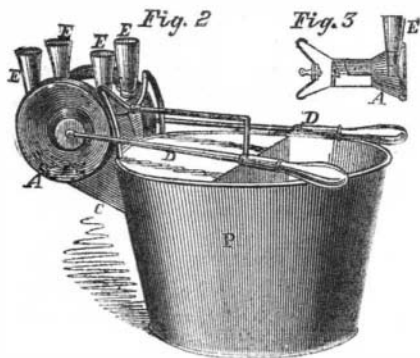


IMPROVED COW-MILKER.

A natural, quick and easy method of milking cows by mechanism deserves general attention. Various contrivances have been devised for such purposes, but the inventor of the milker here illustrated believes that it imitates the natural action of the calf in a very perfect manner, and that it is free from objections that have been urged against other devices. The accompanying description of the engravings will convey clear ideas of the improvement.

The invention consists of two distinct single-acting disk pumps, A—one at each side—connected together by a semi-cylindrical support, and the whole is secured to the socket, C, of the milk-pail, P, Fig. 2. Each pump has a head of vulcanized india-rubber, which is moved back and forth like a bellows by the handles, D. The pressure upon one pump is counterbalanced by that upon the other, so that the pail remains undisturbed during the operation. Each pump has two metallic teat-cups, E E, which are connected to elastic caps on knuckle joints, so as to be pliable and easily varied to fit the distances apart of teats in different cows. The teat-cups are peculiar, and are so formed inside as to fit the end of any teat, large or small, and are therefore suitable for different cows without requiring a change, which is a very important feature. As the rubber heads, A, of the pumps are drawn out by the handles, D, a vacuum is produced in the teat-cup, the milk then flows down into the pump, and as the india-rubber heads return to position, the milk is forced through the valves, Fig. 3, into the pail. The pressure then ceases upon the teat, as in hand-milking, and the milk flows down from the udder into the teat ready for the next pressure. This arrangement also enables the operator to disconnect the machine with ease at any time, and the application of the machine for milking is effected with the same facility. The fulcrums of the levers are so arranged that if the pail is held high or low, they will adjust themselves to suit the operator. The lever handles, C, can be put on and taken off in an instant, and the disk rubber heads, A, of the pumps can be readily taken off their sockets and easily stretched on again. The pumps, therefore, are easy of access for



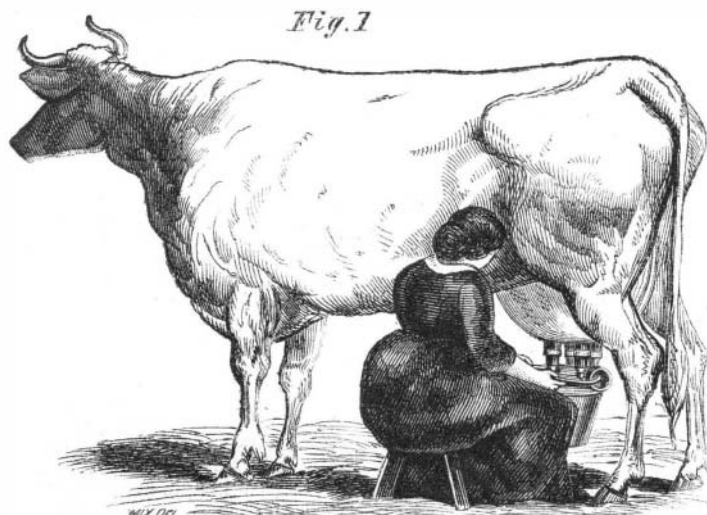
washing inside. One-half of the pail is covered, and to this a handle is secured for carrying it. The whole forms a compact, neat and durable milking machine, and, with pail, only weighs 6½ pounds. It has been used daily for eight weeks, and the inventor states it does not injure the cow in the least, and they stand quietly during the process of milking as if pleased with the operation. The best time ever made with the machine was 12 quarts of milk in 1½ minutes, 3 minutes being sufficient time and with much less labor than by hand. Machines will soon be in the market, and dairy-men can have a chance to prove the merit of this new cow-milker. A milking machine of simple construction, and capable of being readily applied, is certainly a desideratum for dairies; but to be practicable, it must be agreeable in its action to the cows themselves. This one is stated to be so, and it therefore deserves a fair trial by all who are interested.

Two patents have been issued for this machine, on the 22d and 29th of May last. More information may be obtained by addressing the patentee, L. O. Colvin, of Cincinnati, N. Y.

MARINE ENGINES.

Our transatlantic cotemporary, the London *Engineer*, recently published the following sensible remarks:—We can remember when it was considered a sure sign of good stokers and engineers if steam was always blowing-off at the valves, and the funnel vomiting forth huge volumes of "reek," black as Erebus, poisoning the atmosphere, and leaving a huge track of cloud for miles behind. If we were to take this as a test of the men being always at work, i. e., "poking and stoking," there could be little doubt but they were so.

It was once considered a sure sign of a ship being a good sailer, if she pushed along in front of her a huge mountain of water, foaming and surging like the sea in a hurricane. This was called "carrying a bone in her teeth;" and most truly it was a bone, with "very little



COLVIN'S IMPROVED COW-MILKER.

meat on it," as far as the profit of her owner went, and considering his pocket instead of his stomach.

Our engineers and stokers now, however, under the present system, and assisted by a little of that valuable though rather scarce commodity, common sense, are beginning to find that huge volumes of smoke pouring from the funnel, and clouds of steam flying from the valves, mean coal; and that the abuse of both in such a manner is not so satisfactory as the proper use of them—one in the furnaces, to make steam; and the other in the cylinders, to propel the ship.

Some twenty-five or thirty years since, a young and then comparatively unknown gentleman, by the use of a little of that before-mentioned commodity, common-sense, carried out practically, by the aid of numerous and long-continued experiments, proved that the "bone in the teeth" was all wrong, and that, in fact, our ships had been steaming and sailing "wrong end first." This for a long time was not believed; but our far-seeing cousins on the other side of the Atlantic soon found out the truth of his researches, and the advantages arising from their practical application, by adopting the principle of construction he advocated; and in no case has its success and truth been more fully proved than in the celebrated yacht *America*, which "took the shine" out of our most famous clippers which were built on the old plan; and it is worthy of remark that the only vessel at all able to compete with her was a small vessel half her size, constructed on the same plan, by the originator of it; and it is now evident that, from the adoption of this principle, our steamers have risen in speed from 10, to 12, 15, 18, and are now expected to do 20 miles an hour!

We find that equal progress has been made in the construction of engines and boilers, and that such results are being daily and regularly attained in the working of engines in the merchant service as show that the same and in some cases a greater amount of work can be done by the use of half the quantity of coal. For instance, we find ships of 1,600 tons displacement, with engines giving a power of 1,000 indicated horses, making regular voyages of 3,000 miles, at a speed of 10 to 11 knots, with the consumption of 300 tons of coal; and that the regular working of these vessels is accomplished with the combustion of 3 lbs. of coal per indicated horsepower per hour.

THE GREAT RESERVOIR IN THE NEW YORK CENTRAL PARK.

From time to time we have kept our readers informed of the engineering works connected with the Central Park. We believe these details have been of general public interest, as certainly no other project of a like character can compare with this in point of extent and magnificence. In the center of this park is now located the receiving reservoir of the Croton Water-works, covering about 11 acres; this was a grand affair in its day, but it is a pigmy along side of its great successor, now in process of construction at the northern extremity of the park. The farmer who owns a hundred acres of land, and who has spent his lifetime in mowing and tilling it, if he has in addition only one or two wells upon it. 20 or 30 feet deep, may form some idea of the immense labor of excavating his whole farm to this depth. This process of digging one grand well for nearly a million people is now going on in this city, and the new reservoir will cover a space of about 106 acres. It is not formed, like other old ones, with straight rectangular sides, but its borders have a waving outline, giving it the appearance of a natural lake; and it is to be divided by an embankment, so as to allow the water of one half of the reservoir to be drawn off for purposes of repairs. It is also calculated to hold water sufficient to supply the inhabitants of the city for one month in case of any serious accident which would temporarily cut off the supply.

The taste which has directed the stupendous works of the Central Park is admirable. The rocks have been left in quite sufficient quantity to form an agreeable contrast with the extensive display of the works-of-art with which they will be surrounded; and, in all respects, this is an enterprise of which any city may well be proud. When the whole operations shall have been completed, and the trees shall have attained a size sufficient to shade the graveled walks, rambling beneath their branches and contemplating these beauties of nature in the heart of the city will be a source of the purest and highest enjoyment to the generations who will crowd in endless succession the streets of this busy metropolis.

THE FRUIT AND CROP PROSPECTS.—From all parts of this country the news is cheering with regard to the future grain and fruit crops. There has not been such a promise of peaches, apples and pears for several years past. The grain fields are luxuriant and will yield largely if not attacked with the midge. The *Milwaukee Sentinel* says of the north-west:—"In the memory of the oldest inhabitant, Wisconsin has never been blessed with so genial a season as the present Spring. It is the estimate of good judges that one-third more breadth of land has been sown to grain this Spring than any previous season. A good grass crop is already insured. The hopes of the farmers expand as they gaze upon their broad acres teeming with agricultural promise. The crop of last year was almost double that of 1858; and with a continuance of the present propitious weather, the crop of 1860 will show nearly an equal increase over that of 1859."

PEROXYD OF IRON FOR PURIFYING GAS.—In Denmark a native peroxyd of iron—a brown hydrated bog ore—is used in all the gas-works for purifying the gas. It is employed in the form of a coarse powder and is said to be superior to any other substance to remove all traces of sulphur from the gas. It would be well for some of our coal gas companies to try this substance, especially those which use the Pittsburgh or common Liverpool or Pictou coal.

LAC VARNISH FOR VINES.—Grape vines may be pruned at any period without danger from loss of bleeding, by simply covering the cut parts with varnish made by dissolving stick-lac in alcohol. The lac varnish soon dries, and forms an impenetrable coat to rain; it may also be applied with advantage in coating the wounds of young trees.