

SUBTERRANEAN TELEGRAPH TO THE PACIFIC OCEAN.

[To accompany S. bill No. 60.]

DECEMBER 27, 1854.

Mr. FARLEY, from the Committee on Territories, made the following
REPORT.

The Committee on Territories, to whom was referred the memorial of Hiram O. Alden and James Eddy, asking for a right of way through the public lands of the United States, for the construction of a subterranean line of telegraph, for the purpose of establishing telegraphic intercourse between the Atlantic and Pacific States, and a grant of land on certain conditions in aid of the same; and also Senate bill No. 60, "authorizing the construction of a subterranean line of telegraph from the Mississippi or Missouri rivers to the Pacific ocean," based upon a similar memorial, have had the subject under consideration, and beg leave to make the following report:

During the second session of the 32d Congress, the memorial of Messrs. Alden and Eddy was presented and referred in both houses. A favorable bill was reported in the Senate, but not finally acted upon for want of time. At the past session the subject again received a favorable report in the Senate, and a bill carrying out the design of the memorial was passed, and is the same which was referred to your committee. The larger portion of the Senate report of February, 1853, and the whole of that of February, 1854, embracing the views taken of the feasibility of the enterprise, and its importance to the country, from its first introduction into Congress, are hereto appended.

The project contemplated in the bill is of transcendent public concern, and possesses the merits of *practicability* and *early completion*, if it can have the encouragement of the government. It provides—

Firstly. That a right of way shall be given through the public lands of the United States for the construction of a subterranean line of telegraph, (of at least two independent conductors,) from the Mississippi or Missouri rivers to the Pacific ocean, at San Francisco, in California.

Secondly. That it be constructed by individual enterprise, and at individual expense.

Thirdly. That after its completion, in a specified and most permanent manner, the free use thereof, to the extent of eight thousand words per month, shall be tendered to the general government, and the enjoyment of that privilege secured to it in perpetuity, with the reservation to the government of the further *prior* use to any extent within the

capacity of said line, at such rates of compensation for messages transmitted as Congress may by law provide.

Fourthly. That thereupon, and in consideration of such free use and said reservation, the government shall permit the parties to select from the public lands not before sold or appropriated in the territories, along and within fifteen miles of said line of telegraph, any quantity, not more than a section and in alternate sections, two millions of acres, which shall then be conveyed to them.

The citizens of the United States residing upon the Pacific coast have the strongest ties connecting them with the older States. They have established themselves there, organized a powerful State, and are rapidly creating a commerce reaching to the islands and the Asiatic coast. Their peculiar position gives them claims of an imperative character upon the protection and care of the government. Europe is extending lines of telegraph into Asia and Africa, and lines of great length have been constructed in India. When this proposed link shall be completed, the Pacific ocean will be touched upon either shore by lines which, spanning continents, reach to the opposite shores of the Atlantic ocean, and are destined, perhaps, to cross the latter and unite together.

The benefits which will follow the execution of this enterprise cannot be partial or sectional; they must necessarily be of incalculable national importance, and the moral influences resulting therefrom will be co-extensive with the world of civilization and commerce. The results of such a work can hardly be overrated, in the enlivening spirit which it will infuse into the business and other relations existing between the Atlantic and Pacific coasts, in its influence upon the varied interests of that vast population which is destined so soon to occupy every part of the territory embraced within the limits of the republic, and in the facilities which it will be able to render the government in peace and in war. While immense advantages must flow from the construction of the proposed line, your committee are not aware that a single evil can; and objections, if any there be, must be directed against the mode recommended to insure its success, rather than the object sought to be accomplished.

It may be contended that the precise point for the location of the line, at its eastern terminus, should be fixed in the bill. This is not important. It is left discretionary with the memorialists to commence from "such point on the Mississippi or Missouri rivers as they may hereafter select." It will undoubtedly be for their interest to start from some prominent point of population and business. The best route cannot be determined upon without an examination and survey; and as the public interests cannot suffer thereby, it is thought expedient to leave the eastern terminus and general direction of the line entirely open. The fact that from the point selected for an eastern terminus, wherever it may be, diverging lines running in any direction may and will be made to connect with it, is a sufficient answer to any desire for fixing it in the bill.

It has been said that the building of a telegraph line to the Pacific should be connected with that of a railroad; and, further, that the construction of a telegraph line, as an independent measure, will be mark

ing out a line for the Pacific railroad. The force of these objections is not seen by the committee. If the telegraph is to await the construction of the railroad, it is evident that its completion must be postponed for some years, even if the latter be commenced immediately, while two years will suffice for the construction of the former. The plan of the memorialists cannot mark out the route for a railroad, or influence the decision of that question, for the reason that the *straightest* practicable line between the termini is the most desirable. It would cross mountains, valleys, and rivers, in directions utterly unsuitable and impracticable for the route of a railroad; its location would be controlled by other considerations than those of grades, bridges, excavations, and embankments, which must enter so largely into the location of the former.

Connect the Atlantic and Pacific coasts by telegraph communication, and the impulse which it will give to business, and that great tide of emigration setting towards California, will add to the necessity for railroad communication. In this instance, the telegraph should precede the railway.

The bill provides that the telegraph line shall be completed within two years from its passage, and after such State legislation shall have been secured as may be necessary to authorize its construction in the States through which it may pass. The parties having had much experience in similar undertakings, have full confidence in their success and their ability to complete the work within the time specified. The benefits, therefore, which will accrue from this measure, are not to be postponed to an indefinite future; they are close at hand and within our immediate grasp.

The line is to be constructed in the most permanent manner, with two independent conductors, placed under ground, where they will be exempt from all the causes which operate to prevent the efficiency and reliability of lines constructed in the ordinary way. The wires are to be so completely protected by the insulating material, itself imperishable, that they will not corrode; and, being securely placed in the earth, no accidental breaking can occur. The electrical state of the atmosphere, or the most violent storms, can have no effect to interrupt the working of lines thus laid down. The plan proposed also includes the location of testing-tubes at intervals of five miles, and working stations at average distances of one hundred miles. Under such arrangements, should the line from any cause be interrupted, it could be speedily repaired. The parties are entirely confident that they will be able to work the line at *all* times as readily as air-lines are operated in the most favorable weather, and consequently that they can always transmit despatches directly through. This mode of construction, which has been attended with satisfactory success in Europe, will, it is confidently believed, secure all the advantages claimed for it by the memorialists, who have a practical knowledge of the building and operating lines of telegraph; being connected with the management of some of the best regulated telegraph companies in the country. The bill provides for two lines of wire, which will insure the transaction of a larger amount of business, and a degree of certainty and reliability to the government and the citizen in the transmission of despatches.

which might, for obvious reasons, be sometimes interrupted if the dependence was upon but *one* line of wire.

A subterranean line of two wires, such as the bill provides for, is estimated to cost eleven hundred and fifty dollars per mile. Calling the distance twenty-four hundred miles, the entire cost of the line, including the buildings necessary at the working stations, together with incidental expenses to be incurred in its construction, such as explorations and engineering, land transportation of materials, cost of supplies, and erection of forts to protect way stations, would be not less than two million seven hundred and sixty thousand dollars. The annual cost of operating the line is estimated at three hundred and fifty thousand dollars. Fifty operators will be necessary, and a force of two hundred and fifty other men will be required, constantly in the work of repairing and protecting the line. These men will be posted in small parties at the different working stations. It is proposed to have a double set of operators, so that the line may be worked by night as well as by day.

The value of the lands located along and near the telegraph line, if estimated as the government valued its bounty lands given to its soldiers in the Mexican war, when it commuted with them, giving one hundred dollars in scrip, or one hundred and sixty acres of land, would be only at the rate of sixty-two and a half cents per acre. Valuing the proposed grant of two millions of acres at the same rate, it would be worth twelve hundred and fifty thousand dollars, considerably less than one-half the estimated cost of the line. It should be remembered that the bill confines the grant to the *Territories*, while those soldiers had the right of locating in both Territories and States. It is thought, therefore, that the sum of twelve hundred and fifty thousand dollars is a fair valuation of their worth, if estimated as aid in the construction of the line. These lands are so far remote that it must be years before they can become of value to the government. No person could afford to purchase them at the government price of one dollar and twenty-five cents per acre, and retain them until they became marketable; he never would realize the cost and interest. The value to the government of the privilege of transmitting without charge eight thousand words per month is, at the rates named in the bill, equal to a yearly interest account of one hundred thousand dollars, a sum equivalent to an annual interest at eight per centum on the value of two millions of acres of land according to the foregoing estimate. In addition to this privilege, the government is to have the prior use of the line for all its business, without restriction, at rates to be established by itself.

The principle so frequently regarded of selecting alternate sections where grants have been made by the government, in aid of great works of public importance, is incorporated into this bill.

It may be inquired why the government is asked to aid in this enterprise? The answer is clear, and, we think, satisfactory. Telegraphic lines are of recent origin, and the profits of their business uncertain. As an investment, they have not yet acquired that favor with the public which will induce the capitalist to take stock in a line like the proposed, running thousands of miles through a savage country. It is believed that the numerous telegraphic lines put in operation in this

country, exceeding in their aggregate length the united lines of all other countries, have not, on the whole, been a profitable investment to those interested. This project does not hold out sufficient grounds for success as a profitable investment, to induce subscriptions, without government encouragement. Without that assistance, it is not to be expected that a telegraph line, as an independent measure, can, for years to come, be carried through with reasonable hopes of remuneration for the outlay of capital which would be required. A grant of land under the conditions named, will give to the enterprise a degree of confidence in the public estimation which cannot otherwise be created. It will give those engaged in it a credit and responsibility which will enable them to command means at once to carry on the work to an early completion, and overcome a great many obstacles which would be fatal to its success, if confined strictly to the efforts of private enterprise alone.

The aid of the government is invoked. Can it be granted with *safety* and *security* to the public interests? It is evident that it can. It is provided in the bill that no lands can be selected until *after* the completion of the line, and the free use of it tendered to the government. This condition is ample security. Again, it is provided that the line becomes forfeited to the government, in case of neglect on the part of the memorialists to operate it for a period of six months after its completion. The proposed grant in aid of the undertaking is not a *gift* of a portion of the public lands, but such a disposition of them as will confer great and lasting advantages to the citizen and the government. Looking at it in a pecuniary point of view, it is an investment by the government, upon which it will annually receive, in the transmission of its various orders, civil, military, and naval, a consideration of eight per centum on the value of the lands appropriated. This privilege, together with the "further prior use, to any extent within the capacity of the line, at such rates of compensation for messages transmitted as Congress may by law provide," are not of a temporary character; they are perpetual. The risk, labor, and responsibility, are all upon the side of the memorialists. The government incurs no expense in the construction of the line; in a word, it hazards nothing.

The committee report back the Senate bill with amendments, with a recommendation that they be adopted, and that the bill, thus amended, do pass.

IN SENATE—February 8, 1853.

The Committee on Territories, to whom was referred the memorial of Hiram O. Alden and James Eddy, asking for the right of way for a telegraph to the Pacific, and a grant of land in aid of the construction of such telegraph, having considered the same, beg leave to report :

The memorialists are practically acquainted with the construction and working of telegraphs, having built one of the most permanent and efficient lines in the country—one of them being president, and the

other superintendent, of the line. Inquiries satisfactorily answered have established the competency of these persons to build and manage a line to the Pacific, should Congress deem it expedient that such a line should be constructed under national auspices.

The telegraph which the memorialists propose to build is to be subterranean, made of imperishable materials, and perfectly insulated. A line on poles, in the ordinary manner, is, for the tract of country over which it is proposed to build, simply useless. Atmospheric electricity, fires on the prairie, the thunder-storms among the mountains, herds of buffalo, the necessities of the emigrant, are considerations sufficient to establish that the working of a line in the air would be impracticable. Subterranean telegraphs, tried with indifferent success in this country, have been found to work well abroad. Long lines in the kingdom of Prussia, especially, attest the practicability and superior working capacity of the subterranean telegraph.

As to a grant of land along the line of the telegraph, your committee are decidedly disposed to recommend it. The land is worth nothing now to the government, but doubtless will be of value in the hands of these memorialists and their associates when the line shall have been built. Your committee are advised, in regard to telegraph enterprises in this country, that they are by no means certain paying investments. They understand that on the stock of some of the most important lines in the country no dividend is paid. On the other hand, other lines pay a handsome dividend. Some lines are valueless. Many of them have been dead failures, and the lines have been taken down. Such being the character of telegraph stock, it will be seen that the request of these memorialists for a grant of land by which they may call capital to their aid, considering the national character of the work, is by no means unreasonable; and your committee do not hesitate to recommend such an appropriation, with the best conditions which are wont to be annexed to such grants.

The advantages of this telegraph to the government, the convenience and facility it will give them in communicating with their officers on the Pacific coast and in the intervening territories, cannot well be over-estimated. Orders from the War, Navy, Treasury, Interior, and Post Office Departments would be found going over this line, to the great advantage of the several services. Accidents in California—demonstrations which, before we hear from them, have hardened into history—could be arrested or prevented by the aid of the telegraph: The movements of hostile Indian tribes and of our troops could be daily known at the War Department. Should a national vessel cast anchor in the harbor of San Francisco, her arrival would be known at the department here almost as soon as a boat from her could reach the shore. By the facilities this line furnishes for giving orders from the departments, the great delays now experienced, and the necessity of special messengers, would be avoided.

In the coast survey, which is already begun on the Pacific side, the telegraph is invaluable. The speed and accuracy by which the longitude can be determined, has made it, for the uses of the survey, almost indispensable. We state, on information furnished by intelligent officers connected with the survey, that the observations of one night

with the telegraph are worth more than a month's work without its aid.

Such being the return given to the government for that which is now of no value to them, it will be seen that the rights to land which the accompanying bill proposes to confer scarce wear the character of a grant.

But it is to the people of the republic, from one end of it to the other, that a telegraph to the Pacific is eminently desirable and advantageous. The amount of American shipping, engaged in the whale-fishery and in general commerce, now in the Pacific, is vast, and would largely exceed the estimate which any person, without consulting authentic data, would be inclined to form. Few, however, but know that San Francisco has already become one of the most important commercial places on this continent; and few but have looked forward to the time when a large Asiatic traffic shall find its depot there. None except commercial men who have used the telegraph know its value in commercial business. But its advantages between the great cities of the Atlantic border are dwarfed by the facilities of travel: the locomotive runs by its side, and in eighteen hours the passenger from Washington who has telegraphed his starting for Boston overtakes his message. But in the line proposed, the telegraph spans a continent in an instant of time, and leaves the traveller, in the present facilities of conveyance, a month behind. The merchant at San Francisco might order his goods an hour before the sailing of the steamer from New York. In fact, if he consulted only the dial in his own counting-room, he could send his order two hours after the New York time fixed for her sailing. The telegraph, too, would equalize the markets of the Pacific with those of the Atlantic, and the excessive fluctuations now experienced in the prices of the necessities of life in California would disappear.

But it is in its social bearing that the advantages of a telegraph to the Pacific will be most strikingly seen. Every hamlet, it might almost be said every home, in thirty States of the Union, has its representative on the Pacific shore. By the aid of a telegraph they would be in immediate communication with each other. Every message, whether of joy or sorrow, could be instantly transmitted either way; and sons and fathers, wives and mothers, whose relations are now a thousand miles asunder, would be, for the purposes of the interchange of intelligence, as it were, under the same roof. It is found in telegraphs on this side of the Mississippi that the affairs of social life make up the contents of the larger part of the communications. The same feature will be at least as largely developed in the case of a telegraph to the Pacific.

Your committee, in view of the foregoing, beg leave to report the accompanying bill.

IN SENATE—February 21, 1854.

The Committee on Territories, to whom was referred the memorial of Hiram O. Alden and James Eddy, asking for the right of way for a telegraph to the Pacific, and a grant of land in aid of the construction of such telegraph, having considered the same, beg leave to report:

The proposition to connect the eastern and western shores of this continent by magnetic telegraph is one of such vast importance, involving alike the highest consideration of public and private interest, civilization, and power, that it is almost impossible to do it justice within the limits usually assigned to an official communication to Congress. It is proposed, therefore, to divide the subject, and to consider chiefly—

1st. The necessity, uses, and advantages of the enterprise to the government and the public.

2d. The feasibility of its execution.

3d. Its comparatively small cost, in view of the advantages to be derived from it.

That there is an absolute necessity for a line of telegraph, connecting our Atlantic and Lake cities with the cities on the Pacific coast, is apparent to the humblest capacity. The various business relations of Boston, New York, Philadelphia, Baltimore, Washington, Charleston, and New Orleans, as well as Buffalo, Chicago, St. Louis, and Cincinnati, with the cities of our new Pacific empire, must necessarily partake of the nature of chance, and involve innumerable losses, till the wants of California and the means of supplying these shall be known to our merchants, flour and provision dealers, in time to make profitable shipments. A commercial telegraphic correspondent at San Francisco, informing his friends on the Atlantic coast, on the lakes, or on the Ohio, Mississippi, and Missouri rivers, of the state of the markets, the arrival from foreign countries, the abundance or scarcity of provisions, the accumulation of the precious metals, &c., would annually save millions of property, and give to that which is now considered hazardous speculation, the reality and substance of healthy trade. Capital, which is now misapplied or lost, would find a profitable investment, and help to develop and multiply the resources of the whole country. And as the business people of our Atlantic and western cities would be the first to receive all this valuable information, so would they also be the first to profit by it, even to a point which would enable them to import into San Francisco, direct from Europe, the goods which cannot be supplied by our own domestic markets.

So far the necessities of commerce. Let us now consider those of the government. The acquisition of California secures to the United States the most favorable position on the entire globe for a world-empire. Bounded east and west, respectively, by the two great oceans which divide the continents, its northern expanse only limited by barren wilds or sparsely settled colonies of a distant country, and to the southward encountering a nation yielding at every step to our superior energy and progress, nothing is wanting to render the machinery of our govern-

ment perfect, but a safe and rapid intercommunication between the heart and the extremities. In proportion to the distance of a State or Territory from the federal government is the necessity of protection, especially when the wealth and resources of those States and Territories are apt to invite the cupidity of strangers. Our Pacific seacoast is as yet entirely unguarded, and must necessarily remain so for a number of years, though a vast amount of government property may, in the meanwhile, be accumulating in the sea-ports. There are wharves and docks, government stores, custom-houses, assay offices, barracks—in short, property amounting to millions, intrusted to officers with whom the government must be in correspondence at all times, but who might require double the care and attention in time of war. Our California gold fleets might require convoys, and the commanders of our men-of-war in the Pacific fresh instructions from the government, which could not be conveyed in season except by telegraph. Troops may be ordered to march, or be conveyed from one point on the coast to another, reinforcements may be demanded or announced—in short, the action of the government invoked in a thousand ways, when success may depend on promptness of execution. In all these cases the telegraph would be an instrument of *power*, either for offensive or defensive measures.

On the score of economy, it would save the government the employment of expresses, and the multiplication of government officials in the civil and military service. It would cause the business of the government to be done almost as soon as the orders may be issued from the respective departments in Washington, and thus prevent the waste of means consequent on delay. It would add strength and efficiency to every executive act, and preserve that faith and reliance on our federal government, in citizens separated from us by snow-capped mountains and vast deserts, which would animate their hopes and sustain their courage in times of trial.

But there are yet other advantages to be derived from the use of a line of telegraph from the Atlantic to the Pacific. We have a fleet of some six hundred whalers in the Pacific ocean, the captains and crews of which are ever anxious to be put in communication with their friends at home and the merchants in our eastern cities. They are naturally desirous to bring the product of their daring industry to the best markets, whether American or European, and the telegraph is the best means of imparting to them the information needed for that purpose. In addition to this, our carrying trade in the Pacific has quadrupled since the discovery of the precious metals in California and Australia, amounting now to some 300,000 tons, and employing a capital of more than a hundred millions of dollars; while the revolution in China, and the prospect of opening the ports of Japan, promise a field of enterprise to our merchants and navigators, which must make San Francisco and New York the emporiums of the world's commerce, and the Atlantic and Pacific telegraph the great source of commercial information to all trading nations. When our Pacific steamers shall carry the mails from San Francisco to Shanghai and Canton, intelligence will be conveyed from India to China, and thence through the United States to

Europe, in less time, and with more safety, than by the overland route. The India mail, by the overland route, requires, on an average, sixty-eight days to reach England, and twelve days more to reach New York and Boston—in all, eighty days. When the Atlantic and Pacific telegraph shall be built, and a line of steamers run from San Francisco to Shanghai, news from China will be received in New York in seventeen days, fifteen of which will be required in the transmission of the mails from China to San Francisco, and one or two days, at furthest, from San Francisco by telegraph to New York. Add to this distance of seventeen days, twelve days for the transmission of the mails from New York to Liverpool or London, and the eastern news, via the United States, will reach England in less than half the time now required for its transit by the overland route.

The news from India, the Sandwich Islands, the Dutch East Indies, Australia, and New Zealand, will all be conveyed by the United States until, when the Pacific railroad shall be built, commerce itself will follow in the train of commercial intelligence.

That the Atlantic and Pacific telegraph would be the source of infinite satisfaction to thousands of our hardy western pioneers who, through it, would be enabled to communicate with their wives and children, friends and relatives at home, need scarcely be mentioned. Many a heart would be gladdened, many an expense saved, and many a comfort added to scanty means, by early tidings of the emigrant's new favorable location and success. In whatever light the subject may be considered, whether in reference to the interests of the government, the prosperity of our merchants and navigators, or the happiness and comfort of the citizens at large, the enterprise is eminently calculated to promote the power, wealth, and general prosperity of the country.

As regards the feasibility of the enterprise, the experience of the memorialists, tested by successful undertakings of a similar nature in other parts of the country, as well as the fact that they ask no aid from the government *till their line is completed and in working order*, furnish the strongest presumptive evidence in its favor. The wires, which they propose to lay down under ground, to protect them against storms, wild animals, or Indians, are covered by an imperishable insulating substance, impervious to moisture, and unaffected by any other decomposing influences of the earth. They propose to lay them deep enough to prevent their being disturbed; and they have discovered a process of carrying them across the beds of rivers, and through masses of rocks. Experiments of the same kind have been made in Europe and proved successful. Besides, the memorialists propose to have testing-tubes every five miles, and operating stations every hundred miles, on the entire length of the line. Their confidence in their plan of construction, and the entire success of its execution, is so great that they propose to complete the line within two years from the passage of this bill, or to forfeit all the rights and privileges acquired under it. Such confidence can only be imparted by science, which subjects matter to the immutable laws of nature, and predicts with unerring certainty the result of their application. The government is not asked to aid in making experiments; it is not called upon to appropriate a dollar, or donate an acre of the public domain, until the enterprise is crowned with success,

and that success manifest, by the actual use the government is invited to make of it.

It remains to be shown that the expense of the undertaking is commensurate with its advantages in practice.

All the memorialists ask, after the line is completed and in working order, is a donation of two millions of acres of land along the line, or in some other territories of the United States not interfering with the grants that may have been made, or may hereafter be made, for railroad purposes. This is a small donation, compared with the liberal grants which have been made for railroads and other improvements of a less general character, and less likely to affect the wealth and progress of the whole country. Neither is it asked that the lands granted shall be in a continuous line, only benefiting the grantees. The improvements on the line will enhance the value of the adjacent lands, cause their settlement, and thus bring them, at an early period, into market. The telegraph will be the forerunner of civilization and power, and increase the revenue of the government from customs and divers other sources.

But there is yet another most important consideration. The memorialists do not ask that the government shall grant them lands without receiving an *equivalent*. They bind themselves, in perpetuity, to transmit monthly, free of charge, and prior to all other business, eight thousand words for the sole use of the government, and agree to work the line, day and night, without interruption. This the committee consider the most valuable feature in the whole proposition. At the rate of charges proposed by the memorialists for so large a distance, and worked at so great an outlay of labor and capital, it would be equal to the payment of \$100,000 *per annum*; but the actual saving to government in expresses, messengers, &c., would amount to much more, and far exceed the interest on the value of the donated lands. Viewed in this light, the grant of lands from the government would, in fact, be nothing else but a perpetual *lease* of them, at a yearly rent of \$100,000 and upwards; and not in the nature of a *gift*, but of a profitable *investment*.

Considering, then, that the memorialists assume the whole risk and responsibility of the enterprise, and that the government is only called upon, at its successful *completion*, to make a moderate grant of land *for the use of it*, in all time to come, in the nature of rent, their proposition appears eminently just and reasonable on the face of it, and perfectly safe to the government.

Your committee beg leave to report the accompanying bill.