

Telephonic Communication at Sea.

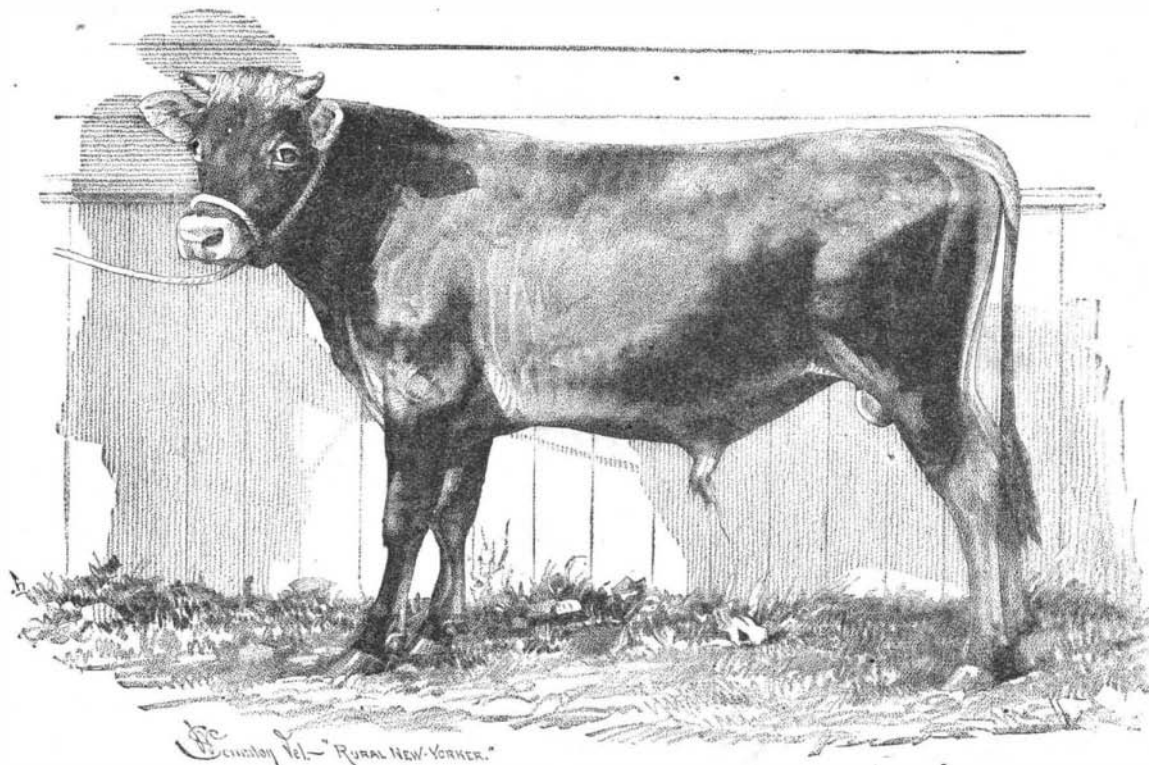
Mr. H. F. Boyer, of H.M.S. Malabar, has recently made a number of experiments in this direction with an apparatus of his own invention. Previous attempts of the same general character by some American electricians were described in our issues of October 7 and November 4. The following description is given of the arrangement:

The source of sound consists of a large gong or flat bell supported against the side of the vessel below the water line. A straight tube leads from this gong to the "bridge" of the ship, and in its interior is a rod fitted with a handle at its upper end, by which the hammer of the gong can be worked, and the gong struck at will. The striking of the gong may, of course, be done in keeping with a code of signals, such as the Morse code used in ordinary telegraphy. In the center of the gong is fixed a modified Bell telephone with a large and sensitive diaphragm. The telephone is connected by means of wires running up the tube to a second telephone on the bridge, within reach of the observer there. This forms the receiving part of the apparatus. If we suppose

two ships fitted with this combination, it is only necessary for one to rap out her message by striking the gong and for the other to receive it on her telephone. The sound waves from the transmitting gong traverse the intervening water and vibrate the diaphragm of the submerged telephone at a distance. These vibrations excite currents in the latter, which, in traversing the second or observing telephone, reproduce the original sounds of the gong. Small explosions of gun cotton under water have also been used by Mr. Boyer in place of the gong; and an ounce of gun cotton can in this way give a signal which is distinctly heard a mile off under water.

Such signals under the sea are independent of fogs or stormy weather; and they hold out the possibility of lighthouses and lightships being able to signal vessels

ever, it will be remembered that Prof. Blake uses a microphone in circuit with the deck telephone as a receiver. With this arrangement, Prof. Blake has been able to transmit subaqueous signals from a locomotive bell through a mile and a half of the Wabash River, comprising three or four windings. Mr. Edison also is

**JERSEY BULL DIAVOLO.**

reported to have signaled through a mile of the Caloosahatchie River, in Florida, during the present year. His system has not been fully disclosed, but it appears to be similar to those described. It is to be hoped that this new development of telephony will be pushed as far as possible. —*Electrician.*

Oyster-Opening Monkey.

Mr. Alfred Carpenter, of the Marine Survey Office, Bombay, has observed *Macacus* monkeys on the island off South Burma opening oysters with a stone. They bring the stones from high water mark down to low water, selecting such stones as they can easily grasp. They effect the opening by striking the base of the upper valve until it dislocates and breaks up. They then extract the oyster with the finger and thumb, occasion-

FINE TYPES OF PRIZE CATTLE.

The Jersey bull Diavolo, represented herewith, received the first prize in the yearling class at the New York State Fair in 1880, and was at that time the property of Hon. Erastus Corning, of Albany.

The Dutch belted cow Lady Aldine, shown in our engraving, is now owned by Mr. H. B. Richards, of Easton, Pa. She took the first prize in her class at the New Jersey State Fair, held at Waverly last September.

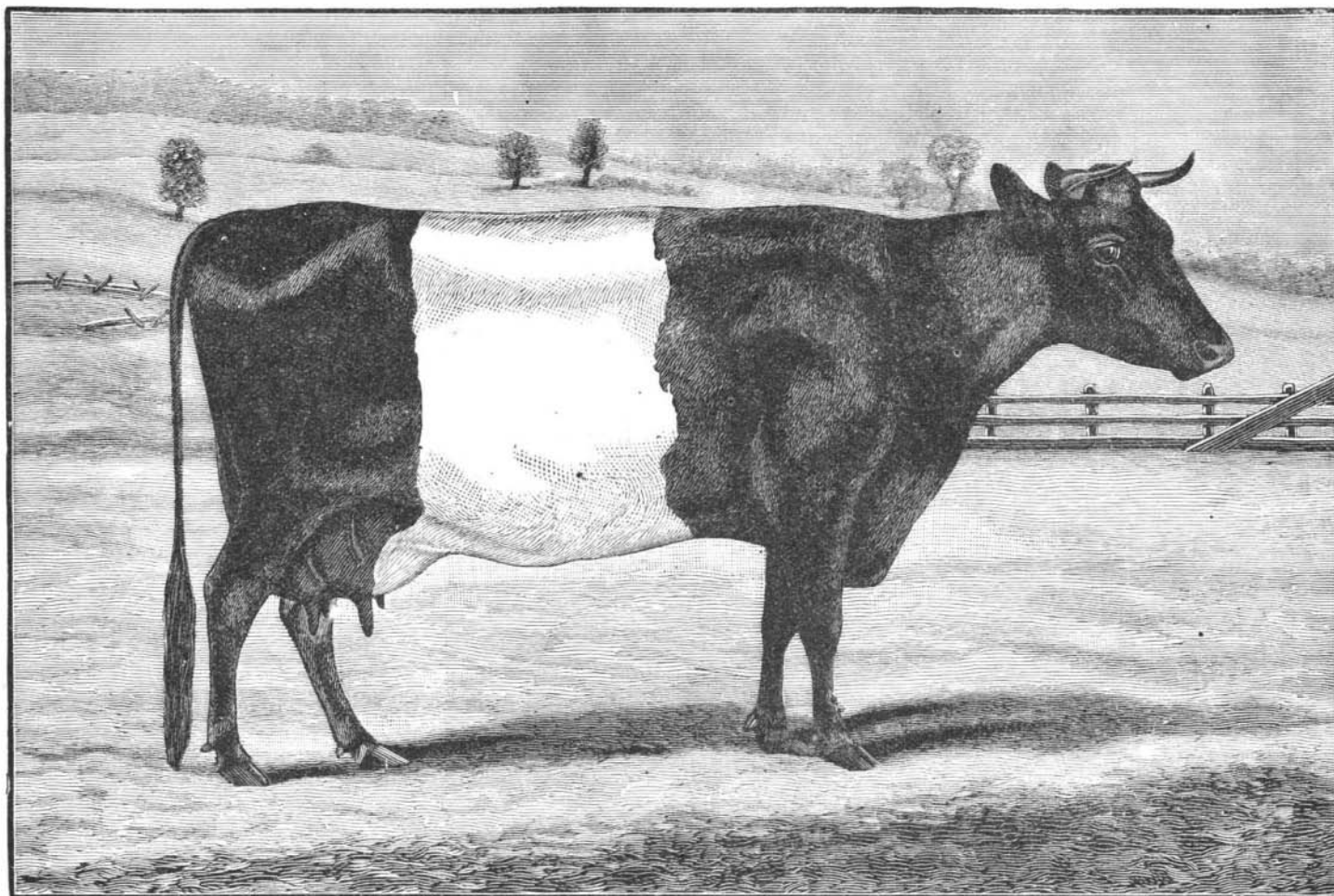
The Aldine family, of which our portrait is a good representation, have become famous as prize winners. The Dutch belted or blanket breed of cows are natives of Holland, and have not been brought to this country in large numbers. They antedate the seventeenth century, when the cattle interests in Holland were in the most thrifty condition, and this type and color were established by scientific breeding. The historian Motley well said: "These are the most wonderful cattle of the world."

In their native country they are owned and controlled by the nobility, and present a very novel feature in the landscape, grazing in the lowlands in

Holland. In color they are black, with a continuous white belt around their body, the white being pure white, the black jet, making a beautiful and imposing contrast. Their form is usually very fine, and they are very productive as milkers.

The owner of Locust Grove farm, Michael Rosney manager, on Orange Mountain, N. J., has a small herd of the Dutch belted cattle. His stock is comprised of both the Aldine and Arnout breeds, five of which number received first and second premiums, according to their ages, at the State Fair where was awarded the first prize for Lady Aldine.

The Holstein cow Clothilde, owned by Smiths, Powell & Lamb, Syracuse, N. Y., has made herself famous by making a milk record of 28,021 pounds in one year.

**DUTCH BELTED LADY ALDINE.**

at all times. Moreover, ships, in addition to signaling each other, could also signal lightships, or announce their number to Lloyd's stations, if the system prove successful. Mr. Boyer's plan, which so far has given encouraging results, is somewhat similar to that of Prof. Lucien J. Blake, of the Rose Polytechnic Institute, United States, which was described in our issue of November 4. Instead of a submerged telephone, how-

ally putting the mouth straight to the broken shell. The way they have chosen is the easiest to open the shell.

AMALGAMS present many peculiarities. Thus iron, antimony, sodium, silver, and gold will dissolve in mercury; but if antimony amalgam be mixed with sodium amalgam, the antimony is thrown out—iron also.

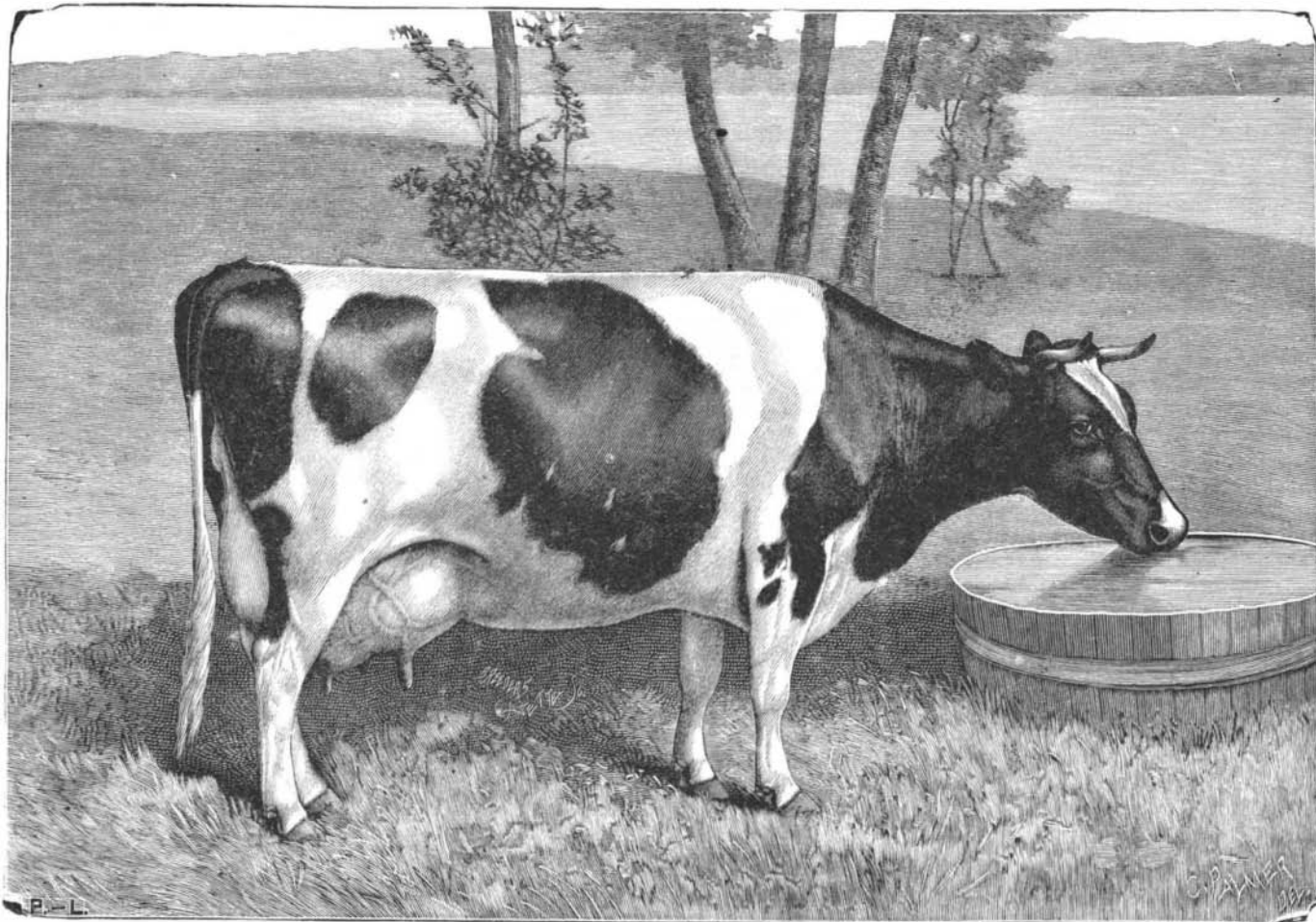
She was exhibited at the New York Dairy and Cattle Show, where all the dairy breeds were shown, and the number of Jerseys exhibited was largely in excess of the number of Holstein-Friesians, and she won the sweepstakes prize for making the most butter in twenty-four consecutive hours, and according to a statement made to us by her owners, she has since given 101 lb. 2 oz. of milk in a day, and made 28 lb. 2 1/4 oz. of

butter in a week, which record there is probably no cow likely to dispute.

The other fine portrait is of a celebrated shorthorn cow, Tenth Duchess of Geneva, whose personal and

ca, were finally dispersed by auction in 1873, when Tenth Duchess of Geneva was bought by Mr. Berwick for the Earl of Bective at \$35,000. She had bred in America the bulls Third Duke of Oneida, Sixth Duke of Oneida,

is, if from overweight a car breaks down in transit, and a train hand is injured or killed by the accident, the responsibility may fall upon the shipper, or the agent who permitted the loading. One thing is certain,



CLOTHILDE.

family history is somewhat remarkable. Tradition ascribes the origin of the family to a breed of cattle possessed for centuries by the family of the Duke of Northumberland, but the actual records commence in the last century, when an ancestress of this cow passed into the possession of Mr. C. Colling, of Ketton, Durham, who was one of the founders of the shorthorn as a distinct and highly improved breed. In 1804 Mr. T. Bates, of Kirklevington, Yorkshire, purchased one of the Duchess cows, and recognizing in her excellence and that of her male offspring the superiority of the family over the shorthorns he had previously owned, he determined to secure more of the sort, and at Mr. Colling's great sale, in 1810, when forty-seven animals of both sexes and all ages, from eleven years downward, made the then unprecedented average of \$732.84, he gave \$929.64 for the two year old heifer Young Duchess, afterward called First Duchess, a daughter of Comet (sold on the same occasion for \$5,080), and grand-daughter of the cow he had first purchased. From that heifer in the female line direct sprang those Duchesses which have at different periods won the chief honors of the Royal Agricultural Society of England, and for many years past have commanded the highest prices at public and private sales. Mr. Bates, while practicing to a considerable extent the system of in-and-in breeding, crossed his Duchesses at different times with other approved shorthorn families, notably with those of Mr. Colling's Red Rose and Princess, thus combining what he considered three of the oldest and best shorthorn families in the kingdom. In 1853, at the Tortworth sale (after the death of Earl Ducie), Sixty-sixth Duchess was bought by Messrs. Becar & Morris, of New York, for \$3,557.40.

Her descendants, having changed owners in Ameri-

and the heifer Eighth Duchess of Oneida, bought also for Lord Bective, at the same sale, for \$15,000.

Overloading Cars.

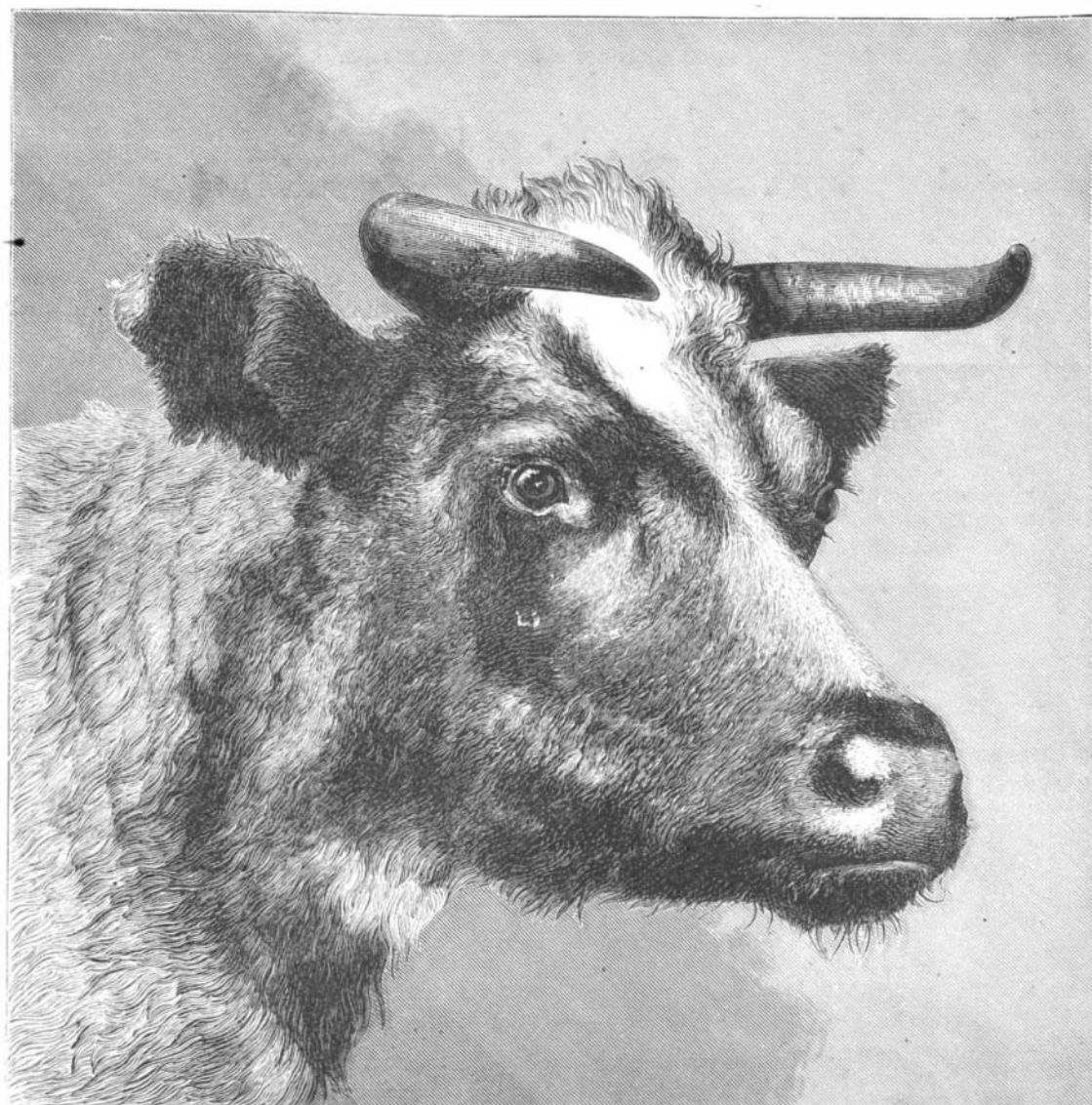
Fifty-two thousand feet of bevel siding is the amount that a Chicago shipper recently shipped in a single car load to an up river dealer, and the latter objected to receiving it. He said he did not buy a whole lumber yard at a single purchase. The incident recalls the days when shippers considered 35,000 feet a big load, and resorted to all manner of schemes to get such a car load out of the yard and on its way east. Such overloading of cars may some day breed trouble—that

this view of such business is not unthought of by railroad officials, and some day it may be sprung on an individual who least expects it.

Referring to the above, we are reminded of numerous instances where the stock is piled to the very top of the car on one side, and within six inches of the top on the other. When this is done, it becomes impossible to unload the car only from one side, and it is a species of luck, when the car arrives at its destination, that the only side from which it can be unloaded is on the opposite side from the dealer's shed or from the driveway to which teams have access. "Time is money" everywhere, and it is not right to cause a buyer to lose the use of a team and one or more employes for perhaps half a day in the labor of "starting a car load," simply to accommodate a shipper in his desire to ship, say, 500 feet more lumber in a car than there is any reason for.—N. W. Lumberman.

Our New Navy.

The *Marine Journal* says: As a bit of a warning to those of our Washington authorities who would blindly follow the lines laid down by foreign builders of war ships and great guns, it is well to note that the English papers state that the machinery trials of the new steel armor plated cruiser *Narcissus* have "again proved unsuccessful." Viewed in the light of Captain Bunce's late report on the defects of the *Atlanta*, and its sister ship, the *Boston*, built on the same lines, yet untested, this information shows that absolute perfection is not yet assured by following foreign models. And it is also interesting to note that American shipbuilders foretold a number of the defects in the *Atlanta* demonstrated by the late trials. Would it not be well to build one war ship on a thoroughly American model, untrammelled by foreign precedents where counter to our own ideas?



THE SHORT-HORNED COW TENTH DUCHESS OF GENEVA.