MAGNESITE

HEARINGS

BEFORE THE

COMMITTEE ON FINANCE

UNITED STATES SENATE

SIXTY-SIXTH CONGRESS

SECOND SESSION

ON

H. R. 5218

A BILL TO PROVIDE REVENUE FOR THE GOVERNMENT AND TO ESTABLISH AND MAINTAIN THE PRODUCTION OF MAGNESITE ORES AND THE MANUFACTURES THEREOF IN THE UNITED STATES

DECEMBER 6, 1919

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MAGNESITE.

SATURDAY, DECEMBER 6, 1919.

UNITED STATES SENATE,
SUBCOMMITTEE ON FINANCE,
Washington, D. C.

The subcommittee met at 10 o'clock a. m., pursuant to call, in room 308-B Senate Office Building, Senator James E. Watson presiding.

Present: Senators Watson (chairman), Curtis, and Thomas.

Also present: Senator Jones and Representative Summers, of the State of Washington; Guy C. Riddell, representing United States Tariff Commission.

Senator WATSON. The subcommittee has been called to meet this morning in order to hear some gentlemen on the bill (H. R. 5218), to provide revenue for the Government and to establish and maintain the production of magnesite ores and the manufactures thereof in the United States, which bill is as follows:

[H. R. 5218, Sixty-sixth Congress, first session.]

AN ACT To provide revenue for the Government and to establish and maintain the production of magnesite ores and manufactures thereof in the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That on and after the day following th passage of this act there shall be levied, collected, and paid upon the articles named herein, when imported from any foreign country into the United States or into any of its possessions, the rates of duties which are herein prescribed, namely:

1. Magnesite, commercial ore, either crushed or ground, one-half of a cent per pound.

2. Magnesite, calcined, dead burned, and grain, three-fourths of a cent per pound.

3. Magnesite brick, three-fourths of a cent per pound and 10 per cent ad valorem.

SEC. 2. That paragraph 539 of the tariff act of October 3, 1913, is hereby repealed; and that so much of paragraph 71 of said tariff act and of any existing law or parts of law as may be inconsistent with this act are hereby repealed.

Senator WATSON. The subcommittee will be glad to hear Mr. Bishop.

STATEMENT OR MR. ROY N. BISHOP, OF THE WESTERN MAGNESITE ASSOCIATION, AND VICE PRESIDENT AND GENERAL MANAGER OF THE NORTHWEST MAGNESITE CO., CHEWELAH, WASH.

Mr. BISHOP. Gentlemen of the committee, there have been very complete hearings upon this question before the Committee on Ways and Means of the House. In addition, the Tariff Commission has made a report; the Geological Survey issued a pamphlet on magnesite

in September, 1919, since the hearings before the House, and I have prepared a statement which is, practically speaking, a summary of the entire situation, and in which I have made certain references to Government publications. Furthermore, for your convenience, I have had all these publications bound up in book form, and I now hand each member of the committee a copy of the book so that you may more readily refer to them.

Senator WATSON. That will make the consideration of this subject by the committee very much more convenient. Let me ask right there, do you agree in the main with the report of the Tariff Commission as to their facts, figures, and conclusions?

Mr. BISHOP. Yes, sir.

Senator WATSON. You may proceed with your statement.

Mr. BISHOP. I would like to present as a part of my statement some details, along with some references from Government publications, which may assist you gentlemen in a consideration of this subject.

Senator WATSON. We will be very glad to have that information, and in as concise a form as possible.

Mr. BISHOP. References will be made to the following Government publications:

Tariff Commission Report, being a report on the magnesite situation by the Tariff Commission, printed for use by the Ways and Means Committee, 1919.

Mineral Resources for 1918, published by the Geological Survey, September 16, 1919, which is a complete review of the magnesite situation in the United States before, during, and since the war.

Hearings before the Committee on Ways and Means on H. R. 5218, part 1, June 16, 1919; part 2, July 17, 1919.

Ways and Means Committee Report to accompany H. R. 5218, by Hon. Lindley H. Hadley, of the Ways and Means Committee.

The mining and manufacturing of dead-burned magnesite in the United States is an industry which has been developed during the war. As the industry was practically unknown in this country prior to the war, it is but little understood by the average American citizen. The following article shows the important part that the magnesite industry played in winning the war and presents the reasons why this industry should be encouraged and its further existence made possible by placing a tariff upon the calcined, or dead-burned, magnesite imported into the United States.

WHAT IS DEAD-BURNED MAGNESITE.

Crude magnesite is a mineral existing in but few places on the earth's surface. In the United States the chief deposits occur in California, Washington, Nevada, and New Mexico. When the crude magnesite is heated the gas is driven from the rock and leaves what is known as calcined or dead-burned magnesite. The accepted understanding of the term calcined magnesite is that all of the gas with the exception of but 2 to 5 per cent has been driven off, while dead-burned magnesite is the product resulting after all of the gas with the exception of one-half of 1 per cent has been driven off. It requires 2 tons of crude magnesite to make 1 ton of calcined or dead-burned magnesite.

References:

Regarding occurrence of magnesite in the United States, refer to Mineral Resources, part 2, page 146, which shows the location of mines by counties in California, Washington, and New Mexico.

For description of magnesite, see Tariff Commission Report on Magnesite, page 7.

USES OF MAGNESITE.

Dead-burned magnesite is a refractory material which is manufactured into a magnesite brick, chiefly used in the lining of open-hearth steel furnaces and also used in the lead and copper furnaces. The material is also used in the grain form (in sizes one-half inch or less), which is used in making the bottoms of open-hearth steel furnaces. Magnesite is therefore a key industry, as it makes the vessel or retort in which the molten metals are treated and is the only mineral which has been found suitable for making this vessel or retort. For the manufacture of suitable refractory brick for this purpose no substitute has been discovered.

References:

Tariff Commission Report, pages 8 and 9.

Mineral Resources, page 150.

Hearing, page 216.

SOURCE OF PREWAR SUPPLY.

Practically 95 per cent of the magnesite used for refractory purposes in the United States prior to the war was imported from Austria or Hungary. A small amount was imported from Greece. Prior to the war three firms operating in Austria and Hungary controlled the imports into the United States.

References:

Tariff Commission Report, pages 14 and 15, which shows production by countries since 1903.

Mineral Resources, page 145.

WAR SUPPLY.

During the war the United States was entirely dependent upon magnesite occurring within its own boundaries. Only one magnesite mine existed in the United States in 1913, which produced about 9,600 tons of crude magnesite. The urgent demand of the steel companies for this material caused the development of 65 producing mines in the States of California and Washington, which in 1917, produced 316,000 tons, sufficient to supply all requirements.

References:

Tariff Commission Report, pages 10, 11, and 12.

Mineral Resources, page 143.

Hearings, pages 21, 116.

CAN UNITED STATES DEPOSITS FURNISH MAGNESITE REQUIRED?

About 120,000 tons of dead-burned magnesite are required per annum by the refractory trade in the United States. This is equivalent to over 250,000 tons of crude magnesite per annum. The Geo-

logical Survey and Bureau of Mines engineers state that there exists in the United States about seven or eight millions tons of crude magnesite, sufficient, therefore, for requirements for about 30 years, with probability that greater amounts will be discovered when the industry is stimulated.

References:
Tariff Commission Report, page 14.
Hearings, page 9, testimony Tariff Commission.
Hearings, page 217.

WHAT IS THE COST OF PRODUCTION OF AUSTRIAN MAGNESITE?

Mr. Allen, vice president of the American Refractories Co., page 60 of the Hearings, stated that the American Refractories Co., prior to the shutting off of foreign supply by the war, imported magnesite from Austria to the United States for $15.75 per ton. As this amount includes the profit, it is certain that the cost was less than this figure. It is understood that the cost at the mines in Austria was then about $7 per ton; that the railroad rate and dock charges amounted to about $2 per ton. It is also known that the ocean rate from Trieste to Atlantic ports was about $2 per ton, or less. This would make the actual cost of the Austrian material about $11 or $12 per ton delivered in the United States. It is, therefore, an undisputed fact that the Austrian material would cost less than $15 per ton under prewar conditions.

COST OF DOMESTIC PRODUCTION.

The sworn statements of the six largest magnesite producers in the United States show that their average cost of delivering magnesite to the Atlantic ports where the brick works are located to be $41.20 per ton. (See p. 27, Hearings.) The lowest cost of any American company delivering magnesite to Atlantic ports is shown to be $37.22. (See Hearings, pp. 27, 30, 31, 32, and 33.)

TARIFF REQUIRED.

A tariff will be required on dead-burned magnesite sufficient to cover the difference in cost of the Austrian magnesite and the American magnesite delivered at the point where the bricks are manufactured. The brick factories are located on the Atlantic seaboard.

The difference in cost is as follows:

Average cost per ton, United States, at mine	$25.13
Freight	16.07
Total cost, Atlantic port	41.20
Austrian selling price, including profit	15.75
Average differential	25.45

To cover this entire differential would require a tariff slightly over 1¼ cents per pound. The difference between the lowest American cost, $37.22, and the prewar Austrian selling price, $15.75, is $21.47, and will require a tariff of slightly over 1 cent per pound. This tariff of 1 cent is calculated from the Austrian selling price, which gives them their profit as against the American cost without profit.

It must be understood that the above figures represent the prewar cost of Austrian magnesite, and the tariff is based on the assumption that this cost will again be reached when normal conditions are restored. The American costs are actual costs existing during the war, and since the war the prices for coal and labor have increased. The Ways and Means Committee did not grant a tariff which would be necessary to cover the difference in cost as indicated above; and not knowing the exact conditions that might pertain in Austria, assumed that a tariff of three-fourths of a cent per pound, or $15 per ton, would be sufficient to preserve the American industry.

References:

Ways and Means Committee report, page 3.

Since the hearing in July, 1919, before the Ways and Means Committee several thousands tons per month have been imported into the United States, and the last record of the Bureau of Foreign and Domestic Commerce shows that the importations for October were as follows:

	Tons.	Value.	Rate per ton.
Austria-Hungary	514	$15,867	$30.86
Italy	2,157	62,753	29.00
Scotland	19	2,504	131.78
Canada	725	23,619	32.57
Total	3,415	104,743	.....

This indicates that the imported magnesite is invoiced at about $29 per ton from Austria.

The following is a communication to Hon. Joseph Fordney from Dr. MacElwee, Assistant Director of the Bureau of Foreign and Domestic Commerce, received from the American consul general at Vienna early in November, 1919, and since the hearing before the Ways and Means Committee:

The total cost per ton f. o. b. Trieste of production is $12.30 including cost of labor, $2.89, but not including profit. The average price Trieste, f. o. b. is about $40 per ton.

No fixed arrangements have as yet been made for shipments, to the United States. Shipments to the United States from Trieste since the armistice are as follows: Steamship *Tollard*, July 5, to New York, 330 tons; to New York, July 16, *Argentina*, 403 tons; to New York, July 16, *Emilia*, 598 tons; to Baltimore, August 26, *Marianne*, 2,192 tons; to New York, September 9, *Wilson*, 520 tons.

This indicates that the material when invoiced at $29 is greatly in excess of its cost. This would indicate that the Austrians are basing their selling price in the United States not upon their actual cost but at a price that will permit them to just under sell the American product, the cost of which is now just available to them.

Serious consideration should be given to the fact that the Austrian currency has depreciated in value. Assuming that a ton of magnesite in Austria before the war cost $10 per ton equivalent to 50 kronen, our problem is to inquire as to how much magnesite $10 will now purchase in Austria. It is, therefore, necessary to assume various increases in cost of production in Austria as exist to-day. It is reasonable to presume that the costs have not increased more

than two or three times the prewar costs but to avoid all question of doubt, let it be assumed that Austrian cost has increased five times in kronens over its prewar cost in Austria. A ton of magnesite in Austria would therefore cost 250 kronen. As the exchange to-day for kronen is 1 cent, $10 of American money will buy 1,000 kronen. Therefore, if the cost of production has increased five times and now costs 250 kronen, $10 in gold will to-day buy 1,000 kronen which in turn will buy 5 tons of Austrian magnesite in Austria and the only additional cost will be that of freight. As the material comes in ballast, this rate will undoubtedly soon return to the prewar level of approximately $2 per ton. To-day, therefore, Austrian magnesite can be delivered into the United States for less money (American gold) than it could under prewar conditions. The only reason that the United States mines are enabled to operate now in the face of the above conditions is the fact that Austria has not as yet adjusted its economic conditions and that shipping conditions are not normal.

TARIFF ON CRUDE MAGNESITE.

The chief object of this bill is to permit the production and manufacture of dead-burned magnesite and in order to prevent the defeat of this purpose it is necessary to place a tariff of one-half cent per pound on crude magnesite.

References:

Report, Ways and Means Committee, Page 3.

TARIFF ON MAGNESITE BRICK.

There at present exists a 10 per cent ad valorem duty on magnesite brick, and three-fourths of a cent per pound (the same as placed on dead-burned magnesite) is added in this bill to the tariff on magnesite brick so as to prevent the defeat of the purposes of this bill and to protect the brick manufacturers.

References: Hearings, page 131.

EMERGENCY SITUATION.

During the war the American mines patriotically produced the material required for winning the war and invested several million dollars in developing mines and in erecting plants. Immediately after the war Austrian importation was expected by the refractory and steel companies and the American mines were closed down. When it was found that the Austrian material was only coming in at the rate of about three thousand tons per month, because of the conditions above pointed out, the refractories companies again turned to the American producers, but, due to the fact that they would not give orders for sufficient quantities to justify the reopening of the properties, only the best equipped were enabled to operate. The American mines which were hurriedly opened up during the war now require definite knowledge that the magnesite industry will be permanent in order that they may erect the necessary plants to economically treat their product. The mines have not been permitted to

be opened on as large a scale as is necessary to secure the most economic operation and will not be justified in making further development until assured that the industry will be protected. A failure to protect the industry now will mean a gradual increase in the importation from Austria with a corresponding decrease in the domestic production until Austria has gradually obtained complete control again of the American market.

Unless the American producers immediately have definite knowledge as to the protection that will be given the magnesite industry they are not justified in further capital expenditures to develop and equip their properties and the industry must gradually dwindle until Austria has again regained the American market.

QUALITY OF AMERICAN PRODUCT.

At the beginning of the war no refractory magnesite had been produced in the United States and it was, therefore, necessary to learn how to manufacture this essential material. In the first part of the war the experiments did not prove entirely satisfactorily and bricks much inferior to the Austrian material were produced, but, however, served the purpose of the steel companies until the process was perfected. In 1918, however, continuous research and experiment enabled the American producers to produce a quality of dead-burned magnesite which the largest users in the United States now certify is equal or superior to the Austrian material.

Much credit should be given the American producers for having solved this problem of successfully producing dead-burned magnesite which can now compete with Austria in every respect.

References:

Hearings, part 2, page 214 (a letter from Harbison-Walker Refractory Co.).

Hearing, part 1, page 208 (a letter from Metal & Thermit Corporation).

Hearing, part 1, page 162, testimony of Mr. Wierum.

CONCLUSION.

The only opposition to a tariff upon magnesite has been from an American company owning control in an Austrian magnesite company. The United States should decide whether it shall again become dependent upon Austrian magnesite or whether it will afford to the American industry born of the war the protection necessary for its continuance and to which it can turn in the event of another war.

It would not seem prudent to protect American capital which is unfortunately invested in Austria, if in so doing it would crush an industry in the United States which has proven necessary in time of war. For it must be admitted that the American capital invested in Austria was unable in any way to assist our Government in giving it this essential material, but on the other hand, American capital had developed a mine in Austria which was used in an endeavor to crush our Nation.

TAX ON ULTIMATE CONSUMER.

About five pounds of magnesite is destroyed in producing one ton of steel. If a tariff of three-quarters of a cent per pound is placed on magnesite, the total additional cost of producing a ton of steel would be 3¾ cents, or slightly more than a postage stamp on a ton of steel. This cost is so insignificant that the larger steel interests feel that this magnesite industry should be encouraged so that they may be assured of a continued supply of magnesite in any emergency.

The ultimate consumer, for instance, a mechanic, would not have to pay one cent additional cost for the purchase of his steel tools until he had purchased 500 pounds of tools, which is more than a mechanic uses in a natural lifetime. A tariff placed upon magnesite will therefore in no way affect the ultimate consumer, but will assure our Government the production of an essential war mineral and place us independent of a foreign country in the event of war and encourage the development of our own natural resources.

ADDENDA.

For a short synopsis of the magnesite industry in the United States reference is made to the Hearing, page 20 (statement of magnesite industries in the United States); also Hearing, part 2, page 215, "The present situation in the magnesite industry," being a report of Mr. W. C. Phalen, engineer for the Bureau of Mines, who examined all of the magnesite properties in the United States in the summer of 1919. These two synopses present the facts upon which a tariff should be determined.

In addition to that—which, by the way, if you will read it will give you all the information you want plus the references—I have made a memorandum of certain subheadings that I thought might interest you; and I am going to name them over so that you will know in advance the subjects I am going to take up in order that you may, if you choose, ask me questions on these subjects.

I thought I would explain:

1. What is dead burned magnesite?
2. The uses of magnesite.
3. The prewar supply.
4. The war supply.
5. Can the United States supply the demand?
6. What is the cost of Austrian magnesite?
7. The cost of domestic production.
8. The tariff required.
9. The quality of American magnesite.
10. The emergency situation which calls for a tariff.

Senator THOMAS. You do not expect to do all that between now and 11 o'clock?

Mr. BISHOP. Unless you ask me many questions it will not take me more than 20 minutes to sketch this over.

Senator THOMAS. All right. I was merely going to suggest that it would take longer than that probably, and if so we might recess over to the Senate and then return here to conclude the hearings, or meet over there.

Mr. BISHOP. The time required to present this matter will depend upon the number of questions you gentlemen may desire to ask.

Senator THOMAS. We meet this morning, rather unexpectedly, at 11 o'clock.

Mr. BISHOP. I do not think it will require but a very short time to present this subject to you gentlemen, in the shape that we have it, but we are here at your pleasure.

Senator WATSON. We can transfer the hearing over to the Capitol if necessary, and meet over there after we shall have gone to the Senate, if we can not finish here.

Senator CURTIS. I might explain that I asked Mr. Bishop to condense his data so that he might present it in as brief form as possible.

Mr. BISHOP. Which I have done.

Senator WATSON. That will be very helpful to us.

Senator THOMAS. I did not desire to interrupt you, Mr. Bishop, but thought it would be best, owing to the fact that the Senate will convene a 11 o'clock this morning, that we have some idea of the time required to present the subject and make our arrangements accordingly.

Senator WATSON. You may proceed with your statement, Mr. Bishop.

Mr. BISHOP. Crude magnesite is really an altered limestone, and occurs in nature as limestone does. On this point I might say that I have brought here and will be glad to submit for the inspection of the committee, three pictures of our plant, which may be seen over at the side of the room on the ledge of the bookcase.

Crude magnesite is mined and ground up, to which is added about 45 pounds of iron per ton of magnesite. This mixture is heated in kilns similar to cement kilns, and the material clinkered. This clinkered material is ground and makes dead burned magnesite, which, in the form of grain, is used to make the bottom of open-hearth steel furnaces. In order to make brick, this material is ground up very fine and made into that form—that is, in the form of brick.

Senator CURTIS. Tell the Senators what magnesite brick is used for.

Mr. BISHOP. It takes about 2½ tons of this crude material to make 1 ton of dead burned magnesite, because about 50 per cent by weight is gas, which is driven off in the kiln.

Under the uses of magnesite: Refractory magnesite—that is, dead burned magnesite—is used to make the brick which are used in making the lining of open-hearth steel furnaces. It makes the vessel or retort in which the molten metal is treated. It is the only mineral substance we know of that is adapted for this purpose, as it will not slake off into the metal and will withstand heat.

Senator WATSON. Let me ask you right there: Is dolomite used as a substitute for magnesite, and, if so, how perfect a substitute is it?

Mr. BISHOP. Dolomite is inferior magnesite, and it can be substituted for the grain material which is used in the bottoms of open-hearth steel furnaces, but it is not a substitute for the purpose of making the brick, which requires something over 50 per cent of the amount of magnesite used. Dolomite will not make brick. The grain material of dolomite is very much inferior to magnesite, and will cause the shutting down of furnaces by reason of holes coming

in the bottom by usage, thereby causing great expense; so that there is a certain differential in price which make users take magnesite instead of dolomite.

Does that satisfactorily describe the refractory material, or magnesite for refractory purposes?

Magnesite, calcined, is also used in making quick-setting cement, which is used in the flooring of battleships, and so forth.

Senator WATSON. Carbonate of magnesia has no mixture of iron at all, has it?

Mr. BISHOP. It has a mixture in the rock of about 1½ per cent of iron, but it is best to have about 6 or 7 per cent of iron in the brick, so that it will make a binder and hold it together. Iron is really an impurity in the rock; it is required only to hold it together, as a binder.

Under the heading Prewar supply: Previous to the war all magnesite brick used for refractory purposes came from Austria—at least 95 per cent of it. A little magnesite came from Greece, but was used chiefly in the plastic trade. In Austria magnesite occurs in very large quantities, and is controlled by three companies, who have controlled the magnesite market of the world and upon which supply the United States has been dependent.

When the war broke out magnesite being essential for the manufacture of steel, refractory companies had to seek a supply elsewhere. At that time there was one mine in the United States, in California, which produced during the year of 1913, 9,600 tons of crude magnesite—used for the plastic trade and not as refractory material. The refractory companies went to California, had this mine start, offered rather large prices for the material, and by 1917 65 mines, of varying sizes, had been opened up in the State of California, and produced 211,000 tons of magnesite.

About this time, in 1917, deposits were discovered in the State of Washington that had not been known to exist before—were discovered during the war. These latter deposits produced about 105,000 tons, so that the total production in 1917 was 316,000 tons of crude magnesite. And, you gentlemen understand no doubt, it takes over 2 tons of crude magnesite to make 1 ton of dead-burned or calcined magnesite. This was sufficient to supply all of the requirements of the steel companies and the Government.

Senator WATSON. What is the annual consumption of magnesite in the United States?

Mr. BISHOP. The actual consumption in the United States is from 10,000 to 12,000 tons of dead-burned a month, or about 120,000 per annum, equivalent to about 250,000 tons crude.

The Geological Survey and the Bureau of Mines report that there exists in the United States about 8,000,000 tons of crude magnesite; which is sufficient, as they say, to supply the demand for a period of some 30 years at the present rate of consumption, and with the probability that other magnesite will be discovered if the industry is stimulated. That explains in reference to the raw material. Whether we can supply it or not does not have to be answered when it is stated that we did supply the demand during the entire war, which may be taken as proof that we can supply the needs of the country if the industry is protected.

I will say in reference to all these mines that they did not all have plants upon the property; but the material in the early days of the war was shipped to companies that had plants, where it was treated somewhat as a smelter treats ore. A great deal of it was shipped east in its crude state and treated in cement plants in the East. This was done on account of the emergency. And that is one reason why we want a tariff now, or to know where we stand in the tariff situation—because those men who during the war could not put up plants in connection with their magnesite properties, for the reason that they could not get the material required, do not feel justified in making the necessary capital investment unless and until they know whether the industry will be permanent or not. Furthermore, those companies who during the war were able to erect plants to treat the material must know whether they will be able to continue to operate so they may develop their mines intelligently.

Under the heading What is the cost of Austrian magnesite——

Senator WATSON (interposing). What was the cost before the war, if you can give it, and what is the cost now of producing Austrian or other foreign magnesite, and what is its cost laid down at New York?

Mr. BISHOP. The cost of Austrian magnesite previous to the war was testified to in the hearings held by the Committee on Ways and Means of the House by Mr. Allen, vice president of the American Refractories Co., of Pittsburgh, who owned the material and shipped it to United States, as being $15.75 laid down at Atlantic seaports. This included the profit, of course, on the Austrian material, as that was the selling price of the material to the refractory companies in the United States. The cost of the material at the mines was about $7 a ton, plus about $2 a ton to the port and freight charges, plus about $2 ocean rate to the United States, which made the total cost about $11 or $12 a ton.

Senator THOMAS. That was before the war?

Mr. BISHOP. These prices were all prewar. In making my calculations, therefore, I have used the prewar prices on Austrian material, as that is the only price that is available, and have not used their cost. I have used their selling price because I could not definitely swear as to their cost. However, it is very apparent that it cost less than $15 a ton when they sold it for $15.75 a ton. So that establishes the cost of the Austrian magnesite prior to the war.

In the hearings to which I have made reference it is shown by sworn statements of the six largest magnesite producers in the United States that their average cost of delivering magnesite to the Atlantic ports, where the brick works are located, is $41.20 per ton. That means, $25.13 as the average cost per ton in the United States at the mine, plus a freight rate of $16.07. That is the average cost of the four largest mines in California and two in the State of Washington.

Senator WATSON. From and to where?

Mr. BISHOP. From the mines referred to in California and Washington to Atlantic coast points where the brick manufacturers are located. That is our point of consumption.

The lowest cost of any American companies delivering magnesite to Atlantic ports is shown to be $37.22. If you take the average

cost of production of the six largest companies and subtract the prewar Austrian selling price you get a difference of $25.45, which is a little over 1¼ cents per pound on dead burned magnesite. And if you take the lowest cost price to an American producer, $37.22, and subtract the Austrian prewar selling price, $15.75, you have a difference of $21.47—which is a little over 1 cent per pound as the differential.

Senator WATSON. Have you a statement of the wage differential between your mine and the Austrian mines?

Mr. BISHOP. Prewar Austrian wages were testified to as being from 40 cents to 80 cents per man per day, but this was corrected by the people who employed men in Austria by the statement that it was $1 per day. As against that our wage is $4.50 paid to common labor.

Senator THOMAS. Are you speaking now of the present?

Mr. BISHOP. Yes, sir; of the present. Four dollars a day is the lowest wage we ever paid, and we now pay from $4.50 to $10 per day per man.

Senator WATSON. There was some little dispute when Mr. Riddell was testifying before the Ways and Means Committee of the House, as I recall from reading his statement, as to whether or not Austrian wages had gone up and are now equal to American wages. Can you tell us about that?

Mr. BISHOP. Do you mean at the present time?

Senator WATSON. Yes.

Mr. BISHOP. In an endeavor to find out the cost of manufacturing material in Austria to-day we received a telegram from the American consul general at Vienna, which stated:

> The total cost per ton f. o. b. Trieste of production is $12.30, including cost of labor $2.89, but not including profits. The average selling price, Trieste f. o. b. is about $40 per ton.

This would indicate that the Austrians are not selling their material based upon their cost but upon our ability to compete with them, as it shows a very large profit between their cost at $12.30 per ton and their selling price of $40 per ton.

Senator THOMAS. Is there any production in Austria at all now?

Mr. BISHOP. So far as I can learn, owing to economic conditions there, production is now at the rate only of about 3,000 tons a month, I understand from a party who was over there, owing to the coal shortage and general economic conditions of which we all read, but which we feel are temporary, are preventing production at present in as great quantity as desired.

Senator THOMAS. Have you statistics of the world's consumption of magnesite?

Mr. BISHOP. The Tariff Commission has presented them.

Senator THOMAS. And that is in this record?

Mr. BISHOP. That is in the record.

Senator THOMAS. All right. You may continue your statement.

Mr. BISHOP. I might explain right there that the Ways and Means Committee of the House did not have all this data before them, and some of it has been obtained since they held their hearings; but in their judgment, not knowing what the cost of production in Austria would be, they gave three-fourths of a cent per pound as their idea of the amount of tariff that should be placed on dead burned.

Senator THOMAS. How much would they have given if they had known what the conditions in Austria were?

Mr. BISHOP. To-day?

Senator THOMAS. You say they gave you three-fourths of a cent per pound without knowing what the conditions were in Austria. I asked what would they have given if they had known all about the conditions there?

Mr. BISHOP. I think they would have given more, as I will explain presently.

I realize it is only a temporary situation and will only have a certain amount of consideration in determining the tariff, but I desire to point out that if the cost of magnesite in Austria—and I am treating this matter as if we were all in Austria now—if the cost of magnesite in Austria before the war was 50 kronens——

Senator WATSON (interposing). In order that the record may be clear just explain what a kronen represents in American money.

Mr. BISHOP. Fifty kronens, roughly speaking, is equivalent to $10 normally. I am assuming that. We have to estimate in our minds what the increased cost in Austria has been. We know that in Italy and other places that the increased cost has been two or three times the old cost. If we assume an increased cost in Austria among themselves of five times what it was before the war, that would make 250 kronens it would be necessary to take over there to buy 1 ton of dead-burned magnesite. Our next problem is to figure how many kronens we can buy for $10 American money. The exchange on kronens yesterday was a little less than 1 cent, and I can buy for $10 1,000 kronens, and therefore in Austria I could buy, if the cost has increased five times, 4 tons of magnesite for $10 American gold.

Senator THOMAS. In other words, the fall in exchange operates as a bounty on Austrian exports.

Mr. BISHOP. Exactly that much.

Now, I want to speak briefly of the quality of American magnesite. Dead-burned magnesite had never been produced in the United States prior to the war, and the first magnesite that refractory companies attempted to make into brick was very inferior, and it was only after careful experiment and much research work that Americans learned to make a quality of magnesite that was equivalent or superior to Austrian magnesite. So in reference to quality in the first part of the war what was true then does not obtain at the present time.

Senator WATSON. Have you no market at all in your western country for magnesite?

Mr. BISHOP. Very little; probably not 1 per cent of the consumption.

Senator WATSON. Not 1 per cent of the consumption?

Mr. BISHOP. No, sir.

In the previous hearing the only opposition that we had practically, and all the opposition that may have come, was prompted by this one concern—the American Refractories Co., of Pittsburgh—who owned a controlling interest in the Austro-American Magnesite Co. in Austria. And they are one of the three Austrian companies that control the magnesite of the world.

The Northwest Magnesite Co., of which I am vice president and general manager, has the largest reduction plant in the United States——

Senator THOMAS (interposing). When were you incorporated, Mr. Bishop?

Mr. BISHOP. In 1917; shortly after the declaration of war. This deposit was discovered after the war started.

We owned some machinery, some cement kilns, etc., and were able, after spending on surface equipment about three-quarters of a million dollars, to erect a very efficient magnesite treatment plant. By providing ourselves with such a plant, after the expenditure of such large sum of money, we were quite naturally able to produce magnesite cheaper than any other company not so equipped. The only reason other companies could not equip themselves with similar plant equipment was the fact that they could not get the machinery during war, together with the further fact that some of them did not feel justified in making so large a capital investment until it was determined whether the industry would continue after the war.

Now, let me mention a rather remarkable situation that developed: Because we put three-quarters of a million dollars into plant and developed magnesite, so badly needed by the country during the war, we were charged in the previous hearings before the Ways and Means Committee of the House with being a monopoly. A complete refutation of that is that we only own one-eighth of the raw material in the United States, and that we have never produced more than 35 per cent of the magnesite that has been produced in the United States, and as soon as a tariff is granted on it, those who own the other seven-eighths of the raw material will become very active competitors.

Senator THOMAS. How much are you producing now?

Mr. BISHOP. We have been producing from five kilns and can produce about 9,000 tons a month now. We have increased our plant since the war by adding one kiln.

Senator THOMAS. What did you get for your product?

Mr. BISHOP. $28.50 to $30 a ton, or an average of about $29 a ton.

Senator WATSON. At the plant?

Mr. BISHOP. Yes, sir.

Senator THOMAS. How much of that represents profit?

Mr. BISHOP. The cost is a little over $21 a ton. We sold magnesite during the war at this same price, but the people to whom we sold it are the refractories people, who in turn sold it to the steel companies, and they sold it with an addition of about $10 a ton on our price, so that for practically indorsing the bill of lading they made a greater profit out of the magnesite than we did.

Senator WATSON. Is there no way by which you could sell direct to the consumer?

Mr. BISHOP. Well, I had made arrangements with the refractory companies that they should handle my product.

Senator THOMAS. How long did that last?

Mr. BISHOP. That has expired.

Senator THOMAS. And you can from now on sell direct?

Mr. BISHOP. Since the hearings before the Ways and Means Committee of the House I have sold magnesite for $28.50 up to $30 a

ton, depending upon the quantity that a buyer might take, and have specified that if they sold it for over $32.50 a ton that I would cease selling to them and quote magnesite direct myself to the trade. Although I will say I do not care to go into the retail business, but that was done to protect the steel companies.

Now, gentlemen of the committee, the real question for us to decide, after considering all this detail side of the matter, is a broader question than any pettiness among the magnesite people themselves, and that is, whether the United States cares again to become dependent upon Austria for a mineral which is so necessary for it to have for the defense of the country and which we were found short of at a critical time, and whether industry, which has now been developed, shall cease to exist if not given protection sufficient to permit its continued operation. I think that is the broad basis upon which it should be decided. Should we have another war we must have magnesite, as was indicated in the last war.

Senator WATSON. Mr. Bishop, there are points in this bill that you will take up and discuss before the committee, I take it?

Mr. BISHOP. Yes, sir.

It is rather comical to note that the poet D'Annunzio blocked the port of Fiume, which has blocked the coming of magnesite to this country. I only mention that to show you, gentlemen of the committee, what might happen by the action of any country blocking the ports from which magnesite is shipped even though we may not be at war, and thus prevent our getting magnesite unless we provide our own supply in this country. And with present unrest in Austria, and being surrounded by warring nations, it would seem good policy, in fact, essential, to have this industry in this country for our own protection if for no other reason.

Senator THOMAS. Poetic justice is not always a figure of speech?

Mr. BISHOP. No, sir; it would seem not from recent developments at Fiume.

Gentlemen of the committee, in this bill is shown the tariff on brick and the tariff on crude magnesite. The material which would require protection is the dead-burned magnesite; and the tariff on crude has been calculated, as has been referred to in the statement which I have heretofore made, on the basis of one-half cent per pound, in order to prevent the defeat of the purposes of the tariff; that is to say, to prevent the importation of crude magnesite into this country and the manufacture of dead burned more cheaply in this country in that way than can be done from crude mined here. That is the reason the duty is put on crude magnesite. On magnesite brick there has always been an ad valorem tariff of 10 per cent and to that is added the same tariff as is proposed upon dead-burned magnesite and for the same reason—in order to protect the purposes of this bill.

I might explain that magnesite brick is nothing more than dead-burned magnesite ground up, mixed with water, and pressed into brick form. If you were to take such a brick and hit it with a hammer, you would simply have dead-burned magnesite in grain form; I mean, if we did not have a duty on brick magnesite. We put that duty on to protect the brick manufacturer.

Senator WATSON. How did you arrive at those particular figures?

Mr. BISHOP. It is explained very fully in the hearings held by the Ways and Means Committee of the House, but I wanted to explain——

Senator WATSON (interposing). How did you arrive at the one-half cent a pound or the three-fouths cent a pound?

Mr. BISHOP. That is shown as the tariff required to protect the brick manufacturers—to protect them against the bringing of crude or dead burned over to this country and treating it here at a figure that would destroy our mining industry.

Senator WATSON. So that there has always been an ad valorem tariff on brick?

Mr. BISHOP. Yes, sir; the magnesite-brick manufacturer has always been protected, but the manufacturer of this material has never been protected.

Senator CURTIS. The raw material has never been protected?

Mr. BISHOP. No, sir. They brought this material over and manufactured it into brick and they had a tariff on brick. But the war caused us to discover this material in this country, and we are merely now asking you for such protection as will permit us to continue the industry in this country and to protect our manufactured dead burned, which is raw material of brick manufacturers.

No one of the manufacturers of the dead-burned magnesite in the United States made any money during the war, and——

Senator THOMAS (interposing). That is strange. I thought everybody made money during the war.

Mr. BISHOP. It is strange. When we started this plant, that you see over here in the three pictures that we have produced for your view, we lowered the price on magnesite, which had sold up to $100 a ton, down to $50 a ton by our more efficient operation. That is, in the early days of the war they paid any price that they had to pay in order to get the magnesite. The law of supply and demand made the price, until we made this investment and brought the price down. And now they charge us with being a monopoly! I would answer that that is the kind of monopoly you want—somebody who will invest his money to manufacture something more cheaply than his competitor.

Senator WATSON. If you have not made any money in the past, how are you going to make money in the future?

Senator THOMAS. I do not understand that Mr. Bishop said he had not made any money at all, but that he was making that statement on the basis of his investment and what might happen under certain circumstances.

Mr. BISHOP. Yes; and perhaps I should correct that. I should have added that if this industry is killed now, all companies that have invested money in plant and development have invested more money than they have taken out.

Senator THOMAS. I did not understand that the producers of raw material had not made any money.

Mr. BISHOP. The producers of the manufactured product have made a good deal of money. And, I might add——

Senator THOMAS (interposing). Let me straighten that out: During the war you produced raw material?

Mr. BISHOP. Yes; we made dead-burned magnesite.

Senator THOMAS. And you made a profit on the raw material?

Mr. BISHOP. Yes, sir; we made a profit on our raw material, as shown in the hearing held by the Ways and Means Committee of the House. But if the industry were to stop now, we would be losers, because we have put a great deal more money into our property than we have taken out.

Senator THOMAS. But you referred to somebody who had not made any money.

Mr. BISHOP. I would like to state that a little differently. I mean to say that if a tariff is not given on magnesite and we go out of business now, due to the fact of that competition, all the producing companies will lose money, as their investment greatly exceeds their profit.

Senator THOMAS. That is to say, that while you made money during the time you operated your magnesite mines, the ultimate result would be a loss to your company?

Mr. BISHOP. Yes, sir; the ultimate result would be a loss.

Senator CURTIS. Because it would be a destruction of the business.

Mr. BISHOP. An absolute destruction of the business. There is the point in that, I think.

Senator JONES. The profits you made you put back into the business?

Mr. BISHOP. Yes; and more.

There was before Congress a war-minerals relief bill, which gave to certain producers of war-essential minerals some relief, I believe, in the way of remunerating them for their losses. The benefits of that bill extended to only those who had produced material at the urgent request of the Department of the Interior or some other Government department. We did not fall in that class for this reason: Magnesite occurred only in Austria, and anyone could look at the imports and see that there was going to be a shortage of magnesite of so many thousands tons, and so the refractory company, before even the Government realized it, went out in California and Washington and urged the development of this mageniste production, and we put our money in voluntarily.

If we had waited and not gone into that until the Government realized the necessity for it, and perhaps called us "slackers," we would then have come within the provisions of the relief bill and been remunerated for our losses. But we did not come in under that, because we anticipated the shortage of the material and went ahead before the Government urged us to do so.

I think that, taken in connection with the references I have given in this brief, covers all that I care to say.

Senator CURTIS. It is now 10 minutes to 12, Mr. Chairman, and I suggest that if we are going to hear any other witnesses, we take a recess until 2 o'clock.

Senator WATSON. Do you desire to be heard, Mr. Adams?

Mr. ADAMS. Very shortly, sir.

Senator THOMAS. I suggest that we recess now and meet at 2 o'clock in Senator Penrose's office in the Capitol Building.

(Thereupon, at 11.55 o'clock a. m., a recess was taken until 2 o'clock p. m.)

AFTER RECESS.

TESTIMONY OF MR. ROY N. BISHOP—Resumed.

Mr. BISHOP. Continuing my statement, I want to show what the additional burden will be on the ultimate consumer if we are granted a tariff on magnesite. I will illustrate it by saying that it takes about 5 pounds of dead-burned magnesite to make a ton of steel. I mean by that, by abrasion and loss in the furnace linings, about five pounds of magnesite is destroyed.

Now, if you take a ton of steel; allow a tariff, as given in the House, of three-fourths of a cent per pound, the increased cost per ton of steel will be only 3¾ cents—equivalent to postage stamp. That is illustrated further by the ultimate consumers, who might be mechanics, using steel tools. They would have to buy 500 pounds of tools before the additional cost to them would be 1 cent on account of any tariff that might be placed upon magnesite. That is so trivial that I wanted to call it to your attention.

If you will consider another phase, that steel is selling for $40 a ton, it amounts to 0.000009 of the selling price. That is a ridiculous figure, of course—six places to the right of the decimal point. As to copper, the testimony before the Ways and Means Committee showed that a ton of copper, selling for $380, would have an additional cost of 10 cents, making the cost of a ton of copper $380.10, which is also ridiculous from the cost standpoint as they can not regulate their heats, etc., to make any such savings as that. That is 0.000002 of the selling price.

I think those two points will illustrate the additional cost to the ultimate consumer, and I feel that the larger steel interests think that they can stand that trivial charge in order to be assured the material which is essential to their industry. Any one who may have complained in the steel industry has probably done so through influence of those who are interested in the Austrian deposits.

I also want to call the attention of Senator Thomas to the fact that in figuring the profit on a ton of dead-burned magnesite, it requires about 2.4 tons——

Senator THOMAS (interposing). I think you stated that this morning.

Mr. BISHOP (continuing). Yes. Between 2.2 and 2.5 tons of crude ore to make a ton of dead-burned magnesite, so that the profit indicated on a ton of dead-burned magnesite would have to be divided by that to indicate the profit on a ton of crude ore.

I think that will conclude the remarks that I wish to make.

STATEMENT OF MR. R. D. ADAMS, SAN FRANCISCO, CALIF., REPRESENTING THE CALIFORNIA MAGNESITE PRODUCERS.

Senator WATSON. Will you please state your name?

Mr. ADAMS. R. D. Adams, San Francisco, Calif.

I do not think, gentlemen, that there is very much that I can add to what has been said by Mr. Bishop.

Senator WATSON. With what company are you associated?

Mr. ADAMS. I represent the California magnesite producers—those who are actually mining the material—and am personally interested in a number of California properties. Incidentally, I think, was one of the first pioneers in the magnesite industry in California. I have also at various times visited or had some connection with nearly all of the magnesite properties on the Pacific coast.

Senator WATSON. The statement in the hearings before the House committee as to the number of these properties in both California and Washington is correct?

Mr. ADAMS. Yes, sir. I think the estimates of the Geological Survey as to the reserve tonnage are, if anything, moderate. Of course, from their standpoint, they simply estimated really what is probable ore. Estimates have been made by the parties owning properties there, but they have simply made estimates of what was reasonably certain oré and not the developments of the future.

In regard to various points as to the cost and all other things pertaining to that, I think Mr. Bishop has covered that so fully and completely that it would be a waste of time for me to touch on that. We, in California, are in full accord with all of the statements that have been made.

Senator WATSON. Is there any difference in the cost of producing this material in California and in Washington?

Mr. ADAMS. Yes, sir; in California I think we have a higher cost. I think our cost runs a little higher than in Washington.

Senator WATSON. Why?

Mr. ADAMS. For two reasons, one being that in California the deposits there in most of the properties occur as veins in serpentine or as large lenses in serpentine. In Washington it is more or less of a quarry proposition on a large scale, and our mining costs are higher for that reason. Also our transportation costs, as a rule, are higher, because some of our best properties lie back some distance from the railroad. Consequently we have a little heavier transportation cost.

I think one of the important things in relation to magnesite is in its relation to possible wars in the future. When this present war broke, as Mr. Bishop stated, there was one mine in California producing a little over 9,000 tons a year. When the necessity arose representatives of the refractory companies came West and called for magnesite. In two years' time we had increased the production of magnesite in California from around 9,000 tons, roughly speaking, to 200,000 tons, which meant the opening up of large properties and installing heavy equipment in many places. Incidentally, in that connection, there was no attempt on the part of the California operators to overcharge or take advantage of that situation to charge higher prices, but our first costs were of course high.

Senator WATSON. When you say "refractory companies," what do you mean by that? What do you mean by "refractory"?

Mr. ADAMS. Refractory is the material that is used in the steel trade. They call it refractory because it is heat resisting.

Senator THOMAS. The companies are not refractory, but their product is

Mr. ADAMS. I might say that some of the companies are also refractory.

We all know what experience we had in connection with the last war, and in spite of the league of nations and other things there is a possibility of war at any time.

Senator THOMAS. Why do you say that? We would like to have some enlightenment on that.

Mr. BISHOP. Mr. Adams was a captain in the last war. He went over there and fought after he developed these magnesite mines.

Mr. ADAMS. I went over in the Canadian service overseas.

Senator THOMAS. I am inclined to agree with you; I do not know whether Senator Watson does or not.

Senator WATSON. I am leaning in that direction.

Mr. ADAMS. Considering the close connections existing between Germany, Austria Hungary, and Mexico, and realizing the fact that Germany and Austria will never be in any position except that of hating us, in case of trouble with Mexico, it would only need a word to Austria to stop all shipments of magnesite to this country. It would not be a case of any interruption of sea traffic, but there would be an embargo or duty or something. Then we would be in the same position again with all mines shut down and equipment wrecked, and I do not think that is a fair situation for the country or for the magnesite producers.

Senator WATSON. What would be the effect on the mine itself of shutting it down?

Mr. ADAMS. As to the ore itself there would be no particular damage there. The damage would be to the equipment and to the loss of the trained men—the scattering of them—and the fact that there would be a lot of repairing of machinery necessary. I do not think there is anything else, sir, that is of any definite importance.

STATEMENT OF MR. HOWARD F. WIERUM, GENERAL MANAGER OF THE AMERICAN MINERAL PRODUCTION CO., SPOKANE, WASH.

Senator WATSON. Will you state your name to the reporter?

Mr. WIERUM. Howard F. Wierum, of Spokane, Wash. I am manager of one of the largest companies on the Pacific coast, which adjoins one of the larger properties of Mr. Bishop. I would like to say but a word, to explain our present status. I was reminded of it and prompted to speak of it by the question asked Mr. Adams as to what would happen if we had to shut down.

We had to shut down shortly after the armistice was signed, and we only started up about four months ago, at the behest of the steel works and the refractories trades who furnish the steel companies with their magnesite.

These refractories companies held off as long as they could, until their stock was depleted, expecting that they could get the cheaper Austrian magnesite, but it did not materialize, and they came to us and we opened up little by little. Now, the demand has increased somewhat, although it is far from normal as yet, and in just those few months when we were shut down our development work suffered so and the condition of our equipment became such that we find it difficult, if not absolutely impossible, at present to get half as

much tonnage out of our properties as we did when we were in the heyday of production.

Senator THOMAS. Is not that true in regard to industrial conditions in general, which neither you nor we can control?

Mr. WIERUM. To some extent, Senator, but it is due largely to the fact that we did not dare to put any money into development work. Right now I do not dare to spend a penny that is not absolutely essential to get out the ore. You see, until we have this duty, or some assurance of a duty, I simply can not tell my directors to give me money for development work or for extension of any kind. That should be perfectly evident. It may be interesting for you to know that in case a duty does go through, and it looks as though the magnesite industry was to be long-lived, I will be in a position to recommend the building of a calcimining plant which we had contemplated, but which the War Industry Board would not allow me to buy the steel for, as you all know. When that time comes, and I can put up my calcimining plant, possibly at the expense of one-quarter of a million dollars, then I will give Mr. Bishop a pretty close run.

Senator WATSON. Did you produce as much as Mr. Bishop during the war?

Mr. WIERUM. We did then, but we do not now. That is all I can say, gentlemen, and I am sorry that I did not hear Mr. Bishop's testimony this morning. I did not know that Mr. Bishop was in town.

Senator THOMAS. You testified at some length, as I remember, before the House committee?

Mr. WIERUM. Yes, Senator.

Senator THOMAS. I noticed your name in the hearings. I have not read your testimony yet.

Senator WATSON. That is all, except that I wish to say something to the other members of the committee.

(Thereupon, at 2.39 o'clock p. m., the subcommittee adjourned, to meet at the call of the chairman.)