



GENERAL  
CATALOGUE No. 11



# Smith-Vaile Pumping Machinery



The Stilwell-Bierce & Smith-Vaile Co.

DAYTON, OHIO, U. S. A.



# SMITH-VAILE

# Pumping Machinery

Single Pumps

Duplex Pumps

Crank and Fly Wheel—High Duty

Triplex Expansion Pumping Engines

Compound Pumping Engines

Vacuum Pumps

Hydraulic Pumps

Triplex Power Pumps

Jet and Surface Condensers

Air Compressors, Etc., Etc.

## THE STILWELL-BIERCE & SMITH-VAILE CO.

DAYTON, OHIO.

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N presenting our General Pump Catalogue No. 11, 1899 issue, beg to state that owing to our extensive line of patterns, we find it possible to illustrate only those general types that experience indicates are in general demand. We solicit inquiries from prospective buyers in the event they do not find illustrated herein that type or size they desire, assuring them that our complete line of designs will develop the style and combination demanded.

We have issued a series of special catalogues for customers making inquiry for any one type of pumping machinery. We will be pleased to furnish our special catalogue devoted exclusively to the illustration of—

AIR COMPRESSORS.

BOILER FEED PUMPS.

POWER PUMPS—TRIPLEX AND DUPLEX.

CONDENSING APPARATUS—JET AND SURFACE.

We manufacture also the celebrated VICTOR TURBINE WATER WHEEL and STILWELL HEATER AND PURIFIER for exhaust and live steam, and have a special department and corps of experienced engineers exclusively assigned to our FILTER PRESSES and OIL MILL MACHINERY lines, and will furnish upon application special catalogue illustrating these lines of machinery.

I N presenting our Catalogue No. 11 to our patrons, and to prospective buyers of pumping machinery, we are convinced that we need no introduction to the former. To the latter we would briefly state that if a critical examination of the extensive line of pumping machinery exhibited herein, illustrating the types and patterns in general demand, does not demonstrate to those unfamiliar with this class of machinery that Smith-Vaile pumping machinery is high-grade in every particular, they will find full guarantee in the fact that our experience in designing and constructing pumps extends over a period of thirty years and more, during which time we have brought upon the market a progressing series of patterns, each an improvement over the preceding type; and a further assurance in the reputation we have attained that the design incorporates the latest improvements, the material entering into their construction is selected with the greatest care, the tests that each pump is subjected to is thorough, and that the workmanship is strictly first-class in every particular.

No expense has been spared in equipping our hydraulic works with the most approved machinery, and we propose for the future to offer that type of pumping machinery that incorporates every improvement that experience has dictated is valuable and desirable, and tends toward economy in operation and durability.

We recognize the demand for economy of steam consumption, and earnestly recommend the Smith-Vaile Compound Pumping Engine to be operated condensing, if possible, where the available steam pressure will not exceed 110 to 120 pounds, and our Triple Expansion Pumping Engine where higher initial steam pressure can be had. We desire to call attention as well to our Crank and Fly Wheel High Duty Pumping Engine in the event further economy of steam is desired.

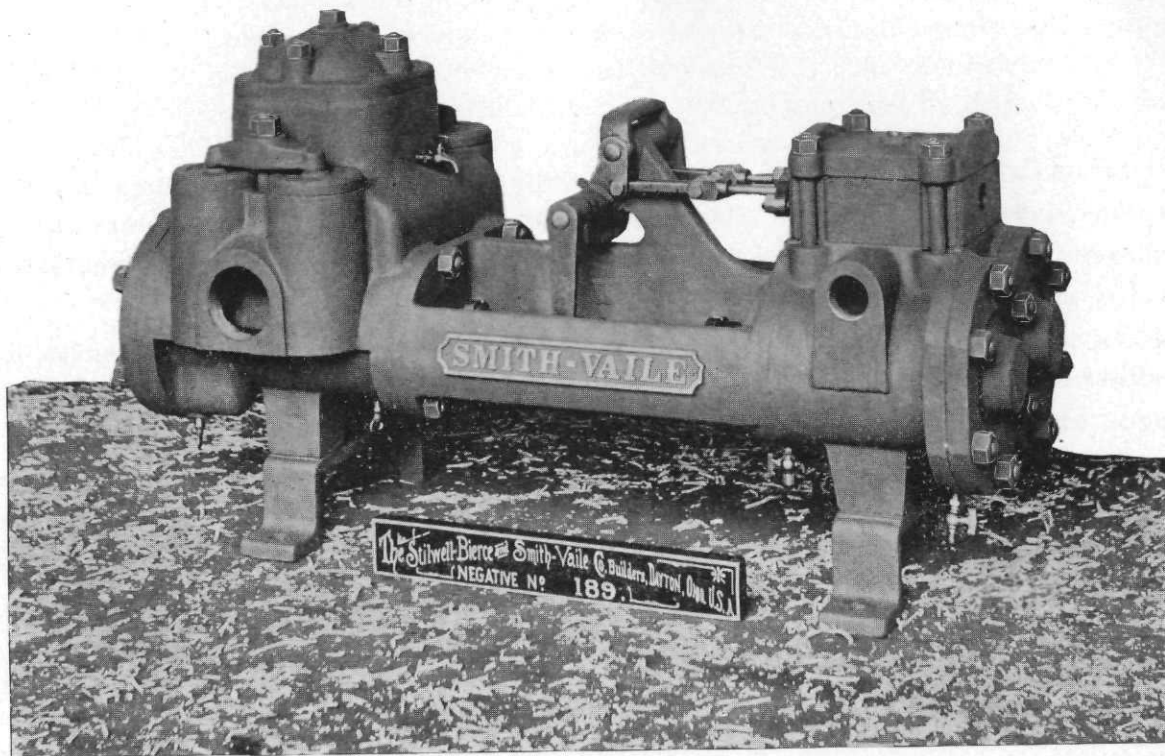
We have also to offer a complete line of Triplex Power Pumps, both single and double-acting, to be operated by direct connection to electric motors, water wheels, gas or gasoline engines, from line shafting or otherwise. The Triplex Pump presents advantages in economy of operation that render this line attractive, and the demand for them is constantly increasing. We publish a special catalogue devoted exclusively to this line, and will be pleased to mail same upon application.

**W**E also manufacture a complete line of Air Compressors of the Single Cylinder Straight Line type, as well as Duplex; Single and Multiple Stage Compression; steam actuated with simple or compound steam end, or belt driven, for pumping deep wells, elevating fluids, operating railway signal systems, pneumatic tools, hoists, mining purposes, etc. Special catalogue will be mailed upon application.

Our line of Condensing Apparatus, including Jet and Surface Condensers, also Vacuum Pumps, has become so extensive as to render it impracticable to fully illustrate in a general catalogue. We have, therefore, issued a special catalogue, which we will be pleased to mail to those interested.

We have made pumping machinery for municipal water supply a specialty, and the general satisfaction that Smith-Vaile pumps have afforded in the past is a guarantee that our line in point of efficiency and durability is unexcelled. We are prepared to offer for this service Simple, Compound, Triple Expansion or Crank and Fly Wheel High-Duty Pumping Engines, Condensing or Non-Condensing; Electric Triplex Pumps, Gas or Gasoline Plants, Combined Water Wheels and Power Pumps, Air Compressors for the Air Lift System, etc.





Smith-Vaile Duplex Boiler Feed Pump—Yoke Box Pattern.

Size, 6 x 4 x 6. Fig. No. 130.

# Smith-Vaile Boiler Feed Pumps.

Duplex Pattern. Yoke Box Style.

The attention of purchasers who prefer a Duplex Pump for boiler feeding is directed to Figure No. 130, on the opposite page. For a number of years we constructed the "Turret" style of water box for Duplex Pumps, but have adopted the yoke box pattern for the reason that the suction valves can be located in separate chambers and the discharge valves immediately beneath the air dome, thus giving access to all valves without disturbing any pipe connections.

Our Boiler Feed Pumps are provided with removable water cylinders and adjustable packed water plungers, giving compensation for wear.

At small additional cost we provide brass-lined water cylinders, brass piston rods and plungers. Water valves are of India rubber, composition rubber, or brass, as the service requires.

We are also prepared to equip these pumps with brass ball valves suitable for handling thick liquids and for filter press work.

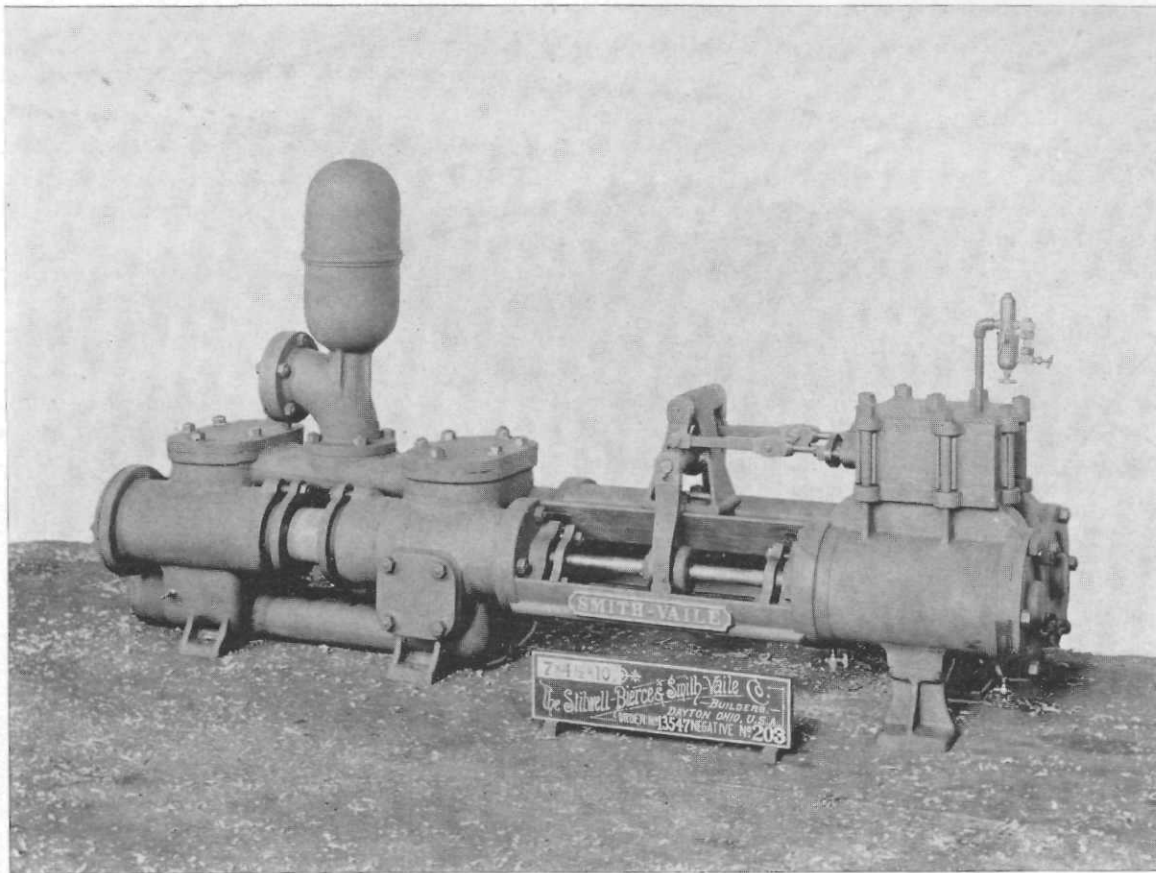
Internally packed pumps of this type are suitable for 125 pounds working pressure, and are amply strong for 175 pounds; but experience indicates that the outside packed plunger type is better adapted for a continuous working pressure exceeding 125 pounds per square inch.

In determining the proper size of Boiler Feed Pumps bear in mind that slow speed is an essential factor for the best results. Thirty pounds of water per hour per horse power is the usual basis of estimate.

*Sight Feed Lubricator is furnished with each pump.*

Diameter of Steam Cylinders	Diameter of Water Cylinders	Stroke	Gallons per Revolution	Steam Pipe	Exhaust Pipe	Suction Pipe	Discharge Pipe	Telegraphic Code
3 in.	2 in.	4 in.	.2	$\frac{1}{4}$ in.	$\frac{3}{4}$ in.	1½ in.	1 in.	Malluck
4½ in.	3 in.	4 in.	.48	$\frac{1}{2}$ in.	1 in.	2 in.	1½ in.	Mallude
5½ in.	3½ in.	5 in.	.8	$\frac{3}{4}$ in.	1½ in.	2½ in.	2 in.	Malamit
6 in.	4 in.	6 in.	1.32	1 in.	1½ in.	3 in.	2 in.	Malamarsh
7 in.	4 in.	10 in.	2.17	1½ in.	2 in.	4 in.	3 in.	Malameet
7 in.	4½ in.	10 in.	2.76	1¾ in.	2 in.	4 in.	3 in.	Malaput
7 in.	5 in.	10 in.	3.4	1¾ in.	2 in.	4 in.	3 in.	Malaqueer
8 in.	5 in.	10 in.	3.4	1¾ in.	2 in.	4 in.	3 in.	Malacite
8 in.	6 in.	10 in.	4.88	2 in.	2 in.	5 in.	4 in.	Maladance
10 in.	6 in.	12 in.	5.84	2 in.	2½ in.	5 in.	4 in.	Malanate
12 in.	7 in.	12 in.	7.9	2½ in.	3 in.	6 in.	5 in.	Malaram
12 in.	8 in.	12 in.	10.4	2½ in.	3 in.	6 in.	5 in.	Malareal
14 in.	8 in.	12 in.	10.4	2½ in.	3 in.	6 in.	5 in.	Malarod
14 in.	9 in.	12 in.	13.2	2½ in.	3 in.	7 in.	6 in.	Malaria





Smith-Vaile Duplex Outside Packed Feed Pump.

Center Packed Style. Fig. No. 5.

# Smith-Vaile Duplex Outside Packed Feed Pumps.

Center Packed Style.

For pressures from 125 pounds to 300 pounds per square inch, or where the water is gritty, or if an outside packed pump is desired on account of accessibility of packing glands, we recommend the pump exhibited on the opposite page.

At additional cost we will provide bronze plungers, brass piston rods, and brass-lined stuffing boxes and glands.

These pumps may be equipped with brass ball valves for handling thick liquids, as tar, wet cement, graphite, syrups, wax, etc.

Water plungers are made of special grade of iron, cast on end, and turned true. The pump is especially designed for accessibility. The water valves will be furnished of India rubber, composition rubber, or brass, as desired.

In determining the proper size of Boiler Feed Pumps it should be remembered that slow speed is desirable, and that thirty pounds of water per hour per horse power is the usual basis of estimate.

The cost of this style of pump is somewhat greater than that of the inside packed. The service demanded, however, is usually of a severe character, consequently the material entering into their construction, strength of casting, workmanship, etc., must receive special attention, and no expense be spared that will add to efficiency and durability.

Diameter of Steam Cylinders	Diameter of Water Plungers	Stroke	Gallons per Revolution	Steam Pipe	Exhaust Pipe	Suction Pipe	Discharge Pipe	Telegraphic Code
6 in.	3 in.	6 in.	.724	1 in.	$\frac{1}{2}$ in.	3 in.	2 in.	Malacoop
6 in.	4 in.	6 in.	1.32	1 in.	$1\frac{1}{2}$ in.	3 in.	2 in.	Malacorn
6 in.	$4\frac{1}{2}$ in.	6 in.	1.65	1 in.	$1\frac{1}{2}$ in.	4 in.	3 in.	Malahot
7 in.	4 in.	10 in.	2.17	$1\frac{1}{2}$ in.	2 in.	4 in.	3 in.	Malahy
7 in.	$4\frac{1}{2}$ in.	10 in.	2.76	1 $\frac{1}{2}$ in.	2 in.	4 in.	3 in.	Malajack
7 in.	5 in.	10 in.	3.4	$1\frac{1}{2}$ in.	2 in.	4 in.	3 in.	Malakard
8 in.	5 in.	10 in.	3.4	$1\frac{1}{2}$ in.	2 in.	4 in.	3 in.	Malstick
8 in.	6 in.	10 in.	4.88	$1\frac{1}{2}$ in.	2 in.	5 in.	4 in.	Malstine
10 in.	5 in.	12 in.	4.08	2 in.	$2\frac{1}{2}$ in.	4 in.	3 in.	Maltare
10 in.	6 in.	12 in.	5.84	2 in.	$2\frac{1}{2}$ in.	5 in.	4 in.	Maltin
12 in.	7 in.	12 in.	7.9	2 $\frac{1}{2}$ in.	3 in.	6 in.	5 in.	Maltiss
12 in.	8 in.	12 in.	10.4	2 $\frac{1}{2}$ in.	3 in.	6 in.	5 in.	Maltiver
14 in.	8 in.	12 in.	10.4	2 $\frac{1}{2}$ in.	3 in.	6 in.	5 in.	Maltoback
14 in.	9 in.	12 in.	13.2	2 $\frac{1}{2}$ in.	3 in.	7 in.	6 in.	Maltock