

# SCIENTIFIC AMERICAN

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## THE FLOATING DERRICK RELIANCE.

The Chapman Derrick and Wrecking Company, of this city, has recently performed successfully two operations that have brought it prominently before the public. Some days ago as the City of New York, the celebrated Inman steamship, was coming up the Hudson River, at the conclusion of a voyage, one of her twin propellers struck the tug boat Viking and cutting a hole in its side sent it instantly to the bottom. The Chapman Company at once sent their derrick Reliance to the spot, and by the aid of a diver passed chains around the hull of the sunken vessel. Attaching the great falls of the derrick to the chain slings thus formed, the tug boat was slowly raised to the surface and taken away for repairs. But a few days later another tug boat, the James A. Garfield, was sunk off the Battery in a collision with another steamer. This tug boat was also raised in a few days by the Reliance. A curious feature in this case was that although the tug boat was instantly sunk, her hull was intact. The collision must have careened her so that she filled with water over her rail.

To the same company was intrusted the work of discharging the elephant Jumbo, the derrick hoisting him out with his cage from the steamer in which he had crossed the ocean. The placing upon a canal boat of the fifty-ton granite block forming the base of the memorial to John Wentworth, of Chicago, was also

one of the recent achievements of the Reliance. After this was in place in the boat, and after the latter had started, it proved unable to pass some places in the canal. The boat therefore returned and the great block was tilted over and secured diagonally, and was then successfully shipped.

The derrick in question is built under and is protected by the patent granted to Mr. W. E. Chapman.

From the deck of a scow, arranged with water-tight compartments and pump connections thereto for applying water ballast, rises a frame resembling a capital letter A. A diagonal boom is swiveled to the deck beneath this frame and is worked by tackle attached to its top and carried back to the frame. The boom and two frame pieces are built up of staves and are hooped at regular intervals. A number of guys or shrouds with turn buckles are attached to and extend backward from the head of the frame to chain plates on the sides. On her deck is the necessary steam plant for working the windlasses and pumping out the compartments. While nominally of 135 tons lifting capacity, it is hard to put a limit to its power.

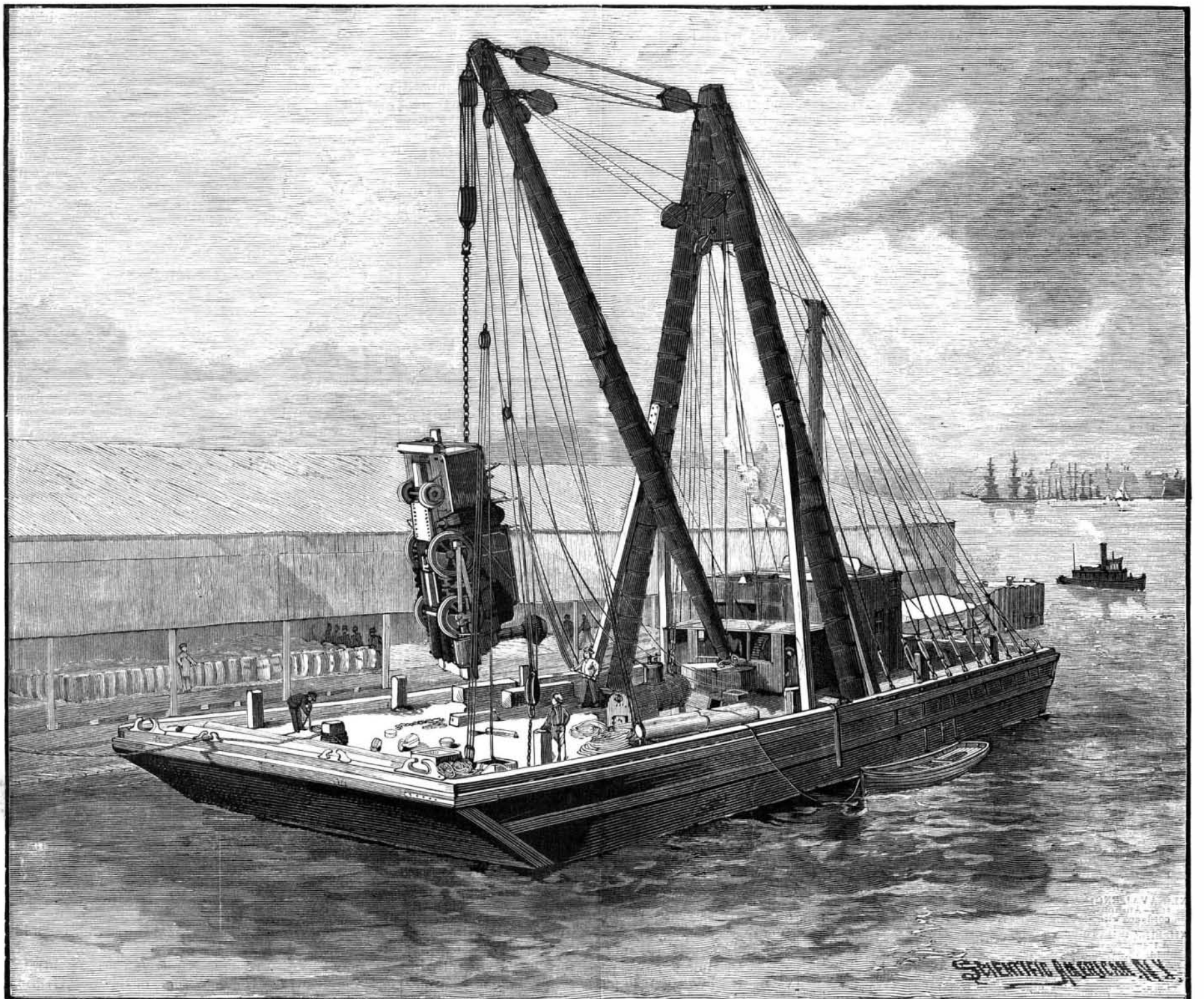
In the cut we illustrate the raising of a sunken locomotive. This engine ran into the river from a dock on the Hudson River at the foot of West Twenty-second Street, in this city, and was raised bodily by the Reliance, without any injury to its machinery. A diver was sent down who placed a heavy toggle across the

opening of the fire door and within the fire box. The chain was attached to this, and the engine raised as shown. The locomotive was a drilling engine belonging to the Erie Railroad. No one was in the cab at the time it ran into the river. Some person standing on the ground threw a wrench or other article into the cab. This probably struck the valve handle or reversing lever, and moved it enough to start the engine, which ran down the track and plunged into the water.

## Interesting Lecture on Caves.

On the evening of October 22, Dr. Horace C. Hovey, of Bridgeport, Conn., delivered a very interesting lecture on the great caves of Indiana and Kentucky, before the Brooklyn Institute. The lecture was profusely illustrated by lantern views, which, considering the difficulties attending this sort of photography, were remarkably fine. The variety of forms of stalactites and stalagmites, the alabaster flowers, the clustered columns, together with the narrow passages and capacious chambers, the shining white of the alabaster and the inky blackness of the small and large openings, were blended in a series of weird and rare pictures not soon forgotten.

Dr. Hovey is well known to our readers as a writer on caves, his writings upon the subject having frequently appeared in the SCIENTIFIC AMERICAN and SUPPLEMENT.



RAISING A LOCOMOTIVE FROM THE BOTTOM OF THE HUDSON RIVER WITH THE CHAPMAN DERRICK RELIANCE.