18

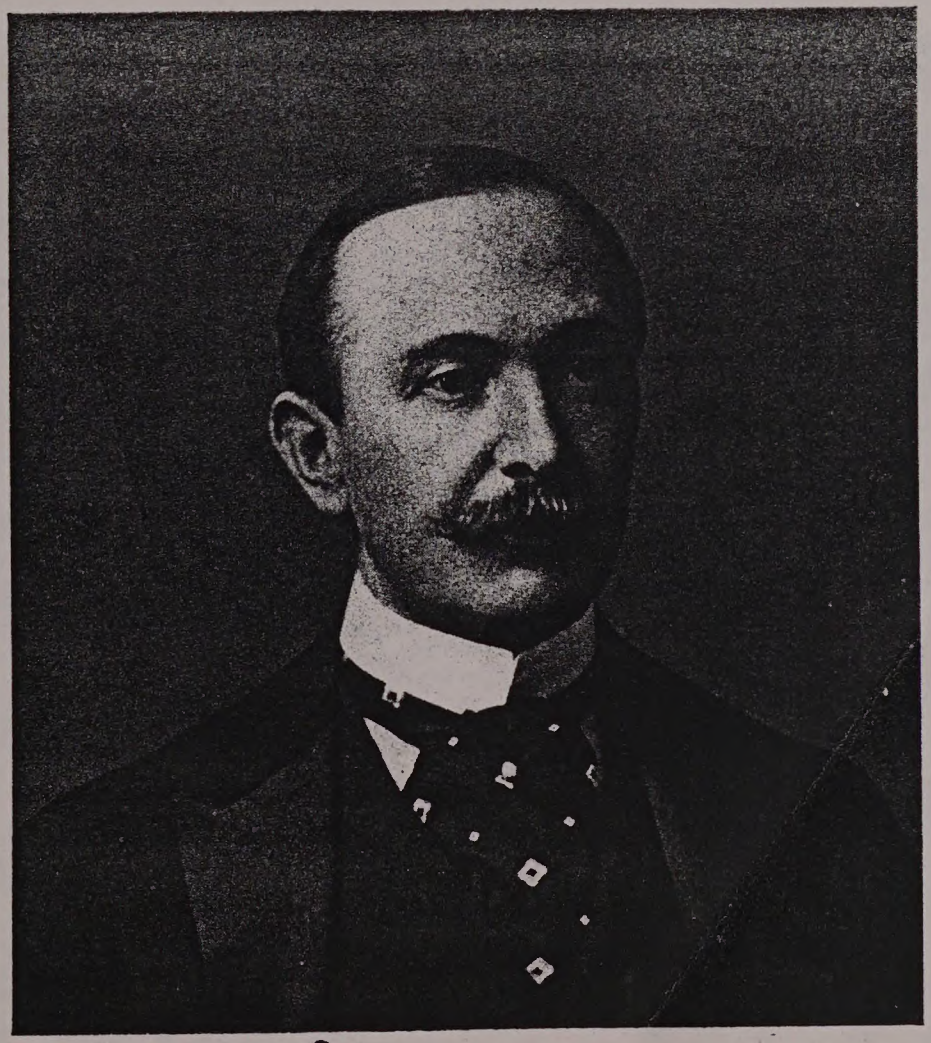
Compliments of the author
John W Dalton,
To Josephus T. Brady
Sandwich Mass
March 25—1911

¶ An ILLUSTRATED Story of the new Maritime Highway, a project first conceived by the Pilgrim's, the canal that will make Cape Cod an island, with illustrations of the work accomplished to March 1, 1911

THE CAPE COD CANAL

¶ Other editions illustrating the progress of the great undertaking will be published from time to time and by preserving them a complete set, showing the various stages of the work from the beginning to the completion of the waterway, may thus be obtained. Compiled, illustrated and published by J. W. DALTON, Sandwich, Mass.

THE EASTERN PRINTING COMPANY, BOST



AUGUST BELMONT, New York
President of the Cape Cod Canal Company.

THE CAPE COD CANAL FROM 1620 TO 1911

BY

J. W. DALTON

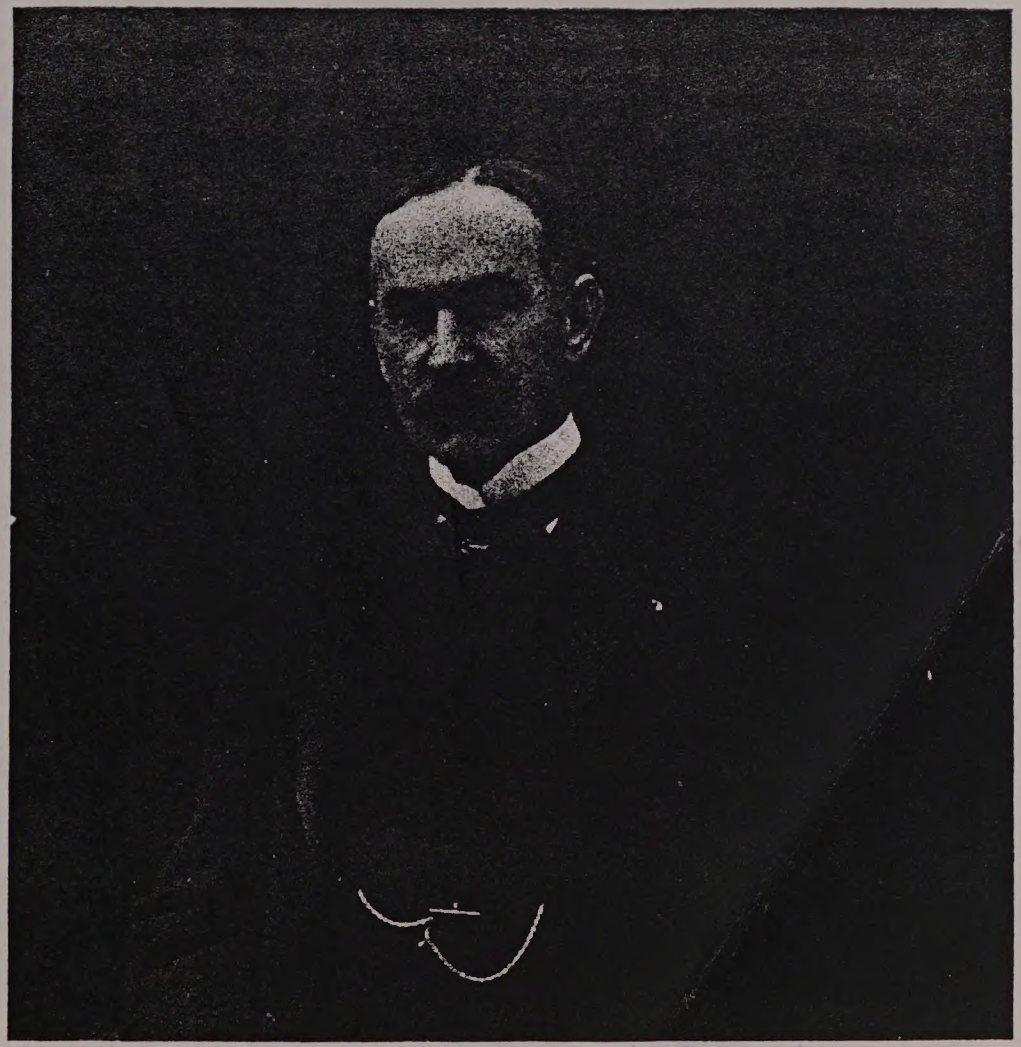
THE VALLEY that runs from Cape Cod Bay at Sandwich, the oldest town on Cape Cod, to Buzzards Bay in Bourne, once a well-worn path where the Indians portaged their canoes in order to avoid the shoals going around the Cape, the route used by the colonists of Plymouth to transport their goods from Scusset Creek on the east side of the Cape to Monument River on the west, in trading with the Dutch of Fort Amsterdam, is now being rapidly converted into a great ship canal, a new maritime highway, by a company of New York capitalists, of which August Belmont is the head.

It is the Cape Cod Canal, so called, a project that has been agitated for nearly three centuries, the first link in the chain of proposed protected waterways from Boston to Florida, the great waterway that will make New York sixty-six miles nearer to Boston, that will increase the transportation and commercial facilities of Massachusetts and all New England, that will practically eliminate the hazardous shipping route over the snoring, dangerous, Nantucket shoals and diminish the tragedies of the sea along the coast of Cape Cod, known to every sailorman as the Graveyard of the Atlantic.

"I promise in digging the first shovelful of earth not to desert the task until the last shovelful has been dug," said August Belmont June 21, 1909, when the construction of the important waterway was formally inaugurated by him.

The idea of a canal across Cape Cod from Cape Cod Bay, or Barnstable Bay, as it is sometimes called, to Buzzards Bay, was given serious consideration by the Pilgrims soon after they settled at Plymouth in 1620.

On their voyage to the new world, of which they had heard glowing descriptions, they had gone so far out of their way that instead of first sighting the shores of New Jersey, it was off the shores of Cape Cod, the desolate beaches,



CAPT. J. W. MILLER, New York
Vice-President of the Cape Cod Canal Company.

where they found themselves after their long passage across the Western ocean.

They encountered the same shoals off Cape Cod that had forced the intrepid Gosnold to turn back as he was groping his way over the hidden sand rips in 1602, and the Mayflower returned northward, doubled the Cape to where is now Provincetown. After landing at the tip end of Cape Cod the Pilgrims later sailed to and settled at Plymouth.

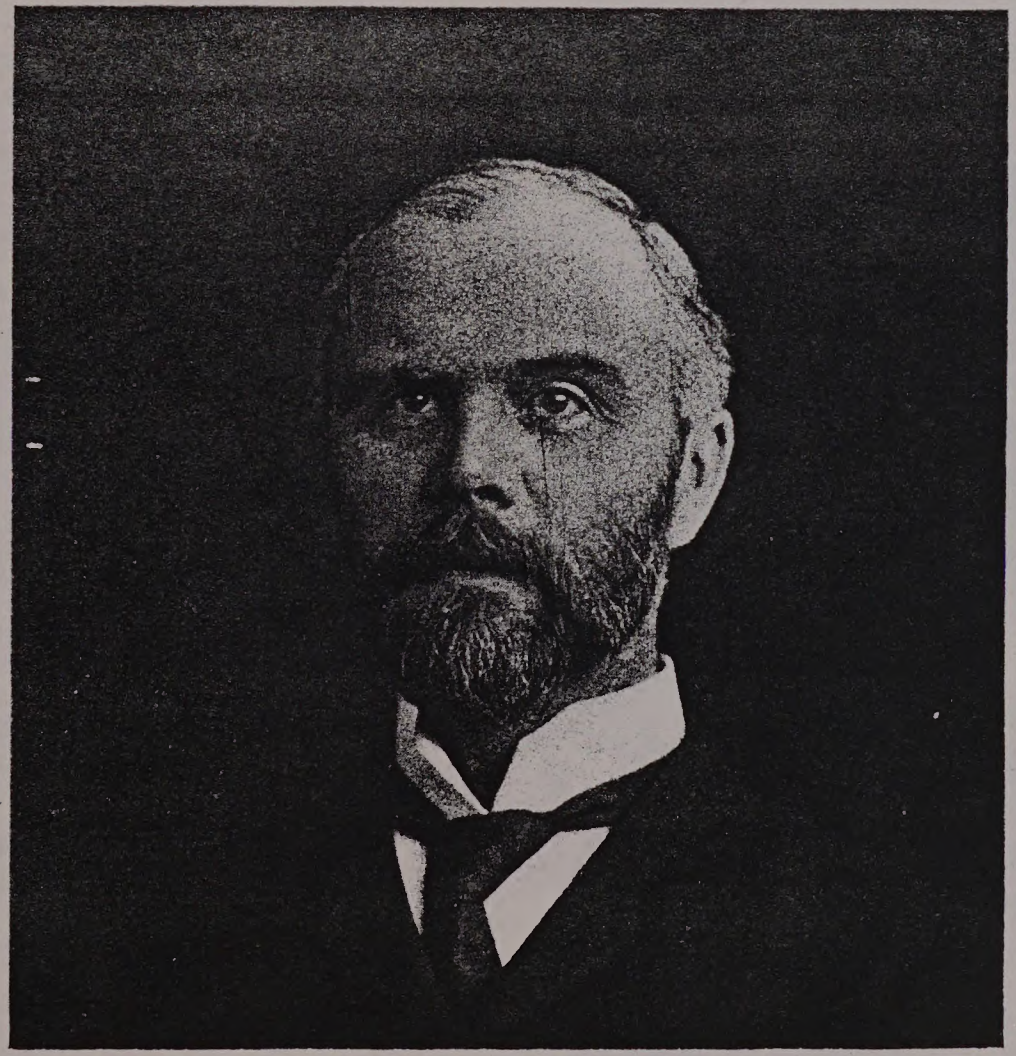
It was indeed fortunate that disaster did not overtake the Mayflower as she was battling with the winds and raging boil of sea off the shores of Cape Cod, in the worst month of the whole year, December, and little did the Pilgrims think after their hazardous voyage over the shoals and around the Cape that they would soon be compelled to again face the same perils in their frail boats, in quest of food.

The sufferings of the Pilgrims the first winter were intense and more than half their number died, among them being Governor John Carver. The other chief leaders of the Pilgrims were William Brewster and the stout-hearted Miles Standish. With Governor Bradford, John Carver's successor, they organized an expedition to brave the perils of navigation, to go around Cape Cod and over the shoals in search of food.

In the spring of 1621 the Pilgrims made a treaty with the Massasoit chief of the Wampanoag Indians who lived between Cape Cod and Narragansett Bay, and this treaty was not broken until 1675.

In this trading intercourse the Dutch communicated to the Plymouth colonists information which led first to trading expeditions to and afterwards to the permanent settlements upon the Connecticut River. The use of the isthmus, in connection with the reasons given to show its necessity, would naturally suggest the idea of making a channel between the bays whenever the commerce seeking that passage and the ability of the colonists would justify the measure. Such an improvement was doubtless early spoken of.

In 1622, the crop being scanty, partly through the weakness for want of food, the settlers embraced the opportunity of buying from a ship from Virginia, sent to survey the shoals about Cape Cod, knives and beads paying in beaver; and being thus fitted to trade for both corn and beaver they attempted to go around Cape Cod but were so frequently baffled in their attempt by the riotous seas that it was near the close



WILLIAM BARCLAY PARSONS, New York
Chief Engineer Cape Cod Canal.

of the year, November, before they succeeded. This was the first adventure made by the Pilgrims around Cape Cod. An additional supply of corn was obtained from the Indians at Mattachisett, Chatham. Disaster overtook the brave band, their shallop was cast away, wrecked on the shores of Cape Cod, and leaving their purchases in care of the Indians, they returned to Plymouth on foot.

Soon after, January, 1623, needing more corn, they went to an Indian settlement at Herring Pond nearly twenty miles south of Plymouth. The settlement was on a fresh water river running into a bay (Buzzards Bay) towards Narragansett. "'T'will bear a boat eight or ten tons to this place." "Hither the Dutch or French, and both, used to come: it is hence to the Bay of Cape Cod, about eight miles, out of which bay the sea flows into a creek (Scusset River) almost directly towards the town. The heads of this creek and river are not far distant."

March 25, 1623, Captain Standish went again to Manomet for the corn the Governor had bought, entering Scusset harbor (now the entrance to the Cape Cod Canal) with his shallop.

As early as 1627 the Pilgrims had established a trading post on the shore of Buzzards Bay to facilitate their intercourse with the Narragansett country, New Amsterdam and the shores of Long Island. The site of the trading post is at the Buzzards Bay entrance to the proposed canal, near the completed big roll lift bridge that spans the waterway there. By transporting their goods in shallops (small boats) from Plymouth to Scusset harbor, now the Cape Cod Bay entrance to the canal, and thence up Scusset Creek to its head waters and transferring them a short distance through the valley, they reached the boatable waters on the other side of the Cape.

Governor Bradford in his diary says, "For our greater convenience of trade, to discharge our engagements and maintain ourselves, we have built a small pinnace at Manomet, a place on the sea twenty miles to the south, to which by another creek on this side (Scusset) we transport our goods by water to within four or five miles and thence carry them overland to the vessel, thereby avoiding the compassing of Cape Cod with those dangerous shoals, and make our voyage southward with far less time and hazard." "For the safety of our vessels and goods we there also built a house and keep some servants who plant corn, raise swine and are always ready to go out with their bark,

August Belmont Digging the First Shovelful of Earth on Line of the Canal at Bournedale June 21, 1909.

which takes good effect and turns to advantage." Mr. Chandler and Elijiah Swift attended the trading post. The first communication between the Plymouth colony and the Dutch was through this channel and De Razier, a noted merchant and secretary of the Dutch Government, arrived at Manomet September, 1627, with a shipload of sugar, linen and stuffs, and Governor Bradford sent a boat to Scusset harbor to convey him to Plymouth.

First Shipwreck On Cape Cod

The Pilgrims witnessed the first shipwreck on Cape Cod in December, 1626, when the passenger ship Sparrowhawk, of London, England, bound for Jamestown, Virginia, was lost at Nauset harbor. The Indians discovered the big ship as she lay helpless, gripped by the sands, and sent couriers to Plymouth, a distance of nearly fifty miles, to convey the intelligence to the colonists.

Governor Bradford hurriedly despatched relief parties to the imperiled seafarers for whom the Indians had already provided shelter and in other ways made them comfortable, furnishing further evidence of their friendship and hospitality to the whites. The passengers and cargo of the Sparrowhawk were saved but the ship later became a total loss. The wreck of the ship furnished further evidence of the perils of navigation around Cape Cod and the treacherous shoals of Nantucket, and the Pilgrims continued to use the Scusset and Monument rivers, the inside route to reach the waters south of Cape Cod, until 1635, when a tidal wave, flooding the whole country about Manomet River, partially filled the river and destroyed the trading post, and the Virginians drove the Dutch away. A shallow ditch of about three miles in length, connecting Scusset and Monument rivers, would have provided a waterway across Cape Cod sufficient for every need of the Pilgrims, would have greatly assisted them in their business and aided the development of their settlement, and the project was discussed by them with much animation.

Cape Cod An Island

The route used by the Pilgrims, the short "carry" across Cape Cod, is practically the one that the ship canal will follow. There was once a natural waterway across Cape Cod; the right

H W. DURHAM
Resident Engineer.

A. S. ACKERMAN
Engineer Eastern Division.

EX. GOV. EDWIN WARFIELD
of Maryland.

F A. FURST
Vice-President, Degnon Cape Canal Construction Company

EUGENE KLAPP
Deputy Chief Engineer Cape Cod Construction Company.

C. M. THOMPSON
In Charge of Real Estate Dept.

M. J DEGNON
Pres., Degnon Cape Cod Canal Construction Company.

arm of Massachusetts was an island, according to Captain Southack, a government agent sent to Cape Cod in 1717 to search for the pirate ship Whida. The ship got entrapped off the coast of Cape Cod during a violent storm, she was driven helplessly into the breakers, dashed upon the shelving beach, the seas came tumbling aboard and soon the once staunch craft was a total wreck. The following morning the forms of the more than a hundred of the pirates' crew of the Bellamy fleet strewed the beach or rose and fell with the tides that surged along the coast.

Captain Southack made a map of the channel from sea to sea as it then existed, and on this channel he marked a whaleboat with this note, "The place where I came through with a whaleboat being ordered by ye government to look after the pirate ship Whida. Bellame commander, cast away on ye 26 of April 1717 when I buried one hundred and ten men." Had this channel remained open it would not have been of any value to the shipping along the coast as it would lead from Cape Cod Bay directly on to the shoals, the graveyard off the back of Cape Cod, where scenes of awful terror have taken place at times of shipwreck, the final resting place of hundreds of hardy sons of the Cape and other whose livelihood compelled them to brave th perils of the ocean.

While it is said that the channel across th Cape at this point was closed by the resident of Cape Cod, according to the *English Pilot* published by Messrs. Mount and Page, Towe Hill, London, in 1783, there was a channel acros the Cape at Orleans at that time. The accom panying map, taken from the *English Pilot* shows the waterway as it appeared at that time The map also shows the coast line south o Cape Cod and as far west as the Colony o Connecticut and the eastern end of Long Island

Sixty years after Captain Southack made not of the channel the *English Pilot* published th map showing the waterway as it then existed and it is not believed that the channel wa closed until near the end of the seventeent century.

There is a traditional story of a man wh often visited the beach at Wellfleet, who is sup posed to have been one of the Bellamay's crew It was thought that he knew where some of th treasures of the pirates were secreted and tha he came to Cape Cod for supplies of gold. Age people related of him that often in the stillnes

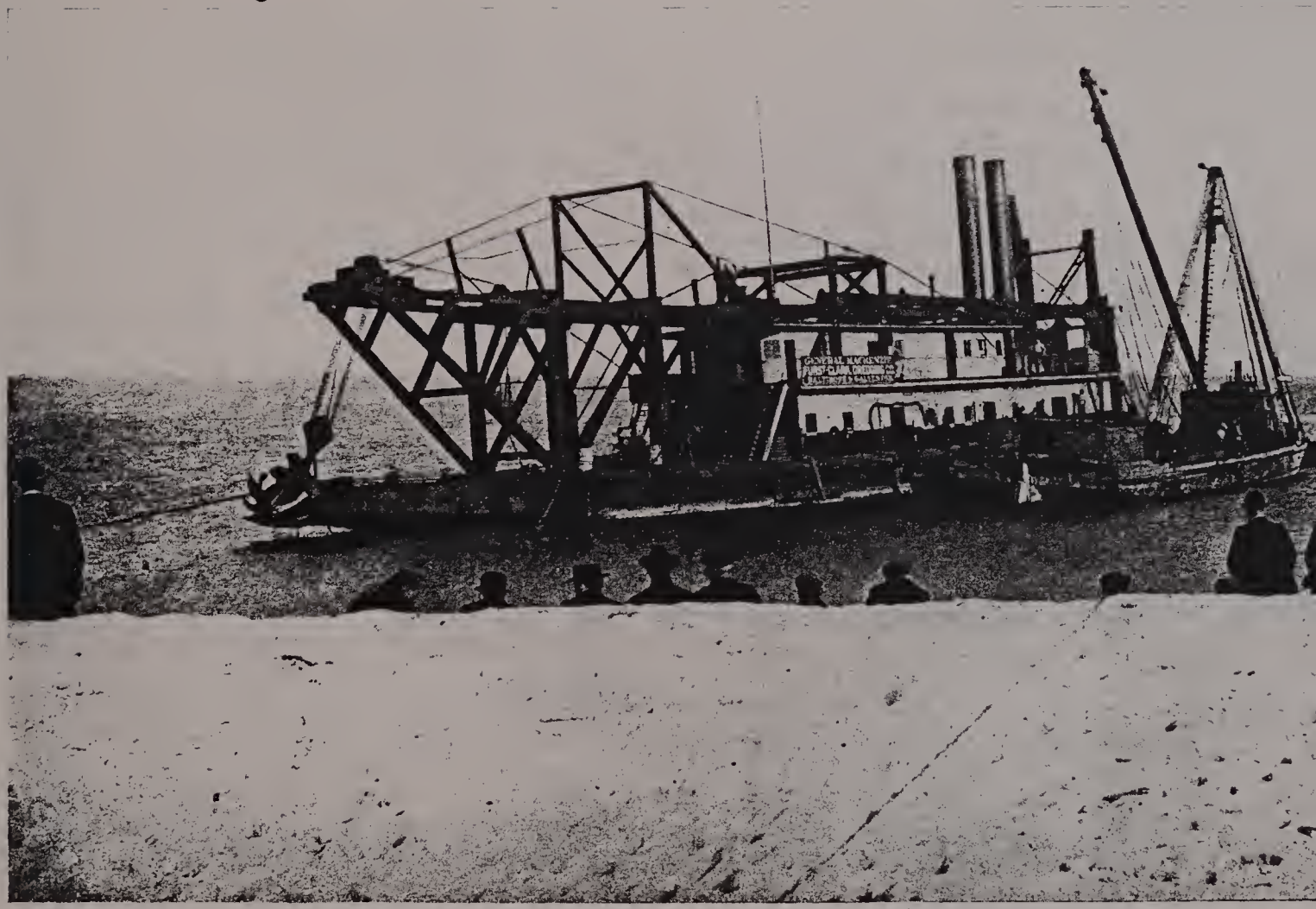
Beginning the Construction of the Breakwater. The First Load of Granite for the Great Seawall, June 1909.

of night he would give utterances in his sleep to profane and boisterous language as if he were contending with some terrible enemy. When allowed the hospitality of a private dwelling, if the Bible was produced for the customary evening prayers, he would seem to be much disturbed and hastily retire. It is said that after his death, which occurred during a wild and tempestuous night, a girdle heavy with gold was found on his body.

It was nearly 100 years after the Pilgrims first used the Scusset and Monument rivers and the short "carry" to cross Cape Cod that mention was first made of the waterway across Cape Cod. The shifting sands closed the waterway described by Captain Southack and obliterated every trace of its course. The value of a canal, and its vital importance to the Pilgrims, became more and more apparent to them as the commerce increased, and the project was again seriously agitated in 1677, according to the entry in the diary of Samuel Smith of Sandwich, and ever since that time the idea of a waterway through the narrow neck of Cape Cod, for the purpose not only of shortening the voyage around the Cape, but more particularly to protect life and property from the treacherous shoals, has been discussed and the work has been actually undertaken without success on two occasions.

In 1776 the General Court of Massachusetts appointed James Bowdoin, William Sever, Colonel Freeman, Brigadier Godfrey and Mr. Cushing to report on the advisability of such a canal. This committee employed Thomas Machin, an engineer in the employ of the Colonial Government, who began a survey of the route, but owing to the breaking out of the Revolution, Mr. Machin was recalled to New York by General Washington.

In 1697 a committee was appointed by the General Court "to view a place for a passage to be cut through the land in Sandwich from Barnstable Bay into Manomet Bay (Buzards Bay) for vessels to pass through, and from the western parts of the country, it being thought by many persons to be very necessary for the protection and preservation of men and estates and that it will be very profitable and useful to the public." The route of the canal was surveyed in 1776, General Washington approving of a plan for a canal between these two points. After the outbreak of the war the subject again came before the General Court upon



Dredge General Mackenzie in Cape Cod Bay Dec. 1909, Trying to Cut Her Way Through the Beach.

representation being made "that a navigable canal may without much difficulty be cut through the isthmus, which separates Buzzards Bay and Barnstable Bay, whereby the hazardous navigation around Cape Cod, both by reason of the enemy and the shoals, may be prevented and a safe communication between this colony and the Southern colonies be so far secured."

In 1791 the newly organized State of Massachusetts appointed Azor Orne, Thomas Russell, William Sever, and Thomas Davis to consider the practicability of the proposed canal. This committee employed James Winthrop and John Mills to prepare surveys. The subject was not agitated again until 1801 when Sandwich within the limits of which the canal was then, gave its consent to the canal project. The project came up again in 1803. Sandwich was cut in twain by an act of the Legislature, April 2, 1884, and the Cape Cod Bay entrance and a mile or more of the canal is in this town the Buzzards Bay entrance and the rest of the waterway is in the town of Bourne.

In 1809, Albert Gallitan, Secretary of the United States Treasury, in his report on the internal development of the United States, urged the building of the canal and the project was mooted as a national one during the war of 1812. The isthmus was used for the transit of merchandise to avoid the dangers of capture by the enemy.

In 1818 the project was again agitated by Israel Thorndike and Thomas H. Perkins and others who employed Laommi Baldwin to survey the route. Mr. Baldwin prepared surveys and made soundings but nothing else was done in the matter. In 1824, for the first time the project was considered by the United States Congress. Mr. Lloyd of Massachusetts submitted to the Senate a resolution in which the Committee on Roads and Canals was requested to ask the President of the United States to cause the necessary surveys to be made and to consider the advisability of this short cut across Cape Cod for war vessels. There was a protracted debate over the matter, but finally an act was passed requesting the President to cause the necessary surveys, plans and estimates to be made of such roads and canals as he might deem of national importance in a commercial or military way. Under this act and in accordance with the instructions drawn up by the Board of Internal

Dredge Nahant Finishing the Work of Cutting a Channel Through the Beach, Cape Cod Bay, Feb. 1910.

Improvement, the ground between Cape Cod Bay and Buzzards Bay was surveyed under the direction of Major P. H. Perault of the United States Topographical Engineers in 1835. These plans were completed and presented to Congress and another act was passed and other plans made by the Board of Internal Improvement, but nothing further was done.

The Civil War Causes Canal Project To Be Abandoned

Just before the outbreak of the Civil War it seemed that at last the time for building the canal had finally arrived and it was regarded as almost a certainty that it would soon be built. Governor Banks' reference to the proposed canal in his inaugural message to the Legislature immediately revived the interest in the project. The Legislature appointed a committee, consisting of Tappen Wentworth, Ames A. Dunnell, George Foster, William Nye, Jr., R. A. Pierce, George Odiorne and G. M. Fiske. The committee made an exhaustive report suggesting that the United States should furnish a large portion of the funds necessary to build the canal, and in accordance with the report a letter was sent to the Superintendent of the United States Coast Survey, asking if the United States Commissioners of Boston could not aid the committee. Professor A. D. Bache agreed with the request of the committee and had the officers of the Coast Survey make new surveys and soundings. Again in 1861 another committee, consisting of G. M. Fiske, George A. Shaw, R. A. Pierce, Ansel Lewis, John S. E. Rogers, George H. Brown and Samuel O. Whitmore were appointed by the Legislature. Henry Mitchell was in charge of the observations of tides in both bays and the plans were revised by the Coast Survey officers.

The Civil War had begun, and although the outlook for building the canal seemed brighter than ever before, the project was again abandoned.

The first step toward eliminating the incubus of smallness from the canal project was made by Colonel and Brevet Major-General J. G. Foster of the United States Engineers in 1870. He pointed out not only the limiting smallness of the previous projects, but that locks were not necessary, and that if the all-objectionable feature of the lock were removed, that a canal of ample cross section to carry any vessel of im-

Nearly Completed Channel Through the Sandwich Beach, March 14, 1910.

portance could be constructed and that a canal would be open all the year round and not closed during the season of winter, as would be necessary with any fresh water project.

In 1870, the Massachusetts Legislature granted a charter to build the canal to the Cape Cod Canal Company, but nothing was done towards constructing the canal, and in 1880 an act amending the charter of the company was passed, and at the same time a new company was chartered for the purpose of building the long-talked canal, and the work was actually begun at Sandwich and about midway between Sandwich and Buzzards Bay.

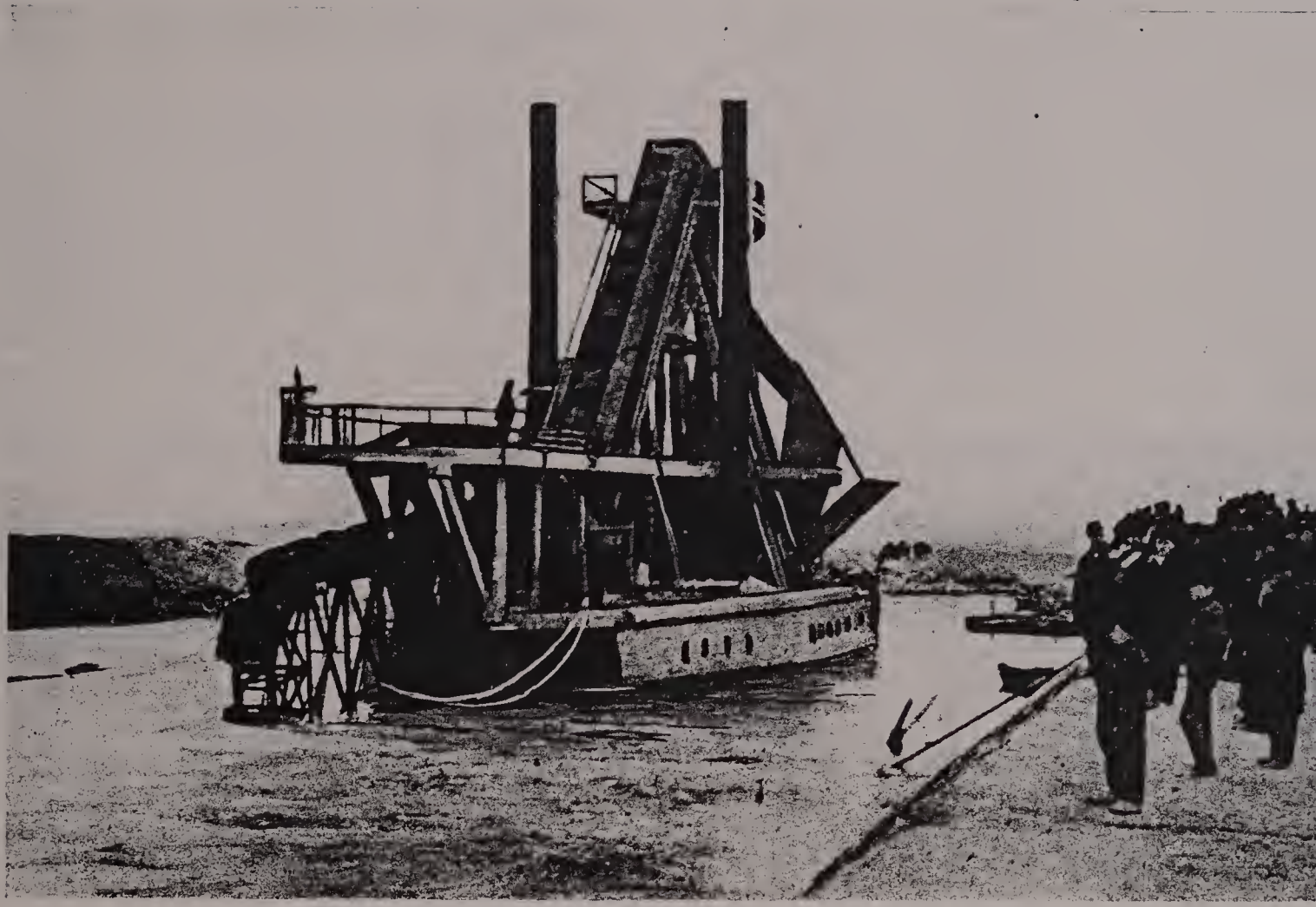
The Whitney Charter, so called, was granted in 1880 and H. M. Whitney expended a large sum of money in making surveys, borings, etc., under the supervision of Josiah G. Chase, an eminent engineer from Cambridge. Mr. Chase employed an engineer, one Savery of Wareham, to make the borings, and Savery's report of the *vast* quantities of quicksand determined Mr. Whitney to abandon the enterprise. Mr. Chase made an exhaustive topographical survey of the two valleys, Scusset River and Monument River, from the notes of which he afterwards constructed a model of the valleys at the request of F. A. Lockwood. This model may be seen at the canal headquarters in Sandwich.

Lockwood never had dealings with Whitney but made his contract with the Seward, Hall Company, "The Cape Cod Ship Canal Co." His assignment was made in 1890 to Colonel Livermore, trustee for Quincy A. Shaw, the latter having financed the enterprise to the amount of $1,500,000.

Nearly five hundred Italians, brought to Sandwich from New York by the contractors, began the work of building the canal with shovels and wheel-barrows but the work ceased in a few weeks.

In 1883 a company, composed of William Seward, George S. Hall, Samuel Fessenden, Edwin Rand, William A. Clark, Jr., Joseph T. Hoile, Walter Lawton, William F. Drake and William Parker, was incorporated by the Massachusetts Legislature. By its charter this company was required to finish the canal in four years, but nothing was done towards the actual construction of the canal for some time, and upon petition of the company to have its charter extended the Legislature granted the request.

The residents of Sandwich have always been loyal to the canal project and whenever a company holding a charter wanted more time to



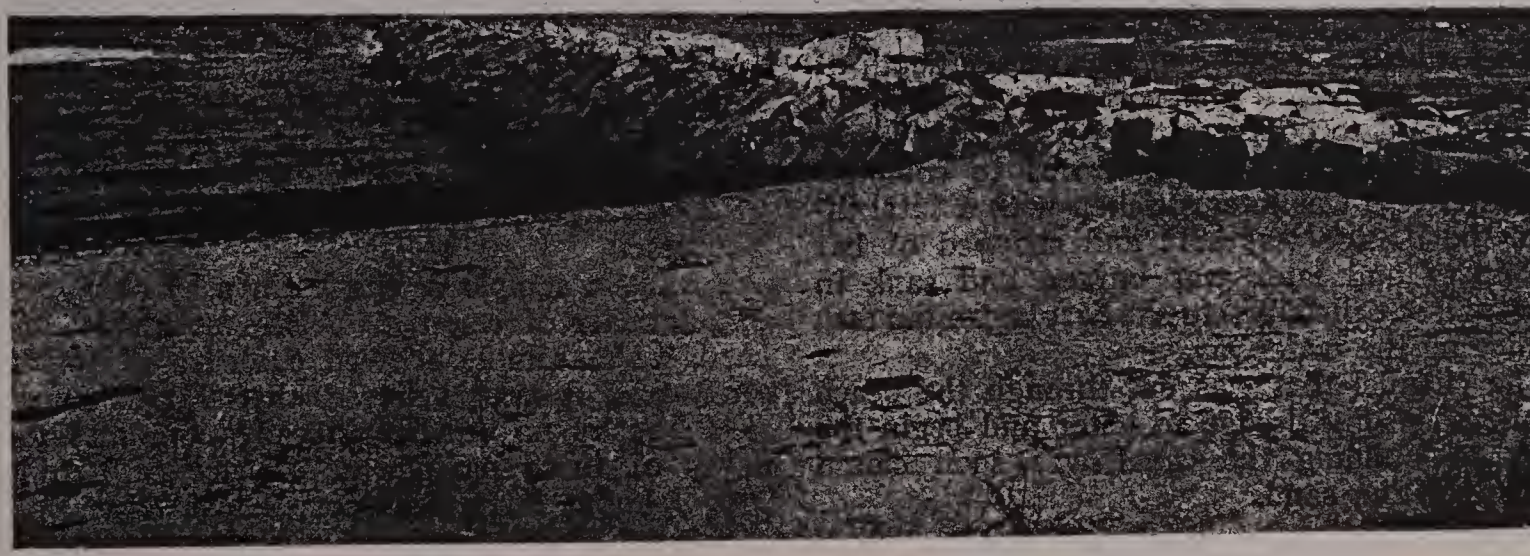
The Lockwood Dredge, the Day That It Arrived at Sandwich, March 1884.

complete the task, or a company that seemed to furnish convincing proof that if they obtained a charter that the canal would surely be built, the old town has always been awakened, her citizens have held public meetings, attended the hearings before the legislative committees and entertained the visiting capitalists and others who have shown interest in the construction of the waterway, and did all in their power to help the cause.

Mass Meeting By Residents of Sandwich

The late Samuel Fessenden, one of the company that obtained a charter to build the canal in 1883, was a resident of Sandwich, and when his company desired an extension of time the citizens rallied to its support as is shown by the notice of the grand mass meeting held in the town hall in Sandwich at that time. At the same session of the Legislature that the Cape Cod Ship Canal Company asked for an extension of time to build the canal, Gerard C. Tobey of Wareham, Mass., petitioned for the incorporation of the Massachusetts Ship Canal Company to build the waterway, and Alfred D. Fox of Montreal, whom it is said signed a contract to construct the canal for the Cape Cod Ship Canal Company, but failed to comply with the conditions, and whose contract was never ratified by the officers of the canal company, also petitioned the Massachusetts Legislature for an act of incorporation for the purpose of constructing a ship canal from Buzzards Bay to Barnstable Bay. At the same session of the Legislature William Seward, who was formerly president of the Cape Cod Ship Canal Company, also petitioned for an extension of the charter of that company, signing himself president of the company.

The late F. A. Lockwood, who at this time was the head of the Lockwood Manufacturing Company of East Boston, became identified with the project and the canal company was known as the Lockwood Company. He built a mammoth dredge at his works under the Ball patents at a cost of $75,000. The dredge was towed here and began the work of digging the canal. The day that the dredge arrived was one of great rejoicing for the residents of Sandwich and all Cape Cod; they believed that at last the canal would surely be built. The dredging was done by an endless chain of buckets, thirty-nine in all, driven by two steam engines of seventy-



The Breakwater, Sept. 2, 1910.

five horse-power each. The material excavated was raised to a height of fifty-six feet above the sea level and discharged into a hopper, from which it was forced through an eighteen-inch pipe by three powerful six-inch streams of water, a distance of several hundred feet and deposited on either bank of the canal. The dredge could excavate and discharge 4000 cubic yards of material in ten hours.

The dredge only worked at intervals, but finally cut a ditch through the historic Scusset marshes for a distance of about a mile from the beach towards Sagamore at an average depth of about fifteen feet. The company for lack of capital failed to continue the work. Mr. Lockwood, whose whole ambition was to complete the waterway, was later stricken with a fatal illness, the dredge was sold and stripped of her machinery and later was burned and sank in the canal, so called, where she first began the task of digging the waterway.

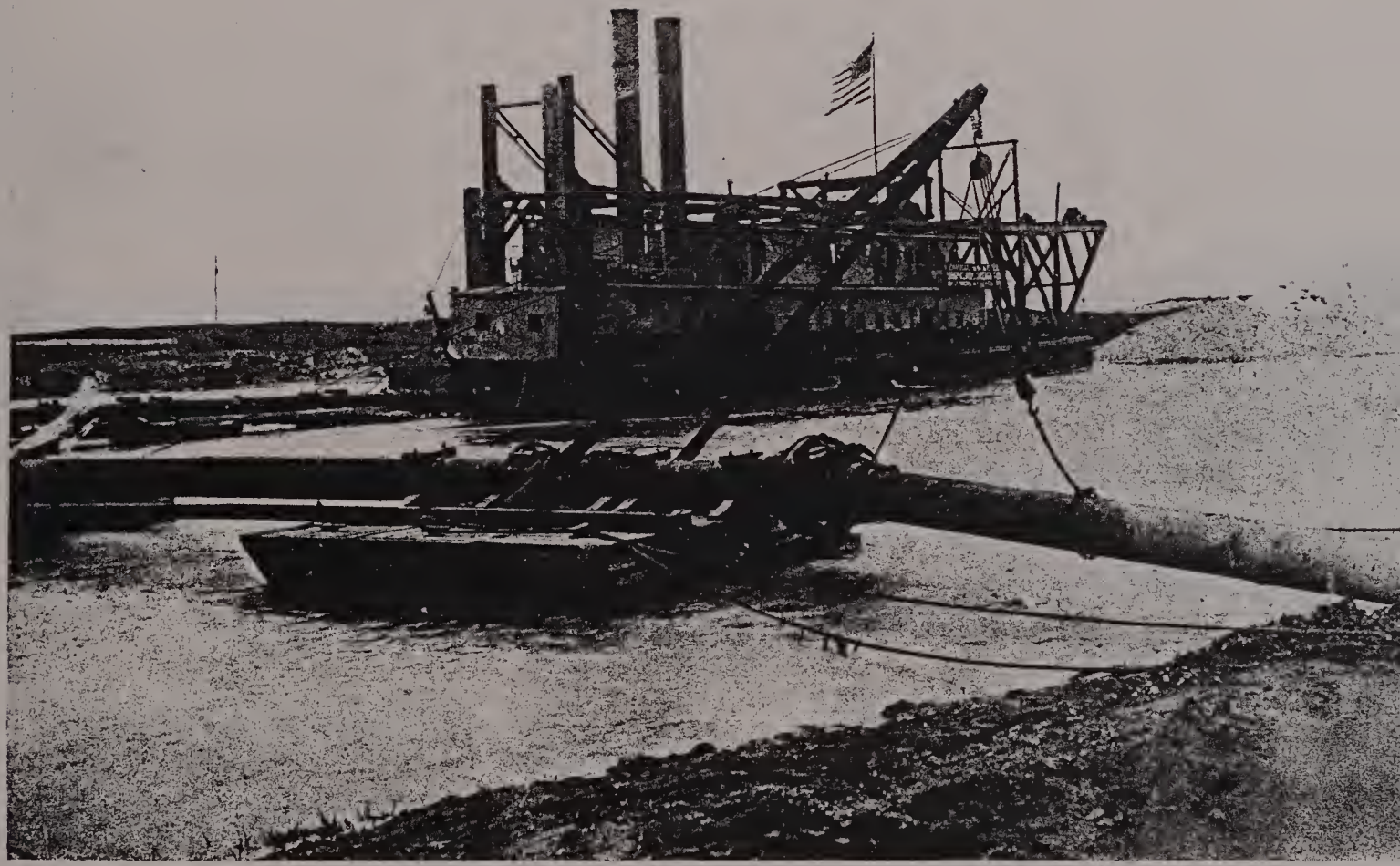
The channel that was cut through the beach to allow the big dredge to enter and begin the work of building the canal was soon closed by the shifting sand.

The late Captain William Flannagan of New York City, De Witt C. Flannagan and R. D. Woodward of New York, organized the present company, the Boston, Cape Cod and New York Canal Company and obtained a charter from the Massachusetts Legislature June 1, 1899. The charter was amended July 17, 1900.

In 1906, De Witt C. Flannagan brought the attention of Mr. August Belmont to the canal and Mr. Belmont became deeply interested in the project, and the same year sent his engineer, William Barclay Parsons, to look over the route of the proposed waterway. There had previously been a set of borings made along the line of the proposed canal by Alfred Noble, an eminent engineer for John M. Forbes and others who were interested in the project, and these were examined by Mr. Parsons while he was in Sandwich, at the office of Engineer Charles M. Thompson.

Testing a sample of the borings by placing it in a tumbler of water, Mr. Parsons nodded his head. The sample showed evidence of quicksand, and it was believed that Mr. Parsons would make no further investigation, and the hopes of those having the charter of getting Mr. Belmont interested seemed lost.

For nearly seven years Mr. Flannagan and his associates had expended a vast sum of money in



General Mackenzie Showing Big Discharge Pipe.

preliminary work and they had labored hard to get capitalists to become interested in the project, and when such an eminent engineer as Mr. Parsons had practically put his seal of disapproval on it there did not seem to be a ray of hope left.

Mr. Thompson, who had been associated with the Lockwood Company, so called, and knew every foot of the region between Sandwich and Buzzards Bay, came to the rescue at this most critical time in its history; the tide was turned in favor of the project, Mr. Parsons was convinced that the project was a feasible one, that it did not entail any difficult engineering problems, that it could be built within a short time and that it would prove a success and be one of the most important waterways along the Atlantic coast.

When Mr. Parsons found quicksand in the sample of borings, Mr. Thompson explained its presence in a simple but convincing way.

"There had never been any cross section boring made along the route of the proposed canal," said Mr. Thompson; all have been made in the center of what, in his opinion, was the center of the old geological valley through which a glacier ploughed its way into the waters of Cape Cod Bay, that a deep furrow had been cut through the valley between Sandwich and Buzzards Bay by the glacier, that all the fine sand, (quicksand) had naturally been crowded to the bottom of this deep furrow, and that it was bedded at and below the level of the bottom of the proposed canal, and that he believed that if cross section borings were made that it would be found that the quicksand would not be found outside of the center line of the canal to any alarming extent.

Mr. Parsons considered this opinion to be well founded, and upon his request for cross section borings Mr. Flannagan had them made.

The samples taken from the hundreds of holes made along the line between Sandwich and Buzzards Bay did not reveal any quicksand. Mr. Thompson's theory was correct, and upon Mr. Parsons' report to Mr. Belmont the latter at once took hold of the enterprise and plans were quickly made to build the canal.

Memorable Day In History of Cape Cod

Probably never before in its history had Cape Cod been visited by a delegation of men who in

Land Excavator at Work on the High Land near Sagamore, April 1910.

the aggregate, including their own fortunes and allied interests, represented so many millions as did the guests of the Degnon Construction Company, fifty or more, who visited here June 21, 1909.

The party consisted of August Belmont and his son, August Belmont, Jr.; Robert Bacon of New York, formerly Secretary of State, and a member of the firm of J. Pierpont Morgan & Co.; F. R. Appleton; Col. L. F. Loree, president of the Delaware & Hudson Railroad; De Witt C. Flannagan of New York; U. A. Murdock, New York; A. L. Devens, New York; Captain J. W. Miller, vice-president of the New England Navigation Co.; former Governor Edwin Warfield of Maryland and his son, Edwin Warfield, Jr.; Treasurer Frank A. Furst of the Degnon Construction Co.; Attorney Frederick Feldner, counsel for the Furst-Clark Co.; Simon Hees of New York; President M. J. Degnon of the Degnon Cape Cod Canal Construction Co., who built the New York Subway among other large undertakings; Secretary N. J. Haywood of the Degnon Co.; H. C. Sandford, chief engineer for the Degnon Co.; General Superintendent James H. Wilson of the Degnon Co.; H. W. Durham, resident engineer; A. S. Ackerman, Charles M. Thompson, Robert A. Shailer, John Degnon and Charles L. Crandall.

The party was met by county and town officers who greeted and welcomed the distinguished visitors to Cape Cod. Purely as a matter of sentiment it was arranged that the first spadeful of earth, instead of at either approach, would be removed from a point about midway. At exactly 1.20 P. M., Mr. Belmont lifted a little pile of earth from a spot where the sod had been previously removed. The shovel he used was of silver with a mahogany handle, and similar in size to the small ones used by children at the seashore. On the handle plate was the inscription:

"Presented to August Belmont, President of the Cape Cod Construction Company, by M. J. Degnon, President of the Degnon Cape Cod Canal Construction Company."

Then Mr. Belmont, Mr. Degnon and others made speeches, the latter declaring that when the canal was completed a monument should be erected in honor of Mr. Belmont's enterprise and grit.

While every effort down through three centuries met with one failure or another, as a result of lack of funds, energy or engineering

Building the Breakwater from the Shore End, 1909.
Dredge General Mackenzie in Tow of Tug on the Way to Dig Through the Beach.

skill, in spite of this gloomy record the present syndicate, of which Mr. Belmont is the most conspicuous factor, declare that the much-talked-of-ditch of the old Bay State will soon be a reality.

They promised to build the canal within three and one-half years and assure the American public that they are backed by sufficient money and ingenuity to accomplish the task.

They say that failure is impossible, and the delegation of financiers and experts who came with Mr. Belmont were thrilled with equal optimism.

After the exercises Mr. Belmont stated in an interview that he had never been more enthusiastic over any project than that of the Cape Cod Canal, in which he became interested through the efforts of Mr. De Witt C. Flannagan. "It means much to commerce and to transportation interests," said Mr. Belmont, "and there is absolutely no doubt about the outcome. The canal will be completed and ready for operation in about three and one-half years.

"While I have not been able to explain why this canal has not been built long ago, I admit that the present conditions are far more favorable than they ever were before." The coastwise tonnage has increased enormously in the last twenty years, and there has been a gradual disappearance of the sail. "The dangers to shipping around Cape Cod have multiplied with the increase in the number and tonnage of vessels and the traffic to pass through the canal warrants its construction as a paying commercial enterprise.

"The powers granted to the company by the government of both the State of Massachusetts and the United States insure the speedy and uninterrupted progress of the work.

"Mr. Flannagan deserves great credit for keeping the threads of the enterprise together through the many years preceding its undertaking through my firm." The advantages to the whole of New England will be untold and soon understood. "It is a poor and stupid argument that the past failures to build this canal should still nurse skeptics on the subject."

Captain J. W. Miller

Captain Jacob W. Miller, vice-president of the Canal Company, speaking of the construction of the canal by the present company, said:

"During the past year work upon the enter-

Outer End of Breakwater, June 4, 1910.

prise has progressed with rapidity. The right of way has been obtained, the negotiations relative to the change of line of the New Haven road have been arranged, the railroad bridge at Buzzards Bay is completed, dredges are deepening the main ship channel in Buzzards Bay, others are working on the eastern end; one-fifth of the canal is nearly completed, Sandwich will soon be an open port." "There is about four-tenths of the great seawall that will stretch out into Cape Cod Bay for a distance of 3500 feet completed, and a campaign of much activity is contemplated during the year.

"From an engineering point of view the problem is not great, the distance over the isthmus is only eight miles; the total length from Barnstable Bay to Buzzards Bay to the 30-foot depth is twelve and one-half miles. The soil to be cut is sand and the amount only 17,000,000 cubic yards. Its highest elevation is only 29 feet. Through the greater part of the eight miles much is to-day below the level of the ocean. The difference in the tide between the two bays necessitates no locks. The depth is to be 25 feet. The minimum width on the bottom is 100 feet and on the surface of the water 250 feet, the width on the bottom of approaches 250. There will be three passing places with a minimum width on the bottom of 200 feet and on the surface of the water 350 feet. Skepticism as to the completion and success of the canal, brought about by previous failures, has been superficially natural.

"The conditions of the past, when the great majority of coastwise tonnage was carried in sailing vessels, has materially changed in the last few years. To-day, tows, consisting of barges from 1000 to 3500 tons, transport practically all the crude material. These tows are controlled by a few corporations and a plant is required for a three-weeks' trip between Boston and New York, whereas through the canal, the expenses of that plant can be reduced 50 per cent.

"It will, therefore, be seen that the distance saved between Boston and New York is not the only financial factor.

"Eight million tons of coal, 300,000 tons of stone, 250,000 tons of Nova Scotia plaster, 200,000 tons of oil, to say nothing of the brick, lumber, ice and 2,000,000 tons of high-class merchandise, will all seek and be tributary to the new channel. The total tonnage around Cape Cod to-day is 25,000,000. Add to this the 500,-

Outer End of Breakwater, Sept. 2, 1910.

000 passengers now carried between New York and eastern points and the financial success of the Cape Cod Canal must be apparent.

"The opening of the canal will render the neighboring regions much more accessible as steamers of the Long Island Sound type can leave New York late in the afternoon, land their passengers at desirable resorts, and still reach Boston early the next morning. The New York, New Haven Railroad runs parallel with the canal from one end to the other. At its eastern end should, in the near future, be a large manufacturing center where mills will have the advantage of both land and sea transportation in a climate especially suited to that purpose. Water power abounds in the hills back of the line, and on these hills should be a largely increased summer population.

"Further humanity demands the elimination of the dangerous, stormy and fog-bound route around the Cape. The loss of life and property in that locality has been appalling. The record, more or less complete from 1843 to 1893, gives minimum 2131 vessels wrecked in the Nantucket shoals region, 908 of which were a total loss. Ten complete crews disappeared with their ships and in addition about 700 of New England's hardy fishermen and sailors, lost their lives. Over 50,000 vessels go around Cape Cod every year.

"It is a vital fact that cheap freight must be brought into New England at a minimum figure. In no other way can the population of a manufacturing region in a locality devoid of cotton, iron or coal, continue its mill industries." If Massachusetts is to retain her supremacy, she must in every way foster water transportation. Massachusetts should hail with acclaim any man or body of men ready to risk their money toward that end.

"On my part I am proud to be associated with a corporation which, while government bureaus are publishing reports concerning future developments, while associations are meeting and discussing policies to come, the project which should have been accomplished long ere this is actually at work, and in less than three years will finish the first of the long-desired channels along the Atlantic coast and complete the Cape Cod Canal."

William Barclay Parsons

Speaking of the Cape Cod Canal and its importance to New England industries and com-

Dredge General Mackenzie Dredging Channel and Sending Material Over Breakwater, Sept. 1910.

merce. William Barclay Parsons said the subject should be considered in three phases: past, present and future, and the past had more than an academic interest. Mr. Parsons urged building a canal of sufficient cross section to pass the modern Dreadnought and so make a continuous inland waterway free from attack by an enemy, connecting the three naval stations of Boston, Newport and New York. The building of the canal would undoubtedly stimulate the commerce of Boston which would then be increased in importance as a distributing point for New England.

In regard to the commercial advantages and effects of the new canal upon New England in general and Boston in particular, Engineer Parsons has the following to say:

"The whole method of coastwise trade has changed tremendously in the last two decades. Twenty years ago it would have seemed as if nothing could have displaced the three or four-masted coasting schooner as a cheap means of conveyance of such material as coal, but as steam power has almost driven the sailing vessels from the high seas, so steam power is fast driving the smaller sailing vessel from the coasting trade and we are seeing reproduced along the Atlantic coast the same methods that the lake navigators a few years ago found to be the most economical; namely, barges in tows.

Might Prove of Great Value in Case of War.

"The canal as planned is quite sufficiently deep to take all the smaller vessels of the navy, even to cruisers. The battleship is a vessel that one thinks of instinctively as a vessel that would naturally seek deep water and avoid a narrow channel. There might, however, arise a contingency when the canal would be of the greatest value to the country in time of war.

"There are three naval stations on the Atlantic coast where battleships can enter regardless of their depth—Boston, Newport and New York; and if you will consider the map you will realize that no enemy could successfully maintain a blockade line from Maine to New Jersey, so as to preclude the possibility of a sortie from any one of these three naval places and so take the blockade line in the rear, provided, of course, that the government had not entirely denuded any of these three points of a naval force.

"Newport and New York are connected through the Sound. Newport and Boston are

General View of the Canal Looking Towards Cape Cod Bay Before the Sand Hills at the Entrance Were Removed July 1

1910

connected only outside of the Cape. Boston, therefore, would be cut off from either of the other two points by vessels of large draught. Should, however, the Cape Cod Canal be large enough to take battleships, the naval authorities could move from any of these three points and so concentrate at any point the whole of their naval force by an inside route from obstruction by the enemy.

Bridge Foundations Built with Eye to Future

"It is not the intention of the Company to construct its canal to the depth sufficient for battleships (35 feet). I can state, however, that realizing how the future demands exceed early ideas, the foundations for the two bridges crossing the canal have been put to such a depth that a channel thirty-five feet at low water could be dredged, giving a depth of forty feet at high water, and so permit, if the government ever needed the canal for battleship passage, or it could be deepened to meet increased commercial demands, and as there will be no locks or rigid obstructions, increase in depth can be obtained during operations without interfering with navigation.

"The saving in distance is substantially the same in all cases. If it were a question of distance only this saving would not be so very great, though it saves twelve hours or more for slow moving vessels, but it means the elimination of the worst part of the entire journey. Of all the wrecks occurring on the whole Atlantic coast from Eastport, Maine, to Key West, Florida, one-quarter take place in the short stretch between Chatham and Provincetown, at the end of the Cape. So measurable is this decrease in risk that the marine underwriters have stated that insurance premiums would be reduced 10 per cent. to 25 per cent. on vessels using the canal, even after allowing for whatever new hazard the canal itself would present.

"Before summarizing what the canal will do, let me state what it is not primarily intended to do. It is not being built with a view to local traffic, though such traffic may spring up along the line of the canal as the works of the Keith Car and Manufacturing Company are being expanded, and other manufacturers may, probably will, find it convenient to establish other works there and obtain the facilities of total rail and sea delivery. It is not intended to and will not draw business from any other locality. It is

Working on Breakwater, Sept. 14, 1910.
Discharge Pipe from Dredge, Sending "Spoil" Over Breakwater.

not in any sense a rival or antagonistic to any of the inland canals projected between the vicinity of Boston and Narragansett or Buzzards Bays. It is to be a canal without locks, of large cross section for the largest vessels, of salt water that, unlike the Erie barge canal, will not freeze in winter, and of such short length that it will not materially involve delay to passing vessels.

"New England is a great consumer of certain raw materials that it does not produce, and a great producer of others that it cannot wholly consume. Over 8,000,000 tons of coal arrive annually in vessels of some character around the Cape, and in large amount do cotton in bales, oil and oil products, cement, brick and fertilizers. Massachusetts, on the other hand, ships granite, Maine lime, plaster, ice and other products of the forest.

"These commodities cannot afford to pay the necessarily high railroad freight rates. They must be water borne. As the profit per ton at which such articles are sold is very small, a very slight decrease in cost of production or delivery frequently greatly enlarges the possible market. The effect of the canal will, therefore, be to stimulate the trade in the bulky articles of commerce that New England produces and to lower the cost price of those other bulky commodities so necessary for its manufacturing industries.

"So far as Boston itself is concerned it will tend to further increase its importance as a distributing centre. It will do in measure what the Manchester Ship Canal has done for the Manchester, England, and the Lancashire Mills. Holding an office in the Company and that office connected with construction rather than transportation, I feel some diffidence in prophesying the commercial outcome and the results to New England. I am afraid that my enthusiasm might carry me away. I do believe, however, that it will mark the greatest forward step in local commerce since the introduction of steam to coastwise trade. Gallatin in 1809 placed this enterprise at the forefront of what should be undertaken. The conventions of the Atlantic Deeper Waterways Association have recently done the same."

Vice-President Miller's speech before the Commercial Club of Boston had the merit of being both historical and prophetic, as well as descriptive of results already attained in building a stretch of waterway which, in due time, should be only one of many constructed to make safer and quicker Atlantic coastal trade. Sentiment

Completed Roll Lift Railroad Bridge Spanning the Canal and Dredge on Buzzards Bay End of the Waterway Nov. 1910

as well as a legitimate desire for profit, plays its part in the construction of this link between divided waters of the Atlantic, and the enterprise has aspects which justify an attitude of friendliness toward it by men who wish to see Boston's port grow.

Interesting Facts

Located on the canal is one of the largest car manufacturing plants in the world and one of the greatest industries in New England. The development of this business the past two years has been marvelous, and it is the purpose of this article to tell something of the history of the enterprise and give to the world something of an idea of the magnitude and extent of an industry in which every Cape Coder feels a just pride.

In 1846 Isaac Keith, grandfather of the president of the great manufacturing company, laid the foundation of the present industry. Locating in West Sandwich, then known as "Scusset," when a young man, he formed a partnership with another and began the manufacture of carriages under the firm name of Ryder & Keith. Mr. Ryder retired in a few years, when Mr. Keith took the business, and until 1849 confined his efforts to the manufacture of carriages and stage coaches. He established a reputation for honest dealing and thorough workmanship, in which any man might have taken a just pride. Some of the old stage coaches that were run between Cape Cod and Boston were built by Mr. Keith. In 1849, with the breaking out of the California gold fever, Mr. Keith began to build "prairie schooners" and the demand for these particular wagons taxed the capacity of his little shop to its utmost.

Later he manufactured edge tools and stationary engines, and when the Cape Cod Railroad was extended from Wareham to Sandwich, he began the business of manufacturing railroad cars, for both freight and passenger service. A spur track was built from the little shop in which these cars were made, to the main line of the railroad and the finished product was drawn by oxen to the road. It was in this little shop also that a part of the first elevated cars used in New York City were built by Mr. Keith.

In the early sixties Mr. Keith took his two sons, Hiram T. and Isaac N., into partnership, and upon his death in 1864, the business was turned over to them, Isaac N. Keith becoming the manager. The enterprise having grown it

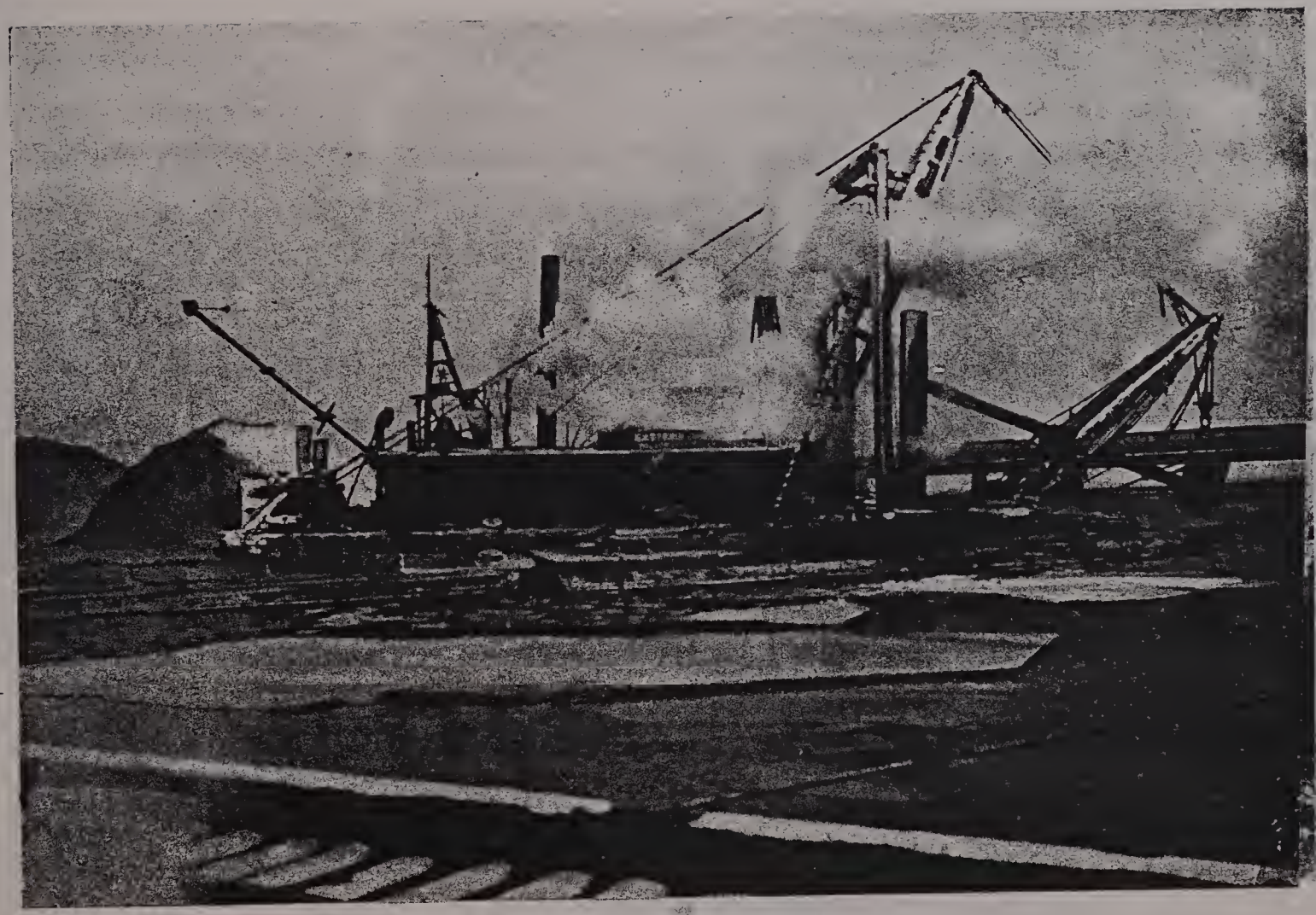
View From Head of Canal, Looking Towards Keith Car and Manufacturing Companys Plant, Sagamore, March 1911.

became necessary to abandon the small building and seek larger quarters, and a mammoth new shop was erected on the present site of the plant. At one time the firm also operated a manufactory at Hyannis.

Isaac N. Keith, the active head of the business for so many years, was educated in the public schools of Sandwich, and when a young man learned telegraphy, and soon after was made superintendent of the Cape Cod and Cape Ann District of the American Telegraph Company. He resigned this position upon associating himself with his father and brother, devoting his whole attention to the manufacture of freight cars. Mr. Keith was beloved by his employes and held in the highest esteem by his business associates and by every one who enjoyed his acquaintance. His fellow townsmen honored him with elective offices. He represented the Cape Cod District in the Massachusetts Senate, and later was a member of the Governor's Council. Legions of friends mourned his death in 1899. In his son, Eben S. S. Keith, the Company has found a successor worthy of his ancestry. As a young man, after graduating from the Bourne High School, Eben S. S. Keith associated with his father in the enterprise, and with a business sagacity unusual in one of his years, has mastered every detail of the industry. As the growth of the business necessitated the enlargement and improvement of the plant, it was evident that the management of the young man was a success, for the number of cars turned out year by year was far larger than ever before.

In 1907 the business was enlarged and incorporated under the laws of Massachusetts, the name of the corporation being the Keith Car and Manufacturing Company. The purchase of land east and west of the old plant was accomplished and a sufficient number of acres were secured to give the Company a strip more than two miles long between the N. Y., N. H. & H. Railroad and the proposed location of the Cape Cod Canal. When the waterway is finished all the fuel and lumber used in the construction of the cars may be brought direct by water and unloaded on the premises of the Company.

The work of constructing the new steel buildings required months. Nearly all are of steel, everything is built of the best material and in the most approved manner, no expense having been spared either in the construction of the buildings or their equipment. The foundations are of concrete.



At Work On Buzzards Bay End of Canal.

Beginning at the western end of the Company's property the first building is the truck and under-frame shop. This building is 60 feet wide, accommodating four tracks, and is 1016 feet in length. Next comes the power plant, blacksmith shop and machine shop, all in one building, constructed of brick and steel, and 365 feet long. Close by is located the mammoth hydrant tank, the capacity of which is 225,000 gallons, and the sprinkler tank holding 50,000 gallons of water. Two fire pumps have been installed, each capable of throwing 1000 gallons per minute and a complete system of hydrants and automatic sprinklers from one end of the property to the other affords ample fire protection for the entire plant.

On the eastern side of the county road, which divides the plant, is located the mill and erecting shop, 836 feet in length. Parallel with this and bordering on the railroad is the largest building of the plant, the paint shop, 1330 feet, or fully one-quarter of a mile in length. From the eastern end of this building to the extreme end of the truck and under-frame shop is a distance of more than one mile, and extending beyond both are the private tracks of the Company, covering a distance of over two miles. Altogether the Company has over 18 miles of track on its property and the cars are transported back and forth by their own locomotives. The entire plant is equipped with machinery of the latest type, and power and light are furnished by electricity.

The office building, near the railroad station, has every modern convenience, including a private telephone exchange. The services of a large force of stenographers, bookkeepers and clerks are required to carry on the business of the concern. The Company also maintains a private hospital with a nurse constantly in attendance, and regular visits are made daily by a surgeon.

At present about 600 men are employed by the Company and about 25 cars per day are being turned out. The capacity of the plant will allow a much larger output later.

The business of the Keith Car and Manufacturing Company is under the direction of the following officials:

President—E. S. S. Keith.
Treasurer—L. J. Whitney.
Purchasing Agent—C. H. Clapp.
Manager of Works—Charles Streicher.

Where 500 Italians Began Work of Digging Canal With Wheelbarrows in Sandwich, near Town Neck in 1880.

First, Task To Be Finished

The first task incidental to the building of the canal, to be finished is the big double track roll lift bridge, known to engineers as the Straus trunnion bascule. This spans the waterway at Buzzards Bay.

The bridge is said to be the largest of its kind ever constructed. It will be operated with a sixty-five horsepower motor, power for which will be furnished from the New York, New Haven & Hartford's electric plant at Tremont. To open the draw requires about a minute and a half. The counterbalance, a mammoth steel box-like arrangement, hangs at one end and is filled with 1200 tons of concrete.

Because of the ulterior value of the project and the effect it will have on New England shipping industry particularly, New England business men are taking the keenest interest in the canal work. This interest is not confined to New England, but all along the Atlantic coast the same interest is manifest. The canal is the grandest enterprise to date taken in connection with the agitation for deeper Atlantic waterways.

Some of the routes of commerce that will be affected by the canal with reference to the Atlantic waterways will be: Boston to New York, outside or inside courses, and to Southern ports; Portland and other Maine ports to New York or Southern ports; Halifax to New York or Southern ports; Jacksonville, Savannah, Norfolk, Va., Baltimore and Philadelphia to New England ports.

The hydraulic dredge that is engaged deepening the trunk of the canal in Monument River near Buzzards Bay is capable of taking out 2000 cubic yards of spoil (material) a day.

The opening up of the canal and its use by passenger steamer between Boston, New York and Boston, will be of untold convenience to the public, when it can leave New York late in the evening and reach Boston the next morning.

For working purposes Engineer Parsons has divided the work into two sections, the first or eastern division extending from Barnstable Bay to a point a little beyond Bournedale, and the second or western section covering the remaining distance.

Land diggers have been put into service on the eastern division near Sagamore. These diggers are making the preliminary excavations and cuts through small hills that have been encountered on the Barnstable Bay outlet.

Cap Cod Bay Entrance to Canal, March 1, 1911.

The mammoth breakwater is of the rubble mound type and is rapidly approaching completion. It was found necessary to install this because of the tides and also to afford safe anchorage for vessels. The breakwater is built of huge blocks of stone, weighing as much as fifteen tons each, the center or core of the wall consisting of smaller blocks. When completed the wall will be from thirty to sixty feet wide at the bottom and twenty-five feet across at the top, and the length will be in the neighborhood of 3500 feet. At high tide the top is eight feet above the surface of the water and the base is twenty-five feet below mean low water.

A steep incline is noticeable as the feature in the construction of the land or inner side of the wall. On the outer side is the contrast; here the slope is long and gradual, the aim being to furnish surface on which the force of the waves is easily spent. The end of the breakwater wall will be capped in the harbor with a concrete monolith. Plans are being made to place a lighthouse at this point.

Canal Adjunct to Boston Harbor.

The Cape Cod Canal has been described as an adjunct to Boston harbor, and according to the statements of experts and shippers, it will prove even more, in that communication between other ports and to the north and south will be directly furthered and quickened.

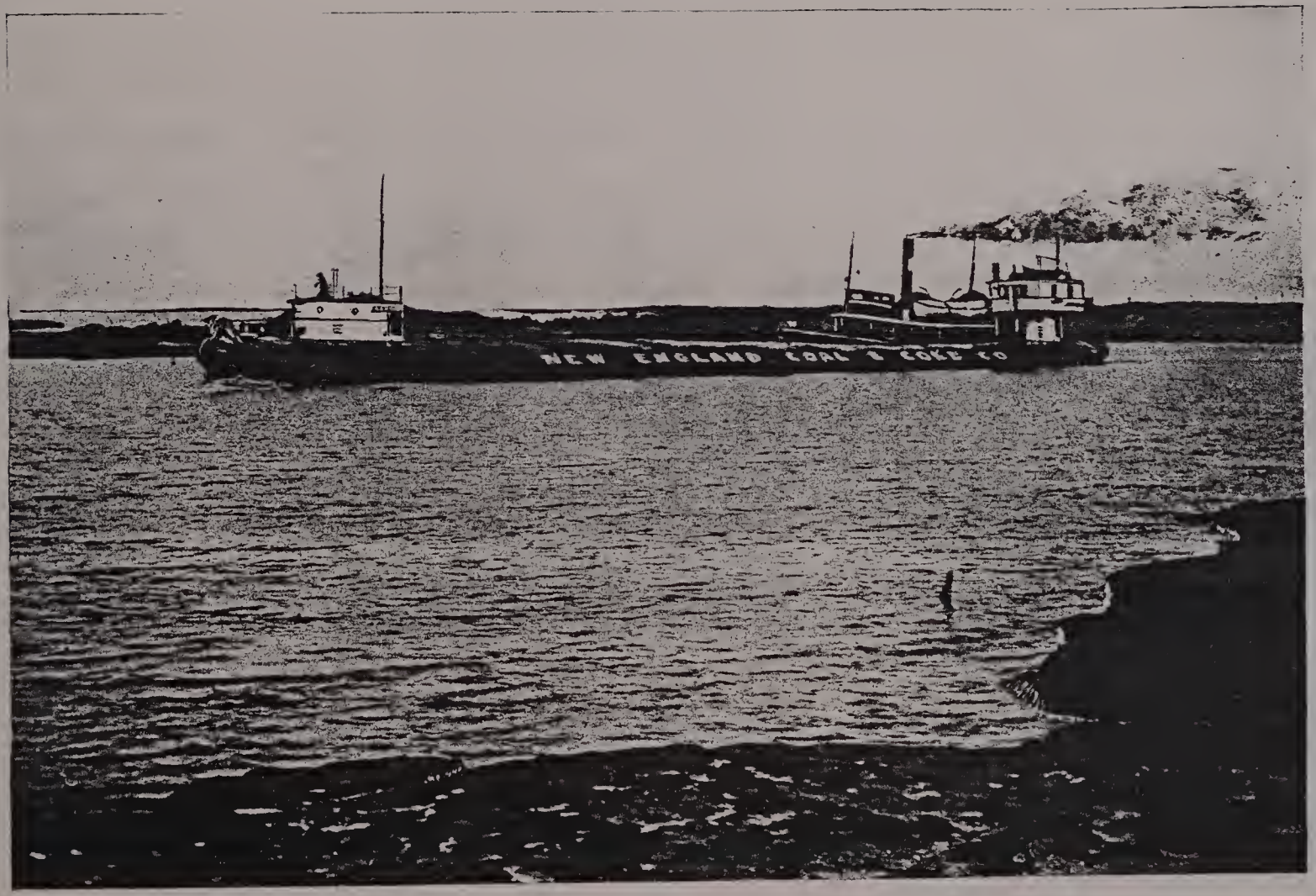
N. Y. N. H. Railroad Looking Forward To Completion of Canal.

The N. Y., N. H. Railroad Company has already taken steps looking forward to the completion of the waterway. The company has recently acquired the valuable Commonwealth docks in South Boston and it is the intention of the Company to use the docks for their steamers that now ply between New York and Boston, and later special steamers, built expressly for the run from New York to Boston through the canal, will be placed in commission.

On May 8, 1907, the Joint Board of Harbor and Land and Railroad Commissioners approved the plans.

Agreements for the change of the railroad line have been made with the N. Y., N. H. & H. R. R. Co.; the railroad bridges necessitated thereby are completed.

The bridges are being constructed on the basis of an ultimate depth of canal of 34 feet. They



The First Cargo to Arrive at the Port of Sandwich. The Barge Cassie with 2,000 Tons of Coal Towed into the Canal by the Tug Mary Arnold, Dec. 14, 1910.

will each have an opening of 160-feet span of the type known as the Bascule lift bridge.

The local travel across the canal will be accommodated by such bridges or ferries as experience may dictate.

Canal to be lighted.

The final estimates for the canal include the thorough electric lighting and other aids to navigation of the whole channel and approaches requisite for a region where fog prevails.

The tonnage through Vineyard Haven Sound and over Nantucket shoals to-day, which will be all tributary to the canal, amounts to 25,000,000.

(*a*) This tonnage is under the control of a small number of corporations, which tow the merchandise in barges containing from 1000 to 3500 tons.

(*b*) The towing companies now require a plant for a three-weeks' round trip on account of the dangers and delays via the Vineyard Haven route.

(*c*) The cost of this plant will be reduced at least one-third, for the reason that not only is the distance shortened 66 miles, but the duration of the trip is greatly diminished.

(*d*) Insurance from perils of the sea will be lessened.

(*e*) The congested railroad systems of the Atlantic coast are now heartily in favor of water transportation for crude material, thus relieving their lines for the transportation of high-class merchandise and passengers.

This new waterway is not in the strictest sense a canal, but a short passage connecting two portions of a much-traveled route through which a known traffic exists. Its conditions are analogous to those at Suez, where the profits have far exceeded the estimates.

The charter under which the Boston, Cape Cod & New York Canal Company is building the canal was granted by the State of Massachusetts on June 1, 1899.

It provides for a capital stock of $6,000,000 and for coupon, or registered bonds, to an amount not exceeding, in the aggregate, the capital stock.

That a ship canal shall be built between Buzzards and Barnstable Bays.

It gives the corporation the usual railroad rights relative to condemnation of land.

Other and minor provisions of the charter have been fulfilled in accordance with the terms thereof.

The dredge No. 9 was built three years ago

The Partly Completed Highway Bridge that will Span the Canal between Buzzards Bay and Bourne, Feb. 1911.

by the Furst-Clark Co., in their own plant near Galveston, Texas. The craft is 160 feet long, with a 42-foot beam, and is of the new type of dredges, being built with a sharp nose for towing at sea. Her engine is of 600 horsepower and her capacity for digging is practically the same as that of the General Mackenzie, from 10,000 to 15,000 cubic yards per day.

No. 9 requires a crew of some 40 men and is commanded by C. F. Loga.

The General Mackenzie at work on the canal is the largest dredge of her type along the Atlantic coast. She discharges the material excavated through a 22-inch pipe and conveys it a half mile or more and deposits it over the marshes.

The land excavators, so called, seen at work along the line of the canal, are cutting a ditch on the northern end of the proposed waterway. They will continue this work to Buzzards Bay. The land excavators weigh 110 tons; the big bucket that scoops up the dirt weighs but eight tons. The bucket ladder of the excavators is 100 feet in length. The excavators each handle from 700 to 800 yards of material a day. The land excavators work day and night as do the dredges.

In Buzzards Bay the deepening of the main ship channel from a point near Wing's Neck to the present railroad bridge over Monument River is about half completed.

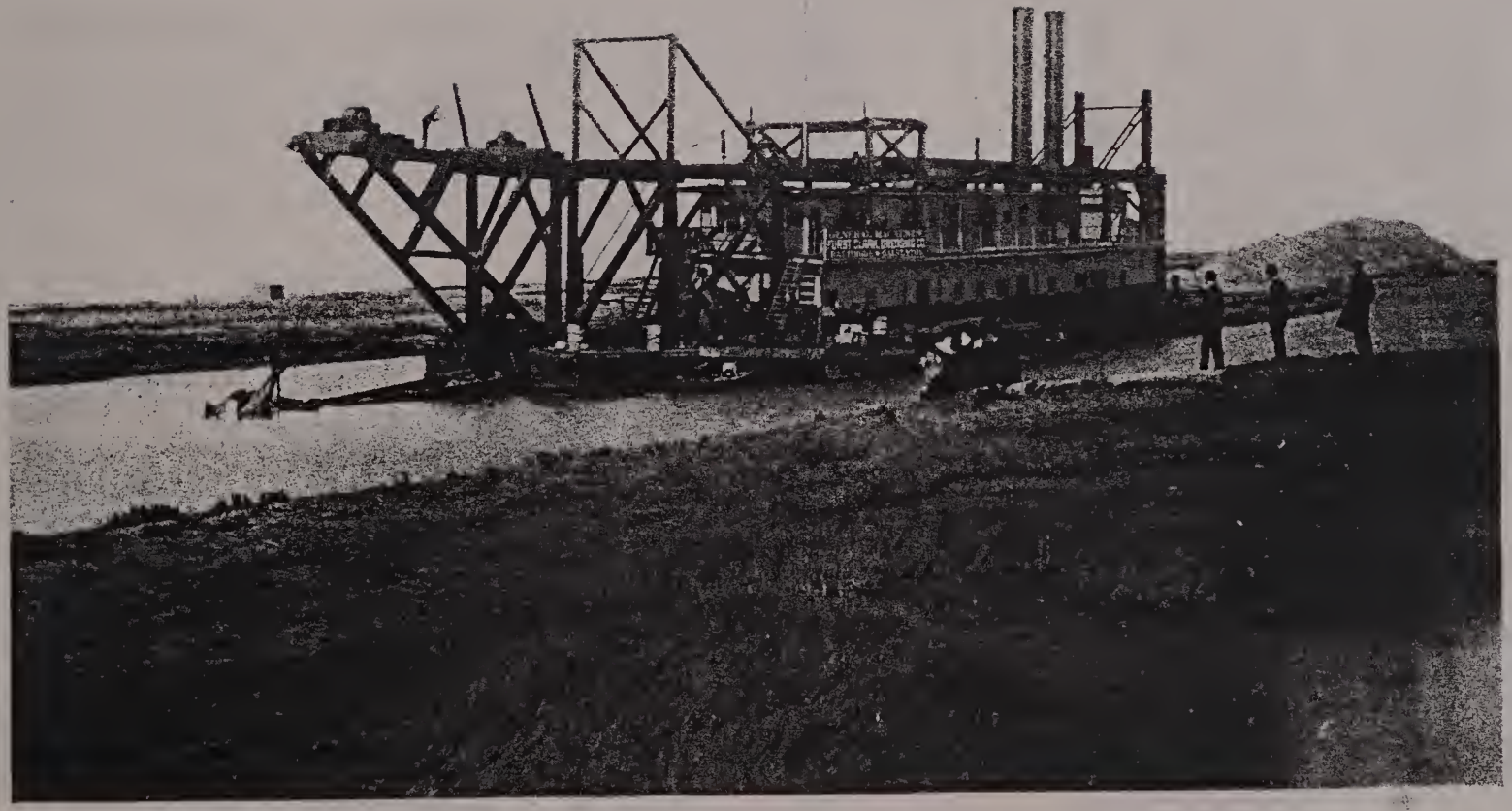
The offices of the Canal Company are in Sandwich, the Burgess House on Jarvis Street, near Post Office Square, having been purchased and refitted by the Canal Company for their exclusive use.

The breakwater in Cape Cod Bay is four-tenths completed and will extend seaward for 3500 feet, nearly three-quarters of a mile, to where the water will be thirty-six feet, or six fathoms deep. A breakwater 1000 feet in length may be built to run parallel with the main breakwater. If so they will be 800 feet apart.

The Pennsylvania Steel Company built the mammoth roll lift railroad bridge that spans the canal on the Buzzards Bay end.

Ezra Perry, brother of Edward Perry, was one of the early settlers of Sandwich. He had two sons, one of them, Oliver Hazard Perry, was the grandfather of August Belmont, the head of the syndicate that is building the canal.

The Maritime Canal Company, organized in Canada in 1890, lost their charter to build the canal by failing to comply with one of the con-



General Mackenzie Inside the Beach Ready To Begin Work of Digging the Canal, April 10, 1910.

d'tions which required them to deposit $500,000 with the treasurer of the State of Massachusetts for the purpose of paying land damages.

The natural slope of the sides of the canal are believed to be sufficiently firm to wear. Where the sides are found weak cement and granite will be used.

The Cape Cod Canal Construction Company has sublet the dredging, which is the main part of the big undertaking, to the Furst-Clark Construction Company, formerly known as the Maryland Dredging Company of Baltimore.

About 1,000,000 tons of granite will be required for the breakwater.

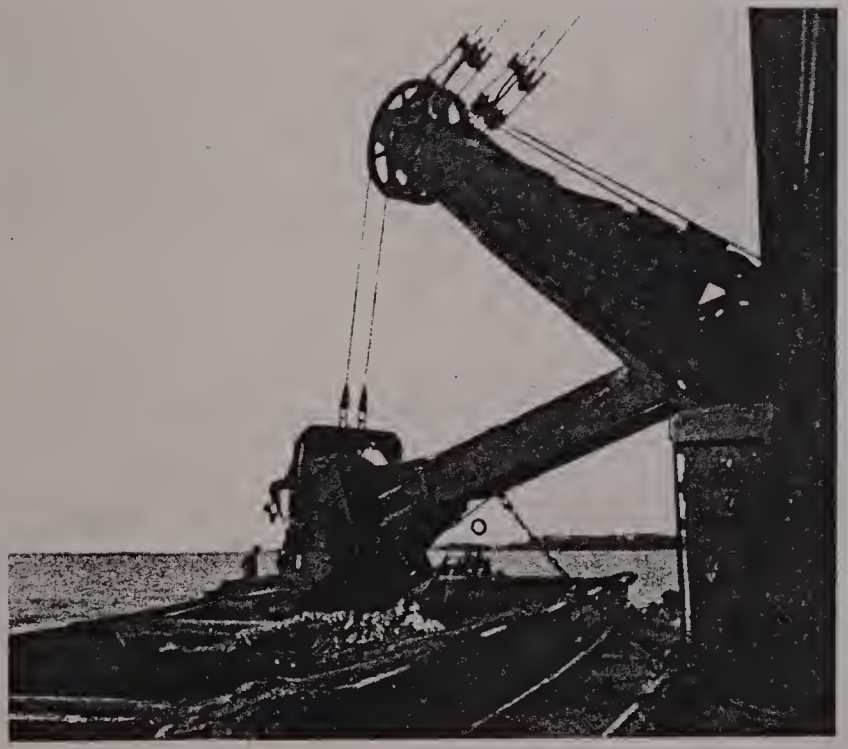
The strange carvings exhumed from the Scusset marshes by the dredges were executed by a poor demented fellow who lived close to the bay shore and whose fondness for a Sandwich belle led him to seek employment for his leisure time by carving her image and various cabalistic signs upon billets of oak. In his lucid moments, overcome by disgust, he would consign them to seclusion of unsympathetic eyes by submerging them in the creeks that furrowed the Scusset marshes. The figures are generally carved upon sticks of wood of ordinary stove size. Few bear any coherent inscriptions. One that was made up of eight letters, two letters being upon each side of the stick as follows: *MY|LO|VE|WIL|*.

Change of railroad location.

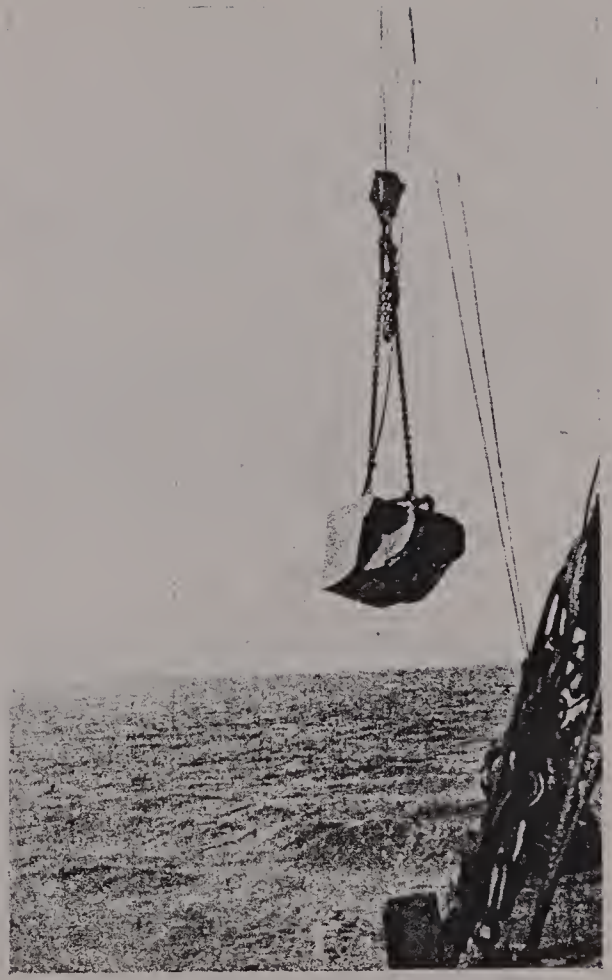
The construction of the canal will necessitate the changing of the line of railroad from a point just beyond the western end of the Keith Car and Manufacturing Plant in Sagamore to Buzzards Bay, a distance of about five miles. On the right bank of the proposed waterway, from a point about half way between the present Bournedale depot to the Scusset marshes, a distance of nearly two miles, the big plant of the Keith Car and Manufacturing Company will parallel the canal.

Going down the Cape the canal will be on the left of the N. Y., N. H. Railroad, and the great number of vessels of all types that will be passing in the great waterway will always present a rare and interesting spectacle for passengers on the trains. From the cars may be seen the big breakwater extending out into Cape Cod Bay with a lofty lighthouse on the seaward end. A United States life-saving station will be established on the Sandwich end of the canal.

From Buzzards Bay going down the Cape the



The Mammoth Bucket of the Dredge Kennedy
Working in Buzzards Bay.



The First Block of Granite For The Breakwater
in Cape Cod Bay.

railroad trains now run parallel with the left bank of the Monument River. The bridge, just beyond the Bourne station where the tracks cross the river, is in the centre line of the proposed canal.

From a point near the Bourne Library the railroad will parallel the waterway on the right bank its entire length to the Scusset marshes at Sandwich where the canal turns seaward to the shore and into Cape Cod Bay. The railroad will thus cross the canal but at one point, Buzzards Bay.

The dredge General Mackenzie was the first of the fleet of dredges to arrive at the Sandwich end of the proposed canal.

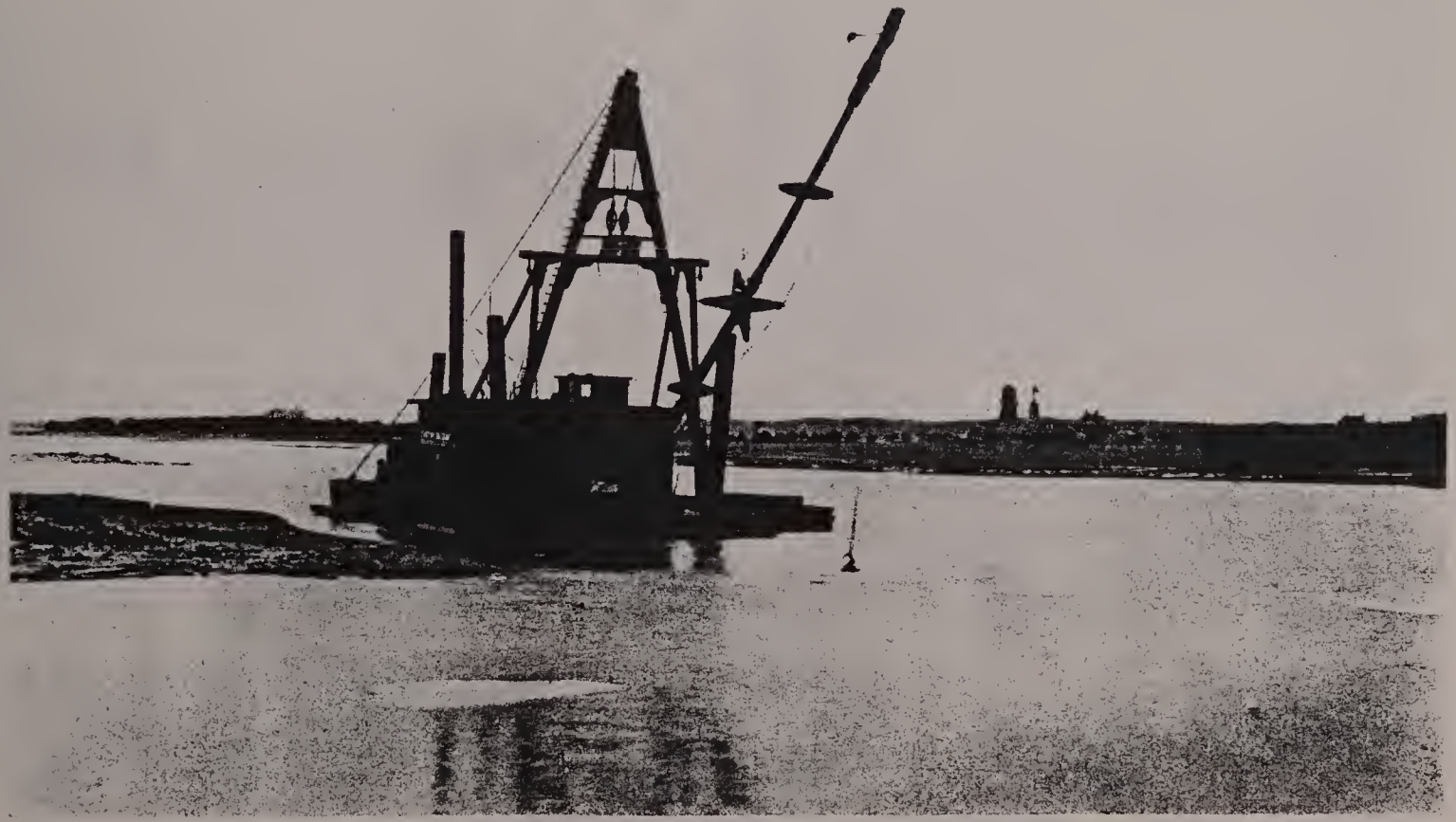
In tow of the big ocean-going tug Buccaneer, the General Mackenzie, in command of Capt. Robert Hullman, arrived in the bay off Sandwich October 14, 1909.

The dredge began work at once but in a few days was compelled to flee for safety across the bay to Provincetown in tow of the Buccaneer. Repeated efforts were made by the General Mackenzie to cut through the beach into the nearly mile of ditch dug by the Lockwood dredge in 1884, but successive gales compelled the dredge to abandon the task and the big digger was tied up at Provincetown and Plymouth during the winter.

The dredge Nahant of the Eastern Dredging Company was engaged to make the cut through the beach, and by working her way up a small creek she reached Tuppers Creek, so called, and dug her way into the abandoned mile of canal, and on January 25, 1910, began the task of digging seaward through the beach to Cape Cod Bay.

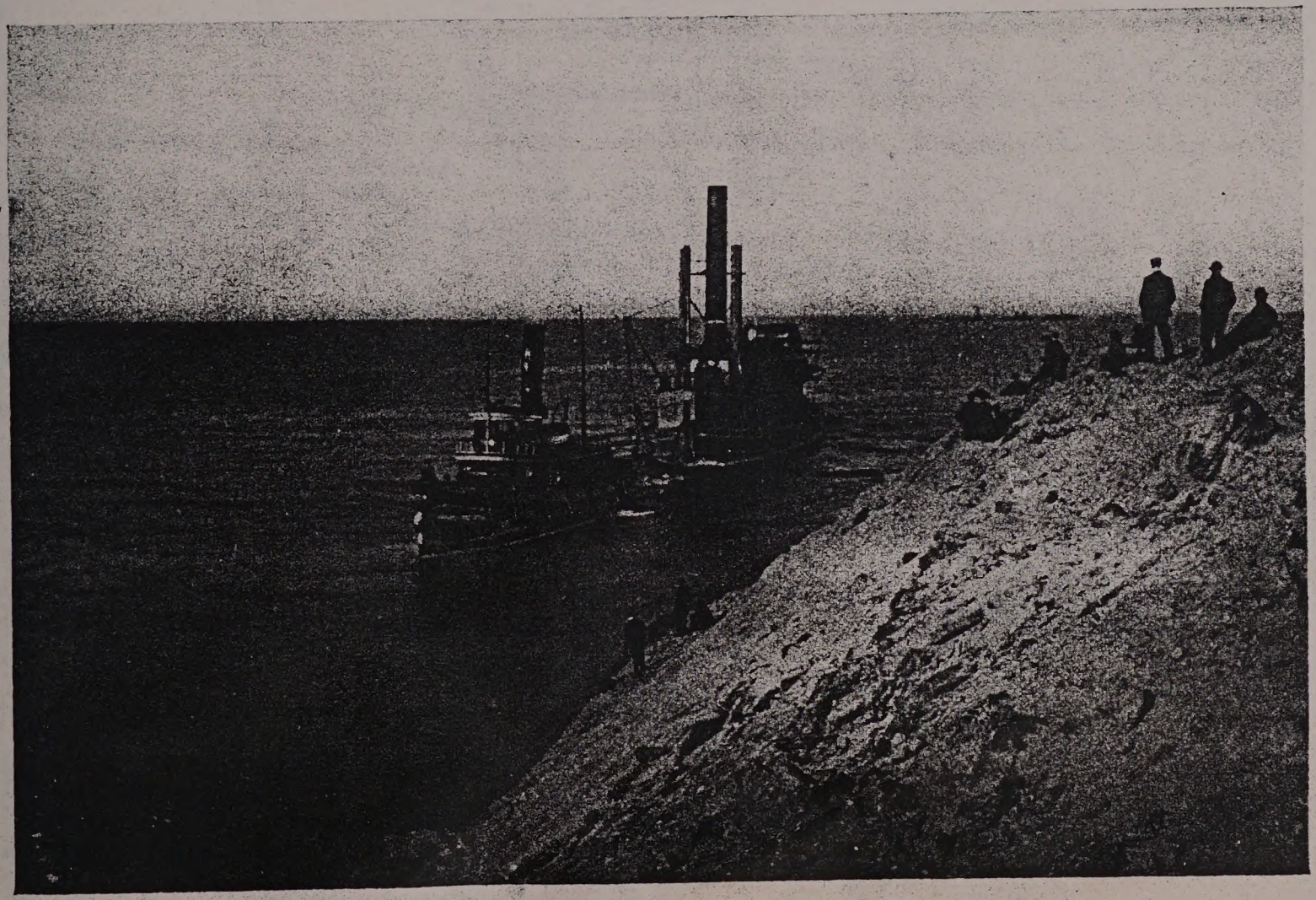
The "spoil" removed by the Nahant was piled on the sides of the cut. The Nahant finished the cut through the beach April 6, 1910, and the General Mackenzie was towed through the cut into the old mile of canal on April 8, 1910. The great mounds of sand piled up on either side of the cut were removed by the General Mackenzie and were carried by the discharge pipes over the historic Scusset marshes.

The dredges Capitol, International, National, and General Mackenzie are now engaged digging on the Sandwich end of the canal. A fleet of big dredges will begin work on the Buzzards Bay end of the waterway on April 1, 1911, and other dredges will be added to the fleet at work on the Sandwich end.

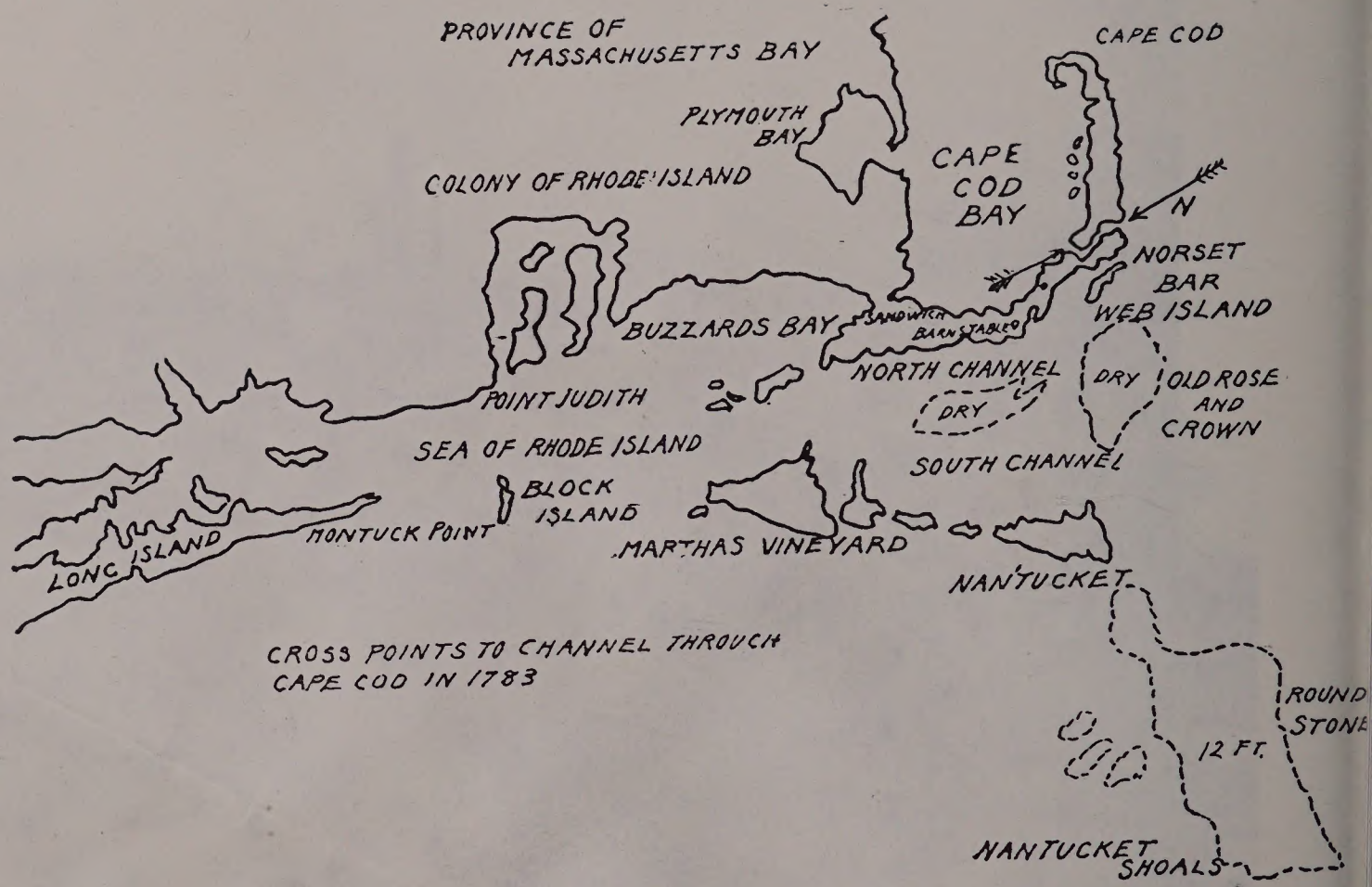


Deepening Channel on Buzzards Bay End of Canal to Admit Big Dredges.

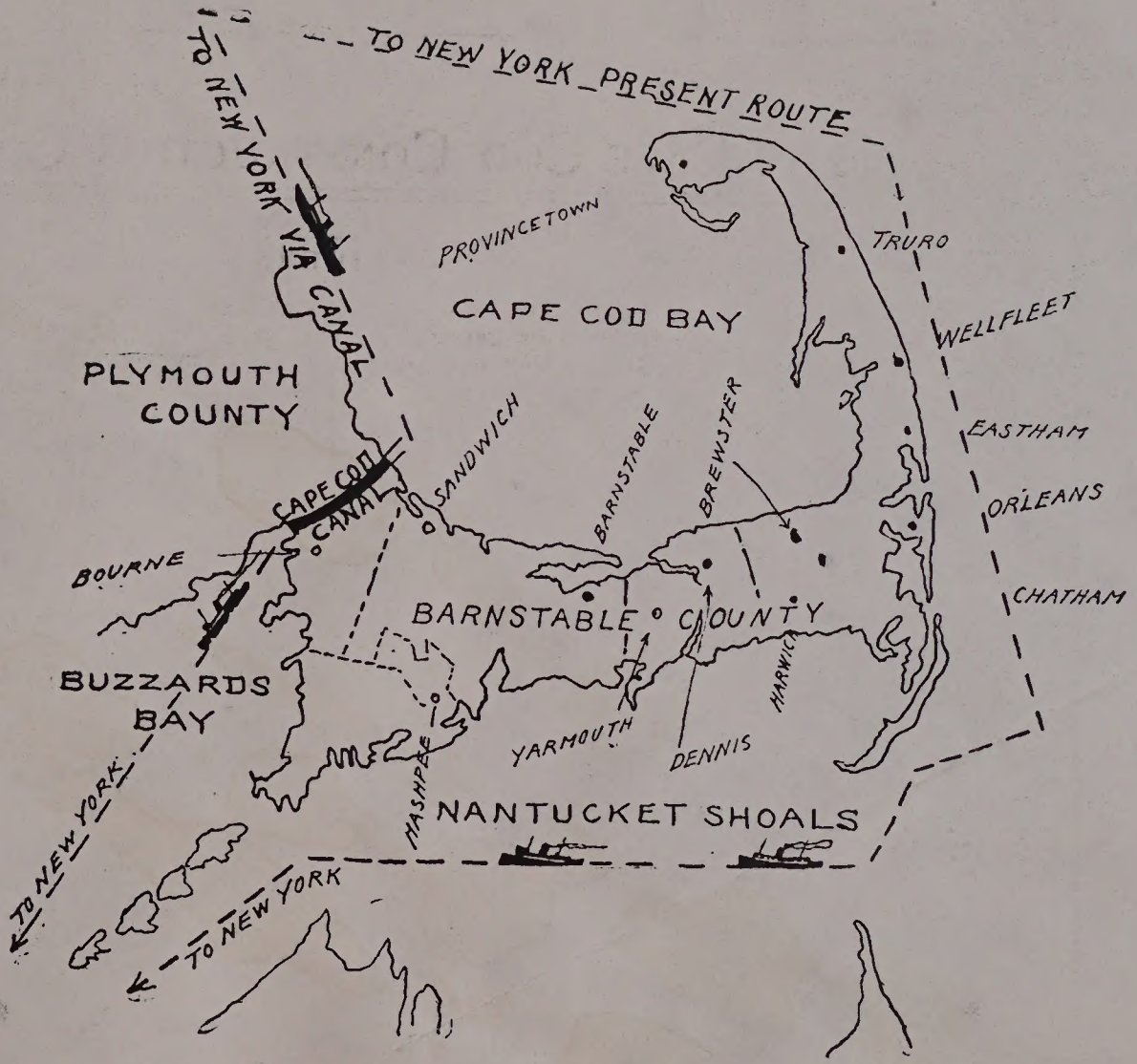
Giant Cutter of Dredge General Mackenzie.



Dredge No. 9 Entering the Canal, May 2, 1910.



CAPE COD AN ISLAND IN 1783.



Map of Cape Cod Showing Present and Canal Routes from Boston to New York.

THE CAPE COD CONSTRUCTION COMPANY

OFFICERS

PRESIDENT,	AUGUST BELMONT
FIRST VICE PRESIDENT,	J. W. MILLER
SECOND VICE PRESIDENT,	A. LITHGOW DEVENS
CHIEF ENGINEER,	WILLIAM BARCLAY PARSONS
DEPUTY ENGINEER,	EUGENE KLAPP
SECRETARY,	U. A. MURDOCK
TREASURER	J. J. COAKLEY
CLERK OF CORPORATION,	FREDERICK HALE

DIRECTORS

CHARLES H. ALLEN,	First Vice President Guaranty Trust Co. of New York
FRANCIS R. APPLETON,	Vice President Waltham Watch Company
AUGUST BELMONT,	Banker
A. LITHGOW DEVENS	Banker, Boston
E. W. LANCASTER,	Director Atlanta and Charlotte Ry. Co.
LEONER F. LOREE,	President Delaware and Hudson Company
J. W. MILLER,	Late Vice-President New England Navigation Company
WILLIAM BARCLAY PARSONS	Engineer
FREDERICK D. UNDERWOOD.	President Erie R. R.
N. P. WILSON,	Secretary Great Western Power Co.

DEGNON CAPE COD CANAL CONSTRUCTION CO.,	General Contractors
PENNSYLVANIA STEEL CO.	Bridge Steel Work
HOLBROOK, CABOT AND ROLLINS	Bridge Foundation Work