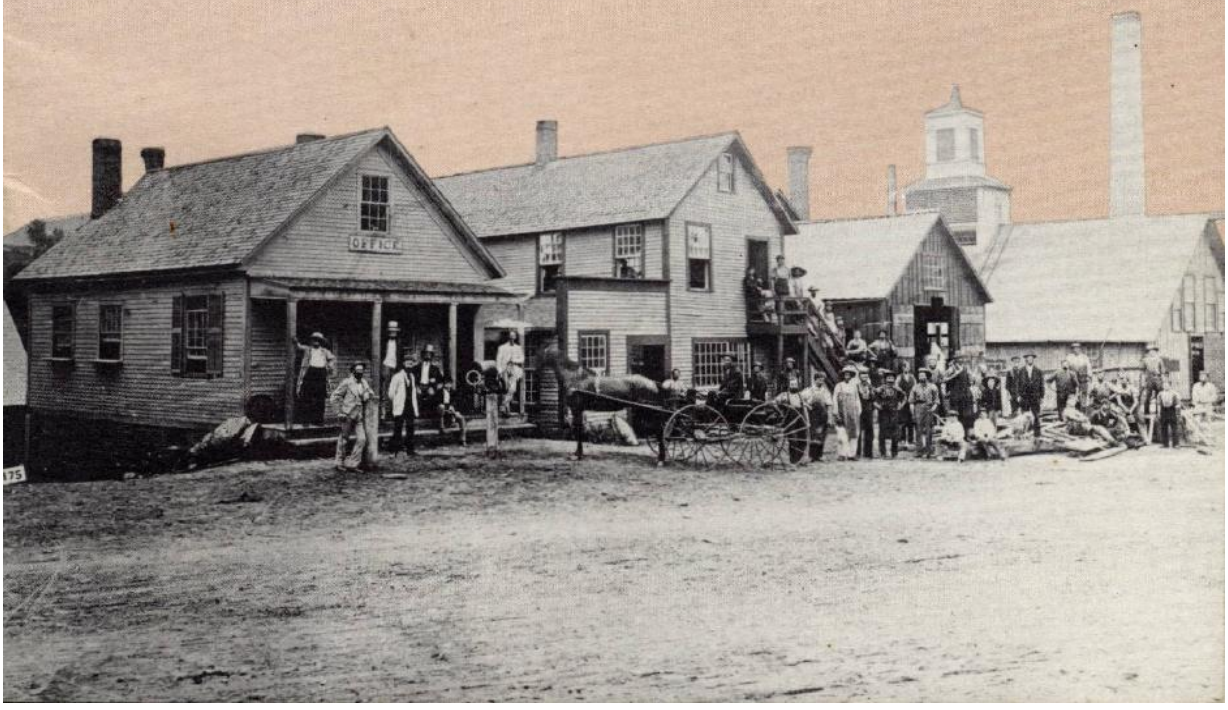
SULLIVAN

TRADE MARK

MACHINERY COMPANY

THE FIRST 95 YEARS



COMPRESSORS · AIR LIFT · COAL CUTTERS · DIAMOND CORE DRILLS · ROCK DRILLS
PORTABLE HOISTS · DRILL SHARPENERS AND FURNACES · BUSTERS · SPADERS

SULLIVAN

REGISTERED TRADE MARK

MACHINERY COMPANY

NEW YORK LONDON PARIS TOKYO SYDNEY

THE BEGINNINGS OF A GREAT COMPANY

In 1765, when western New England was still a wilderness and the Revolutionary War was still to be fought, one Roswell Elmer built a blacksmith shop on the banks of the Sugar River where water power was abundant. A furnace was erected for production of plows, stoves, and potash kettles, the chief metal needs of the little community of Claremont, New Hampshire.

Elmer was succeeded by a George Emerson who later added a machine shop on the same site. Thirteen years before the Civil War, in 1851, James Phineas Upham, a Dartmouth College graduate with an intense interest in machinery, purchased the machine shop and added other buildings and equipment. In 1854 the small machine shop was dignified by the name "Claremont Machine Works," manufacturing engine lathes and "iron planers of a new and desireable style." All work leaving the shop was warranted. Thus did the predecessors of Sullivan Machinery Company establish the principle of "standing behind its work."

On a spring afternoon in May 1868, two men driving a light buggy sought out James Phineas Upham who was pruning trees beside the highway. The men, Albert Ball and Roger Love from Windsor, Vermont across the Connecticut River, produced sketches of a newly invented diamond channeling machine for quarrying stone, especially marble, and an agreement was made then and there to build this machine. The meeting of these three enterprising New Englanders may truly be said to have been the beginning of the Sullivan Machinery Company. Soon after, the trio founded a corporation that was to become known and respected throughout the world.*

In the years between 1868 and 1892 Sullivan specialized mainly in producing machinery for prospecting, mining, oil field exploration, and industrial construction. Through the years after the Civil War the Claremont factory grew in size as the company expanded its products and services. In 1901 Sullivan purchased the M.C. Bulloch Company, mining and prospecting specialists located in Chicago. In the early 1920's the Chicago facility became too small for the company's rapidly expanding business and Sullivan purchased 125 acres of land in Michigan City, Indiana where a new factory was completed in 1923.

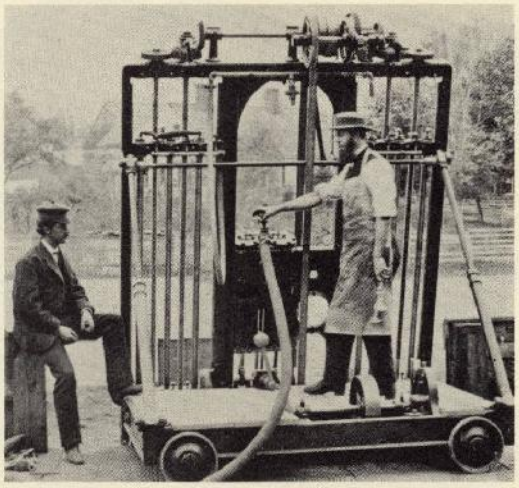
Through mergers and acquisitions, and the experience and integrity of its people, Sullivan Machinery Company continued its strong growth and greatly contributed to the progress of the mining and construction industries throughout the world.

*The name Sullivan was that of the county where the machine shop was located. The county was named for the intrepid General John Sullivan who with General Stark had shared the principal honors of New Hampshire in the Revolution.

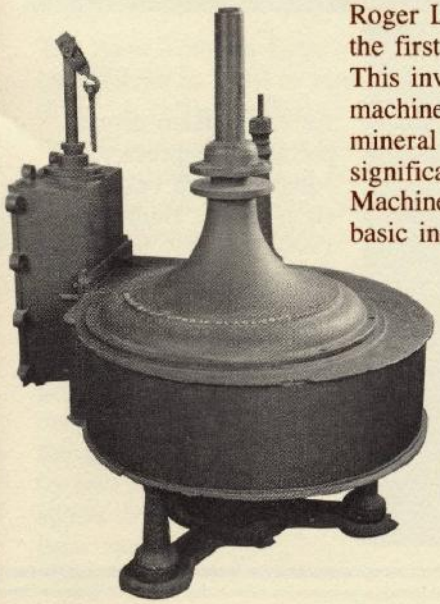
On the cover: Sullivan Machinery Company, Claremont, New Hampshire as it looked in 1873.

Through the years many innovations in machinery for the basic industries were attributable to the dedication of Sullivan engineers. Early in the 1900's Sullivan rock drills and channeling machines dug the 185-foot deep wheel pits at Niagara Falls, excavated 15 miles of rock for the Chicago Drainage Canal, and countless Sullivan rock drills helped carve out the Panama Canal. In 1928 Sullivan compressors supplied 13,000 cubic feet of high pressure air for rock drills penetrating the backbone of the Cascades for the Great Northern Railway tunnel. And during World War II Sullivan Machinery Company was cited for its contribution in war production equipment and services.

And today, wherever men prospect, dig or build, Sullivan products are known, used, and respected.



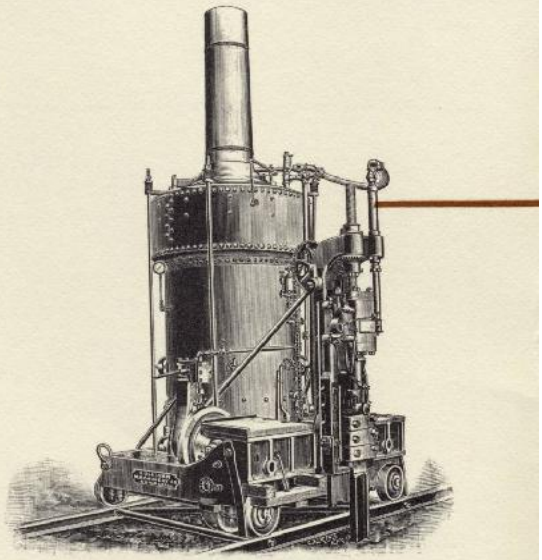
Roger Love and inventor Albert Ball with the first diamond channeling machine. This invention heralded a revolution in machinery for quarrying, mining, and mineral exploration, setting the stage for significant contributions by Sullivan Machinery Company to the growth of the basic industries.



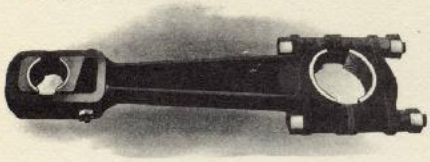
The Tyler Turbine Water Wheel invented by John Tyler in 1855 was an important advance in the utilization of water power. A few years later, the turbine was manufactured by J.P. Upham who merged this product into a line of quarrying and mining machines under the name Sullivan Machinery Company "which became world renowned for the quality of its products."

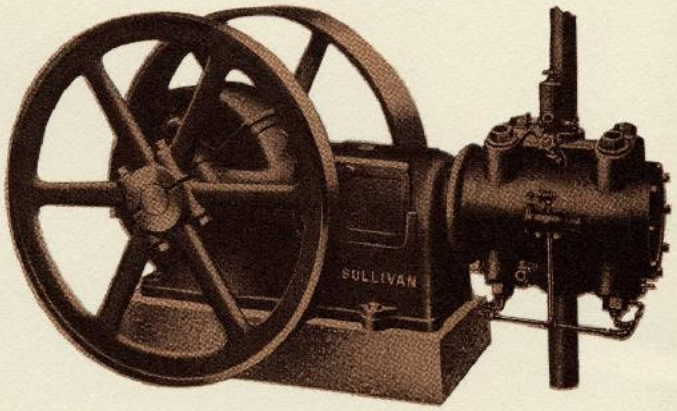
Photos courtesy American Precision Museum, Windsor, Vermont

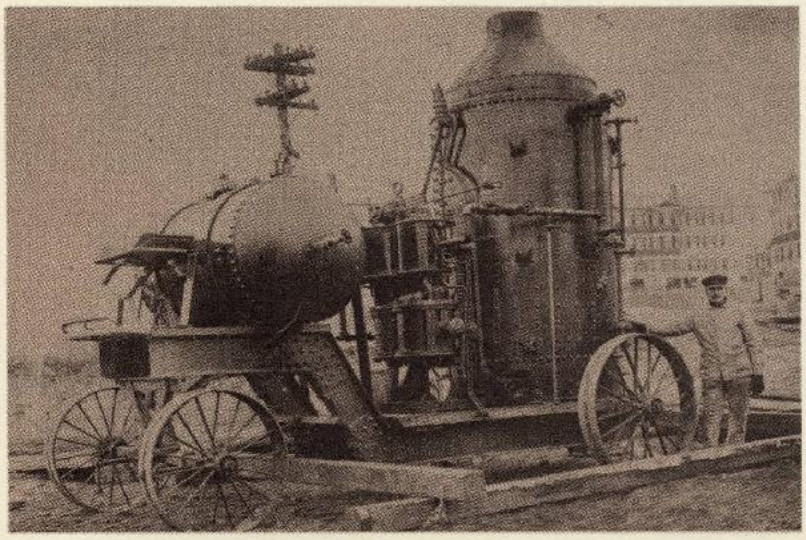
During the 1890's the Sullivan steam driven channeler was well known in the principle quarrying regions of the country "having been used extensively in marble, sandstone and limestone." The Chicago Main Drainage Canal was "the first piece of public work" using 55 Sullivan channelers. "A smooth rock wall was secured...the walls being entirely unshattered by explosives."



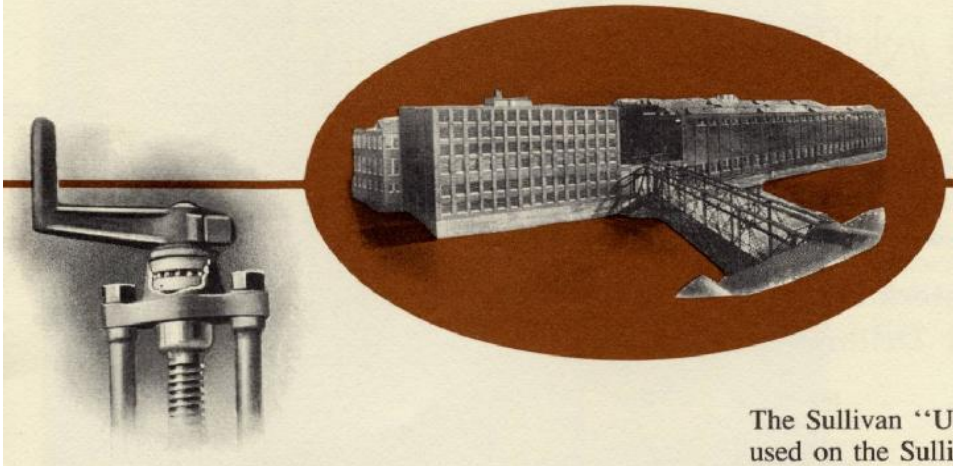
A 1918 bulletin describes the Sullivan "WG-3" air compressor:"...a single air cylinder, securely bolted to a sturdy frame, which carries a crank shaft on one end, and a fly-wheel on the other...Simplicity and strength are chief characteristics of this type...The machine is practically automatic, running continuously and with but little care..."





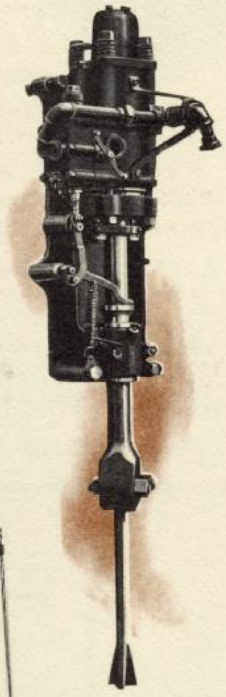


An early steam driven portable compressor, complete with boiler and air receiver. Built around 1900, this may have been one of the first Sullivan "portable" air compressors. Note driver's seat for this horse drawn "carriage."

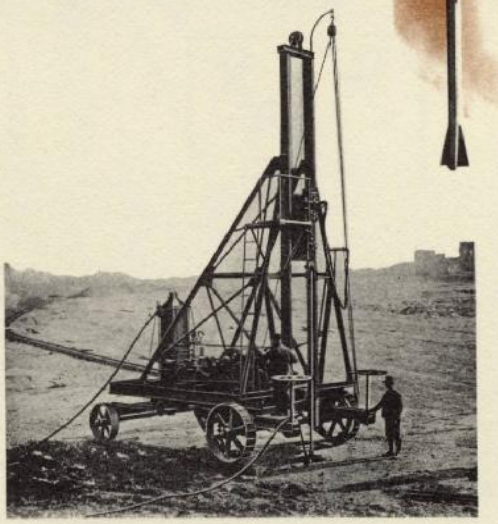


Sullivan tripod mounted rock drills at work on the Panama Canal in 1906. Weights on each leg of the tripod gave the drill stability while the operator hand cranked the screw feed to advance the hammer into the rock.

The Sullivan "UM" rock drill used on the Sullivan Auto Traction Drill. The rock drill cylinder is seven inches in diameter with a piston stroke of 8⅝ inches. A five inch bit is used.



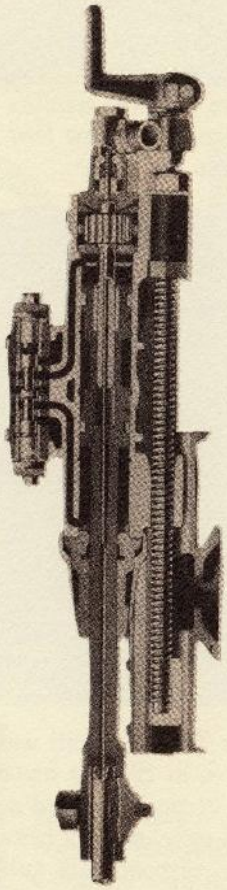
The Auto Traction Drill was developed by Sullivan in 1910 to replace tripod drills. A vertical standard carrying a rock drill attached to a heavy iron block was suspended in guides over 20 feet in length by a steel cable passing over a sheave which "is alternately paid out or taken in by a hoisting drum. The standard and hoist are mounted on a steel wagon truck. A two cylinder reversible engine provides power for the hoist and for moving the outfit...by means of a chain drive to the axle...The Auto Traction Drill run by two men will do the work of five tripod drills, requiring ten men for their operation."

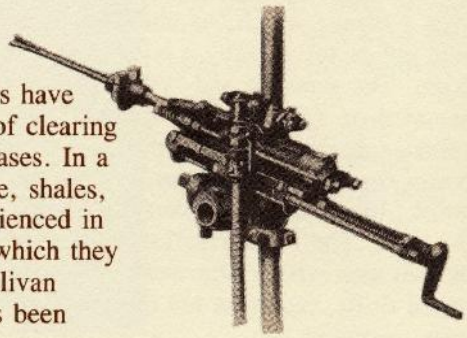


MINE AND QUARRY
REG. U. S. PAT. OFF.

VOL. X, No. 4 JULY, 1918 Whole No. 35

All who can should adopt the pledge proposed by the food administration: "I will eat no wheat until the next harvest."



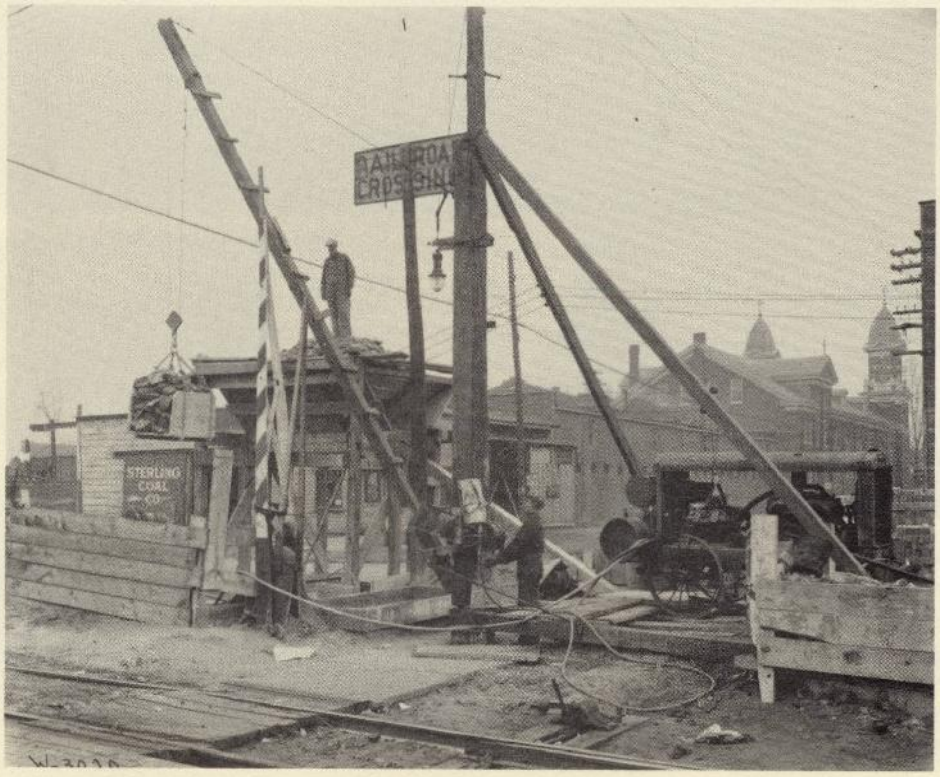


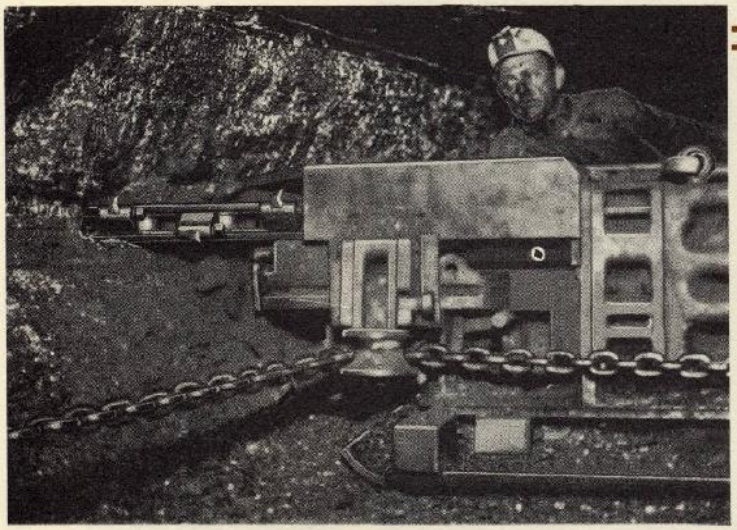
From Bulletin 66-H, August, 1913–"Engineers have devoted much time and study to the problem of clearing the drill hole of its cuttings as the depth increases. In a rock that makes sludge rapidly, as for example, shales, slates and some porphyries, difficulty is experienced in cleaning the holes, regardless of the angle at which they are drilled. With these points in mind, the Sullivan Water Attachment for Reciprocating Drills has been developed."

An early Sullivan basketball team. Note the famous Sullivan Machinery Company logo on their uniforms.

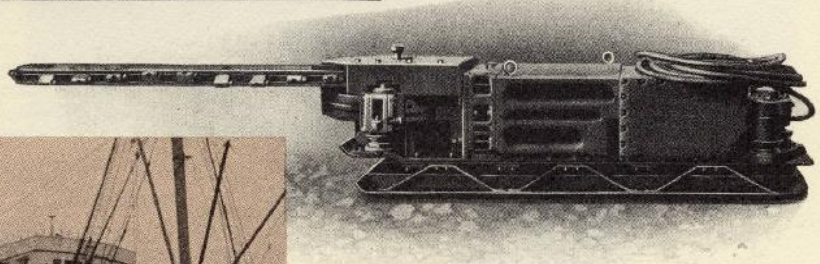
HAMMER YOUR DRILL BITS

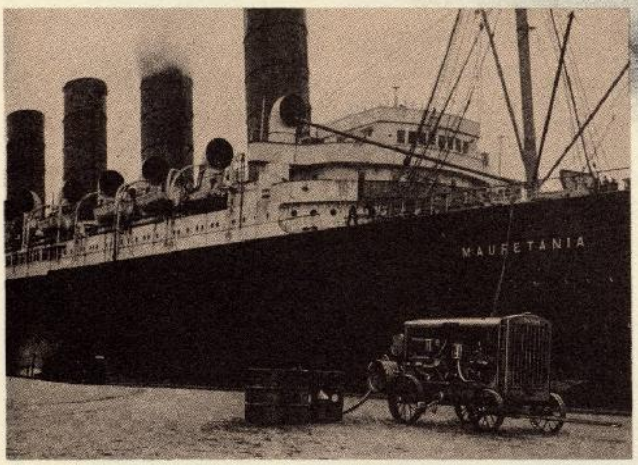
This photo carries no date but may have been taken in the 1920's. The portable compressor is supplying air to a Sullivan "Turbinair" hoist, handling what appears to be broken rock being removed from a vertical shaft.





A 1921 "CE-11" Sullivan Continuous Overcutter, a low vein room and pillar longwall coal machine. Machine runners were paid a scale of 20 cents an hour in the Arkansas district.

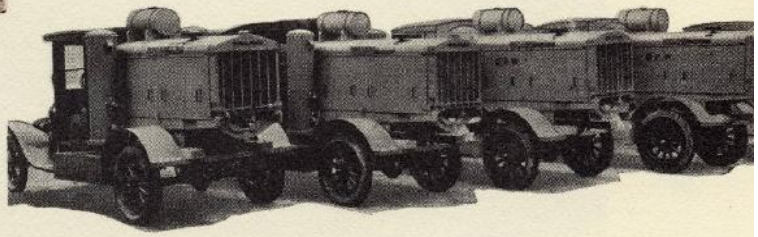


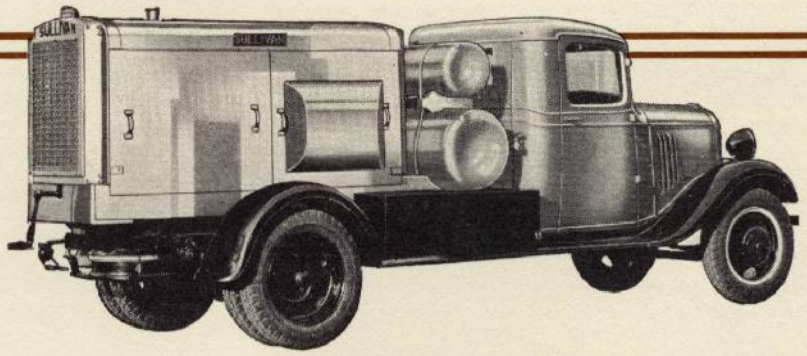


The British liner "Mauretania" in dock at Liverpool (1927). A Sullivan 310 cubic foot portable air compressor furnished air for structural changes, running "...day and night until completion of the work...operating eight pneumatic rotary drills and three riveting hammers. In spite of the severe load...freedom of strain of this four-cylinder balanced compressor was especially notable."

Milwaukee has "fleet" of Sullivan Portables. The machines ranging from the 110 ft. WK-312 to the WK-314 "V" type, 220 ft. capacity were again selected for the third year in succession for their overall successful performance. (June, 1927)

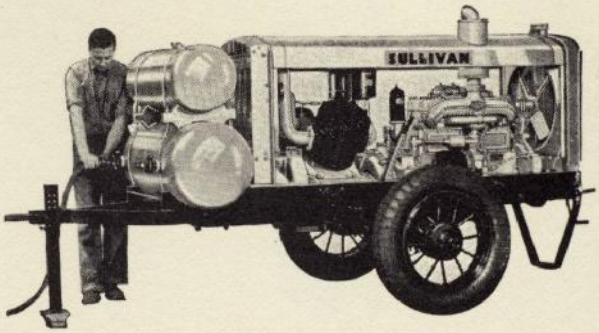
A Sullivan Portable up to the hubs in a Vermont winter. Calling for pioneering of the roughest character, telephone and power line poles had to be set directly over the summit of Ludlow Mountain.

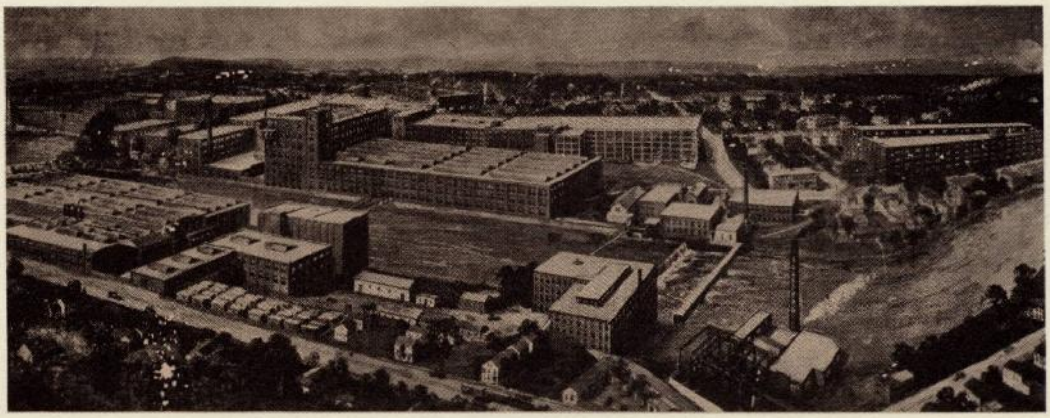




A 1936 Ford 1½ ton dual wheel truck mounting a 105 to 160 cubic foot Sullivan two-stage reciprocating compressor.

A Sullivan Model 105 two-wheel pneumatic tire portable compressor with automotive spring mounting for high speed towing.





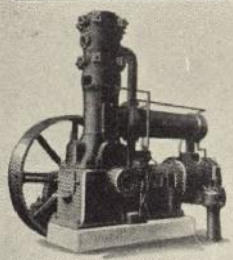
The Sullivan Machinery Company "works," Claremont, New Hampshire in a 1937 photo.

USED THE SCRAPE·HOIST·LOAD·PULL·HAUL·LIFT WORLD OVER

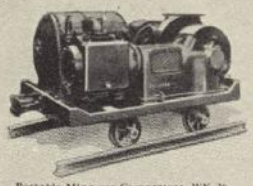
SULLIVAN
MACHINERY CO.
CLAREMONT, N. H.

A 1931 Sullivan "HE-7" electric single drum hoist running a material elevator for building construction in Monterey, Mexico.

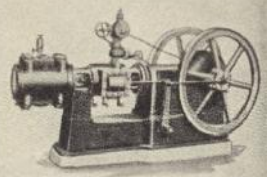
SPEED · UP · WITH AIR



Angle Compound WJ-3 Compressor, Bulletin 75-S.



Portable Mine-car Compressor, WK-20, Bulletin 75-J.



Straight Line, Steam Driven, Single Stage Compressor, WA-6, Bulletin 75-P.

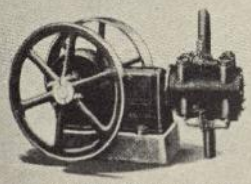
IN the mine, in the quarry, in the foundry and shop, for pumping water, excavating rock and working metals, air power increases production, makes labor more efficient, reduces costs.

Sullivan Air Compressors

assure a constant supply of this modern, adaptable power, at low expense. Some popular types are shown in this page. If you have air power problems, Sullivan engineering experience is at your disposal.

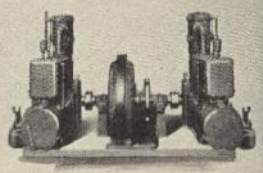
Booklet 121 illustrates all types
Ask for it

SULLIVAN MACHINERY CO.
122 So. Michigan Ave., Chicago



Belted, Straight Line Compressor, WG-6, Bulletin 75-R.

Portable Gas-engine driven Compressor WK-31, Bulletin 75-T.



Twin Angle Compound Compressor, Motor Driven, WN-4, Bulletin 75-S.

Sullivan Machinery Company

122 South Michigan Ave., Chicago, Ill., U. S. A.

Algiers
Amsterdam
Boston, Mass.
Butte
Christiana
Claremont, N.H.
Denver
Duluth
El Paso
Gijon, Spain
Joplin, Mo.
Juneau
Knoxville
London, Eng.
Nelson, B. C.
New York
Paris, France
Petrograd
Pittsburgh
St. Louis
Salt Lake City
San Francisco
Santiago, Chile
Spokane
Sydney, N. S. W.
Toronto
Tunis, Africa
Turin, Italy
Vancouver, B. C.
Wallace, Idaho

J. B. Wheeler, Trust
2 Wall Street, New York

Fred'k G. Bulkley
Genl. Manager Aspen, Colo.

The Aspen Mining and Smelting Co.

Aspen, Colo., December 19th. 1892.

Mr. T.L.Dee,

The Sullivan Machinery Co.,

15 North Clinton St.,

Chicago, Ill.

Dear Sir:-

Replying to your favor of 12th. inst.

1st. We are using one (R) electric drill.

2nd. Approximate total No. of feet drilled, 16000.

3rd. Nature of rock, Limestone , generally compact but containing fractured and seamy zones.

4th. 7000 feet drilled in 1892, at the rate of 38 1/2 feet per 24 hours, two shifts.

5th. Cost per foot in 1891, 81 cents. In 1892, 68 cents including carbon losses etc.

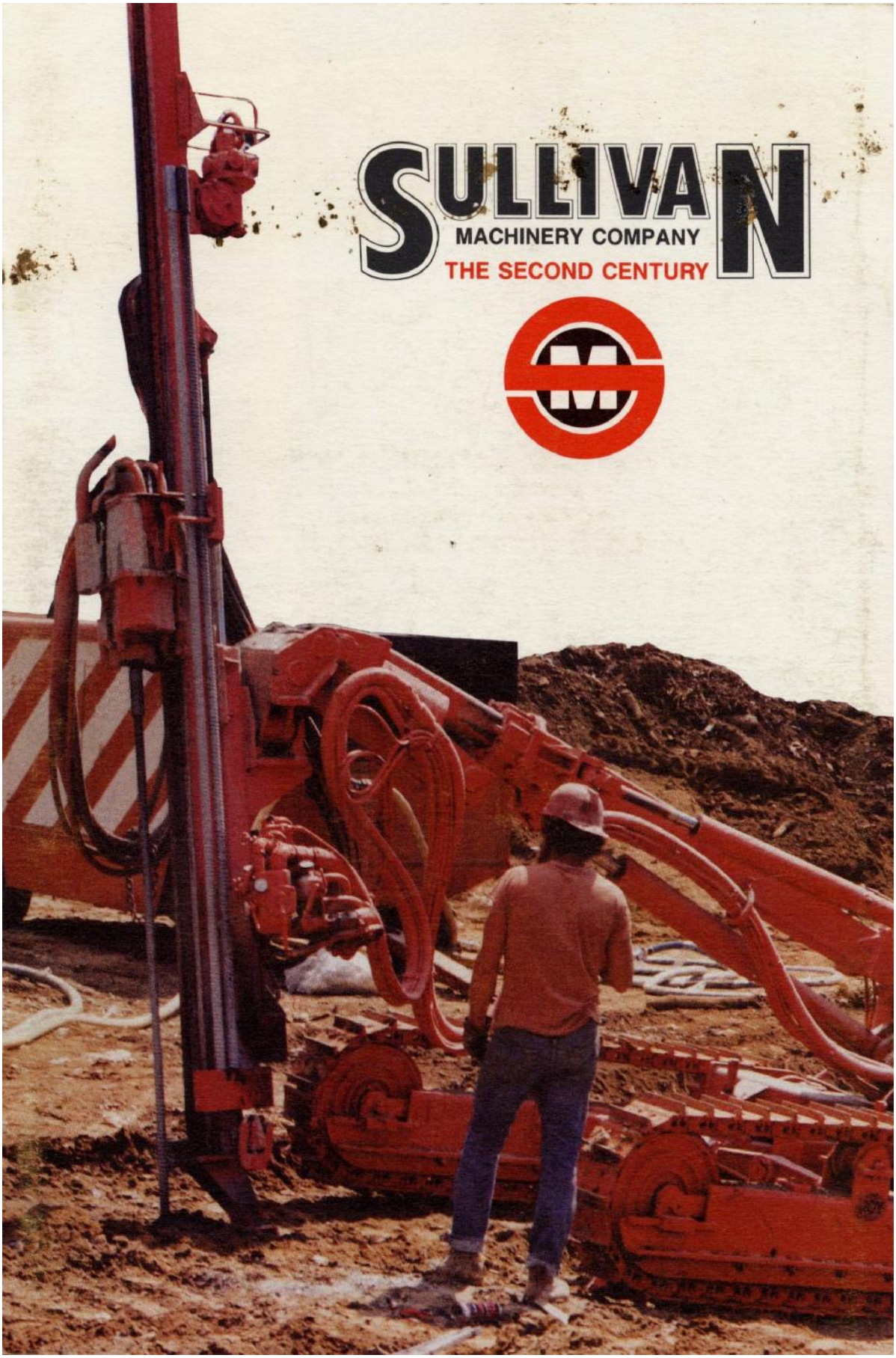
6th. Advantages derived, cheap and effective prospecting, rapid work, discoveries of ore, convenient and economical application of power, etc etc.

7th. Several discoveries of mineral have been made aggregating about $50000.00 in value.

Yours very truly,

Fred'k G Bulkley

General Manager.


SULLIVAN
MACHINERY COMPANY
THE SECOND CENTURY

SULLIVAN
MACHINERY COMPANY

THE NEW BEGINNINGS OF A GREAT COMPANY

Today, Sullivan Machinery Company looks forward with fresh optimism to future growth and the opportunity to serve our customers with imagination and innovation.

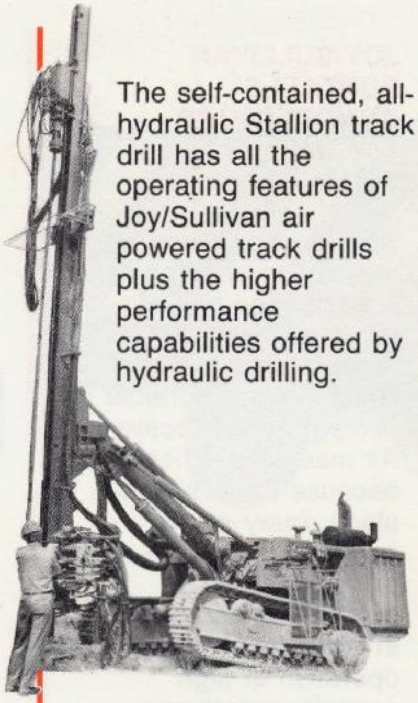
Sullivan Machinery Company links with the past through a merger in 1946 when Sullivan was acquired by Joy Manufacturing Company. In the intervening years, Joy retained most of the major engineering innovations and product developments achieved by Sullivan, improving on design and manufacturing concepts as the industry's technology advanced.

The mutually beneficial merger remained in force until early in 1984 when Joy Manufacturing Company chose to relinquish its markets and products for heavy construction and metallic mining in favor of concentrating the company's efforts in the prime markets of non-metallic mining and other energy related industries. Thus the products for heavy construction and metallic mining have been acquired once again by Sullivan Machinery Company – and the new beginnings of a great company are at hand.

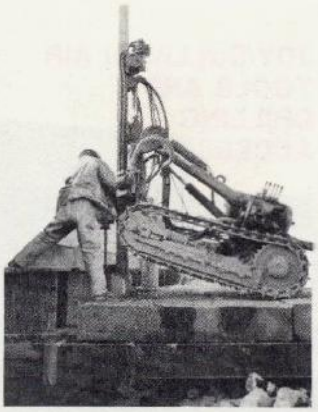
More than 100 years after our modest beginnings we will again serve our customers with new and better products for mining, construction, and industrial uses. And as we develop and grow we promise to live up to our Sullivan heritage, offering our customers the experience and integrity of our people and quality and value in our products. Because no matter how big we grow, we won't forget our beginnings.

JOY/SULLIVAN TRACK DRILLS — Air or All-Hydraulic Operation

Joy/Sullivan designs and builds track drills in lightweight, mediumweight and heavyweight models for virtually any quarrying, mining, or heavy construction task. Choose from air operated track drills equipped with unique Joy/Sullivan VCR (Valveless Continuous Rotation) rock drills designed for optimum penetration in any formation. Or choose the all-hydraulic Stallion track drill with innovative features not found on other hydraulic drills.



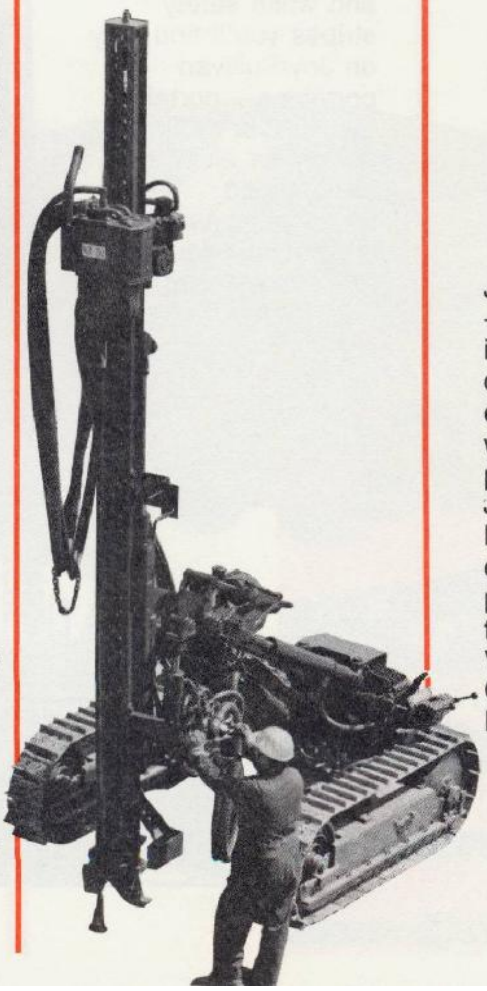
The self-contained, all-hydraulic Stallion track drill has all the operating features of Joy/Sullivan air powered track drills plus the higher performance capabilities offered by hydraulic drilling.



The frisky Maverick track drill, a Joy/Sullivan lightweight drill downsized to work in close quarters. Operates effectively on only 450 cfm air.

Joy/Sullivan Mustang track drill – the *original* heavyweight drill that surpasses all others in large diameter, deep hole production and on-the-job reliability.

Joy/Sullivan rock drills – air and hydraulic – incorporate valveless operation to provide economy of operation without sacrificing performance. Joy/Sullivan air and hydraulic hammers come in several sizes, power-matched to their track drill mates. The VCR-360 Valveless Continuous Rotation Drill is shown above.

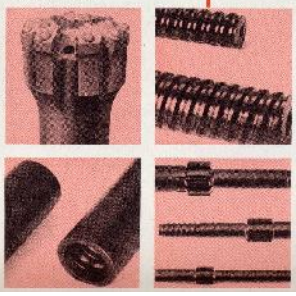


Ram mediumweight track drill – standard of the industry for more than 20 years. No other mediumweight drill is bigger or heavier, more rugged, more reliable, or better performing than a Joy/Sullivan Ram Track drill.

JOY/SULLIVAN AIR TOOLS AND DRILLING ACCESSORIES

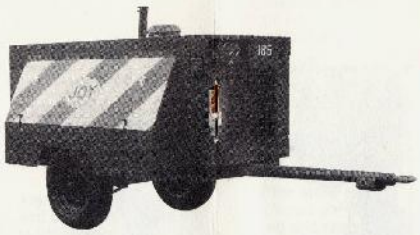
Joy/Sullivan offers several sizes of paving breakers and air tools designed for ease of operation and handling on utility work.

Joy/Sullivan Drilling Accessories. Tungsten carbide rock bits, drill steels, couplings, and striking bars are all available from Sullivan – your single source supplier of rock drilling accessories.

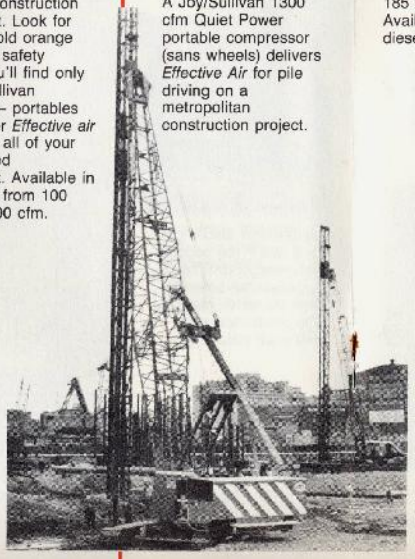


JOY/SULLIVAN PORTABLE COMPRESSORS — The Quiet *Effective Air* Machines

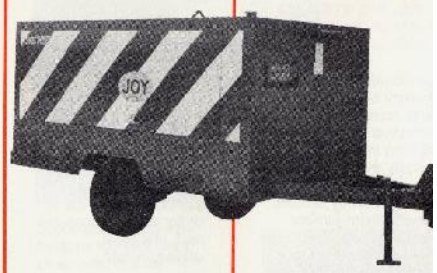
Simple design with only two moving parts – a matched pair of rotary screws – make modern Joy/Sullivan Quiet Power™ portable compressors *Effective Air* machines. Effective because these single-stage rotary screw portables compress air in a continuous, pulseless process for efficient, economical operation of high capacity construction equipment. Look for the big, bold orange and white safety stripes you'll find only on Joy/Sullivan portables – portables that deliver *Effective air* quietly for all of your air powered equipment. Available in capacities from 100 cfm to 1600 cfm.



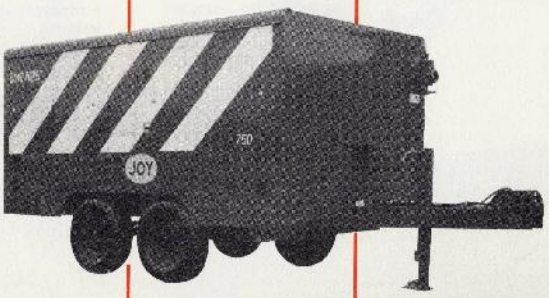
Joy/Sullivan D185Q3 Quiet Power portable compressor. Rated at 185 cfm capacity. Available with gas or diesel power.



A Joy/Sullivan 1300 cfm Quiet Power portable compressor (sans wheels) delivers *Effective Air* for pile driving on a metropolitan construction project.



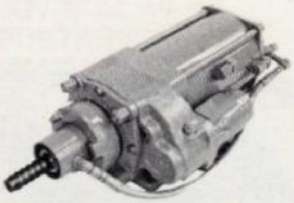
Joy/Sullivan D450Q3 (450 cfm) Quiet Power portable compressor. Diesel powered for efficiency with tandem wheel mounting for easy maneuverability.



Joy/Sullivan D750Q3 Quiet Power portable compressor. Diesel power for on-the-job dependability and full 750 cfm capacity. Tandem mounting provides stable towing characteristics and good maneuverability.

JOY/SULLIVAN DRILLING SYSTEMS for High Production Underground

Joy/Sullivan's long history in designing and manufacturing effective underground drilling systems is plainly evident in this generation of mining and tunneling jumbos. Joy/Sullivan jumbos are available in several configurations as rail, rubber-tired or crawler mounted carriers with componentry that matches your special needs underground.



Joy/Sullivan jumbos are equipped with Joy/Sullivan all-hydraulic valveless drifters – the most significant advance in drifter design since the rock drill went underground.

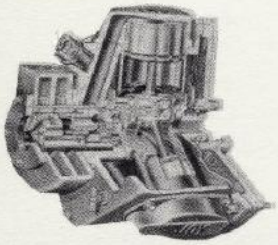
The Joy/Sullivan hydraulic roof bolter for Joy/Sullivan jumbos. It drills the hole, places the bolt, and secures it – all from the safety of a remote operator's station.

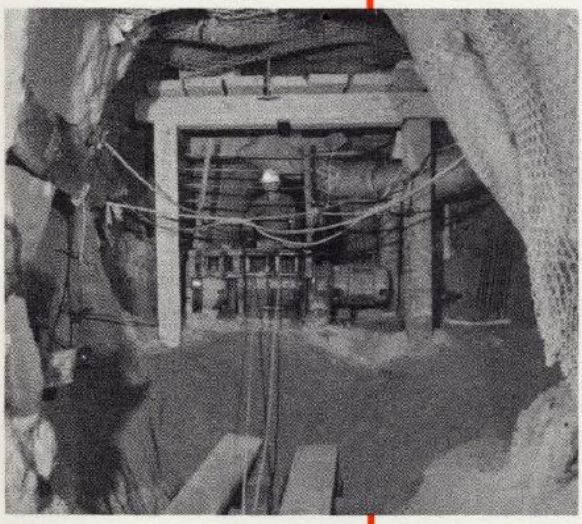
Joy/Sullivan DPH diesel powered hydraulic jumbo

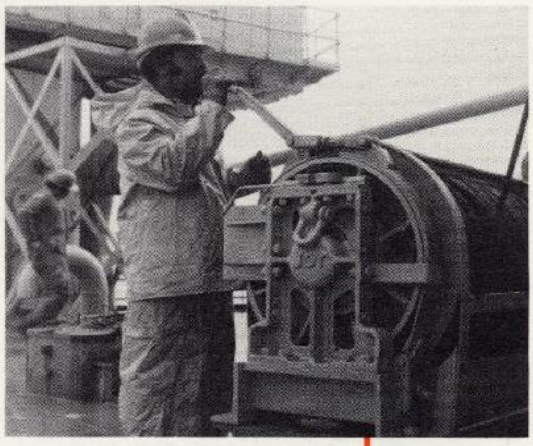
Joy/Sullivan HCH crawler mounted, electric driven hydraulic jumbo operating in an underground limestone mine.

JOY/SULLIVAN AIR HOISTS, SLUSHERS, AND AIR MOTORS – Known the World Over for Dependability

Long before the turn of the century, Joy/Sullivan was the leader in design and construction of air hoists and air and electric slushers. It's still the same today. You'll see Joy/Sullivan hoists and slushers working on construction projects, in underground mining, on offshore oil and gas rigs, and in industry everywhere.







Joy/Sullivan guideline tensioning hoist, part of an offshore rig motion compensating system.

Joy/Sullivan air hoists are powered by Pistonair™ radial air motors, providing safe operation in any environment.

A three drum Joy/Sullivan slusher moves ore in underground stope development work.

Foundry application of a Joy/Sullivan air hoist.

SULLIVAN
MACHINERY COMPANY

600 Grant Street
Pittsburgh, PA 15219
Tel. (412)765-1260
Telex 888971 (SULROB PITT)

MANUFACTURING AND SELLING JOY MINING AND CONSTRUCTION PRODUCTS

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