

NEW DOUBLE SHAPING MACHINE.

Messrs. R. Fernau & Co., of Vienna, Austria, have recently put in market a double-acting shaping machine, of which the specialty consists in the arrangement of the feed motion, which will be understood by reference to the perspective sketch and the detail. The boss of the driving pinion is extended, and has a curved slot formed in it, which imparts an oscillating motion to a lever; this motion is transferred to a horizontal shaft, through which it is conveyed to the tool holder. On the front end of this shaft is a cast iron cap, which serves as a lever and also as a cover. In a slot in the cover (see Fig. 2) is placed a bolt, which can be moved up or down at will, the end of the bolt projecting, as shown in Figs. 1 and 2, into a triangular opening in the piece within the cap, so that the oscillating movement of the cap gives greater or less motion to the piece above mentioned, which carries at the upper end a pawl and ratchet driving a toothed wheel, that in its turn conveys motion to a worm and wheel. The spindle of the latter carries a horizontal pinion gearing into a rack, and gives motion to the wheel.

Skilled Labor.

The richest mines of wealth of a nation are its workshops, its factories, and its farms, filled with men of highly trained and skilled labor, it being a universal law that the world's great prizes go to the best. This is not simply an abstract question, but one affecting us all in our prosperity and success every day and every hour of the day, and every day in the year. France, Switzerland, Prussia, and Germany have laid us, and are laying us, every year under contributions of millions of dollars for very superior workmanship, taste, and skill. Their silks, their laces, their cloths, their china and porcelain, their bronzes, their fabrics in metal and wood, and their objects of *virtu* and art could be largely produced in this country if we had developed and educated our artisans and mechanics up to the same perfection in workmanship that they have in those countries.

Their mode of thorough instruction in their workshops and manufacturing establishments produces men of the highest order of training, ability, and skill. If we take, as an example, the small State of Wurtemberg, in Germany, with a population of 1,778,000, we find that they have forty-nine industrial and technical schools for the training of boys and educating them in all the industrial arts. In these schools there is a mercantile and commercial course, and one for the application of chemistry to the chemical arts and manufactures, where there are fifty-one professors and teachers of chemical and physical mineralogy, modeling rooms, mechanical workshops, rooms for drawing, botanical garden, and astronomical observatory. There are other schools for building instruction and tradesmen, where builders are trained for masters and constructors of public works, etc., and plasterers, carpenters, grainers, painters, smiths, etc., are educated for foremen and masters; and the schools are crowded with those for whom they were intended, while the graduates are eagerly sought everywhere on the Continent for their superior excellence.

There are also schools for education in all agricultural pursuits, in which practice is combined with theory, they having under their care four hundred square miles of territory. These schools are largely attended, for in one year 12,040 persons, in 523 places, were getting a thorough, complete, and practical agricultural education. Connected with these schools are institutions for practical training in anatomy, physiology, and diseases of animals; and a smithy is attached, in which 4,000 animals were shod per year.

The result of this discipline is shown in the superior skill of the workmen, the excellence of all their works in the arts and sciences, and the harmony existing among them. A thorough acquaintance with a particular industry necessitates a wide range through the field of knowledge, and makes a familiarity with all the causes which produces such effects. The brain is the motive power as well as the guide, for it points the way, and all things move as it points. Skilled labor is its own protection. While its progress may be temporarily impeded by the glittering tinsel of some superficial work, yet its final success is conclusive proof that "all is not gold that glitters," for merit in all things must win.

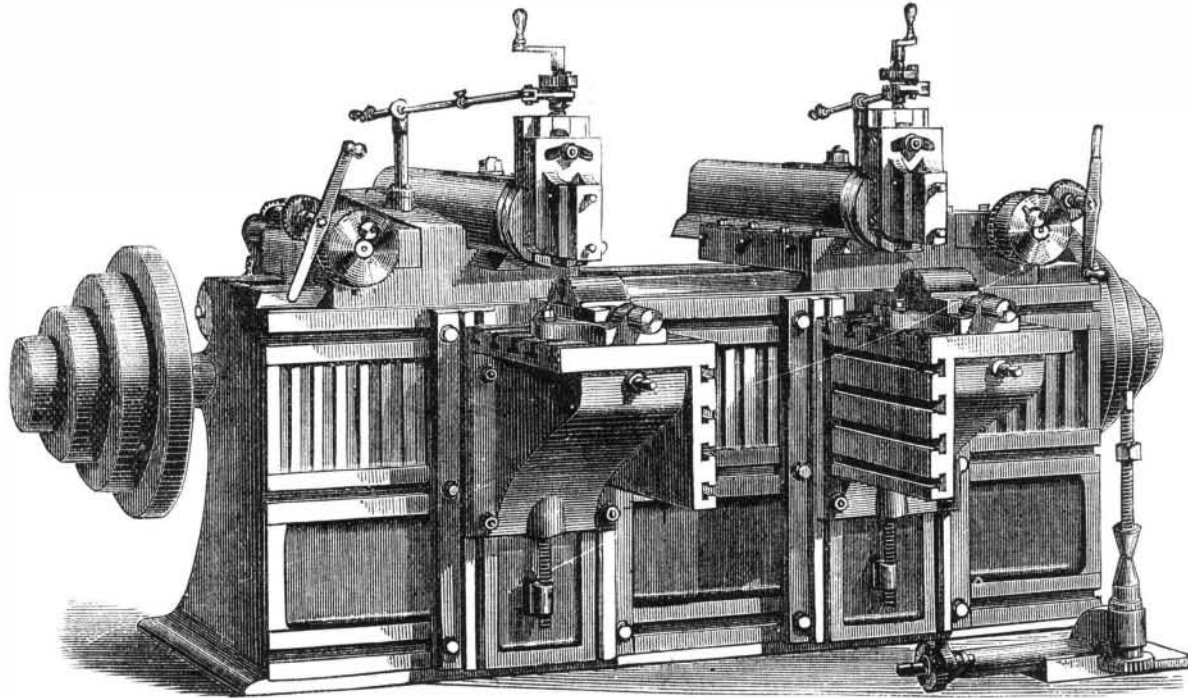
Carelessness and ignorance are the most fruitful sources of loss of life and property. Proportionately, as the mind becomes trained and disciplined, carelessness ceases; greater care is manifested in the management of all the affairs of

life and the products of our workshops. The great hurry, which has characterized our people, to reach results and to accumulate riches causes that neglect and superficial workmanship which is so prevalent. Scarcely a paper is published that does not contain in its columns some startling accident, accompanied by great loss of life, occasioned by defective machinery or ignorance in its management. Railroad collisions nearly all result from these causes. The disastrous errors which frequently occur in many cities among chemists and druggists arise from an ignorance which never would or could exist if a compulsory and skillful training in schools established for the purpose, under practical as well

Sir Isaac Newton's Experiments.

When Sir Isaac Newton changed his residence, and went to live in Leicester Place, his next door neighbor was a widow lady, who was much puzzled by the little she had observed of the philosopher. One of the Fellows of the Royal Society of London called upon her one day, when, among other domestic news, she mentioned that some one had come to reside in the adjoining house, who, she felt certain, was a poor crazy gentleman, "because," she continued, "he diverts himself in the oddest ways imaginable. Every morning, when the sun shines so brightly that we are obliged to draw the window blinds, he takes his seat in front of a tub of soapsuds, and occupies himself for hours blowing soap bubbles through a common clay pipe, and intently watches them till they burst. He is doubtless now at his favorite amusement," she added; "do come and look at him." The gentleman smiled, and then went up stairs, when, after looking through the window into the adjoining yard, he turned round and said: "My dear madam, the person whom you suppose to be a poor lunatic is no other than the great Sir Isaac Newton, studying the refraction of light upon thin plates, a phenomenon which is beautifully exhibited upon the surface of a common soap bubble."

This anecdote serves as an excellent moral not to ridicule what we do not understand, but gently and industriously to gather wisdom from every circumstance around us.—*Druggist's Circular.*



DOUBLE SHAPING MACHINE.

as theoretical masters of the particular industry sought to be acquired, had been gone through. We often read of the falling of a floor filled with people. This shows an ignorance of building and of the strength of different materials, a knowledge of which is so indispensable in this important branch of industry. Schools established for a thorough training in mining would not only save life and property, but cause a more profitable development of our mineral resources.

"Knowledge is power." It is the limiting director of the productiveness of all labor. As a knowledge of all the arts, a thorough acquaintance with the laws of nature exists, so will be the progress in improvement in all the affairs of life. Its application to all the industries causes a greater productiveness from the same labor. It has decreased the labor of farming, and increased its producing power. The superseding of the scythe and the cradle by the mowing and reaping machines has enabled a much greater number of acres to be tilled; at the same time a larger value is realized from the same quantity of land

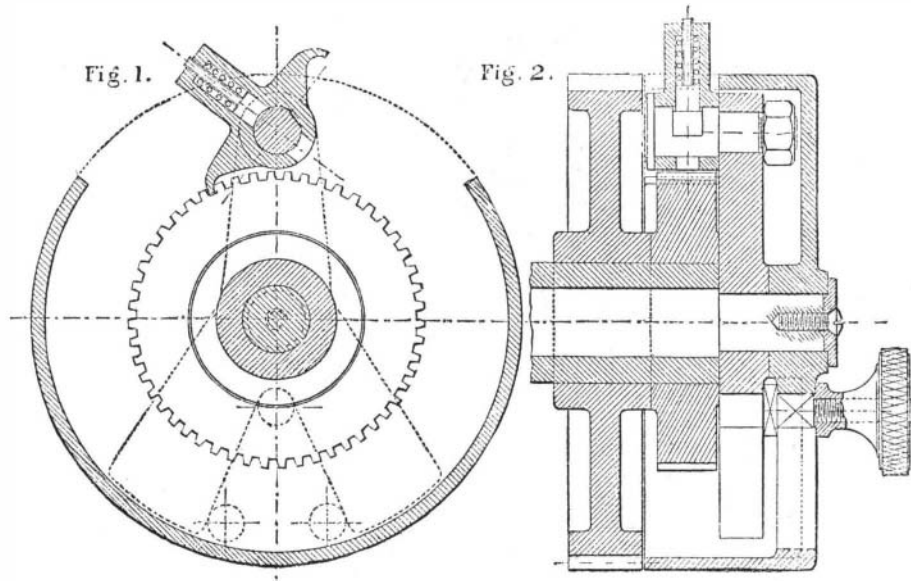
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Corner Lots.

To persons about to build a residence in the city, the following article from the *Land Owner*, on the most desirable corner to locate on, will be read with interest:

When a lot is on the northwest corner of two streets, it is best, in a sanitary point of view, for its frontage to be on the west side of the street and the depth on the north side. The house thus gets the sun in the front bed rooms in the morning, and on the side of the house, looking south, nearly all day. When a lot is on the northeast corner, it is best that its frontage should be on the east side and its depth on the north side of the street. The east side of the street looks west, from which quarter our prevailing cold summer winds come. All rooms looking west are very cold at night, especially at the time of year when sudden changes of temperature are common. If the front bed room windows face the east side of the street, they can be kept closed at night and air secured from the sheltered side windows on the north side of

the street, on which the sun shines nearly all day. If a lot is on the southwest corner, it is better that the frontage be on the south side, and its depth on the west side of the street. The rays of the sun do not strike the south side of the street, while they do strike the west side in the early half of the day—thus getting the sunshine and heat in the front bed rooms at the most desirable hours. When a lot is on the southeast corner, it is best that it should have its frontage on the south side and its depth on the east side, for the reason, before stated, that the sun does not strike the south side of the street, while its rays are poured on the east side from about noon till 5 p.m. The cold winds of night can be kept from the best (the front) bedroom by having the windows closed on the east side and by opening them on the south side. These are important facts to be remembered by those who are subdividing large lots for sale, or by those who are erecting houses on large corner lots, where they are in a position to front them either way.



DOUBLE SHAPING MACHINE—SECTIONAL VIEW.

The greater the skill, the greater the wages. Every hour spent in improving the mind is a bid for increased pay. "The laborer is worthy of his hire," and that worth is enhanced just in proportion as a knowledge of his work is great or small. The foreman of a workshop receives greater compensation than any other workman. Why? Because he possesses greater intelligence on all matters connected with the work. This subject is capable of being drawn to a great length; but enough has been said to show the benefits arising from knowledge and skill in all branches of industry, and that industrial and technical schools should be established everywhere.—*Philadelphia Inquirer.*

THE volume of a confined mass of gas is inversely proportional to the pressure to which it is exposed; the smaller the pressure the larger the volume, and the greater the pressure the less the volume.

No one looking for a residence site, who can afford to buy a corner lot, should fail to do so. By having a corner all difficulty about securing abundant sunshine and air in each room is avoided. Of almost equal value with sun and air is the cheerfulness of rooms in a corner house. The effect upon women, who have little exercise or change, is exceedingly beneficial. There is, from a corner house, an outlook that whiles away many an hour which would otherwise be dull to the dweller in the house. The average cost of a corner lot over a middle one in a residence location is 40 per cent, and it is worth more than this difference. A corner house will rent for nearly enough more than a middle one to justify the purchase of the former from an investment point of view alone. Those who wish a sunny, well aired, and really cheerful dwelling should strain every point to secure a corner. Better a corner and poorer house than a fine house hemmed in between other dwellings.