New Inventions.

Lumber Slitting Gauge.

The accompanying figures represent an improved gauge for slitting lumber, for which a patent was granted to Francis P. Hart, of Chandlersville, Pa., on the 15th of May last.

Fig. 1 is a longitudinal outside view of the improved gauge. Fig. 2 is a longitudinal section of it, and fig. 3 is a longitudinal outside view, showing a different side of fig. 1. Similar letters refer to like parts.

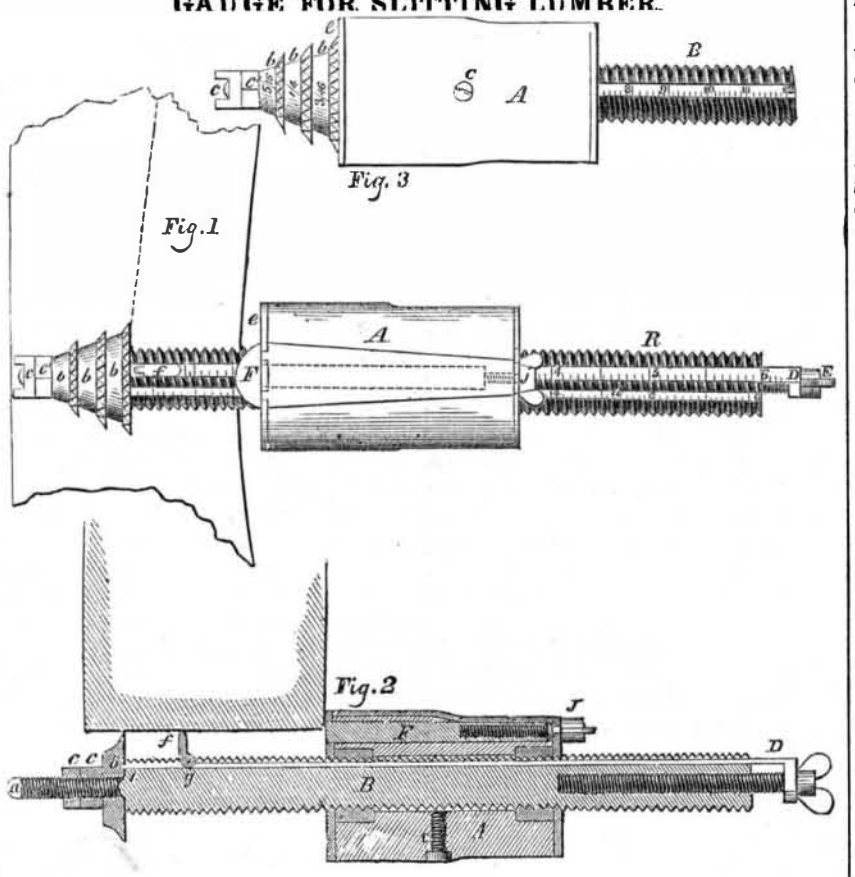
This invention consists in a contrivance for gauging in an oblique direction relatively to a given edge, so as to mark off strips of tapering form; also in a certain arrangement of one or two scribers employed for cutting mortices, whereby it may be rendered inoperative when the gauge is used for scribing a single line; and also a sliding guide piece to be brought into use for gauging curves, circles, and irregular forms.

A is the stock of the gauge which has a left screw in each end to receive and fit a fine threaded right screw, which extends nearly along the whole length of the shaft, B, and is also furnished with a binding screw, C, by which to secure it at any point on the shaft. The shaft has a pin, *a*, turned down at one end to receive one of a number of wheels, *b b*, which have sharp pointed teeth on their peripheries. These wheels are confined to the pin by a screw on the pin, and two nuts, *c c'*, and may be either allowed to run loosely on the pin, or be clamped tight up to a shoulder on the shaft at the back of the pin, according to the purpose for which the gauge is to be used. In gauging obliquely for articles of tapering form, the wheel, *b*, which is placed on the pin, is clamped by the nuts, *c c'*, tight up to the shoulder, *i*, on the shaft, and the binding screw, C, in the stock, is loosened to allow the screw to turn in the stock. The shaft is adjusted in the stock by a scale, *d*, fig. 1, of inches or other equal parts, which commences at the shoulder, *i*, of the shaft, and in order to bring the teeth of the wheel, *b*, at a distance from the face, *e*, of the stock, corresponding with the width of one end of the strip or article to be gauged. The gauge is then run along the stuff in the same way as a common gauge, and the wheel receiving rotary motion through the bite of its teeth on the stuff as it runs along it, turns the screw, and according to the direction of its revolution, either increases or diminishes the distance between the wheel and the face of the stock, thus running and scribing obliquely to the guiding edge. By changing the size of the wheel, *b*, the taper may be greater or less, according as the wheel is smaller or larger. In gauging parallel, the wheel, *b*, is left free by the nuts, *c c'*, to turn easily; and the stock and shaft are secured together by the binding screw, C. For the purpose of gauging mortices, the gauge has a slider, D, fitted to a groove in its shaft, said slider carrying a scriber, *f*, which is hinged to it, so as to be capable, when not required for use, of being folded down to be received within the groove in the shaft, as shown in dotted outline fig. 1. When thrown outwards, the scriber, *f*, is kept at a right angle to the shaft by a square shoulder at *g*, fig. 2, and when cutting, is kept up to that position by reason of its edge being beveled on the opposite side to the shoulder. The outer face of the slider, D, has a scale of inches or equal parts, like that on the scale, *d*, on the shaft of the gauge, and it is adjusted by means of a screw, E, passing through a loop at its end, and working in a female screw in the opposite end of the shaft to where the wheels, C, are fitted. For gauging both sides of a mortise, the scale, *d*, on the shaft and the scale on the slider, D, enable the scriber, *f*, to be adjusted by the screw, E, with accuracy, at a distance from the edge of the wheel, *b*, equal to the required width of the mortise, and the stock is adjusted on the shaft to bring its face to a distance from the edge of the scriber equal to the required distance from the edge of the stuff. The toothed edge of the wheel scribes one side, and the scriber, *f*, the other side of the mortise. The toothed edge prevents the gauge following the grain of the wood. F is the sliding guide piece to be employed in gauging from a circular curved or irregular edge, consisting of a flat piece of metal fitted in a slot, made in the stock parallel with the shaft, and adjustable lengthwise by a screw, *j*, at the back. The front end is of rounded form as shown in fig. 1.—In gauging straight work, the guide piece, F, is all drawn into the stock by means of the screw, *j*, and the face of the stock serves as the guide; but for gauging circular, curved, or irregular work, the guide piece is screwed out beyond the face, and its rounded end forms the bearing, and allows the gauge to follow the sinuosities of any curved or irregular edge. This instrument will be useful for saddlers, or other workers in leather, as well as workers in wood. As a gauge for cutting leather, a sharp edge rotary cutter may be substituted for the toothed wheel, *b*

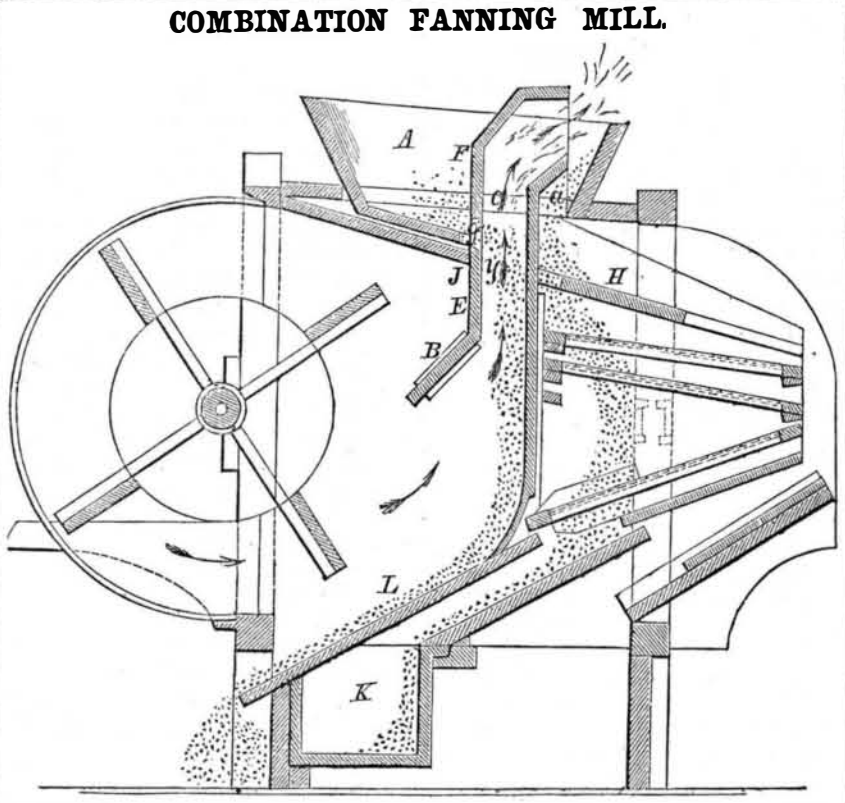
The wheels, slide, and scriber can be employed to common mortising gauges, and thus make them far more useful and convenient.

More information may be obtained by letter addressed to the patentee at Chandlersville.

GAUGE FOR SLITTING LUMBER.



COMBINATION FANNING MILL.



The annexed figure is a vertical section of the combination fanning mill, for which a patent was granted to Joseph Keech and Stephen Stilwell, on the 29th of June last. The nature of the improvement consists in an arrangement whereby the horizontal open blast winnowing machine may be converted into a vertical blast separator, for more effectually separating lighter foreign substances than the grain.

A is the hopper, and C is a vertical trunk inserted in a common winnowing machine, so as to intercept the horizontal blast, and turn its course in a vertical direction, as shown by the arrows. B is a stationary plate, which serves as a guide to direct the current of air into the trunk. E is a plate forming part of trunk C, and joining the upper edge of B. Between plate E and plate F there is an aperture, *g*, to allow the grain to pass from the hopper, A, into trunk C. This aperture may be closed by a valve The hopper is provided with recesses, *a*, through which the trunk, C, passes; but when the machine is used as an open blast, or ordinary winnowing machine, these recesses are closed by slide pieces. The figure shows the machine converted from a common horizontal fanning mill into the vertical blast mill. The trunk, C, is slid down to plate, L, and the opening, *g*, comes in a range with the upper surface of plate J. The grain at *y* is passing into the trunk, and is subjected to the vertical blast shown by the arrows. This forces all the substances that are lighter than the pure grain out. The light grain is shown forced out of the mouth of the trunk, C, into the back part of hopper, A, and it falls thence directly down upon the screens, and is carried down to plate L, and falls into the box, K.

The claim of this patent is for the movable trunk, C, for the purpose of converting the open horizontal blast of the ordinary winnowing machine into the vertical blast.

This machine, as will be seen, combines good devices for cleaning and separating grain and grass seeds, operating in the capacity of a chaffing, screening and fanning mill, and embraces very important advantages. And, in addition to the uses to which the open fan blast mill can be applied in cleaning grain or grass seeds, this mill separates the grain or seeds according to their specific gravity or weight in the vertical trunk, by means of the blast produced by the fan, as shown, by which any farmer can judge for himself of its advantages and value. More information may be obtained by letter addressed to Ebert Taylor, Waterloo, Seneca Co., N. Y., (the agent of the patentees.)

Scientific Notes and Queries.

An Ancient Museum Destroyed—The late accounts from the Crimea bring intelligence of the destruction of an ancient museum at Kertch, by the hangers-on of the allied army which captured the place. The museum was a temple containing finely sculptured ancient sarcophagia, statues, and golden ornaments. The Russians always kept a guard over it, but it seems that when it was captured by the Allies, they neglected to do this, and the army of loafers, alias *Vandals*, entered it, and committed wanton havoc on these ancient relics. This, at least, has been reported.

It is highly creditable to George Sumner, of Massachusetts—brother of the Senator—now in London, and who has traveled extensively in Russia, that he sent a letter to Sir Charles Wood, describing the value of this museum, and requested that the government would telegraph with all despatch to place a guard over the temple. This was done, but we regret to state too late to effect the object.

The Newfoundland Submarine Cable—The telegraph submarine cable to be laid down in the Gulf of St. Lawrence, between Newfoundland and this continent, and to form part of the line from New York to Europe, was shipped from London on the 28th of last month. It is expected that the whole line from this city to St. John's, will be in working order in six weeks, and that news will be received from Europe in six days.

Bonelli's Locomotive Telegraph—This telegraph, which has already been mentioned in our columns as having been successful on the Turin road, in Italy, and that messages had been transmitted to and from a locomotive running at full speed, consists in having a metal insulated rod of iron laid parallel between the rails, and a double wire trailing on it from the battery in the locomotive.

A Meteoric Stone in a Queer Place—There has been placed in the Museum of Economic Geology, London, a part of the trunk of a tree felled in Battersea Fields, in which was found a large meteoric stone which seems to have fallen on the tree many years ago, and imbedded itself deeply. The *Gardener's Chronicle* says, "It is a prodigious curiosity."

Large Trees—Until within a few years there stood near the junction of the Scantic and Connecticut rivers, in the town of East Windsor, a large sycamore or buttonwood. After the tree had partly decayed, and a shell of wood, perhaps two inches thick on the outside, remained, Mr. John Pelton found that a pole twelve feet long could be placed horizontally inside of the shell, making the tree more than thirty-six feet in circumference. Another tree near measured twenty-four feet. These trees stood near where the first English settlers in Connecticlt located.—[N. Y. Tribune.

[The California tree now in the N. Y. Crystal Palace is three times larger than this one.