

THE "DAUGHERTY VISIBLE" TYPEWRITER.

We illustrate in our present issue the "Daugherty Visible" typewriter, a machine which in many ways upholds the makers' claim that it is unique. The disposition of the type with upturned faces, so that they are perfectly accessible for cleaning, the arrangement of roller and carriage by which the writing can be seen by the operator, the very characteristically soft and light touch of the keys, and the minor details which cannot be described within our limits, mark as many innovations on the mechanism of the ordinary class of typewriters.

The general appearance of the machine is shown in the two general views, in which the paper is shown in position for receiving the impression of the type. In front is the regular keyboard, comprising the letter bars, the spacing bar and upper case bars. Immediately back of the keyboard come the type bars, arranged nearly in the segment of a horizontal cylinder, thus departing from the familiar basket arrangement which has been so very much used.

When depressing a key, the type bar is depressed at its back end, and the type, which occupy the ends of the bars nearest the operator, flies up and, striking the inking ribbon, imprints the letter on the paper. With each motion of the key a type is thrown against the ribbon and the ribbon is independently pressed against the paper before the type strikes it, and as the key is released, the ribbon drops back. One of the all-important points of the machine is that the writing is visible; the line being written comes just above the metal scale. The motion of the keys is somewhat peculiar. They are very flexible and the touch is very easy. The center keys move vertically up and down. The lateral keys when depressed move down and a little outward, this peculiar motion tending to give much relief to the operator.

From its construction it seems to be the acme of simplicity, as its operative parts number but 105, while in other typewriters as many as 500 or more pieces are employed. In addition to the general view we present illustrations of some of the parts. Fig.

1 of these views shows the frame of the machine with the printer roller and carriage removed as well as the keyboard and type bar. The two circular segments of wire which run across the base give the line of the letter bars, as the latter rest on these wires. In front is

seen the spacing bar, extending nearly across the front, while on each side thereof are the upper case bars. The latter, when depressed, cause upper case or capital letters to be imprinted.

In the back are seen the two inking ribbon rollers, and in the center of the ribbon is the space left free

When in the machine, the type lie exactly as shown in Fig. 2, so that their faces are exposed for cleaning. The ready accessibility of the type cannot be too strongly emphasized.

Fig. 3 shows the roller and carriage. This part also is easily removed. By simply pushing it to one side it all comes away as shown. When carriage, type and keyboard are taken out, the machine is stripped for the fullest inspection and cleaning. Fig. 1 shows how complete is the exposure of all details by the procedure described.

The operation of the type bars is peculiar and is represented in Figs. 4 and 5. The key lever pivoted not far from its center has a species of forked end; when a lever is depressed, the upper end of the fork first presses against the type bar and raises it somewhat slowly; after the type bar has reached a certain elevation, the upper point of the fork loses engagement with the type bar while the lower point catches it at a greatly reduced leverage and sends it in very rapidly against the type ribbon. In

this way the desirable feature is secured that the type bar begins to rise slowly and terminates its motion at high speed.

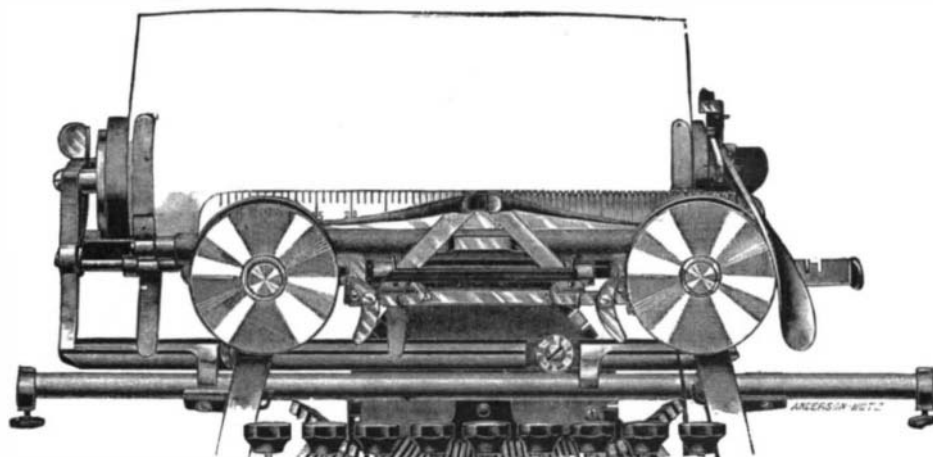
There are many other ingenious features about the machine which cannot be well condensed within the space at our disposal. The easy removal of the entire

type action is specially to be commended, as this makes it possible to remove the action in case any of the type are broken and to replace it temporarily by a new one until the old has been repaired. The same is to be said of the carriage, which is instantly removable. All the parts are interchangeable and a very slight inspection is sufficient to show that it really has no light or delicate parts to be injured by the hard service to which a typewriter is necessarily subjected.

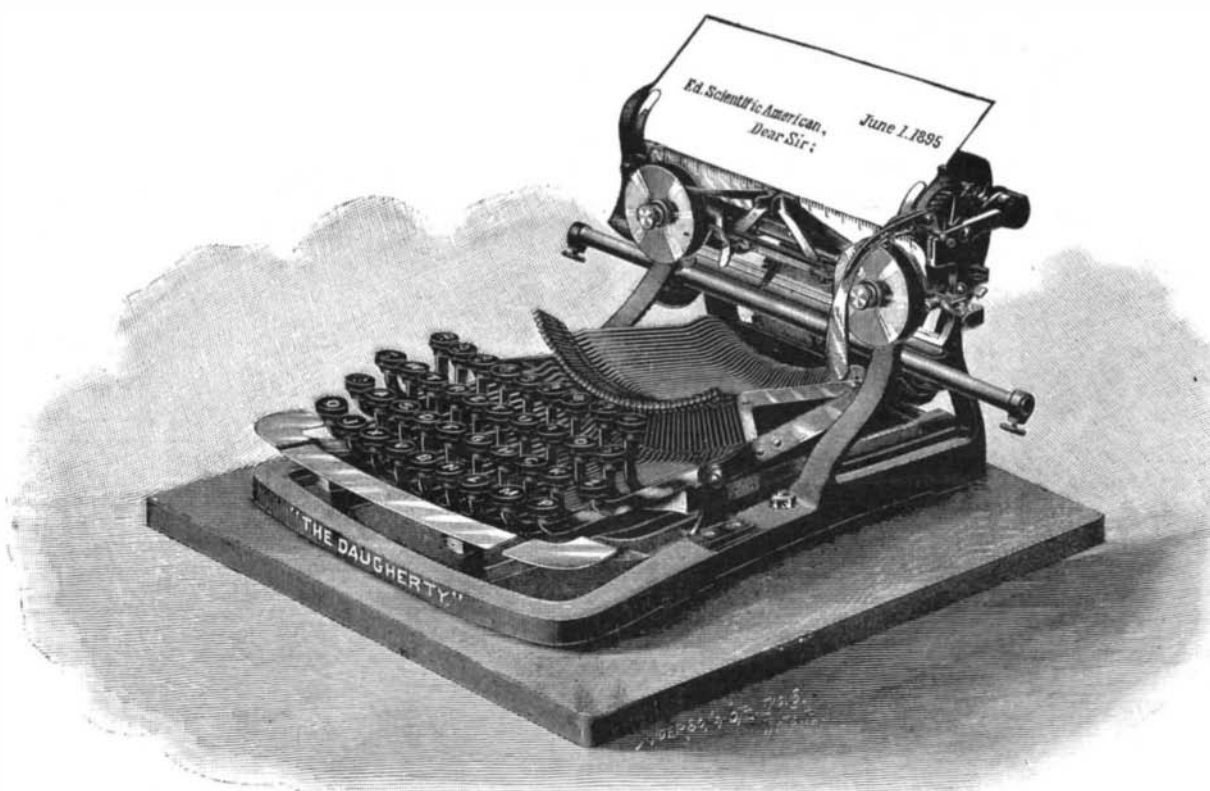
It is obvious that where the entire writing can be seen, as in the "Daugherty Visible," great facility in executing tabular or specially spaced work is given. It is a fair assumption that any operator who has become accustomed to see the work would find it very disagreeable to

work in the dark, as is done with the ordinary machine.

This new machine is being introduced by the Daugherty Typewriter Company of 21 Sixth Street, Pittsburgh, Pa.



THE DAUGHERTY TYPEWRITER—FRONT VIEW OF TOP OF MACHINE.

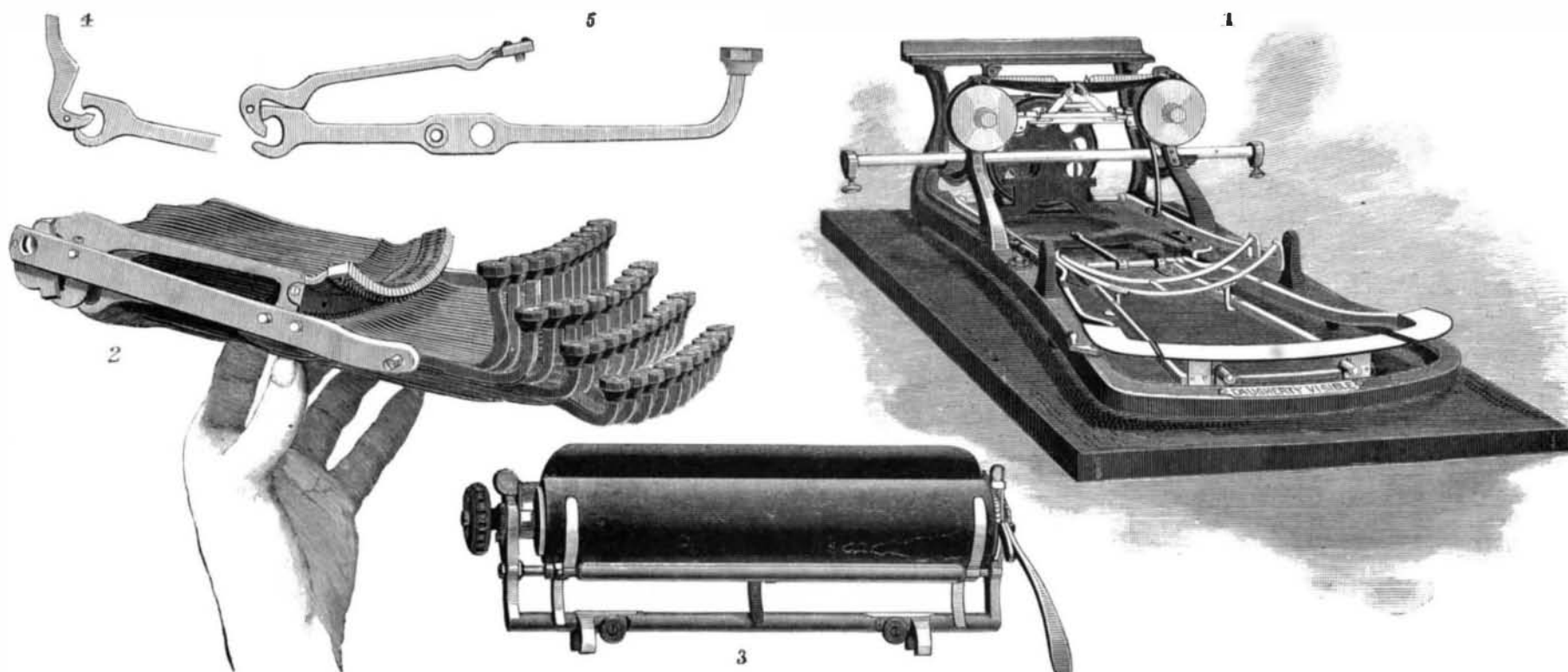


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Fig. 2 shows the keyboard and type bars, all of which come out as shown in one part. The removal involves not the least trouble, being only the work of a minute. It is obvious that this gives great facility for cleaning or getting at any trouble that may exist.

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THE DAUGHERTY TYPEWRITER—PRINCIPAL PARTS.

Rhododendrons.

The Garden (London) considers the rhododendron the "queen of flowering shrubs." After naming a number of the choicest varieties, but which do not endure the winter climate well, the writer adds:

To those who may be interested in procuring a few of the very grandest varieties of hardy rhododendrons—whether old or new—in cultivation, and who do not care to wade through nurserymen's bewildering catalogues, I would suggest a trial of the following twenty kinds as almost certain to give satisfaction in their respective colors if properly planted and attended to. If the former is well done, they do not require much of the latter, beyond well watering and syringing just when they are coming into bloom. Baroness L. De Rothschild, superb conical truss, brilliant scarlet, with lighter throat; Mrs. John Penn, salmon pink edges, with waxy cream center; Helen Waterer, white center, with most brilliant scarlet edge; Kate Waterer, rose crimson, with yellow center; Lady Eleanor Cathcart, salmon pink, finely marked, very beautiful, but shy bloomer; Mrs. R. S. Holford, superb truss, salmon pink; H. W. Sargent, dark velvety crimson; James Mackintosh, rich velvety crimson, fine truss, and splendid foliage; Michael Waterer, an old favorite, bright scarlet, rather poor foliage; Marchioness of Lansdowne, light red, intense maroon blotch, very fine flower; Marie Stuart, lovely shade of rose lilac, with intense purple blotch, splendid truss and habit, flowers as beautiful as an orchid; the Queen, one of the most beautiful whites; Lady Gray Egerton, pearly white, magnificent truss; Sir T. Sebright, metallic bronzy purple, free and long bloomer; Joseph Whitworth, dark maroon, beautiful flower and foliage; Martin Hope Sutton, brilliant dark scarlet—if perfectly hardy, one of the finest in cultivation; James Marshall Brooks, scarlet, with a curious mossy bronze eye; Broughton (or Lord Palmerston), very similar, but not synonymous, grand trusses, bright pink, fine foliage; Frederick Waterer (or John Walter), different habit and foliage, but very similar flowers, bright scarlet, perfect trusses; Sigismund Rucker, rich magenta crimson, with a black intense blotch.

It would be easy to add twenty more almost as good as the foregoing, but it would be hard to name twenty better. When varieties such as those enumerated cost very little more than the ordinary ponticum, it is strange that they are not more extensively planted.

Potash Soft Soap.

Potash soft soap for engineer's lubricating purposes may be made as follows: Take 20 pounds of absolutely pure, fine, strong caustic potash, dissolve it in an iron or earthenware vessel, with 2 gallons of soft water. Add this strong lye to 9 gallons of oil, heated to about 140° F., pouring it in a small stream and stirring continually until the two are combined and smooth in appearance—about ten minutes is necessary. The mixing may be done in a wooden barrel. Wrap it up in blankets to keep in the heat that is generated by the mixture itself slowly combining and turning into soap. Put it in a warm room and leave it for three days. The result will be 120 pounds of the finest concentrated potash soft soap, pure, and free from adulteration. Any vegetable or animal oil will do. Pale seal oil for wire drawing and lubricating is the best. For ordinary washing, when made with cottonseed oil, the soap is both cheap and good, and, besides being useful for machinery purposes, produces a very superior soap for flannels and greasy or stained woollens in cold water.—Textile Industries.

New Machine Guns Wanted.

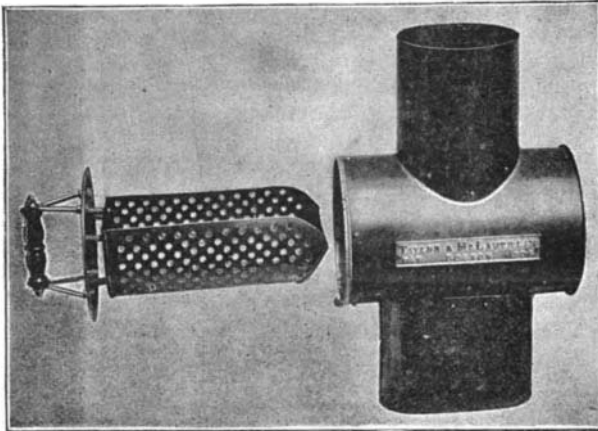
The Chief of the Bureau of Ordnance will shortly issue invitations to companies or individuals to submit machine guns of 6 millimeter caliber to a test, with a view to their adoption in the navy. It is probable that the first order of the bureau will be for 100 guns. An American invention will of course be preferred, but the best gun will be selected without reference to where it is made. Only guns using smokeless powder and jacketed bullets will be used. Ten thousand rounds of ammunition must be supplied. Great attention will be paid to the facility of dismounting and assembling the mechanism, and to the liability of the gun being injured by dust and rust. The guns will be fired for rapidity without aiming with ordinary and extreme elevations and depressions. Rapidity and accuracy of aiming will be tested by target firing at moderate ranges. Excessive pressure tests will also be made. It is expected the Driggs-Schroeder, Hotchkiss, Gatling, Gardner, Maxim and Robertson guns will enter the contest.

How to Drive Rats Away Alive.

Somebody who has tried it recommends putting pulverized potash, which soon becomes sticky when exposed to the air, in all the rat holes about the house. The special detestation of a rat is anything which will stick to his silky coat. Some persons find a mixture of equal parts of Cayenne pepper and Scotch snuff sprinkled well into the holes still more efficacious.

KITCHEN REFUSE READILY DISPOSED OF.

One of the most serious of the sanitary problems in all our large cities is that of the practical and economical disposal of garbage, or refuse and waste of the kitchen. Its removal by the local authorities is expensive and frequently the cause of much vexation and annoyance, although the necessity that it be promptly disposed of is everywhere recognized as imperative, in the interest of the public health, to which there is nothing more inimical than a quick decay of organic matter in warm weather. To obviate this difficulty and provide for the complete removal of all garbage in a most simple and inexpensive manner, is the object of the improvement represented in the accompanying illustration, and which is being introduced by the Sanitary Construction Company, of No. 113 Devonshire Street, Boston, Mass. The carbonizer consists of a horizontal cylinder about one-third larger in diameter than the stovepipe in which it is to be placed, according to convenience, in a joint or an elbow of the pipe making the connection between the stove and the chimney. It may be applied to any stove or furnace and any size of pipe. One end of the cylinder is removable, and attached thereto is a basket or scoop of somewhat reduced diameter, and with perforated sides and a tight bottom, affording free passage for the smoke and heat from the stove around the scoop and through the perforations. When this scoop or basket is filled with garbage and placed in the cylinder, the water is quickly driven off, and the residuum changed to charcoal, which burns freely when placed in the fire, affording in fact a valuable material for kindling the fire in the morning. The natural draught up the chimney prevents the escape of any odor into the rooms, and there is no odor from the chimney, as the gases from the stove thoroughly deodorize the gases escaping from the drying garbage. It is intended that the waste shall be placed in the carbonizer as it is made, so that there will be no accumulating garbage in the kitchen and no need of a garbage bucket. The device has been

**A HOUSEHOLD GARBAGE CARBONIZER.**

highly recommended by the chairman of the Boston Health Board and other sanitary and street cleaning officials. Many of them are in use in Boston and vicinity.

The Bordeaux Mixture.

The history of the cupreous solution popularly known as Bordeaux mixture is brief, but of much interest, more especially as it contains conclusive evidence that, as in the case of some other discoveries of great economic importance, this fungicide is the result of an accident. It is a matter of some interest to know that it was first used in the vineyards of the Medoc, not as now for the purpose of preventing or checking the ravages of fungoid diseases to which the grapevine is liable, but for the purpose of preventing the grapes being stolen. A thick paste was made with lime and sulphate of copper, and this was sprinkled upon the vines and trellises alongside the highways. There is no authentic information with regard to the length of time the practice had obtained previous to Professor Millardet visiting the region in 1882, but we know that when engaged in his investigations in the Medoc vineyards in that year, he was informed by the owners that the vines over which the paste was scattered escaped the ravages of the mildew.

Taking note of this fact, Professor Millardet, who had for several years been engaged in investigating the fungus, with a view to discover a remedy, conducted a series of experiments in 1883 with a similar preparation, and although the results were not satisfactory, he repeated them on a larger scale in 1884. These proved more encouraging, and at the end of the year the results were communicated to the Agricultural Society of the Gironde, and as the French vineyards were being seriously injured by mildew, the communication created much interest, and a considerable number of viticulturists at once instituted experiments with the mixture. Subsequently various formulas for its preparation were published, the proportion of copper sulphate recommended ranging from 13.2 pounds to 2.2 pounds to 22 gallons of water, but

Professors Millardet and Gayon found in the course of their investigations in 1888 that the mixture in which the sulphate of copper was used at the rate of 2.2 pounds gave nearly, if not quite, as good results as one of much greater strength. While to the French is unquestionably due the honor of discovery of this important fungicide, the credit of extending its use as a preventive of diseases other than those of the grapevine and potato plant belongs to American investigators.

The use of Bordeaux mixture has extended in America at a very rapid rate, and although it has not been found a panacea for all the fungoid diseases of plants, it has proved of great value, as shown in the Bulletin prepared by Mr. Fairchild, assistant pathologist of the U. S. Department of Agriculture, in checking a considerable number of them. The more important of the diseases that may be prevented or checked by its judicious use include the downy mildew of the grapevine, the pear, cherry, and plum leaf blights, the apple and pear scab, the peach leaf blister, the quince spot, the chrysanthemum leaf spot, the black rot of the potato, and the well known potato disease. There are some other diseases for which Bordeaux mixture will probably prove an effectual remedy, but those mentioned are sufficient to indicate that its utility is by no means limited to preventing the attacks of the destructive *Phytophthora infestans*.—The Gardeners' Magazine.

The Iron Trade Situation.

The present situation of the iron and steel industries of the world is one of more or less suspended animation and unstable equilibrium. All countries alike are looking forward to a great improvement on the existing condition of things.

England must be content in the future to share the outside markets of the world with Germany, Belgium, the United States, and, to a less extent, other iron-producing countries, including probably Spain, Austria, and Russia.

It may now be said that there is no iron-making country that is not prepared to place a surplus of its produce, actual or possible, on outside markets. The following statement shows approximately the existing resources of the chief metallurgical countries for the production of pig iron and steel:

	Pig iron. Tons.	Steel. Tons.
The United States.....	14,000,000	7,500,000
Great Britain.....	9,000,000	5,000,000
Germany.....	6,500,000	4,000,000
Belgium.....	1,000,000	950,000
France.....	2,800,000	1,000,000
Russia.....	1,000,000	600,000
Austria-Hungary.....	1,000,000	650,000
Sweden.....	750,000	500,000
Spain.....	400,000	200,000
Italy.....	60,000	130,000
Canada.....	150,000	75,000
Totals.....	38,460,000	20,605,000

When we consider that the greatest quantity of pig iron hitherto produced in any one year has been about 25,000,000 tons, and that the largest output of steel in a single year has been about 12,000,000 tons, it is clear that there is a considerable margin available for meeting any possible increase of demand, and that there is little or no chance of such increase of demand leading to a material increase of the realized prices of either commodity. If a large demand springs up in the United States, and prices become inflated there in consequence, Europe will step in with unlimited supplies, while conversely, if the demand comes from outside markets, Europe and America will fight with the utmost vigor to secure and hold the field.

As matters stand at the present time, it is astonishing how nearly the chief iron-producing countries of the world come to one another in the matter of prices. Between the United States, England, and Germany there is not, at the moment, a difference of more than 10 per cent in the current prices of ordinary descriptions of iron and steel. In other words, it comes to this, that prices are tending to a virtual equality in all the chief countries of the world, except for special products, more or less indigenous to the different countries concerned.

All this is, or should be, a source of satisfaction and of protection to the outside markets, which for that reason should have the less hesitation in taking up new enterprises calling for large supplies of iron and steel. When the United States began to import steel rails from England, and for many years afterward, they had to pay from £10 to £15 per ton for them. To-day the same country is prepared to supply steel rails to outside markets for less than £4 per ton at works.

Manufacturers can hardly, in view of the facts just stated, look for any very large increase of price. They may, of course, secure much more remunerative rates than those current for the last year or two. If they had not this prospect to look forward to, it would hardly be worth the while of the majority to continue in the business. But where supplies can be drawn from such a great variety of sources, the profits that were formerly easy become virtually impossible.—Iron and Coal Trades Review, London.