

## NEW INVENTIONS.

An improvement in curtain fixtures, patented by Mr. Geo. A. Crisson, of New York city, consists in an improved swinging curtain bracket formed of a plate provided with segmental transverse slot, into which a beveled stud of a slide loosely mounted on the guide rod of the window casing and suspended from suitable cords passes, this plate being pivoted at its upper end to this slide.

Mr. Louis K. Derby, of Philadelphia, Pa., has patented an improved beam compass. The invention consists of a T-shaped beam made in sections that are jointed and clamped together, and graduated in fractions of an inch, and having a vernier, which is attached to the sliding leg.

Messrs. Samuel J. Wright and Loftus L. Wright, of Mineral Point, Wis., have patented an improved flood-gate, constructed in such a manner that it will be opened automatically should the water rise above a fixed height, and that the gates, when opened, will offer no obstruction to the passage of float wood or other rubbish.

A convenient device for holding mail pouches or sacks in an open position has been patented by Mr. William J. Taylor, of New Albany, Ind.

Mr. Ottmar Spachmann, of New York city, has patented an improved barrel support, which is so constructed that the barrel can be pulled forward and inclined, so that all the liquid in it can be drawn conveniently, and at the same time this construction permits of placing the barrel upon the support or taking it from the same without any great exertion.

Mr. William F. Trippensee, of Clarence, N. Y., has patented an improved feeding attachment for fanning mills, which consists of a curved feed lever, a connecting rod hinged to the shoe operating connecting rod, a double-jointed coupling for connecting the rod and lever, a stud to fulcrum the lever, and a feed arm or point attached to the curved lever, whereby the feed lever will be vibrated to feed the grain by the up-and-down movement of the shoe operating connecting rod.

## Another Improvement in Trotting Time.

The fastest trotter in the world, Maud S., beat her previously "best time" by quarter of a second, at Pittsburg, Pa., July 13. She trotted the mile in 2:10½.

Following is the official record of the time by quarters:

First quarter.....	33	Three quarters.....	1:37¼
Half mile.....	1:05½	Full mile.....	2:10½

Maud S(tone) is seven years old. Her first famous record was made in Chicago last year, beating St. Julien's 2:13 by a second. Afterwards St. Julien made 2:11¼ at Hartford, and at the fall meeting at Chicago Maud S. beat that record by trotting a mile in 2:10¾. The third quarter-mile at Pittsburg was made in 31¾ seconds, or at a rate which, if maintained, would cover a mile in 2:07.

## NEW DOUBLE PLUNGER STEAM PUMP.

We give an engraving of a new double plunger steam pump for forcing water containing sand, mud, lime, or any impurities which are liable to cut the cylinder of piston pumps. For feeding boilers with hot water this type of pump is preferred by steamboat men, rolling mill and furnace engineers. In ordinary piston pumps the sand or dirt rubbing between the piston and cylinder will wear them. In the pump illustrated the space between the plunger and cylinder allows the free passage of destructive material.

The only wearing point is in the stuffing box, and this can be easily repacked. The plungers are connected by two rods which pass outside the cylinders. It will be seen that it is impossible for any water to pass the plungers from one end of the pump to the other.

The steam valve gear is a new and simple device. The plunger next to steam cylinder has a projecting roller, which passes between the flanges of the cam lever. When the plunger nears the limit of its stroke, the roller passes between the curved flanges near the end of the cam lever, causing it to tilt and shift the auxiliary steam valve, reversing the motion of the main piston and plungers. As the pump starts on the return stroke the cam lever is thrown back into its first position, which brings the auxiliary on its center and closes the ports communicating with the chest piston. By this arrangement there is no chance for steam to blow through on account of the chest piston becoming worn and leaky.

These pumps are also made for pumping out mines, and they are at present working in mines, pumping from a depth of 400 feet. With plungers and stuffing boxes made of gun metal they will resist the action of bad mine water. The water passages are nearly equal to the area of plunger. The valves can be easily taken out.

These pumps are manufactured by Dean Brothers' Steam Pump Works, Indianapolis, Ind.

## NOVEL FRUIT PICKER.

The engraving shows a novel fruit picker, patented by Mr. John Sager, and being introduced by Messrs. John Sager & Co., of Thamesville, Ontario, Canada. The invention consists of a long canvas tube attached to a ring at the end of a long handle, A, and two semi circular jaws, D, mounted over the mouth of the canvas tube, and operated by a rod, B, extending down the handle and provided with a thumb-piece.

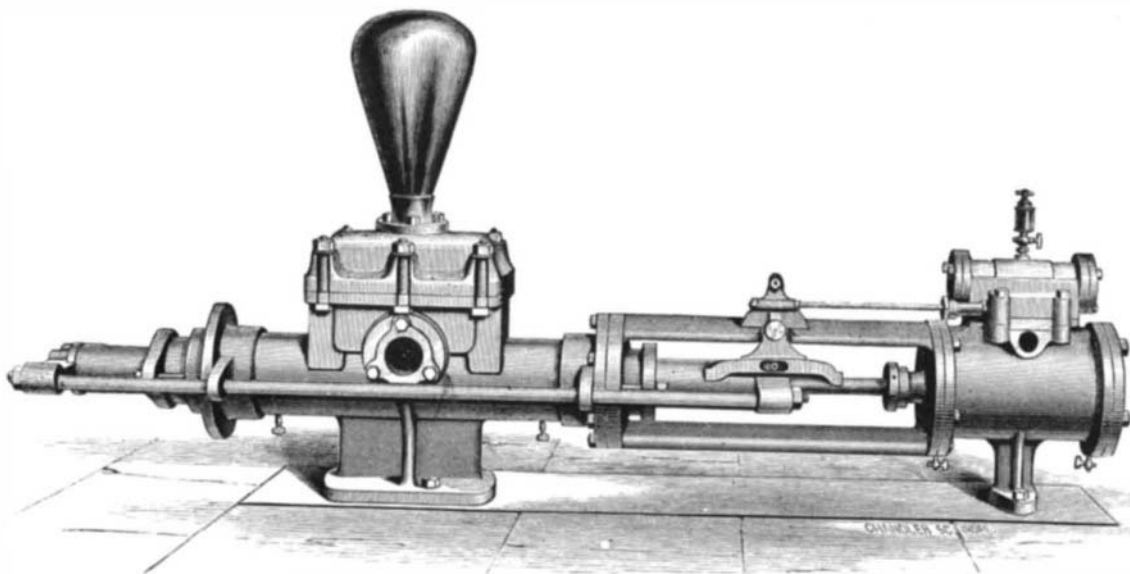


## SAGER'S FRUIT PICKER.

The details of construction can be seen in Fig. 2. The manner of using the implement is shown in Fig. 1. The open end of the canvas tube is placed around the fruit, the semicircular jaws are closed upon the stem by pulling down the thumb-piece, and the fruit is conducted by the canvas tube to the ground or to some suitable receptacle without bruising or injury.

## Prof. Winchell on Evolution.

In a recent lecture before the Summer School of Christian Philosophy, at Greenwood Lake, Prof. Alexander Winchell, of the University of Michigan, discussed the speculative consequences of evolution. Speaking of the predicament of those who stake all religious truth on an allegation of the untruth of evolution, in case the method of nature is finally



## DEAN BROTHERS' DOUBLE PLUNGER STEAM PUMP.

found to be a method of evolution, he said: "At this moment the well-nigh unanimous verdict of the scientific world sustains the doctrine of evolution. This verdict is one of the criteria of truth. Repudiation of it is a hazard which only rashness and ignorance will incur. To stake all religious belief on such repudiation is to throw all of man's spiritual interests upon the hazard of a die. As I understand it, the recognition of a method of evolution in nature's operations does not involve consequences deleterious to a spiritual faith, but is a means, on the contrary, for approaching into closer relations with the immaterial forces of the Divine government of the world. We must first establish a clear conception of evolution. Multitudes of men imagine evolution and Darwinism to be synonymous terms, if they do not even believe them synonymous with material-

ism, as is so often charged. I conceive the evolution which I discover in nature to be the progressive differentiation of an identical existence. It proceeds from the more general to the more special, from the homogeneous to the heterogeneous. It means that new forms of existence are only older existences transformed and not new beginnings of existence. Every department of the cosmos has had a history, and every present is the outcome of a past. It takes no cognizance of special originations, but only of the history which follows. Evolution, I say, knows nothing of creation. This is not because it contravenes creation, but simply because creation is an event which does not come within its purview. Evolution is the name of a mode of continuance, not of a mode of beginning. It can neither affirm nor deny any mode of origin."

## Food for Infants.

The French Commissioners on the Hygiene of Infancy, in awarding the prize in a competition of essayists, report that the conclusions generally arrived at lead to the following recommendations: No child should be reared on artificial food when the mother can suckle it, but such food is preferable to placing the child with a wet nurse, poorly remunerated, and living at her own home. For successfully bringing up an infant by hand, the best milk is that of a cow that has recently calved, or similarly of a goat, to which should be added during the first week a half part of water, and subsequently a fourth or less, according to the digestive powers of the child. Glass or earthenware alone should be used; no vulcanized India-rubber mouthpieces or vessels containing lead ought to be employed.

## Growth of Telegraph Monopoly.

The rise and progress of the Western Union Telegraph Company is thus set forth in a prospectus issued by a rival company:

Beginning as the House Printing Telegraph Company, with a capital of \$360,000. On the first of January, 1863, by stock bonuses, and the purchases of other lines, its capital was increased to \$3,000,000. On the 2d of March, 1863, this was watered by exactly doubling its capital and presenting the additional shares to stockholders, thus raising it to \$6,000,000. May 28, 1864, it was further increased, by purchase and extension of lines, \$5,000,000, making its capital \$11,000,000, and at the same time the whole of its stock was again doubled by an issue of 100 per cent bonus to its stockholders, making its capital \$22,000,000. From this period up to January, 1868, it took in the United States Telegraph Company at \$3,333,333, and absorbed the American Telegraph Company, with a capital of only \$2,000,000, taking it in at \$11,818,800, and by bonuses and extensions of lines, etc., its capital was increased to \$41,008,800; and recently it absorbed the Atlantic and Pacific Telegraph Company, whose lines cost not more than \$2,500,000, and the American Union Telegraph Company, with its lines, which cost little more than \$2,000,000, taking them in at \$25,000,000, and at the same time issuing a stock bonus of \$15,000,000, thus bringing its capital up to \$80,000,000. In addition to all this it sank \$3,000,000 in the abandonment of the Russian Telegraph, and nearly as

much more by the abandonment of the California lines and contracts for lines parallel to the Pacific Railroad, and it also borrowed \$5,000,000 for the purchase of real estate in New York, and pays \$75,000 per annum rental for the California State Telegraph Company; \$85,000 per annum rental for the Illinois State Telegraph Company; purchased a majority of the Pacific and Atlantic, Southern Atlantic, and Franklin Telegraph companies, and guarantee perpetual dividends on the minority of the stock; and recently leased the Northwestern Telegraph Company, and pay a large rental on a stock and bonded capital of nearly \$4,000,000, besides rentals of other leased lines, making its capital really about \$100,000,000. The increase in the volume of its

business and the amount of its earnings have kept pace with its increase of capital, until now its traffic is over 30,000,000 of messages, gross receipts over \$15,000,000, and net earnings over \$6,000,000 per annum; and all this with no improvement in method and but little improvement in appliances over the first line constructed forty years ago; moreover, this gigantic monopoly, touching and influencing every branch of commerce and industry, is controlled by one man, whose sole object is self-aggrandizement.

**DISTINGUISHING SPURIOUS HONEY.**—A solution of 20 parts of honey in 60 parts of water mixed with alcohol gives a heavy white precipitate of dextrine if glucose has been added, while genuine honey, if treated in the same manner, merely becomes milky.