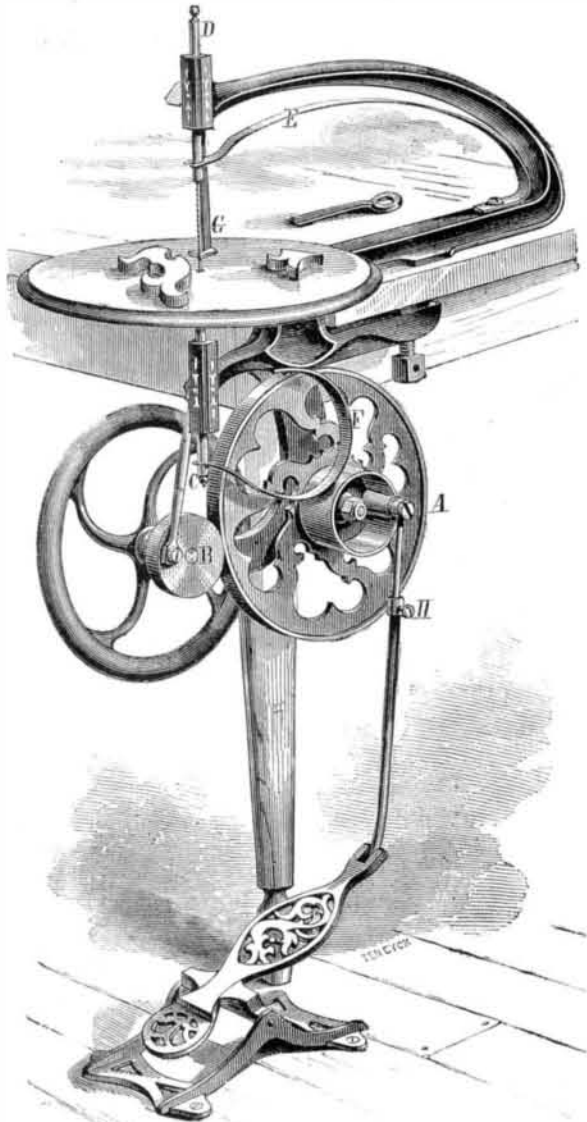


AMATEUR'S JIG SAW.

We illustrate herewith an ingenious form of jig saw, designed especially for amateur use. It is portable and readily attached to a carpenter's bench or an ordinary table, by means of the screw clamp, as shown. The cast iron arm terminates in the guide, D, in which works the spindle to which the upper end of the saw is attached in the ordinary adjustable manner, its lower extremity being similarly held in the guide underneath the table. A constant tension of the blade is maintained by the bent springs, E and F. Motive power is communicated from the treadle, which may be attached, at any convenient point on the floor, to a rod which forms a sleeve for a smaller rod, which is connected with the crank of the large wheel, A. The object of making the rod in two portions is that it may be adjusted to suit any height of table and afterward held in position by the set screw at H.



Around the circumference of the wheel, A, is placed a covering of leather, by the friction of which the pulley, B, and the fly wheel connected therewith are actuated. By means of the pitman, as shown, motion is transmitted to the saw. G is an adjustable metal foot designed for holding the work in place while being operated upon.

The machine is both simple and durable in construction, and, as a means of developing a mechanical taste in the young, will prove both a useful and instructive gift. It will readily cut out brackets, book racks, and other ornamental articles, and thus may be used for profit as well as for amusement.

Patented through the Scientific American Patent Agency, July 23, 1872. For sale of rights, agencies, and for other particulars, address the inventor, Mr. Samuel N. Trump, or Mr. C. N. Trump, machinist, Port Chester, N. Y.

GOVERNMENT TELEGRAPHY.

The *Telegraphic Journal* is the name of a new monthly periodical lately established in London, of which the first number is now before us. It is printed in magazine form, and contains much valuable matter relating to telegraphy. In England, as our readers are probably aware, the telegraphs are now owned and worked by the government. A bill is now before Congress intended to effect the same thing in this country. It is therefore interesting to know how the plan of government telegraphy works, practically, in Great Britain. On this subject our new cotemporary, the *Telegraphic Journal*, says that, in theory, it is good to have the government own the telegraphs, but in practice it is bad. It takes a longer time to send messages than formerly. The man who expects, in England, to send a message fifty miles by telegraph quicker than he can send it by railway, is generally disappointed.

Labor Strikes in England.

Recent telegrams from England bring the news of the strike of five hundred of the stokers employed by the London gas companies. This is but a continuation of the uprisings which are disturbing the industries of Great Britain and which evidence the unsettled state of the labor question in that country. Policemen, and employees of the civil service and of the post office have in turn attempted to obtain increased wages by organized resistance, and now the stokers have followed their example, to the great inconvenience of a large portion of the inhabitants of London. The city has been at

night in a state of partial darkness, and several of the theaters were compelled to omit their performances. Large numbers of the disaffected workmen have held meetings and processions, and many have been arrested and imprisoned under charges of conspiracy.

The probabilities are that this, as was the case with the preceding strikes, will result in the defeat of the laborers, but which ever way the conflict ends, it is plainly evident that a readjustment of the system of work and wages in England is fast becoming a necessity which that country can ill afford to neglect.

Facts concerning Bees.

When the queen bee is forcibly taken away from the hive, says the *American Bee Journal*, the bees which are near her at the time do not appear sensible of her absence, and the labors of the hive are carried on as usual for a time. It is seldom before the lapse of an hour that the working bees begin to manifest any symptoms of uneasiness. They are then observed to quit the larvæ which they had been feeding, and to run about in great agitation to and fro; and on meeting with such of their companions as are not yet aware of the disaster which has befallen them, they communicate the intelligence by crossing their antennæ and striking lightly with them. The bees which receive the news become in their turn agitated, and spread the alarm further. All the inhabitants now rush forward, eagerly seeking their lost queen. But, finding search useless, they appear to become resigned to their misfortune, the tumult subsides, and if there are worker eggs or young larvæ in the cells, preparations are made to supply the loss by raising a new queen, and the usual labors of the hive are resumed.

For feeding bees: Take at the rate of five pounds of refined or white sugar, two gallons of soft water, one tablespoonful of salt, ten grains of cream tartar; put all together, bring to a boil, skim and, when cold, add eight ounces pulverized slippery elm bark, or fine oat meal, stir it well, then feed in the hive. During the summer, use but four pounds of sugar.

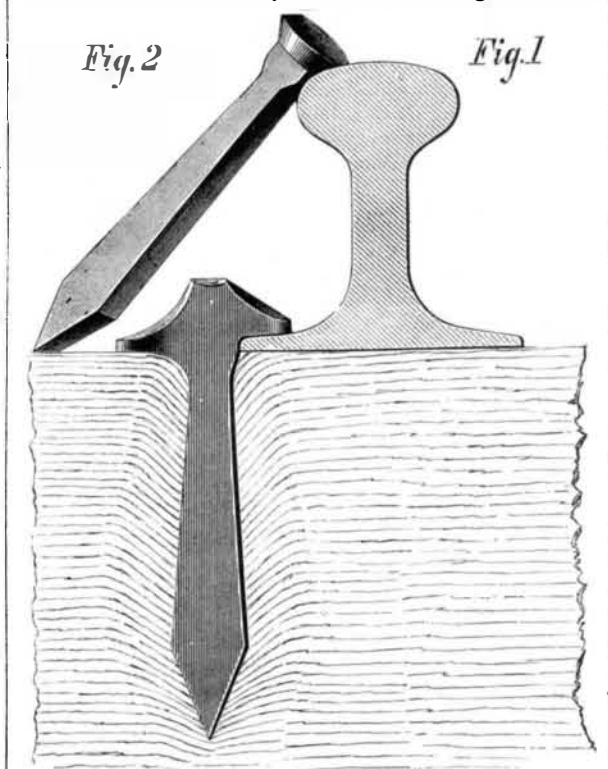
Italian bees gather much larger stores of honey than the black bees. Dzerzon, the great German apiarian, after many years experience, says that the profits of his apiary have been doubled since their introduction. They are also much more peaceable than the black bees.

Artificial Volcanoes.

M. Hochstetter has made, at Vienna, an experiment which imitates on a small scale the eruption of volcanoes. It is based on the property, possessed by sulphur when melted under the vapor of water having a pressure of three atmospheres, to absorb a certain quantity of the water, which afterwards escapes in the form of vapors during the cooling. In operating on a quintal of sulphur, a superficial crust formed, an opening being made in which, pieces of sulphur emerged, accompanied with explosions and puffs of vapor. At the end of an hour it formed a cone, having a diameter of from 30 to 50 centimeters at the base and about 8 centimeters in height, exactly resembling the volcanic cone resulting from the successive accumulations of lava streams.

IMPROVED RAILROAD SPIKE.

The invention herewith presented furnishes two improved forms of railway spikes, one for holding the rail to the tie, and the other for bolting down the chair. The engraving shows the construction of the device so clearly that but little explanation is necessary. The shape of the head of the rail spike, Fig. 1, is such as to afford a large holding surface, while the lower portion, being gradually widened, is well adapted to clinch in the wood, bending the fiber downward so that there is no liability of the bolt working loose. The



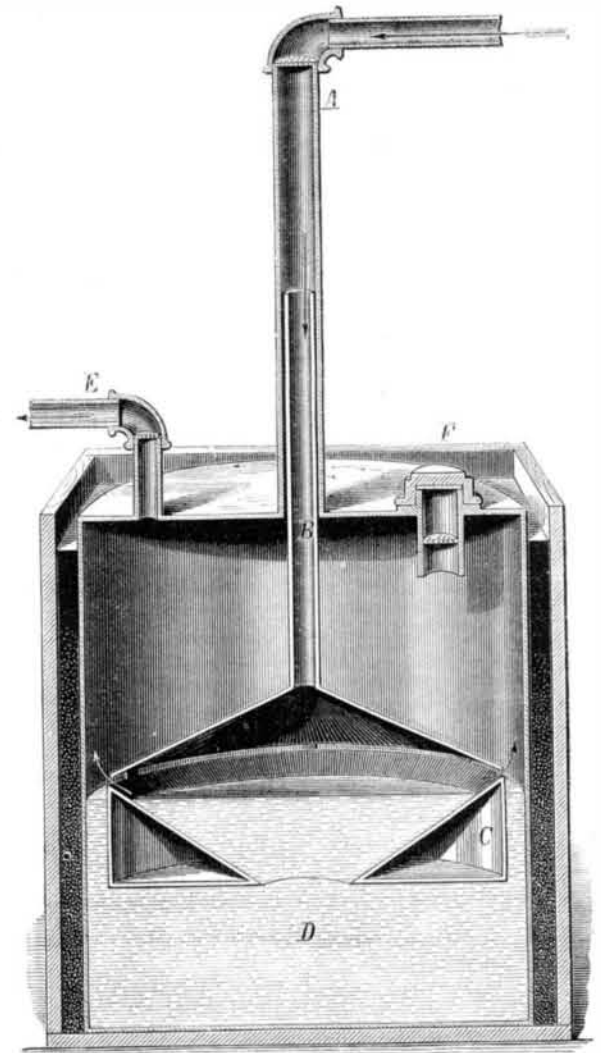
chair spike, Fig. 2, is made with a round head, and, being otherwise constructed on a similar principle to that above described, it possesses the same advantages. The practical utility of the invention is plainly evident, and as its expense is necessarily no greater, it will doubtless be preferred to the straight and less effective spike now in use.

Patented Nov. 12, 1872. For further information address Henry Stibbs, 25 North Paca street, Baltimore, Md.

DAYTON'S GAS CARBURETTER.

This invention, illustrated in section in our engraving, is one of the best forms yet devised for carburetting ordinary street gas, and thus causing an economy in its use, both by increasing the illuminating power and largely diminishing the rate of consumption. The apparatus, the simplicity of the construction of which is clearly indicated in the engraving, affords a means of combining the gas, as supplied in the mains, with the vapor of a low distillation of petroleum, a heavy product, and not the light gasolene ordinarily employed in air gas machines.

Entering in the direction of the arrow, and passing down the tube, A, the gas flows through the interior pipe, B, which fits loosely in the larger tube; thence it descends into the conical deflector, by which it is brought in contact with the vapors arising from the hydrocarbon. The liquid, D, is poured into the receptacle through the opening at F, and supports a



peculiarly shaped float, C, which is attached to the deflector. It is evident that, as the level of the distilled product is lowered, the float descends, carrying with it the deflector and pipe, B, so that every portion of the liquid will be completely utilized. The gas, after being enriched with the vapors, arises in the direction of the arrows, between deflector and float, into the body of the apparatus, and finally makes its exit by the tube, E.

It will be noticed that the gas does not pass through the hydrocarbon, but is deflected so near to its surface as to become thoroughly impregnated. That this method is practically successful, repeated tests have well demonstrated. Experiments conducted in our presence, using the same burner, and comparing the light obtained by street gas with the same after passing it through the machine, indicated not only a plainly increased light, but the meter showed a direct saving of some forty per cent in the quantity of gas burned. As the cost of the material used is quite small, the system must necessarily insure a great economy. The inventor states that he has determined by actual practice that two barrels of the liquid will supply twenty burners for one year, and that forty-five gallons produces 10,000 feet of excellent gas. The apparatus can, of course, be made of any size, to hold either a small amount or several barrels; it is well protected by casing and by safety gauze at every outlet.

In order to determine exact data relative to the increase of light obtained, Professor Henry Wurtz, of this city, a well known expert in such matters, communicates to us the following results of experiments: He considers the invention both simple and cheap in construction, and in his report states that the tests were made on the gas of the New York Gas Light Company, the value of which, as supplied in the city mains at 12 o'clock meridian, was found to be 17.55 sperm candles for five feet burned per hour. The device above described converted the same gas to a power of 33 candles for the same volume per hour.

Patented Oct. 8, 1872. For further particulars address the inventor, Mr. H. G. Dayton, Maysville, Ky.

THERE are, at present, three submarine telegraph cables between America and Europe. A new cable is soon to be laid by the French company, and still another by the Great Western Telegraph Company, making five in all. The total amount invested in all these cables will be thirty millions of dollars.