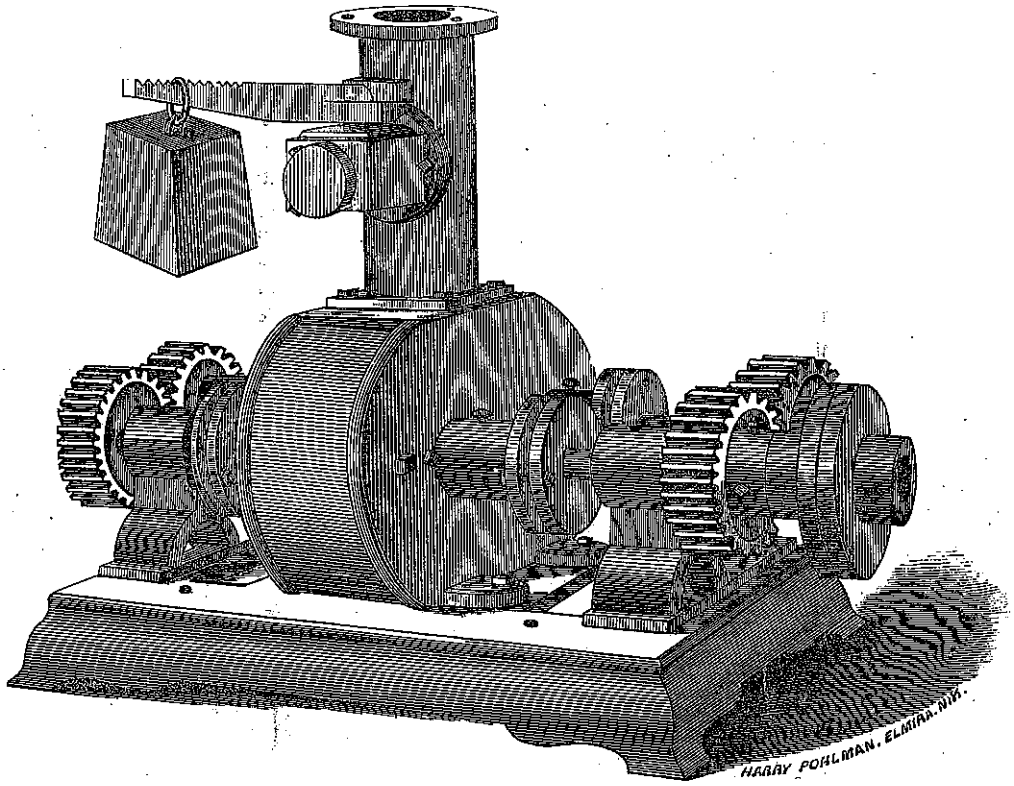

HOLLY'S ROTARY FORCE PUMP,

— AND —

ROTARY STEAM ENGINE.

R. BICKFORD, AGENT, 5 CITY EXCHANGE, CONGRESS SQUARE, BOSTON.

The Holly Force Pump has now been extensively introduced into New England, and in no case has it failed to give entire satisfaction to the purchaser. It is warranted to throw more water with a given amount of power, than any other pump in use, — is not liable to get out of order, on account of the simplicity of its construction, — is very durable, and is undoubtedly the **Best Force Pump** ever Invented. It is admirably adapted to pumping fresh or salt water, Liquors of any kind, Beer, Molasses, Oil, Leys, or in fact any kind of liquid. These Pumps are made of a Bronze Composition for pumping liquids that corrode iron, and are of all sizes, — capable of throwing from TWENTY GALLONS TO THREE THOUSAND GALLONS per minute.

Our Pumping Engines, consisting of Holly's Rotary Pumps and Rotary Engines, for **Mines, Quarries, Docks, Steamships or Sailing Vessels, Railroad Stations, Sunken Vessels, Locomotives, etc., etc.** Four of our largest Pumping Engines have been employed the past season on Lake Erie, in pumping out leaky and sunken ships, and have *far excelled everything of the kind heretofore known in that region.* [The right to use these Pumping Engines on the Chain of the Great Lakes, has just been sold at a high figure.]

In places where a large quantity of water or other liquid must be raised every day, as in **Bleacheries, Distilleries, Breweries, Dye Houses, Paper Mills, Tanneries,** and the like, this pump is valuable on account of its durability. We have had these pumps running constantly, day and night, since they were first made (three years ago) without getting out of order. The reason for this is obvious — there are no valves and no packing in these pumps to wear out, and they do not require to be driven at a high speed.

The Holly Pumps are particularly valuable as **Stationary Fire Engines, for Steamboats, Mills, and large Factories,** where Power can be applied. They can be furnished to throw one, two, three or four large streams at a time, with great force. In Factories where steam power is used, these Fire Pumps can be attached to the shafting from the main engine, or can be run by one of Holly's Rotary Donkey Engines, such as is used in his Pumping Engines and Steam Fire Engine. (See below.) It is well known that an immense amount of factory property is saved from fire every year by the use of these Fire Pumps, and much more might be saved if they were more universally put into manufactories of all kinds. Insurance Companies know the value *to them* of such agencies for the extinguishment of fire, and are always willing to insure property, protected by a powerful **Fire Pump,** at lower rates, so that the cost of a Pump can often be saved in a single year, to say nothing of the additional feeling of security against fire, which a mill-owner must have, with a Force Pump at his command, that can be started at a moment's warning.

Various sizes of these pumps are made, worth from $12 00 to $75 00, suitable for fire engines for dwelling houses, barns, shops, &c., situated at a distance from any public fire engine. Most fires are discovered in season to be extinguished by a few buckets of water, well directed, as they might be through a hose-pipe, by one of these pumps. With one of the $75 00 pumps, a stream of water, five-eighths of an inch in diameter, has been thrown, by four men, through 350 feet of hose, to the height of fifty or sixty feet. One of the small size can be worked by a boy. Even these smallest pumps have already been the means of saving several valuable houses from fire.

PUMPS DRIVEN BY HORSE POWER.

For all places where horse-power must be used for raising a large amount of water, as at Railroad Water Stations, Tanks for Supplying Water Carts, &c., this Pump has no equal, because its motion is rotary, and therefore steady, and it has the least possible friction; consequently almost the whole power of the horse can be employed in raising water, whereas with many pumps it takes nearly the whole strength of a horse, owing to the complexity of the machinery necessary to obtain the piston motion, to work the pump without raising any water. With this pump you can belt directly from the driving wheel. See testimonials below.

HOLLY'S STEAM FIRE ENGINE.

The Manufacturers have just completed (Jan, 1858) their second Steam Fire Engine, (in which Holly's Rotary Pump is used), built to order for the city of Chicago. At a trial of its capacity, Jan. 26th, the following wonderful results were obtained, viz.; In eleven minutes from applying the match, there were ten pounds of steam in the boiler, with which two streams were thrown fifty-seven feet, through one and an eighth and one and a half inch nozzles. In fifteen minutes from applying the match there were twenty pounds of steam, in sixteen minutes thirty pounds, in seventeen minutes forty pounds, and in eighteen minutes fifty pounds, all the time throwing two or three streams. With fifty pounds of steam a one and a half inch stream was thrown two hundred and forty-four (244) feet, and a two inch stream was thrown two hundred and eight (208) feet. These distances cannot be beaten by any machine in the world. When in use at fires, thirty or forty pounds of steam to the square inch is all that is necessary to drive the engine. Of course, with so light a pressure, there would be no danger of exploding the boiler. Fifty pounds forced four one and an eighth inch streams at a time one hundred and forty feet. A one and a half inch stream is just equal to four three-quarter inch streams, (the size ordinarily thrown by a common fire engine), and a two inch stream is equal to a little over seven such streams.

This machine is driven by one of Holly's Patent Elliptical Rotary Steam Engines, and the small amount of steam required, as stated above, to produce these results, shows conclusively the great economy of this new Rotary Engine. Some Steam Fire Engines that have been built have required one hundred and forty pounds of steam to drive them.

Below is given a table showing the size of delivery pipe, number of revolutions, and quantity of water that can be raised per minute by the various sizes of Power Pumps.

	Delivery Pipe.	No. of Revolutions.	Number of Gallons per Minute.
No. 1,	1 inch.	150 to 350	20 to 50
" 2,	2½ "	150 " 350	100 " 150
" 3,	3½ "	150 " 300	150 " 300
" 4,	4 "	125 " 275	250 " 400
" 5,	5 "	125 " 250	350 " 800
" 6,	6½ "	100 " 225	600 " 1000
" 7,	8 "	80 " 175	900 " 1500
" 7 & 8 combined	10 × 14	75 " 150	1500 " 3000

The revolutions can be increased beyond those mentioned above without injury to the pumps, for instance No. 3 and No. 4 have both been run over 400 revolutions. We have never used larger than No. 5 for Stationary Fire Engines.

TESTIMONIALS.

MEDWAY, January 25, 1858.

ROBERT BICKFORD, ESQ.: *Dear Sir* — We hereby certify that the "Holly Pump," which we purchased of you in July last, has met our entire expectations and your recommendation. The simplicity of construction, the certainty of action, and its superior power causes the pump to stand higher in our judgment than any other kind of pump known to us, and we would commend it to all who are desirous of obtaining the pump which can do the greatest execution with the least power, least repair, with the greatest security, and with the least cost of any pump known to us. Very truly, yours,

DANIELS & HURD.

NORFOLK MILLS, ROXBURY, January 30, 1858.

ROBERT BICKFORD, ESQ.: *Dear Sir* — The Holly's Patent Rotary Pump, purchased of you in September last, by the New England Worsted Co., we have had in constant use since it was set up, and find the operation of it far exceeds our expectations. It raises a larger quantity of water with less power than any pump I have ever seen, and requires but little attention. It has been in use four months, and shows no evidence of wear. I most cheerfully recommend it to every one requiring a large quantity of water to be raised.

Yours, truly, JNO. JOHNSON, Agent.

SENECA FALLS, Sept. 15th, 1855.

We have had in use in our Distillery, for the past seven or eight months, one of *Holly's Patent Rotary Pumps*, which has been in almost constant use, day and night, during that time. We have no hesitation in saying, that we consider it very much superior to any Pump we have ever used, or with which we are acquainted, in simplicity of construction, durability and economy in power required for raising water, and not being liable to get out of order.

The Pump we are now using, although used longer without repairs than any other, (and we have had several others,) shows no evidence of wear.

We would most cheerfully recommend them to every one requiring a large quantity of water to be raised.

JOHN SHOEMAKER & CO.

OSWEGO, N. Y., June 15, 1857.

WM. BROWN, ESQ.: *Dear Sir* — In answer to your wish to know the number of "Holly's Rotary Pumps" we have in use, and how they work, we would state, that we have at the present time four of the No. 5, and one of the No. 7, which are in use night and day, and they all work well and give us no trouble, throwing an immense amount of water. In fact, for execution, in case of fire, we know of no Pump equal to it, either for strength or the amount of water they are capable of throwing. We intend to put in another No. 7 in the course of this summer. The No. 5's have been in constant use for about two years. Respectfully, T. KINGSFORD & SON,

Oswego Starch Factory, Oswego, N. Y.

BATTLE ISLAND. N. Y., June 5, 1857.

MR. WM. BROWN: *Sir* — The Pumps we bought of you are now in full operation. We have in use in the "Oswego River Starch Factory," (Fulton), four of the No. 5 and five of the No. 3 "Holly's Patent Eliptical Rotary" Power Pumps, and can without hesitation recommend them as the best in use. With two of the No. 5, we draw and force the water through a four and one-half inch pipe, sixty-five feet perpendicular, and they do the work with perfect ease.

Yours truly, H. V. DURYEA.

WATERLOO, Sept. 15, 1855

MESSRS. SILSBY, MYNDERSE & CO.: *Gents* — I have been a close observer of Holly's Patent Eliptical Rotary Pump since it came into use, and for durability, efficiency, simplicity of construction, economy of power, the quietness with which it runs, and the small space it occupies, I consider it much superior to any other Pump I have ever seen, and would most cheerfully recommend them to all persons in want of Power Pumps. JOSEPH WRIGHT.

CHICAGO, August 14, 1856.

A. D. BAKER: *Dear Sir* — I am happy to say the No. 2 Power Pump, (Holly's Patent Eliptical Rotary), we bought of you this Spring, gives entire satisfaction. It is drawing water three hundred and fifty feet, fifteen feet lift, and forcing it forty feet, and discharging one hundred gallons per minute. I have used and seen in use many different kinds of Pumps, but I can freely say that I have not seen any Pump that will compare with it in any respect. It has been running constantly since it was put up, and has not had a particle of repairs of any kind; neither does it show any signs of wear.

Yours truly, JAMES PATRICK, M. M.

We would refer for further information to the following parties: —

Messrs. ALLEN & ENDICOTT, North Grove St., Boston.
" A. L. BROOKS & Co., Lowell.
" MANN & MARSHALL, Leicester, Mass.
" BATES, HYDE & Co., Bridgewater, Mass.
BOOTH BOTTOMLY, ESQ., Leicester.
Capt. H. A. SNOW, Somerville Bleachery.
Messrs. J. WASHBURN & Co., Worcester, Mass.
W. S. DENNY, ESQ., Worcester, Mass.
THOMAS NEWCOMB & Co., Kingston, Mass.
SAMUEL BATCHELDER, ESQ., City Exchange, Boston.
W. F. DRAPER, ESQ., Andover, Mass.
LACONIA CORPORATION, Biddeford, Maine.
MANCHESTER PRINT WORKS, Manchester, N. H.
BOSTON GAS LIGHT Co., Boston, Mass.
Messrs. NOURSE, MASON & Co., Boston and Groton.

And hundreds of others whose testimonials, all of the strongest character, are in our possession.