535

AMSCO

Amsco Manganese Steel is made by analytically controlled formulas and scientifically determined heat treatments, the results of years of experience—truly "The Toughest Steel Known.

The AMSCO Bulletin

AMSCO MANGANESE STEEL

FAHRALLOY *and other AMSCO Alloys and Products*

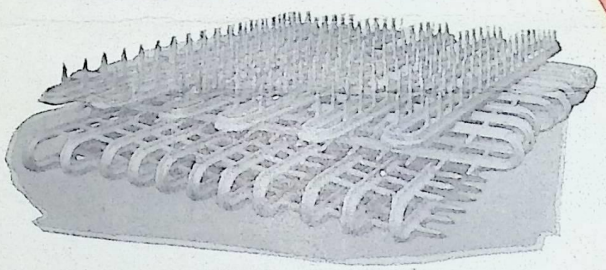
AMSCO Fahralloy

is the name of a series of chromium and nickel alloys, each made for a particular condition requiring heat and corrosion resistance.

Volume II, No. 4 — April, 1930

*10 Years and Still Going. (See Page 4)

FAHRALLOY Pin Bars



The group of Loop Type FAHRALLOY Pin Bars illustrated is part of a shipment to a midwestern enameling company. These bars, weighing 572 pounds each, are for use in high temperature enameling ovens, handling wet enameled parts through the "heat zone" where enamel is heat hardened.

FAHRALLOY offers many outstanding advantages on work of this nature as it is entirely unaffected by temperatures up to and over 2000° F. and does not burn, scale, crack or sag even after repeated heating and cooling.

It is ideally applied wherever heat and corrosion resistance is required in machine or equipment parts, and is made in many different analyses, each particularly suitable to some peculiar condition or process.

Most analyses are machinable and all offer complete heat and corrosion resistance for the purpose intended. Write for complete details on this super-metal.

Four Years to the Day

Quoted below is a letter signed by Mr. C. C. Fisher, Plant Superintendent, National Rock Products Company, Los Angeles, California.

It is particularly interesting to note in this letter Mr. Fisher's remarks regarding the 25° cable bend over the AMSCO Sheave and the fact that *cable life is three to five times as long* as when used with ordinary cast iron sheaves.

The characteristic polish that AMSCO Sheaves take after a short time in service and the hard, tough nature of AMSCO Manganese Steel are the reasons for extended cable life, an argument long used for AMSCO Manganese Steel Sheaves that has been again confirmed by this user's experience.

"In answer to your letter of January 20, 1930, am very pleased to inform you that I have used one of your 24" Manganese Cable Sheaves in continuous service for a period of four years almost to the day.

"This sheave carries a 1" steel cable at about a 25° bend and has delivered to our plant approximately 550,000 tons of sand and gravel up a 33 per cent incline.

"Cables last 3 to 5 times as long as with the ordinary cast sheave, thus saving loss of time, labor and temper.

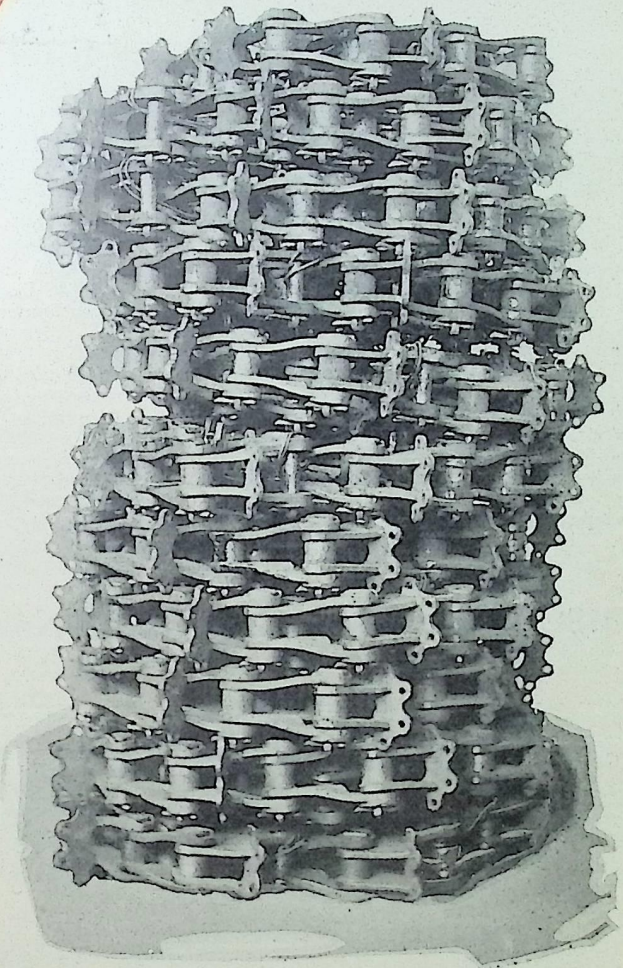
"Am highly pleased to recommend these sheaves and the use of Manganese Steel in various other departments of the sand and gravel business."

Thew Shovel Uses AMSCO Dipper

The illustration (on page two), a Lorain-75, fitted with an AMSCO Manganese Steel Dipper, recalls the passing of the site that was a land mark and gathering point for New York's elite for many years—that of the old Waldorf Astoria Hotel. This famous hostelry was demol-

(Continued on Page 2, Column 1)

No. 830 Chain With F-2 Attachments



The illustration shows 212′ of Manganese Steel No. 830 Chain with F-2 Attachments every other link. A sand and gravel dredging customer of ours in Michigan, who is thoroughly pleased with AMSCO Pumps because of their efficiency and economy, uses this chain in their sand scraper box naturally for the two reasons of resistance to wear and breakage, and the good workmanship in our shop. Last November they reported that they had used AMSCO Chain all season without the slightest trouble and considered it a commendable record because of previous less favorable experience with other makes of chain and ordinary metals.

Chains of almost every size and class, and sprocket and traction wheels of sizes to match are available in AMSCO Manganese Steel, affording users the maximum of life and freedom from trouble and breakdown. Where the service is most severe—the loads the heaviest—in dirty, gritty work—where shocks, wear and abrasion quickly destroy ordinary chain—there use AMSCO Manganese Steel Chain. Once used, always demanded.

Thew Shovel Uses AMSCO Dipper

(Continued from Page 1, Column 1)

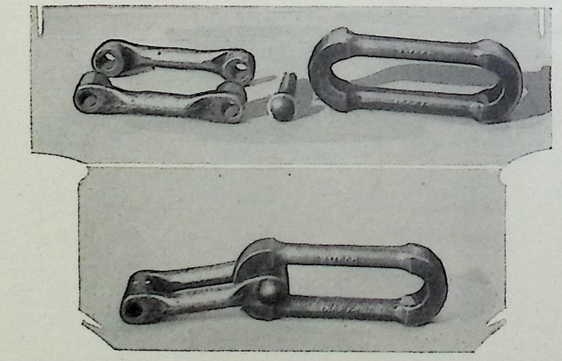
ished to make room for the new Empire Building, an 80 story edifice which will be the world's tallest office building, topped by the largest airplane beacon in the United States.

Photo by Cheesman, New York City

While no operating details are available on the yardage handled or the service rendered by the AMSCO Dippers employed on this excavation work, it is an interesting fact that AMSCO Made Parts and Equipments are employed on almost every major construction job, to say nothing of the thousands of smaller jobs on which we have no check and which never get into the news columns.

The New York Vehicular Tunnel, the Ohio River Canal Work and the Great Lakes Improvement Program are just a few noteworthy, modern-day developments on which AMSCO Dippers, Dipper Teeth, Buckets, Chains, Sheaves, Pumps, Cutter Heads and other equipments have played an active part. In fact, wherever shock, wear and abrasion are encountered, AMSCO Manganese Steel is used, for it possesses a peculiar toughness and resistance to wear that is so fully developed in no other metal or alloy commercially practical today.

AMSCO Riveted Coil Type Chains Now Made in Nine Sizes



The new AMSCO Riveted Coil Type Chain, now made in nine sizes, is a distinct improvement in design over welded coil chain because it has a maximum joint bearing equal in diameter and length to the dimension between the side bars. Welded coil chains when new have only point contact and bearing, and although this area increases with wear, it is still small when the chain is finally worn and discarded.

AMSCO Riveted Coil Type Chain, besides having the major advantage of the large bearing surface, is easily assembled and disassembled, and is made for use with standard attachments and idler wheels.

Features of this improved chain are (1)—Exceptionally long life due to the design and the use of AMSCO Manganese Steel (2)—A link to link bearing joint that does not "cut out" (3)—Designed for use with standard log dogs, attachments, etc., and to run on the usual types of tail sheaves, slip irons or conveyor bottoms (4)—Specially designed drive sprockets are made *without* removable teeth but are reversible when worn, adding to their life which always is as long as the chain, even under most severe service conditions (5)—Soft iron rivets, hot driven, fill the link holes completely, making a rigid yet flexible joint. They take no wear because all bending action and sprocket wheel contact fall on the link faces.

The sizes now available are:

Dimensions in Inches	Approximate Weight Per Foot in Pounds
1x1⅝x6	12
1x1¾x8	12½
1¼x2x8	18
1½x2¼x8	26¼
1¾x2¼x8	32¾
1⅝x2-7/16x9	33½
1¾x2½x10	34
1½x2¼x8 (Extra Heavy Type)	34
2x3x10	53

Read what this user of AMSCO Riveted Coil Type Chain has to say about their installation which is now three and one-half years old.

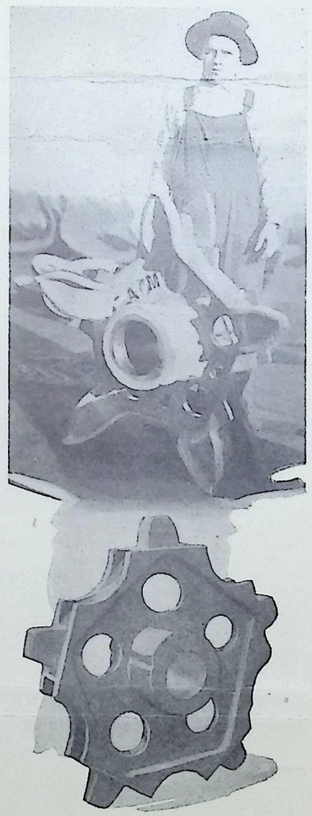
"We have your letter of February 12 and it is with very great pleasure that we give you a report on the service obtained from your riveted coil type log haul chain.

"This chain has been running in our Mill No. 2 night and day for three and one-half years, and has hauled up approximately 401,500,000 feet of logs.

"We have no trouble with the chain, dogs or sprockets and at the present time this equipment shows practically no signs of wear.

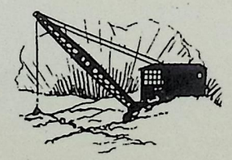
"You have our permission to use this letter in selling this chain to other prospective users."

(name on request)



Two types of standard AMSCO Sprocket Wheels for use with AMSCO Riveted Coil Type Chain are shown. Note: Teeth are not removable but entire sprocket is reversible to make both sides of the tooth surface available.

Excavator Buckets, Clamshells, Dippers and Dipper Teeth, the most abused equipment used in stripping, digging and excavating operations, are assured a vastly longer life when made of AMSCO Manganese Steel.



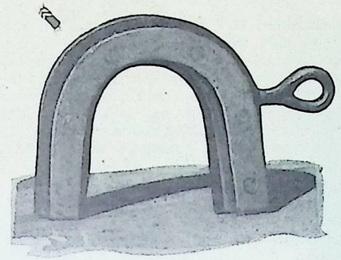


Plate No. 1.

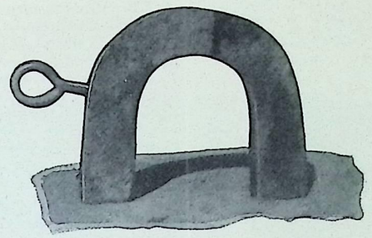


Plate No. 2

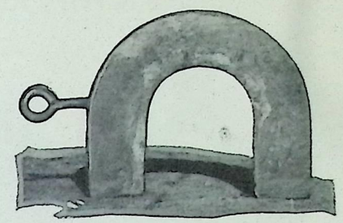


Plate No. 3

Manganese Steel Resistance Blocks

By John R. Lyons, *AMSCO Research Department*

In all car wheel foundries, railroad repair shops, car building plants or wherever wheel mounting is done, there is a piece of equipment called a wheel press which is designed to dismantle wheel and axle units by forcing the wheel from the axle under a pressure of approximately fifty tons.

This press is equipped with a casting known as a resistance block which serves as a buffer in removing the wheel from the axle, and its function is to absorb the wear due to this high pressure.

Castings of various alloys have been tried in an endeavor to get a steel which would render a good service and the best result that could be attained was by the use of a steel which lasted three months, at which time the casting had worn to such an extent that it was necessary to add service plates to increase the life of the casting.

This particular case seemed to be an ideal application for Manganese Steel because the alternate applications of pressure would peen harden the steel and increase its wear resistance.

Two castings were made for the Hammond, Indiana Works of the Southern Wheel Company for test purposes, and while the results to date aren't conclusive, the service at present proves the superiority of Manganese Steel.

To demonstrate this contrast, three pictures were taken, one showing the Manganese Steel resistance block after three months' wear (Plate No. 3) and the other two, alloy steel resistance blocks after they were used the same period of time (Plates No. 1 and No. 2)—for removing 1500 to 2500 pairs of wheels per month.

The alloy steel blocks show excessive wear and the need of service plates (Plate No. 1) and a fracture (Plate No. 2).

The Manganese Steel (Plate No. 3) shows that it has been peened down, but now it is in ideal condition for complete wear and shock resistance, the two qualities for which this steel is widely noted.

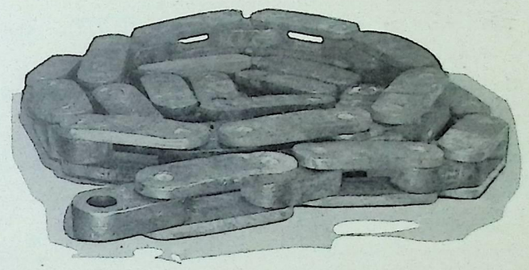
These castings weigh approximately 120 pounds each and cost about 32c per pound for the alloy steel blocks and about 13c per pound for Manganese Steel, a saving in itself that is distinctly worthwhile.

Spools and Sheaves

The six 8″ O. D. 6″ face Manganese Steel Spools and four 6¼″ O. D. Sheaves illustrated are part of a shipment to a Minnesota Coal Dock.

On similar sheaves previously purchased from us they say, "Our past experience in using AMSCO Manganese Steel Sheaves has been very satisfactory, as we have had 6″ sheaves in our car hauls for about four years, and the wear is very slight." (Name on request.)

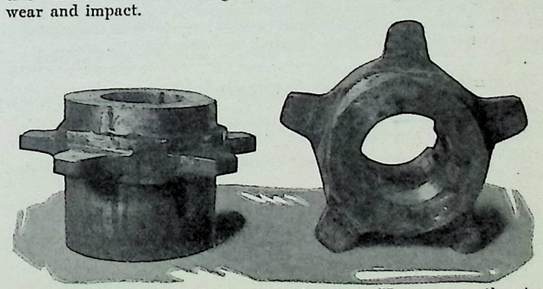
Draw Bench Chains and Sprocket Wheels



Pictured above is part of a shipment of Draw Bench Chains and Sprocket Wheels made for a well known engineering company, manufacturing draw bench equipment.

This shipment of AMSCO Manganese Steel Parts consisted of 416—8½″ pitch, side bars and 208—4¾″ pitch, center links, and 2—5 tooth drive sprocket wheels, 1—8⅝″ machine bore and the other, 8 11/16″ machine bore, both having ground keyways and machined hub ends.

The experience of users of this type of equipment has proved the merit of AMSCO Manganese Steel for this work, it being a well established fact that Manganese Steel when of the proper analysis and heat-treatment, has an austenitic structure that gives great toughness, ductility and shock resistance. A peculiar property of the metal is that it work hardens very rapidly and it is probably due to this characteristic that Manganese Steel is so serviceable under severe wear and impact.

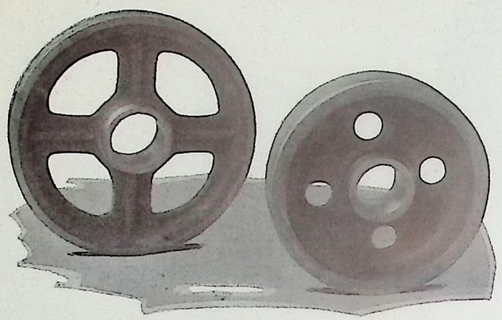


In one sense the yield point is rather low. However, as the steel starts to stretch, it immediately stiffens up very radically and this increase in yield point is progressive almost to the ultimate strength. This ability of AMSCO Manganese Steel to build up a new, high yield point is the prime reason for its resistance to extreme shock as such shock stresses result in a higher resistance against further stresses of like degree.

This building up of strength and hardness is a very rapid process and very soon after the chain has been in service, maximum resistance to breakage stresses and to abrasion is reached.

We are not only equipped to make the very best possible Manganese Steel chain so far as analysis and heat treatment are concerned, but to test draw bench chains up to 150 tons before shipment. We are, of course, not confined to any one design, but can furnish the design best suited the conditions.

Sheave Service Records!



Two Sheaves from a group recently shipped from our Chicago Heights Plant—at the left a four spoked 22" O. D. 104 pound sheave; at the right a plate center 17½" O. D. 92 pound sheave. From a shipment of 24 Sheaves ordered by a large overhead crane manufacturer.

The **President of a Massachusetts Sand and Gravel Company.** Sheaves ordered in 1926—January 28, 1930—

"It gives us a great deal of pleasure to state unreservedly that we have found the manganese sheaves we purchasd from you in 1926 and 1927 everything which you claim for them as to wear, service and dependability. We would no more think of going back to the old type sheaves we were using at the time we placed our first order with your representatives than we would consider screening sand by hand for the market today.

"We operate two oversize derricks with buckets of two and two and one-half yard capacity respectively, and during the past three years we have run continuously in all kinds of weather from nine to fourteen hours daily, with but one shut-down of two weeks for repairs. We could not have accomplished this had we been subject to the sheave and cable trouble we experienced before we became acquainted with your products."

The **Engineer of a New England Gas Company.** Sheaves bought in 1927—January 30, 1930—

"The AMSCO Manganese Steel Sheaves referred to in your letter are still in use and have proved very satisfactory. We have no hesitation in stating that these greatly outwear ordinary cast iron sheaves and are generally superior."

A **Massachusetts Contractor,** January 30, 1930—

"I used AMSCO Manganese Steel Sheaves on a Bearcat Shovel in 1927 with most satisfactory results. I am at present using an Osgood Conqueror and have not, as yet, been obliged to replace the sheaves, but when I do replace them I shall certainly replace them with Manganese Steel because of their strength and durability to stand hard usage."

The **Purchasing Agent of an Eastern Dock Company,** January 31, 1930—

"We have had four of these sheaves in operation on fair lead of bridge for seven months. They are standing up all right."

The **Superintendent of Waste Disposal of a Metal Mining Company,** January 10, 1930—

"We find the Manganese Sheaves very satisfactory in the crane service. We use them extensively in our buckets and they seem to have no limit to their life. I would say that we can notice no extreme wear to cables, due to roughness of the sheaves. Some of these sheaves we have had for ten years or more and an occasional bushing is all they need. I would state from my experience that Manganese Steel Sheaves are to be recommended for service on Industrial Locomotive Cranes, on the boom and elsewhere."

A **Dock Superintendent,** February 4, 1930—

"Our mechanic reports that the sheaves mentioned were installed as holding rope sheaves on our electric cranes in 1926 and so far have shown very little wear. He claims that with the ordinary sheaves he had used previous to this, replacement would be necessary at least every two seasons under present conditions, and says that the service given by the manganese sheaves is very satisfactory in comparison to the ordinary sheaves."

A **California Trucking concern,** February 6, 1930—

"We are pleased to inform you that we have used your sheaves and found them very satisfactory in every respect and we are at all times ready to recommend them to others."

The **Vice-President of a Southern Dry Dock Company.** Sheaves bought in September, 1926—January 29, 1930—

"The AMSCO Manganese Steel Sheaves we purchased from you were used on construction work for our customer and we have had the very best reports possible from the use of this material. Our customer advises they gave him exceedingly good service and in all probability are still in use as he disposed of the equipment about a year ago. As stated before, we have always found AMSCO material of the highest grade and of exceedingly long lasting qualities."

The **Manager of a Colorado Gravel Producer,** January 22, 1930—

"We have your letter of January 20 regarding Manganese Steel Sheaves which you furnished our company in 1926. We find these sheaves are working very satisfactorily and outlasting the ordinary sheave a good many times over. We feel that these sheaves, while costing considerably more than the ordinary sheave, are very much more economical in the long run, and we intend to replace some of our other sheaves with Manganese."

The **Superintendent of a Minnesota Coal Dock Company.** Sheaves ordered in 1924—January 23, 1930—

"The manganese steel sheaves, or rope carriers which you furnished us, are giving splendid satisfaction and we are very much pleased with them."

The **Purchasing Agent of a California Rock Producer,** January 24, 1930—

"Our experience with your Manganese Steel Sheaves has so far proved favorable. It is possible to purchase steel sheaves at a much lower price than those furnished by you; however, we feel that the added expense has its advantages. We have no complaint to make regarding the service of your sheaves."

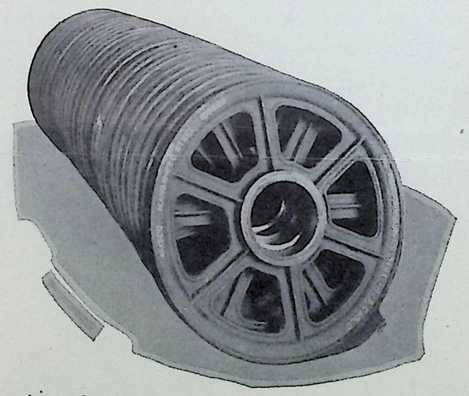
The **President of an Arizona Rock Company,** January 23, 1930—

"To date this sheave has not been placed in service and consequently we are not in position to comment. It has always been our experience that manganese steel in cases of severe abrasive service has proved superior to ordinary steel."

The **Secretary of a New England Harbor Dredge Company,** January 22, 1930—

"We think it sufficient to say that all users of heavy duty sheaves know full well the dangers and never ending troubles due to breakage and replacements. We have had our full share of such experiences.

"Against such conditions we are glad to state that the four 24" AMSCO Manganese Steel Sheaves delivered to us about September 1, 1927 from your New Castle plant are still in place on one of our 6-yd. dredges. They are satisfactory in every way, and also economical."



A part of a shipment of one hundred 36" diameter sheaves from our St. Louis Foundry to a midwestern oil supply company. This shipment of traveling block sheaves weighed 19,300 lbs.

The **Superintendent of a Massachusetts Gas Works,** January 25, 1930—

"Our records show that we purchased from you in November, 1926, two Manganese Steel Sheaves and in April, 1929, four Manganese Steel Sheaves. At the present time two of these are in stock, three are in service and one has just been removed for rebushing. Presumably the one just removed was one installed on the first order and was put on not long after it was received. The groove in this sheave looks very good and we can get a great deal more service from it."

(Continued on Page 6, Column 1)

WHO'S WHO AT AMSCO?

We present in this issue William M. Black, "Bill" Black to his many friends in The Eastern Territory who have come in contact with him in his present day capacity as Eastern Sales Manager of the AMSCO organization.

WILLIAM M. BLACK

"Bill" came to this company in the Spring of 1912 and made his start with us in the foundry of the Chicago Heights Plant where he spent several years learning the many details of making Manganese Steel.

While being "exposed" to the many ramifications involved in the making of Manganese castings for shock and abrasion resistant purposes, he spent much time studying the many manufacturing problems that beset the special alloy casting manufacturer and so is well qualified by knowledge and experience to fill the position he holds today.

After his early training in the Chicago Heights Shops, and a finishing course in selling the products he had learned to make, he decided that a knowledge of the application of these products would round out his educational career on Manganese Steel—so he journeyed forth to the Gold Fields of Alaska to study the gold mining operations of several large companies.

At Nome, Alaska, he came in contact with several large dredge operations and saw, first hand, the severe service to which Manganese Parts are put in the placer dredging of gold bearing gravel. It is worthy of note that one of the operations he visited and sold on AMSCO Manganese Steel has since established the record of digging 15,500,000 tons of gold bearing gravel with a single set of 9½ ft. capacity AMSCO Buckets which were in constant operation for some 17 years.

Later, on returning to the States, he entered the AMSCO Sales Department in charge of the Pittsburgh Territory where he held forth until the latter part of 1927, with the exception of his time in service during the World War, when he served as a Lieutenant in the U. S. Ordnance Department.

In 1927 he was placed in charge of the New York Office of the company at 230 Park Avenue, New York City, and later in the same year was promoted to the position of Eastern Sales Manager, which position he now holds and ably fills.

Sheave Service Records!

(Continued from Page 4, Column 2)

The **President of a Pennsylvania Trap Rock Quarry Company.** Sheaves bought in 1925—January 27, 1930—

"Replying to your recent inquiry as to the use of your Manganese Steel Sheaves beg to advise that we found them very satisfactory. In fact the only ones we purchased from you lasted several years and were discarded on account of changes in operation of the plant. They were not worn out and showed very little wear. We would recommend them highly in preference to the ordinary cast steel wheel."

A **Pennsylvania Building Brick Company.** Sheaves purchased in February, 1926—January 28, 1930—

"The AMSCO Manganese Steel Sheaves we purchased from you have given us entire satisfaction. Since using these we have not been obliged to replace them. This applies to all other equipment received from you."

The **Manager of a North Carolina Quarry Company—**

"We find it pays big dividends to use Manganese Sheaves as the life is fully four times that of ordinary ones and the time element for installing is considerable. Use this if needed."

The **Manager of a Coal Dock Company on the Great Lakes,** January 29, 1930—

"We have used AMSCO Manganese Steel Sheaves in various installations in connection with our docks and will say that I find them perfectly satisfactory and more economical than ordinary steel sheaves. We find them tough and strong, and that the grooves take on a high polish, thereby eliminating rope wear. You probably will note from our requisitions that we are ordering Manganese Lips for our clamshell buckets and replacing as fast as possible many of our worn steel parts for manganese wherever possible."

Shipper Shaft Pinions

Quoted below is a letter from the General Superintendent of an Ohio Limestone company (name on request), commenting on the service received from a set of AMSCO Shipper Shaft Pinions, illustrated above.

"In answer to your letter of January 17, regarding the service we have had from AMSCO Manganese Steel Shipper Shaft Pinions that we are using on our steam shovels, we equipped the first shovel with these pinions in March, 1929 and the shovel worked two 10 hour shifts per day until November 1st and has been working since then on a single shift.

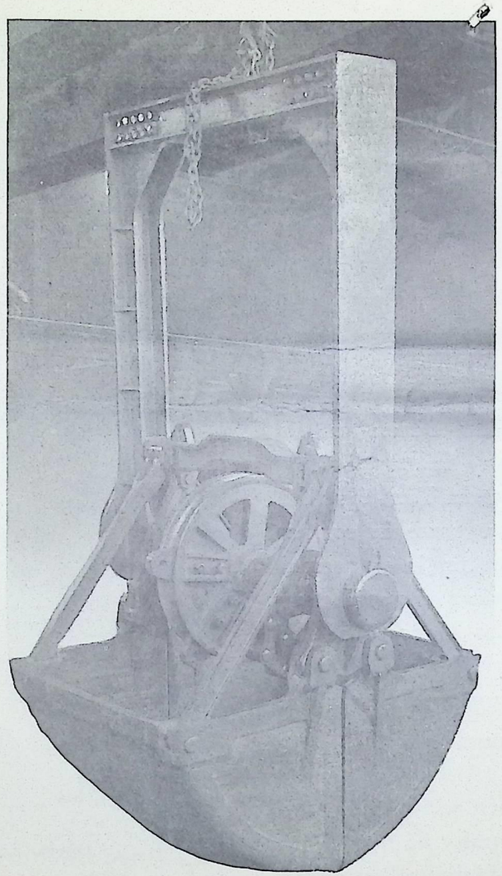
"These pinions do not show any wear and look as if they would be good for another season.

"Until we put on the AMSCO Pinions, four to five months on a single shift was good service. Needless to say we are equipping all of our shovels with AMSCO Pinions."

8 Yard Bucket Weighs 22,669 Pounds

The 8-yard dredge bucket, illustrated, made for a Great Lakes dredging concern, is a typical application of the superior shock and wear resistant qualities of AMSCO Manganese Steel.

The total weight is 22,669 pounds, the bucket being entirely of Manganese Steel with the exception of the rivets, pins and shaft. As



every dredge operator knows, in a built-up type of bucket the extreme digging shock and stresses distort the plates and loosen the rivets. To eliminate the possibility of distortion the AMSCO Half Shells are made as one-piece Manganese Steel castings, leaving no possibility for loosening and very little likelihood of breakage. The rigid Manganese Steel Uprights permit even operation in opening and closing. In the AMSCO Bucket either rope or chain can be used, which makes for easier repairs on the job.

Of course the great strength, shock resistance and wear resistance afforded by Manganese Steel Castings, of which the bucket is entirely constructed, assures the operators of longer life from parts that are subjected to shocks and wear.

Simplicity of design allows for repairs and replacements to be made with great facility, and this fact alone often eliminates serious delays and costly shut-downs. We have made a number of these buckets during the past few years, and all of them have given splendid economy and first class efficiency.

When you buy Buckets, Clamshells, Orange Peels, Grabs or Dippers, be sure to specify *Made of AMSCO Manganese Steel.* It is your guarantee of maximum service.

AMSCO Feeders Handle Stone

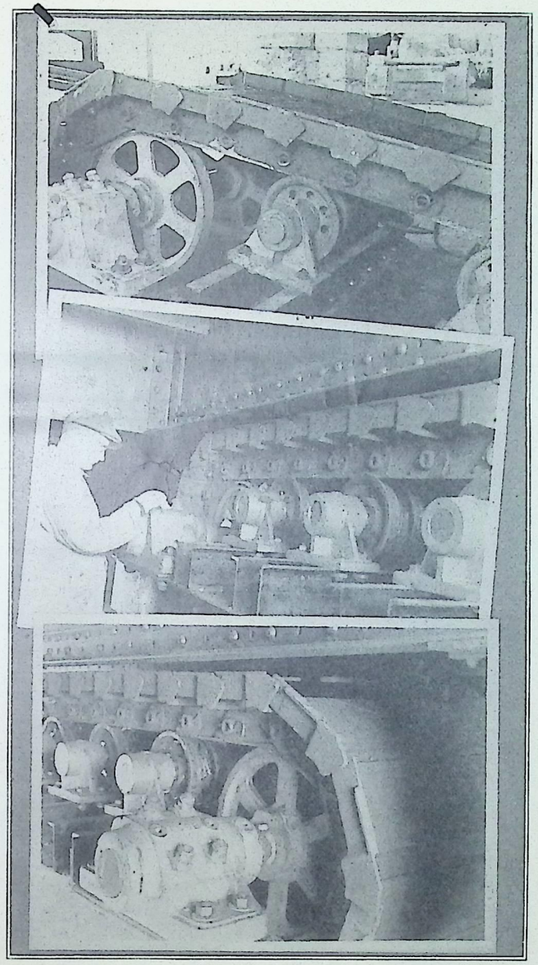
A recent installation of AMSCO Feeders, engineered and installed by the Stephens-Adamson Manufacturing Company, is that of two 36″ units recently put into operation at Elmhurst-Chicago Stone Company.

The AMSCO Manganese Steel parts consisted of:

84—9″ pitch x 36″ wide pans, weighing 80 pounds each.

168—9″ pitch links and attachments—riveted to pans, weighing 21 pounds each.

4—9 tooth—26.315 pitch diameter sprockets, weighing 212 pounds each.



4—22.815 O. D. traction wheels, weighing 150 pounds each.

26—10″ tread diameter flanged track rollers, weighing 24 pounds each.

22—10″ tread diameter plain track rollers, weighing 21 pounds each.

Feeder with AMSCO Pans, Links, Sprockets, Idlers and Rollers at the Elmhurst-Chicago Stone Company. Feeder is 36″ wide by 9″ pitch by 14′6″ centers. This feeder (top view) receives from the primary crusher and delivers to the first belt conveyor up to the surge bin.

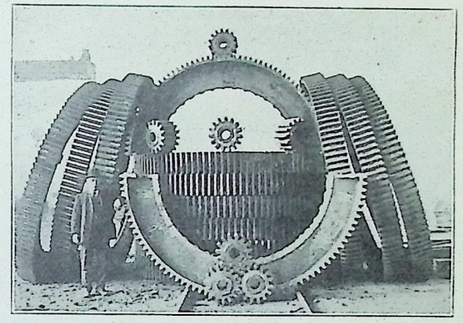
The pans travel at a speed of 31′ per minute driven by a 7½ H. P. motor and have a capacity of 300 tons per hour.

This feeder (middle and bottom views) draws material from a 500 ton capacity surge bin and delivers into a Simons Cone Crusher over a special spout which can be wheeled to either side to pass material over a straight chute into the crusher or over a bar grizzly which bypasses the fines into a belt conveyor under the crusher.

The pan speed is controlled by means of one of FJS Variable Speed Reducers from 5 to 30 FPM with a corresponding range in capacity of 60 to 350 tons per hour.

Way Back When

Because some of the old timers (and even a few of "us moderns") are wont to reminisce a bit and tell of the jobs and special castings of another day, made way back when some of the big bosses of today were just learning the whys and wherefores of Manganese Steel, we are going to print in each issue of the AMSCO BULLETIN illustrations and stories of work that was done by AMSCO many years ago—way back when Manganese Steel was first commercially made and on down through the years until the World War saw it widely used on heavy duty, severe service equipment of every kind.



A group of tube mill gears and pinions, some of the first Manganese Gears made for use in this service in the Chicago District. The gears weighed 7,000 pounds each and the pinions, 640 pounds each. The official poser (you'll see more of him) was also style setter for Chicago Heights on what the well dressed foundryman should wear! Some Chollie, we'd say.

A 15,000 pound dredge tumbler made in the early days for service in the Northwest on a large gold dredge (Sh—maybe it's "Bill" Black in disguise that's keeping it from rolling away).

ISSUED BY THE AMERICAN MANGANESE STEEL COMPANY, CHICAGO HEIGHTS, ILLINOIS

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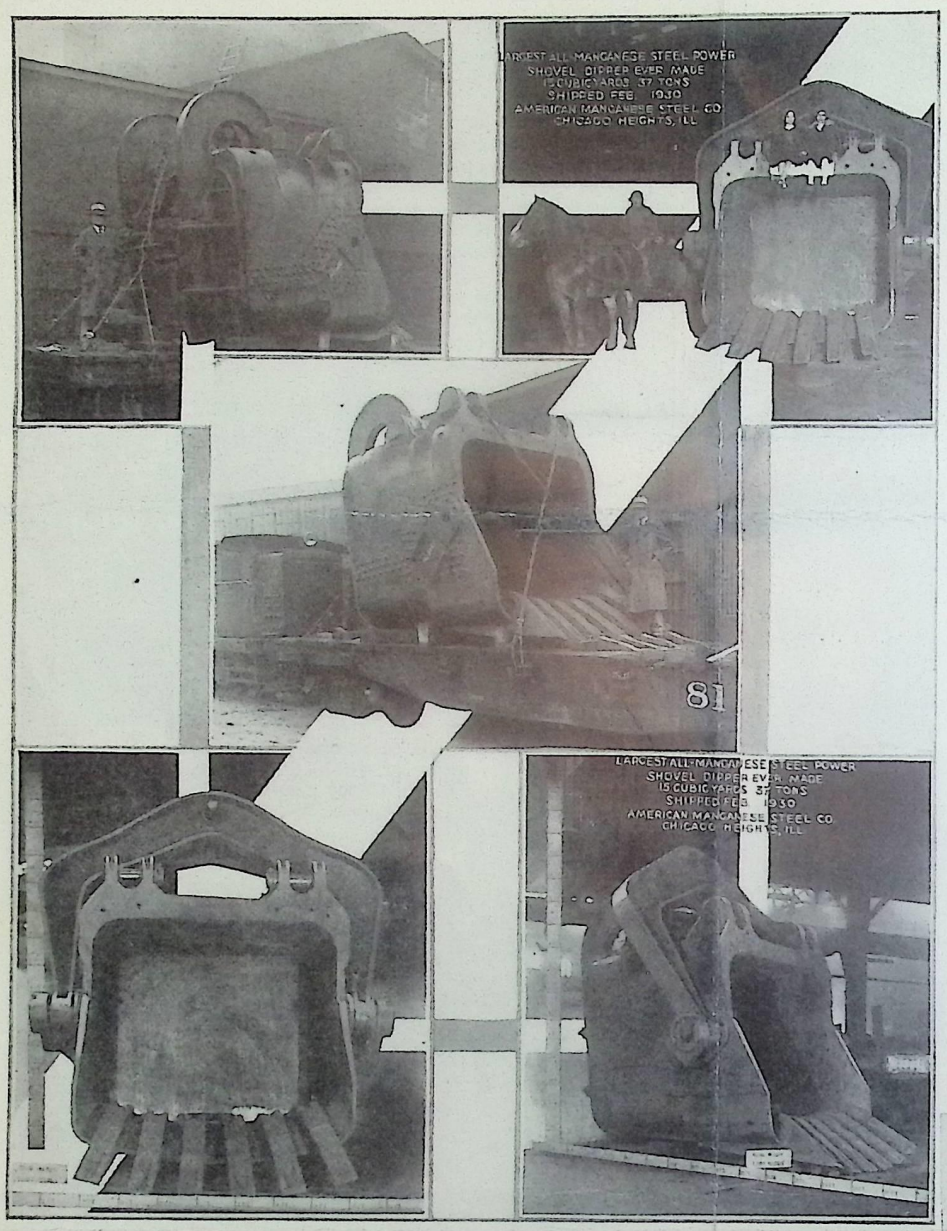


Largest All-Manganese Steel Dipper Ever Made

The largest, all-Manganese Steel Power Shovel Dipper ever made is illustrated here—note its size compared with the horse and cart.

This mammoth power shovel dipper, by far the most massive of its kind ever built, was cast and assembled at the Chicago Heights Plant of the American Manganese Steel Company for the United Electric Coal Company, Danville, Illinois. It is in use at their Duquoin Illinois Strip Mine under the direction of Mr. J. W. Fellmeth, Operating Engineer, to whom we are indebted for the interesting facts presented here.

The dipper is 14′ high over the bail, 12′ wide between outsides of bail brackets and 14′ from the ends of the dipper teeth to the bottom of the door, it weighs 37 tons (empty) and is of 15 cubic yards capacity.

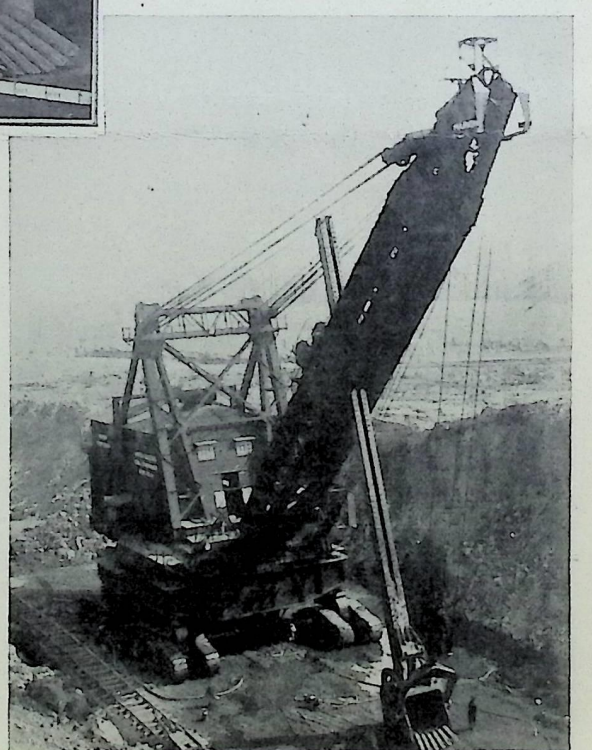
A busy statistician has figured out its weight as being about 370 times that of the two girls perched on the upper edge of the bucket back or about 740 times the weight of one of the two girls, and almost twice the weight of any one load of material it will handle.

This dipper is used at one of the largest strip mines in Illinois, and is in service on one of the world's largest electric power shovels (built by the Marion Steam Shovel Company) for stripping overburden from coal. Some idea as to the size of the shovel on which it will be used is found in the fact that a full size seven passenger automobile can be driven under it when the shovel is operating on level ground.

The specifications of the shovel follow:

Length of boom	120 ft.
Length of handle	83 ft.
Size of dipper	15 cu. yd.
Working weight	3,300,000 lbs.
Overall height	73 ft.
Height of dump	82 ft.
Radius of dump	144 ft.
Height of boom	115 ft.
Bearing area on ground	414 sq. ft.
Hoist cable	2⅛ in.

The entire plant is electrified with General Electric Co. equipment so far as it is economically possible. This includes all of the stripper shovels, as well as the loading shovels, tipple, etc.



We've Got This Flowers and Showers

story all mixed up. Some one said that something comes in like a lion and brings April flowers or goes out like a lamb that's all wet or something—anyhow it hasn't happened where we live, and if you've noticed any of those business charts lately, you'll see that it's good around Chicago. And maybe that's because of the many satisfied customers who are continuing to order Manganese Steel Parts and lots of them, although our increased facilities are not taxed in any sense yet, and if you can't send in an order right away, why don't you send us an April bouquet, in the form of a letter, telling us of the things that AMSCO Manganese Steel has accomplished for you—and we'll let all the world know about it in some other issue of this bulletin.

P. S.—It snowed yesterday.

PRINTED IN THE U. S. A., APRIL, 1930