can also be placed under the load in a position opposite to the side shown in Fig. 3—that is, while having still one end secured to the roller *f*, and said roller occupies the position shown in that figure, its middle portion and opposite end are laid over the stoppers *a* until the scow is loaded, and then that middle portion and the free end of the apron are laid over the load, and its cable f^2 is secured to the rail *e* with such a knot as can be easily slipped off to detach it after the load has been dumped—and when the scow has arrived at the place where it is to be discharged streams of water are sent under the canvas among the débris, causing them to fall within the canvas and making it bag over the rail of the vessel, as by this last mode the high stoppers *a* may be dispensed with, causing the boat to lose its equilibrium and turn over with its load; but if the water should happen to be too shallow to overturn the scow, or for other reasons, the load may be removed from the deck by directing powerful streams of water upon it from suitable-sized hose and nozzles.

In Fig. 5 the stoppers *a* do not extend against the side of the scow, but they stand vertically upon the edge of the deck, where it is provided with two rails, a^2, having a space between them for the reception of one end of the stoppers. The latter are made of planks, about eight feet long and three inches thick, that can be inserted between the rails a^2 and connected together only with a rope passing through a hole made in each plank or through an eyebolt attached to each one.

In Fig. 6 the stoppers *a* are secured to the edge of the deck by means of hinges *h*, and the lower end of the stopper extends under the pivot of the hinge a short distance against the side planking of the hull to form a bearing for said stoppers and resist the pressure that will be brought against its upper end by the weight of the deck-load at the time the scow is to be overturned.

Having now fully described my invention, I claim—

1. The process herein described of overturning a loaded scow by shifting its load against side stoppers by means of a power located outside the scow, substantially as described, until the equilibrium of the scow is destroyed and it is overturned.

2. The combination of the hull of a scow having its deck and bottom similar in form with movable side stoppers connected with said hull, substantially as described, and incapable of swinging outward over the side of the scow under the pressure and shifting of its deck-load, and whereby said deck-load is retained after being shifted to one side by a power located outside the scow, substantially as described.

3. The combination of the hull of a scow adapted to have its deck or its bottom uppermost with side stoppers projecting above the edge of the deck and an apron having one end inserted within the load of the scow and the other provided with ropes whereby said apron is adapted to be pulled over the load, substantially as and for the purpose described.

4. The combination of the hull of a scow having its deck and bottom similarly formed with side stoppers hinged to the deck and adapted to be folded upon or made to project above said deck, substantially as described.

FREDERICK E. SICKELS.

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