man to rise to the rank of manufacturer than now; a workman of established character and known ability has no difficulty in obtaining credit. The failures have been caused chiefly by investing money outside the business, and then drawing money out of the business to protect the investments. Two thirds of the workmen I have known have saved money, and a large proportion of those living in the country own their houses and some land. A larger proportion of the workingmen than of the manufacturers, since 1840, have ended their days in or are now living in competence. I have never known an industrious temperate workman, except in the case of some calamity like sickness, who was not in comfortable circumstances."

"I venture to say," Mr. Walker continued further on, "that in one year there will be very few willing to work and unable to do so. I think there are not so many men looking for work in this August, 1878, as in any August from 1840 to 1850.

[The Textile Manufacturer.]

Marvelous Inventions in America.

SIR: "John Bull" will, no doubt, be pleased to learn that there is supposed to be in existence a far greater invention than the Clements card attachment. I will, therefore, endeavor to give him a short history of this wonderful machine.

Some two or three years ago there was down in the State of Connecticut an antiquated specimen of a Dutch American, who had been hard at work for some time on this to be wonderful contrivance. No one seemed to divine its object, but finally a Yankee, more curious than the rest, accosted the inventor one day in this wise: "I say, friend, that is a mighty kind of a curious machine you are building up. I guess and calculate from its appearance it must be destined to produce wonderful things. Now, friend, just tell me what it is for?" The directness of the question caused the inventor to put down his hammer and chisel. He lifted his spectacles on to his forehead, and looking at the inquiring Yankee for a few moments replied, "Ha! yes, sir, this is to be one mighty machine. I have no time to tell you all it is designed for, but among other things it is intended for the production of sausages and scrubbing brushes." The inventor then pointed out two set screws and a peculiar hopper, explaining that by the combination of that peculiar hopper and the two set screws, sausages or scrubbing brushes could be produced at will by simply driving live pigs into the hopper, its capacity being only limited by the number of pigs operated upon.

Now, it is just possible that this machine, besides sausages and scrubbing brushes, is intended to produce checks, ginghams, etc., by feeding cotton seed; all wools thoroughly shrunk by feeding turnips and grass; silks and satins of every description by feeding silkworms, caterpillars, or mulberry leaves; and finally to produce power to turn itself, the bottled sunshine in coal will not be required; but merely a casual glance from the glorious sun which rules our system.

If all the above should be realized the pride of "John Bull" at the smartness of his American brother will be great indeed; but pride leaves little cash, and riding on a horse's tail is not very edifying.

Now, sir, I have had long experience on both sides of the Atlantic, and have concluded there is just as much smartness in the English workman as there is in the States; for are not English workmen sought after in America in preference to other nationalities? Why? Because he is generally a thoroughly good workman.

My impression is that in England the artisan is treated too much like a machine. Hence, England, with her vast wealth and ingenuity, begins to feel and fear outside competition. To win you must run. The British Isles ought to be the very hotbed of fostered ingenuity. It is all very well to provide free libraries, comfortable coffee houses, etc., for the artisan, but man is but man, in whatever stage we find him; he loves money, and if you desire to hold the lead in the race that is being run between nations, you must offer something more than libraries, coffee houses, etc., to your toiling artisan. Nothing is more conducive to fallow the intellect than working without stimulation. What makes Americans, native or adopted, so full of restless ingenuity, and constantly on the look out for improvement? It is an efficient patent law—a law made to meet the position of the artisan.

The English artisan has ceased to compete in a race in which he can only win weekly wages. The sooner he is given a title to his birthright (the production of his brain) the better. Where is the justice of a cheap and long term of copyright to a party who can write fiction, very often trash, while the artisan, to secure his ideas, is taxed by an unjust and expensive patent law? The law as it stands I consider the cankerworm of British industries. Nine tenths of inventors spring from the practical workingmen; if so, why not make the patent law simple and cheap? Is it the true policy for a manufacturing nation like Great Britain to tax her toiling sons to such an extent that there is an accumulated surplus fund of £1,250,000 credited to the Patent Office Department? What do those figures mean? So much paid over and above the working expenses of that department. It seems to me simply preposterous for any Government to derive a revenue from a tax upon the inventive genius of the people.

England has held her position by the genius of such men as Watt, Crompton, and Westwood. Yes, and other nations see it. Therefore America extends the utmost facilities to her inventors to secure their rights. Certainly this facility has caused numberless useless patents to be taken out; but what of that if it has fostered good ones?

Can "John Bull" wonder if a workman who earns, say, 32s. a week, should keep his ideas to himself? I say, give your artisans the same chance as they get in America, and you will find them holding their own. Yes! even in the production of card machine attachments, Dutch-American sausage and scrubbing brush machines, or for anything else.

I am, sir, yours truly, BROTHER JONATHAN.

Manchester, June, 1878.

A NEW CAMERA LUCIDA.

The various kinds of camera lucida hitherto used have always possessed many inconveniences, none of them allowing to be seen upon the paper with sufficient precision, and simultaneously, the image of the object and the point of the pencil. For the purpose of remedying this inconvenience, Dr. J. G. Hofmann, of the Rue Bertrand, Paris, has had recourse to an arrangement by which he believes he has obtained the most satisfactory results. The illustration, which we take from *Nature*, will give some idea of this arrangement.

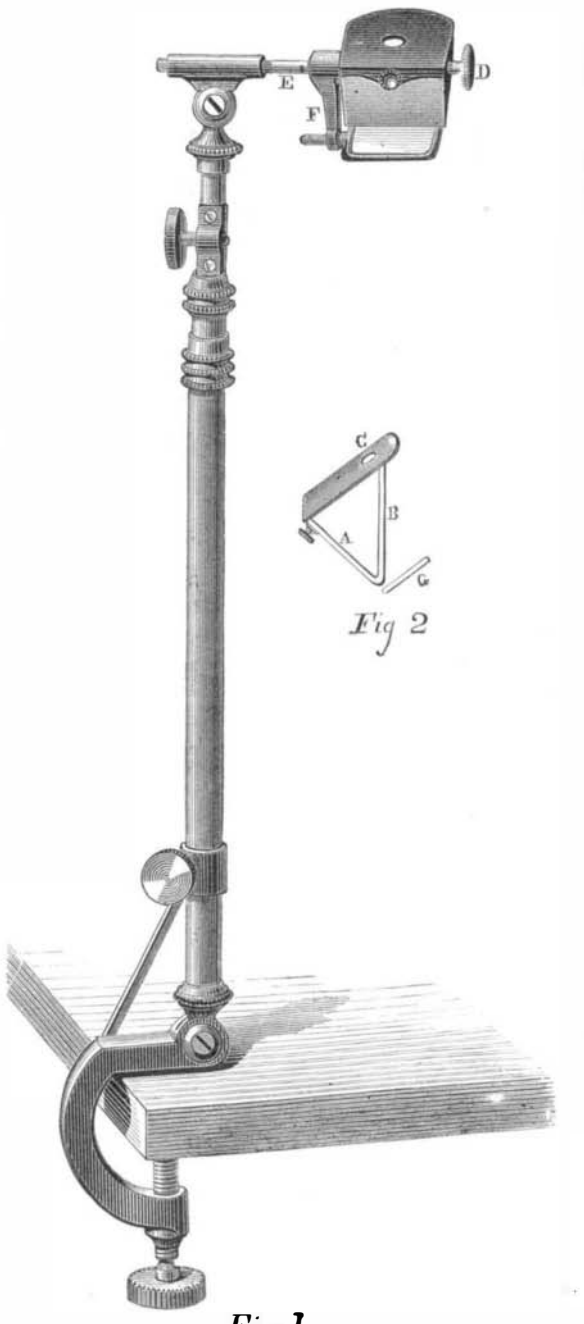

Fig 2

Fig. 1

Fig. 1 represents the general elevation, in half size, of Hofmann's camera lucida. Fig. 2 is a transverse section of the optical part, composed, at A, of a metallized mirror, or other metallic surface, polished and rigorously plane; at B, of a small plane mirror of parallel glass, forming, with the metallized mirror, a fixed angle. The function of the latter is to let pass a part of the luminous rays coming from the object to be drawn, and to show at the same time the point of the pencil alongside the image upon the paper. At G may be placed, in a movable frame, either a plate with parallel surfaces, or lenses of neutral glass of various foci, the principal object of which is to enable a satisfactory drawing to be made of the objects placed inside, when using white paper; for the outside, this glass serves to temper the brightness of the sun.

At C is the eye-hole or opening before which the eye is placed. The knob, D, serves to place the chamber in a convenient position, which sometimes depends on that of the artist with respect to the object, but generally it is convenient to place the mirror, D, vertically. With the same pieces of the optical part, with the addition of a concentrating lens, Dr. Hofmann has been able to construct a second model applicable to microscopes, for which, as well as for telescopes, all previous forms of camera have given only very mediocre results.

NOTES OF PATENT LAW.

DECISIONS OF THE COURTS.

In Herring *vs.* Gas Consumers' Association, the complainant alleged that he was the owner of an undivided two-thirds interest in the patent described, and that the defendant was the owner of the other undivided one-third interest; that the defendant was using a device which was an infringement upon their common patent, and that he was so doing under cover of their common patent. The complainant claimed damages for said infringement; not for the entire amount, but for his proportion, to wit, two thirds.

The defendant demurred to the bill of complaint, on the ground that, being a joint owner of the patent, he could not be treated as an infringer. The direct question thus presented was whether an infringer of a patent could escape liability for his infringement on account of being a joint owner of the original patent so infringed. Now it is evident that if a stranger was guilty of the infringement he could be compelled to respond in damages; but could a part owner infringe the common patent and escape all liability? If so, then, however small his aliquot part, he could make the enjoyment of the patent valueless to his joint owners. He has, by virtue of the joint ownership, a right to use the patent, but he has no right more than a stranger to infringe the same.

The court, therefore, looking at the question from this standpoint, overrules the demurrer, holding that the infringer could not escape the consequences of his own wrong to the other joint owners of the patent, by averring that he was by his infringement injuring not the other joint owners alone, but himself also. In other words, he could not, under cover of his interest in the common patent, shield every wrong doer who might infringe the patent. He would, by so infringing, become liable to the other part owners for the wrong done, and the amount of the recovery would be proportionate to their respective interests.

TRADE MARK CASES.—DECISIONS OF THE PATENT OFFICE.

The Commissioner of Patents has affirmed the action of the Examiner of Trade Marks in refusing to Rader & Co. the registration of a trade mark for drain and water pipes, consisting of the word symbol "iron stone" in connection with an oval figure. No trade mark for the words "iron stone" could be granted, as it has been repeatedly decided that a generic name, or a name simply descriptive of an article of trade, of its qualities, ingredients, or characteristics, could not be entitled to protection as a trade mark. But the question in the present case was, whether such words, when associated with the oval figure exhibited by the applicants, would constitute a registrable trade mark. Simple circles, ellipses, scrolls, borders, and the like, marked in plain outline, are commonly employed in business as inclosures for trade or descriptive names, and for terms designating quality, place of manufacture, and other information appropriate to particular classes of goods. The outline figure in such case serves more to direct the eye to the lettering or symbols they inclose than to suggest of themselves or by association any idea of individual origin or ownership. While it is true that plain outlines, such as the lozenge figure, etc., have been registered, yet such registration has only occurred in those cases where the characters inclosed were proper trade marks of themselves. The applicants not being able to bring themselves under such cases, their application was refused, the Commissioner holding that a proposed trade mark in which words descriptive of quality, characteristics, etc., were inclosed in a simple outline border—as was the case with the application under consideration—was not sufficiently distinctive from the descriptive words used alone to entitle the mark to registration.

An Economical Locomotive.

A new anthracite coal burning locomotive has lately been tried on the Old Colony (Mass.) Railway with very promising results. It is said that it is constructed with a largely increased fire surface in order to remove the difficulties arising from the consumption of coal in the ordinary locomotive. Rating the consumption of fuel in the ordinary locomotive at forty to fifty pounds per hour per square foot of grate surface, in this engine when doing its hardest work the consumption is said to be only sixteen pounds per hour. The fire box is behind and on a line with, instead of under, the boiler, and while in the common locomotive the dimensions are 60 and 66 by 32 inches, the new design is 8 feet 6 inches long by 7 feet 6½ inches wide. The heating surface of the fire box is 103 square feet; of the combustion chamber, 26 feet. The grate rest is between water bars, which prevent them from burning out, and the area is 64 feet. The diameter of the six driving wheels is 54 inches, and above them are placed the boiler and fire box. The cab is over the rear end of the boiler, while on top of the fire box are seats, protected from the sun by an awning. The weight of the engine is 86,150. At the front end of the boiler is a revolving register, which, when open, has an area of six hundred square inches. On account of the free steaming qualities of the engine, it becomes necessary to open this register in order that the steam may pass directly to the stack without passing through the fire. The fuel used by this engine can be delivered in Boston at $2.25 per ton, or $1.50 less than the cost of fuel which is now used. As the fuel remains perfectly quiet in the fire box, the consumption is slow, and although the engine has no spark arrester, not a spark escapes from the stack; neither is there any annoyance from smoke and gas, which are consumed.