

You Get Trustworthy Liquid or Gas Cooling With Great Cooling Water Savings from the NIAGARA AERO HEAT EXCHANGER

● You can cool air, gas, water, oils, chemicals, electric and power and process equipment, engines, mechanical processes with lower cost and really accurate control of temperature with the Niagara Aero Heat Exchanger.

You are assured of uniform, constant production and quality from any process... steady, reliable operation... lower cost for more dependable cooling. You can have closed system cooling with freedom from scale, dirt, corrosion and maintenance troubles. You can accurately cool more than one type of liquid with one machine.

The Niagara Aero Heat Exchanger uses atmospheric air to cool liquids and gases by evaporative cooling. You can remove heat at the rate of input to keep accurate control of gas or liquid temperature. You can put heat back into the system to save the losses of a "warm-up" period or to equalize the effect of load variations.



Great savings in cooling water and savings in piping, pumping and power return the cost to you quickly. The Niagara Aero Heat Exchanger can save you approximately 95% of your cooling water cost. Write for Bulletin 96.

NIAGARA BLOWER COMPANY

Over 35 Years Service in Industrial Air Engineering
Dept. P, 405 Lexington Ave. New York 17, N. Y.
Experienced District Engineers in all Principal Cities of U.S. and Canada

More TECHNICAL BRIEFS

tails of instrumentation, the system and calibration technique.

The figure is a flow diagram of a laboratory. The widely varied water quantities are obtained with adjustable-blade propeller pumps. Operation may be influenced by the air pressure. To keep the air content constant during tests a resorber is used. In a large tank where the water is under pressure for considerable time, the air which comes out of solution at low pressure in the turbine runner draft tube may be resorbed.

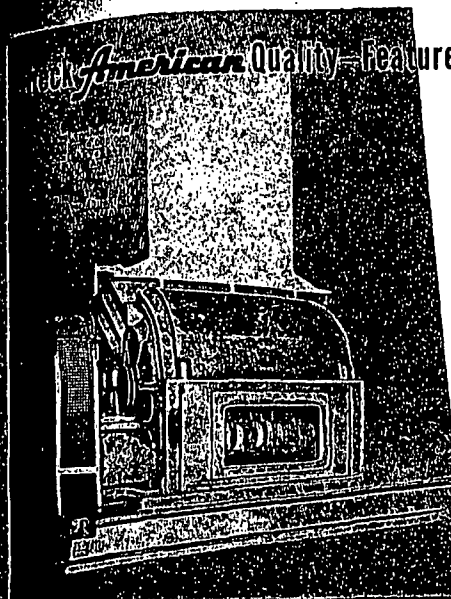
From the main outlet of the tank the water goes through one of four turbine tubes. The plate-scale tank is about 10 ft in diameter, 16-in. high in which model turbines are tested. A large part of the energy applied by the pumps is not absorbed by the turbine and heats the water circulating in the system. Cooling equipment is installed in the resorber to keep the water temperature about constant. ASME paper No. 52-A-95.

Recent Developments and Progress in Air Pollution Control. By A. D. B. Bethlehem Steel Co.

The effects of air pollution are divided conveniently into five groups. They are (1) nuisance, (2) economic, (3) effect on health, (4) vegetation, and (5) on animals.

The nuisance aspects of air pollution are well known. It is very common to have action brought against an industry by a community, by an individual, or by another industry because of an annoyance created by atmospheric pollution discharged by the industry. These cases are sometimes very difficult to arbitrate or adjudicate because of the absence of meaning of scientific data. At what point does atmospheric pollution become a nuisance? Even if a case study is made of the concentration of gases and solid material in the air, the amount of dust fall, at what point does it constitute a nuisance?

Other familiar effects of air pollution are economic in character. As early as 1912 one investigator estimated the smoke and gas in the air in the city of Pittsburgh cost its inhabitants about \$10,000,000 annually. It has been estimated that the air pollution in St. Louis prior to 1940 cost the inhabitants of the city about \$14,000,000 annually, and the economic losses caused by air pollution is costing the United States about \$1,500,000,000 annually. It is hardly denied that the leucoderm is higher in grossly polluted areas than in those having less pollution, and



American ORIGINATED THE ROLLING RING PRINCIPLE OF CRUSHING AND THE PATENTED SHREDDER RING

Over 40 years ago, American originated the ROLLING RING PRINCIPLE of Crushing which gave coal mines and power plants a new and more efficient crushing system. Manganese rings roll free on shafts and are held in outward position by centrifugal force of the rotor. Coal enters the crushing chamber and is struck by the rings in suspension, which shatter and split the coal before it reaches the breaker and grinding plate.

This principle was further improved by the development of the American Shredder Rings (shown at the right) with 120 manganese cutting edges that split the coal instead of crushing it, resulting in a minimum of fines and more uniform coal sizing. When encountering non-crushable material, the rings are free to swing back on their shafts, thus avoiding damage from tramp metal. There are no shear pins, cams, or doggles to cause breakdowns and the rings are reversible for longer life.

The American Rolling Ring Crushers operate efficiently at slow speeds resulting in major savings in power consumption and maintenance as well as producing a better product.

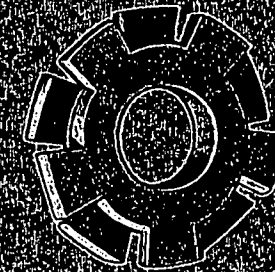
American
Originators and Manufacturers of
Rolling Ring Crushers and Pulverizers

Feature by Feature—and you'll know

WHY
AMERICAN CRUSHERS
can reduce coal for
less than **ONE CENT**
per ton



American Feature No. 1



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