

**Instrument for Describing Ellipses.**

Describing an oval by means of pins, string, and pencil, or by striking two segments of circles and connecting their peripheries, as well as the method by intersecting lines, are but makeshifts, it being difficult to inclose the exact area desired. The device, however, shown in the engraving, gives the means of forming ellipses, of any required size and proportion, quickly and perfectly.

It is a simple instrument, adapted to the trestle of the draftsman, or the bench of the mechanic, easy to handle, and certain in its operation. It is a stock or handle, A, of metal, ivory, box, rosewood, or mahogany, having a slot cut through the greater part of its length, in which slides a bar, B, and a protractor, C, so united to the graded scriber, D, by adjustable sockets of metal, as to insure harmony of the parts in using. One end of the scriber has a swiveled holder for pen, pencil, blade, or diamond, to mark or cut the oval. The arms, B and C, can be set on the scriber to form any size of ellipse within the compass of the instrument, and with any relation to a true circle. At the small end of the handle is a stud, E, which is the center on which the scriber and its parts turn, while a pointer, F, at the end of the slot, determines the line of one axis of the oval, so that it may be drawn exactly where it is wanted.

From this brief explanation it is believed any draftsman or mechanic can understand the operation of this device; its advantages are obvious to all who use drawing materials for drafting machinery, buildings, etc. It is evident, also, that for cutting patterns, where a knife blade is used instead of pen or pencil, it is well adapted. For cutting glass for oval frames also, a diamond taking the place of the pencil, its advantages are evident. The implement is manufactured to varying sizes and in different styles, to suit the demands and taste of the user. The instrument can be adjusted to draw an oval with its long axis parallel to the stock or handle, as well as with its short axis in the same position.

The patent for this device was obtained through the Scientific American Patent Agency, January 14, 1868.

Further information may be obtained by addressing the inventor, Franklin Bowly, Winchester, Va., or Augustin J. Smith, Baltimore.

**THE PROGRESS OF MECHANICAL INVENTION.**

"The times change." We notice the truth of this adage as we glance back over nearly a quarter of a century, and see the vast advances made in one of the specialties of this periodical; that of mechanical improvement. We see our inventors and mechanics taking a higher ground, assuming a higher status, turning their attention from the primer of mechanical and scientific knowledge, proving theories by practical experiments, and using their own powers of observation, thinking, and practice, in preference to accepting the dicta of men of a by-gone age. So long as they adhere in their experiments to well-established laws, even if they use those laws to establish a fact not known to their propounders, they cannot go far wrong. And they may also criticize the experiments upon which those laws were founded and the deductions drawn from them and still be doing "God service," and benefiting their fellow men. But when they choose to ignore the laws which govern matter and project so-called improvements in defiance of those laws, they are simply wasting the time and talents God has given them for useful purposes.

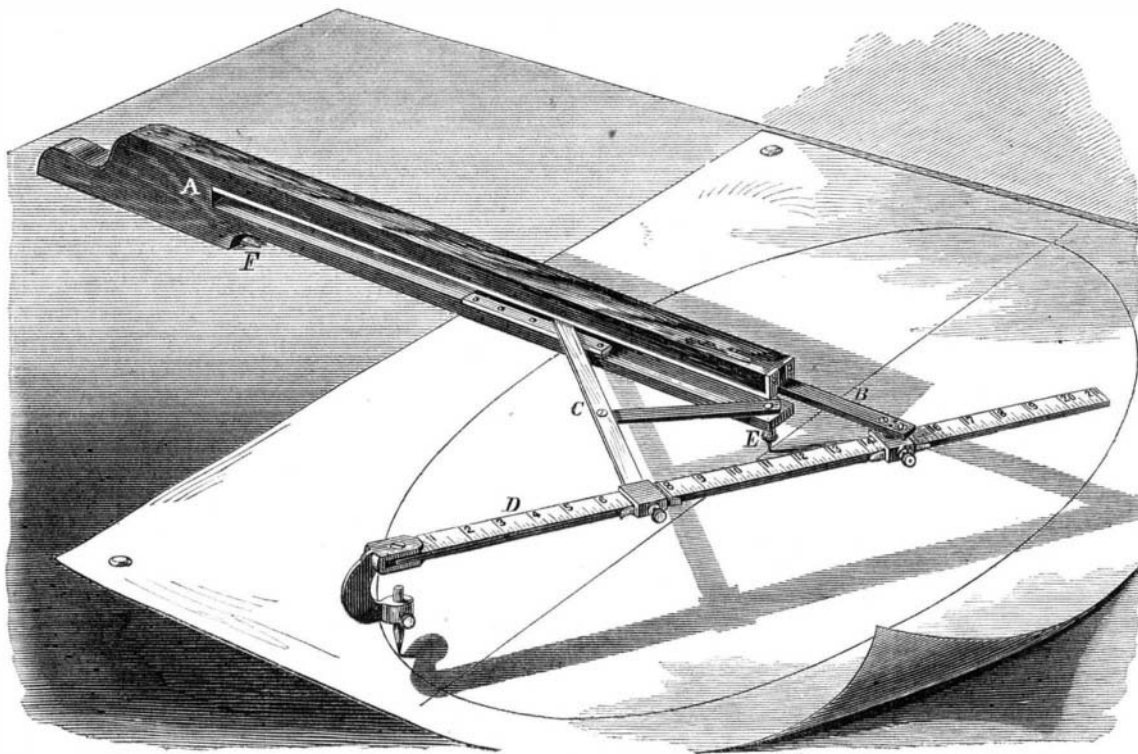
Not long ago one of these "improvements" was brought to our notice by its enthusiastic inventor, who actually claimed to have abrogated the natural and well known law that a force will not yield greater power through the medium of machinery than it first possessed. In vain was it to show—to demonstrate—that the friction of the parts of his machine necessarily absorbed a portion of the original power applied; he insisted that his plan and machine were perfect and that the natural law must be modified to suit his case. Still, even here, we saw the truth of the proposition just made, that our mechanics and inventors were thinking for themselves.

Twenty years ago a mechanic who attempted an improvement in the method or appliances of doing his work was met with discouragements on every side: his fellow workmen, either from jealousy or envy, belittled his work and refused to use his device. Employers looked upon the innovation as a transgression of old time custom and habit, and refused aid to a project which threatened to remove their processes from the well-worn groove and to compel them to a rejection or modification of their appliances. If the inventor took out a patent and expected others to pay for the use of his brain product, he met with discouragements and rebuffs on every hand. Frequently he was compelled to see his improvement adopted and large fortunes made by its aid while he suffered the stings of poverty and the unpleasant reflection that his ambition was not gratified, as in many cases not even an acknowledgment of his agency in the invention was accorded.

Since that time our people have been educated to that extent that not only the workman but the employer and the consumer have come to recognize the value of improvements and the rights of the inventor. Now a really valuable improvement finds a ready sale and speedy adoption, especially if its claims are properly advertised. We cannot but believe that the SCIENTIFIC AMERICAN has done much toward this education and the recognition of the claims of inventors and the value of their labors. As a means of presenting these claims and as an advocate of the rights of inventors this journal has no superior.

**BETTING AGAINST THE WEATHER.**

We were told a few days since that a gentleman in this city had won ten thousand dollars in betting against the

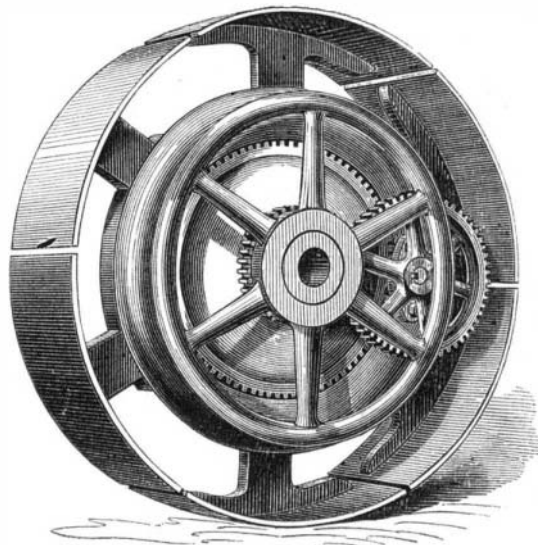
**BOWLY'S PATENT OVAL COMPASS.**

weather during the past spring. There is some novelty in this, to say the least, and it may be no worse than the very prevalent practice of growling against the weather. When we consider the numerous and rapid changes which take place in our climate, it is a remarkable fact that the mean temperature of a place remains nearly the same. The winter may be unusually cold, or the summer unusually hot, while the mean temperature has varied less than a degree.

A very warm summer is therefore likely to be accompanied with a cold winter; and in general, if we have any long period of cold weather, we may expect a similar period at a higher temperature. Usually, however, in the same locality, the relative distribution over summer and winter undergoes comparatively small variations; therefore, every point of the globe has an average climate, though it is occasionally disturbed by different atmospheric changes.

**SAVERY'S IMPROVED EXPANDING PULLEY.**

In the manufacture of paper there are many causes, well known to those engaged in the business, which render it necessary to frequently alter the speed of the different rolls.



These variations in speed are now effected by means of lags of felt, canvas, or leather glued to the face of the driving pulley, or removed therefrom, as the exigencies of the case demand. This rude makeshift is very unsightly, and entails much labor, as all who have noticed the driving side of a paper machine can testify; it is also very uncertain in its operation, as portions of lagging often become loose and come off, breaking the paper, and necessitating the stoppage of the machine. To keep the lagging in order involves so much effort on the part of the machine tender that he will sometimes allow the paper to break rather than take the time necessary to prevent such an accident.

The design of the improvement herewith illustrated is to

provide against these annoyances by an expanding pulley. It is so constructed that it can readily be made larger or smaller by turning the hand wheel backward or forward, and this may be done while the machine is in motion. The change of size can be made very gradually, just as the jaws of a scroll chuck can be opened or closed gradually. The pulley is made very strong, is not liable to get out of order, and has been tested by many of our first class paper makers, receiving their unqualified commendations.

Patented through the Scientific American Patent Agency, June 9, 1868, by Thomas H. Savery. All orders or communications for information should be addressed to Pusey, Jones & Co., manufacturers of Paper Machinery, Wilmington, Del.

**Transparent Gelatin Prints.**

At the last meeting of the Franklin Institute, there were exhibited by Alex. E. Outerbridge, Jr., some transparencies for the lantern, of a novel and effective description. They consisted of impressions from wood cuts, made upon sheets of gelatin directly from the cut, and with as much facility as upon ordinary paper. Mr. Outerbridge has since found that the finest lithographs may be taken upon this substance with the greatest readiness. The only precaution necessary is to print with a dry stone, since gelatin is very soluble in water. The gelatin may be made insoluble by mixing with it while fluid a small quantity of bichromate of potash, and then exposing to light. This, however, slightly tinges the other wise perfectly transparent substance. We have in our possession an impression on gelatin, of the map of the Suez Canal. The finest lines and dots appear perfectly, and with more density than could be obtained in a photograph. This opens quite a new and extensive field for lantern illustration.—*Franklin Jour.*

[Mr. Outerbridge has also favored us with a few specimens.

The use of sheet gelatin for the above purpose is quite old. We have had a large number of pictures of precisely the same kind in our possession for more than eight years. Several years ago, we attended a public exhibition of the stereopticon, at which the views produced on the screen were obtained from similar gelatin prints. A panoramic effect was also presented, the pictures being printed upon long strips of gelatin, which were cemented together and stretched between two rollers, in such a manner that by turning a crank the pictures were successively brought before the lenses and thrown upon the screen. Many of the pictures were colored, and beautiful effects produced. We also witnessed, some years ago, a very useful application of gelatin in a school, where the teacher was accustomed to trace small pictures with a pen and india ink, upon strips of gelatin, and then draw them through the magic lantern, thus reproducing the pictures, greatly enlarged, before her class. It is a very simple, cheap, and effective method of instruction. Sheet gelatin, suitable for the purpose, can be had of dealers in artists' materials. It costs about thirty cents a square foot. The expense of the magic lantern is small, and the gelatin pictures may be readily done by hand. A little practice suffices to enable most young persons to make them.—EDS.

"MINARGENT" is the name given to a new substitute for silver, which is said to possess nine tenths of its whiteness, malleability, ductility, tenacity, sonorosity, and density, while it has a superior metallic luster, wears better, is less likely to be acted upon by sulphur in its various forms, and is less fusible than silver. The chief features of this wonderful alloy consist in the introduction of pure tungsten and aluminum, also the considerable proportion of nickel which the inventors have been enabled to alloy with aluminum notwithstanding its known want of affinity therewith. Minargent is composed of 1,000 parts copper, 700 parts nickel, 50 parts tungsten, and 10 parts aluminum. The first three elements are melted together, then run off in a granulated form, and again melted, adding the aluminum and about 1½ per cent of a flux composed of one part borax and one part fluoride of calcium; these proportions of borax are reduced as the fusion proceeds.

A QUEER TRADE MARK.—A company in France manufacturing steel pens have adopted the very singular trade marks which represent the crucifixion of Christ and the descent of the Holy Spirit; each pen is being stamped with these devices. The French have some very queer notions about the use of names for business purposes. Thus, for example, one establishment in Paris is known as the "Store of the Child Jesus," and a competition concern, not to be outdone, has adopted the appropriate title, "Store of the Good Devil." We once remember to have seen a large transparency in front of a mountebank's tent illustrating the birth of our Savior.

MISSISSIPPI planters this year are paying considerable attention to the cultivation of "Havana" tobacco for cigars. The young transplanted plants are reported to be thriving finely,