

their motion, you must know that they move in such slow measure, that they cannot wear, and the lesse, for that they are not forced by any poise of waight. It is reported in the preface of *Euclides Elements*, by John Dee, that he and Hieronimus Cardanus saw an instrument of perpetuall motion, which was solde for 20 talents of gold, and after presented to Charles the fift, Emperour: wherein was one wheele of such invisible motion, that in 70 yeeres onely his owne period should be finished. Such slow motion cannot wear the wheels. And to the end rust may not cause decay, every Engine belonging to this instrument, is double guilded with fine gold, which preserveth from rust and corruption.

PHIL.—This wonderful demonstration of Artificiall motion, imitating the motion Celestiall, about the fixed earth, doth more prevaill with me to approve your reasons before aledged, concerning the moving of the Heavens, and the stability of the Earth, then can Copernicus assertions, which concerne the motion of the Earth. I have heard and read of manie strange motions artificiall, as were the inventions of Boetius.

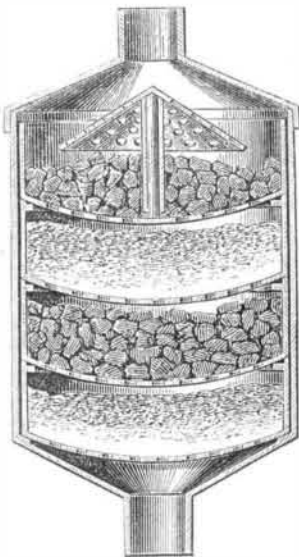
After enumerating these and others, Phil. concludes:

These were ingenious inventions, but none of them are comparable to this perpetuall motion here described, which time by triall in ages to come, will much commend.

THEO.—These great misteries were attained by spending more oyle than wine: by taking more paines than following pleasure.

IMPROVED CISTERN FILTER.

This filter is the invention of G. W. Lampson, of Waterloo,

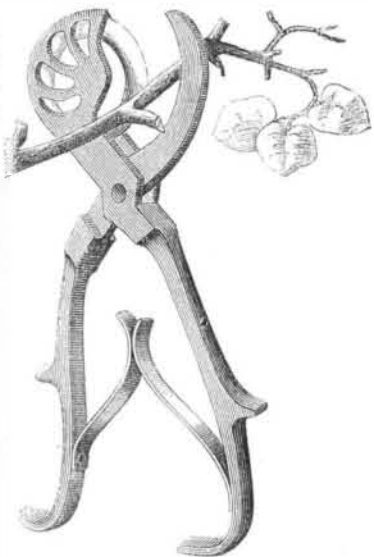


N. Y. It consists in a series of pans arranged one above the other, in the manner shown, in a suitable receptacle. Charcoal and gravel may be used as filtering material, or any other approved material found convenient may be substituted. The water entering the filter falls upon a perforated cone, which distributes it over the filtering material in the upper pan. It then passes through the substances placed in the lower pans, and is drawn off free from impurities at the bottom.

PRUNING SHEARS.

It is well known that a curved edge, or one which cuts obliquely across the grain of wood, is more effective than a straight edge, cutting square across the grain. This principle has long been recognized in the construction of turning tools, carving tools, axes, etc.; and even in the use of tools with straight edges, the apprentice soon learns unconsciously to give the edge a slight inclination, finding that in that position the cutting is accomplished with much greater ease.

In the use of tools constructed on the shears principle, where the blades are short, and the substance to be cut is thick, the latter is liable to be thrust out from between the blades, and thus defeat the attempt at cutting it. Especially has this been the case in the use of shears for pruning trees, vines, and hedges where the branches vary greatly in size. The invention shown in the annexed engraving shows a form of pruning shears, wherein the principle of inclined cutting edges is combined with a curved blade, which prevents the branch from slipping from between the blades, and therefore renders the tool much more effective than those with straight blades. The branch is also liable to force its way between the blades and strain the pivot. In this device this is prevented by a blunt blade, which construction gives two points of support for the branch instead of one, as in the old form of shears.



This tool is the invention of George H. Clinton and D. H. Harris, of New Haven, Conn., and has been patented.

American Needles.

A new demand for articles of American industry has, says the *Bureau*, just come to light in the shape of an order from England, to the agent of one of the largest manufacturers in this country, for 50,000 American needles to be sent to Birmingham, England, which was for years the only city in the

world in which the manufacture of needles and fish-hooks in a large scale was carried on. For something more than a year past the same concern has been shipping fish-hooks to England in considerable quantities. The reason for this order is that we are making good needles cheaper than they can be made in the Old World, on account of the improved machinery in use in our factories. This exchange of business seems very strange at first, but we will soon become accustomed to it and expect it. A large number of articles are now made here for shipment to England and the Continent, which a few years ago were not manufactured in this country at all; and many articles are now exported, which we have procured abroad for many years, and which are now made much cheaper in this country than any other.

The Broken Atlantic Cables.

The recent failure of the two British cables leaves both continents at the mercy of the single French submarine telegraph, and considering that damage to the latter may occur at any time, it is of the utmost importance to the commercial world that the repairs be made at once.

What the trouble is, with the two cables that have ceased working, is difficult to apprehend, but that some under-current has moved the cables upon the edge of a cliff or rocky point, till the coatings are abraded and insulation destroyed, is not improbable. The *Robert Lowe* (British steamer) is at St. John's, Newfoundland, on a grappling and repairing expedition, and it is to be hoped that we may soon hear that both cables are perfect and communication restored. The survey of the bed of the Atlantic ocean is now so complete, that, in any future cable there will be less difficulty in placing portions of wire rope, heavier and better protected, in such parts as the difficult places at the bottom of the sea may make necessary.

The damage is known to have occurred at about 65 miles from Heart's Content, Newfoundland. The grappling for the cables is simple enough, but the rough weather, usual at this time of year, off Cape Race, may delay the completion of the work until Spring.

Correspondence.

The Editors are not responsible for the opinions expressed by their Correspondents.

A Defect in the Patent Law of 1870.

MESSRS. EDITORS:—Allow me to call your attention, and that of your readers, to the closing paragraph of section 33 of the new patent law. The whole section reads as follows:

SEC. 33. *And be it further enacted*, That patents may be granted and issued or reissued to the assignee of the inventor or discoverer, the assignment thereof being first entered of record in the Patent Office; but in such case the application for the patent shall be made and the specification sworn to by the inventor or discoverer; and, also, if he be living, in case of an application for reissue.

This closing paragraph enacts that all applications for reissues shall be sworn to by the original inventor, if he be living.

This is not only a great hardship on assignees, but will probably prove disastrous to inventors, if it be not speedily abrogated. The hardship of it upon assignees is well illustrated by a case which has lately come up in my practice as an attorney. A manufacturing company paid some \$30,000 to an inventor, for his patent of an improvement in the manufacture of an article which is one of their staples. He squandered the money, and then attempted to make precisely the thing he had before sold to the company, who, of course, resorted to legal proceedings and stopped him. This naturally left bad blood between them.

Now other parties, having discovered an oversight in this patent, have procured patents based thereon, and are proceeding to claim as their own that which plainly belongs to the company. To stop these pirates, it is first necessary to reissue the company's patent; but, under the present law, to do this, they must procure the oath of the original inventor, who would about as soon part with his right hand as thus oblige the company. It is useless to talk about bills in equity; he would soon put himself beyond the bailiwick of any officer, if this were attempted. Now, is this an isolated case? Probably four out of every ten assignees would at this moment find it very difficult to ascertain the whereabouts of their assignors, and equally difficult to procure their oaths when found, except upon payment of considerable, and oftentimes large, sums of money.

In just the degree that this provision is found a hardship on assignees, will it prove disastrous to the interests of inventors, as a rule. To a large majority of inventors their inventions are valueless if they cannot sell them, for very few inventors are, themselves, possessed of means to manufacture and introduce their inventions; and if purchasers are to be practically almost deprived of the right to reissue the patents they purchase, thus putting it out of their power to suppress ingenious evasions of their rights, they will be very slow to purchase even valuable inventions. Poor inventors find abundance of difficulty now in disposing of their patents, and they can ill afford to have this heavy load put upon their camel's back. They will surely revolt when they come to understand the practical working of this seemingly harmless little enactment.

The new patent law was, probably, drafted by the late Commissioner of Patents; and this provision must have taken its rise in a curious hostility that he seems to have had against reissues, a hostility that he carried so far as to push him into—as the writer believes—an unprecedented overslaughting of the acts and decisions of his predecessors—a charge which, when made, it is perhaps well to illustrate.

The writer had, during the late Commissioner's term of office, occasion to prosecute an extension case on a reissued

patent, before the Office; it was favorably reported upon by the examiner who had it in charge, and on the last day before the expiration of the patent it came before the Commissioner in person for his final approval. He made no objection to the findings and decision of the examiner below, but refused the extension on the ground that the reissue contained new matter not in the original patent.

Now, as this very question had been expressly decided upon when the patent was reissued by one of his predecessors, every way competent and fit for his office; and as a Commissioner is not, in law, a court of appeal to overturn the decisions of his predecessors; and as the late Commissioner, being a trained lawyer, cannot be ignorant of the true doctrine of *stare decisis*, it is fair to put this act down as most arbitrary, and, with his approval of the enactment spoken of above, as indicating a strong hostility to reissue.

Inventors and owners of patents should lose no time in pressing upon their Representatives and Senators in Congress, to have this enactment repealed, and that right speedily.

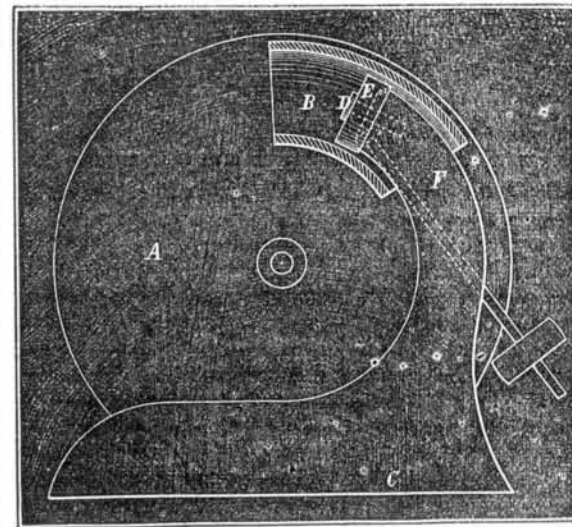
W. E. SIMONDS.

Hartford, Conn.

Boring out Curved Cylinders.

MESSRS. EDITORS:—Permit me to give you a solution of L. Q.'s problem in your issue of Nov. 20th.

A, in the accompanying sketch, is the face plate of a lathe



on which B, the piece to be bored, is fastened (by blocking and straps, not shown) at the right distance from the center to give the desired curve to the hole. A cast-iron piece, C, is to be bolted to the lathe bed, while the part, F, (which is cast at about the same curve that it is desired to give to the hole) is set so that, when the face plate is turned backward, it will enter B centrally. D is a pin passing through E, and driven or screwed into E is a revolving head, which carries one or more cutters, and is made to turn on the pin, D, by means of internal bevel teeth, which engage with the pinion shown in dotted lines. A strip of tin soldered to the revolving head, and projecting back a little over B, will keep the chips out of the gears.

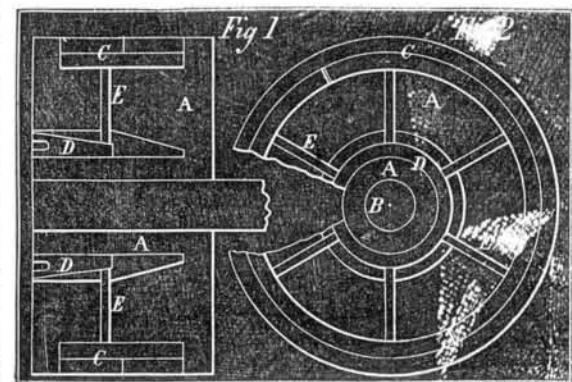
S. G. STODDARD.

Bridgeport, Conn.

A New Piston.

MESSRS. EDITORS:—The annexed diagram is illustrative of a new steam engine piston, which is so constructed that its rings may be set out or adjusted without removing either of the heads of the cylinder. I know that this feature in a piston is not new, but I am sure that I have never seen one of so easy mechanical construction and so simple and perfect in adjustment as this one.

The body, A, of the piston has several radial holes for the reception of the spindles, E. These spindles fit easily in the holes, and are of course exactly of the same length. Their outer ends are in contact with the inner packing ring, and the inner ends rest upon the conical ring, D. This rin



works upon a screw thread cut on the hub of the piston, A. The engineer has only to remove a plug in the center of the cylinder head, and apply a forked wrench to the ring, D, when any adjustment of the rings, C, is necessary.

When cast-iron packing rings are used, a stiff spiral spring should be applied in each spindle hole to prevent churning the cylinder.

F. G. W.

Preservation of Honey. Invention Wanted.

MESSRS. EDITORS:—Whenever we desire light upon subjects of general interest, or wish to call out new inventions, we are wont to turn to the *SCIENTIFIC AMERICAN*, and seldom fail to awaken attention, and elicit a satisfactory reply from some of our many readers.

Every one who is at all acquainted with the nature of honey knows that in a short time the transparent, viscid liquid changes to a thick candied substance. On placing a