

Manufacture of Watches in Switzerland, 1842

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The majority of this article is based on John Bowring, *Report on the Commerce and Manufactures of Switzerland*, London: His Majesty's Stationery Office, 1836.

It is not, perhaps, generally known, that a large proportion of all the pocket watches used in Europe are made in a comparatively small district in the western part of Switzerland. Great as is the skill of the makers in France and England, yet from various causes the Swiss watches still maintain a sale to such a remarkable extent as to constitute an important item in the wealth of the country. The mountainous districts of Neuchatel, the western portion of the adjoining Canton of Berne, the Jura mountains, and the town of Geneva, are the principal seats of the manufacture. A brief notice of the rise and progress of the manufacture will be found interesting.

Up to the close of the seventeenth century, the inhabitants of Neuchatel had no idea of constructing clocks or watches with springs, having only made wooden clocks with weights. But about that time one of the inhabitants of the Neuchatel mountains, having returned home from a long voyage, brought with him a pocket-watch, the first seen by his neighbours. He gave it to a mechanic named Richard, for repair; and this Richard, who was an ingenious man, not only repaired the watch, but conceived the idea of constructing a similar article. After great labour and perseverance in the construction of all the different movements, and even of the tools wherewith he was to make them, he succeeded in making a watch. This achievement created a great sensation in the country, and excited the emulation of several ingenious men to imitate the example of their fellow-citizen ; and by degrees the art of watch-making became introduced among the mountaineers, who had hitherto exercised no other trade or profession than those which are strictly necessary to their daily wants, their time being principally employed in cultivating an unproductive soil. They had been accustomed, before the introduction of this new branch of industry, to seek for work during the summer months among the people of the surrounding cantons, and to return to their families in winter, with the small amount of earnings which they had saved.

During the first forty or fifty years, a few workmen only were employed in watch-making, and, owing to the numerous difficulties they had to surmount, the slowness of execution caused by the want of convenient tools, and the absence of proper materials, the production and profits were inconsiderable. They began, at length, to procure the articles of which they stood in need; but the high prices which they had to pay for them induced many of the workmen to provide tools of home-manufacture. They ultimately succeeded not only in producing tools rivalling those of foreign manufacture, but in introducing many new ones of a superior kind. From that period they have constantly been in the habit of inventing other instruments and tools, to facilitate and perfect the art of watch-making. In fact, the manufacture of watch-making tools has become almost as important a branch of trade as that of watches themselves; for tools are now forwarded to those countries which were formerly in the habit of supplying the mountaineers of Neuchatel with such articles. In proportion as a greater number of workmen embraced the profession of watch-making, several amongst them, animated by the wish of perfecting themselves in their art, went for that purpose to Paris, the great centre of arts and sciences. Those who came back to Switzerland greatly contributed by the knowledge they had acquired, to the development and advance of the art among their fellow-citizens. Others, such as Berthoud, Breguet, and Perrelet, settled permanently in Paris, and raised themselves to the highest degree of celebrity as horologists.

The effect which the introduction of this branch of art has produced on Neuchatel is most remarkable. About ninety years ago, a few merchants began to collect together small parcels of watches, in order to sell them in foreign markets. The success which attended these speculations encouraged the inhabitants

to devote themselves still more sedulously to the production of such saleable articles. insomuch that nearly the whole population of the Canton, with few exceptions, have embraced one or other of the various branches of this art. Meanwhile the population has increased three-fold, independently of the great number of workmen who are established in almost all the towns of Europe, in the United States of America, and even in the East Indies and China. The face of the country, too, has undergone great changes. Notwithstanding the natural barrenness of the soil, and the bleakness of the climate, the country is now studded with beautiful and well-built villages, connected by easy communications; while the population are in the enjoyment, if not of great fortunes, at least of a happy and easy independence. The upper valleys of Neuchatel form the nucleus or centre, from which the manufacture has spread east and west to the Cantons of Berne and Vaud, and the valleys of the Jura mountains.

The Neuchatel watch-makers, like artisans of other kinds, have occasionally had their arrangements somewhat disturbed by the introduction of machinery. A watch consists of a great many movements, or separate pieces, the making of which forms almost as many distinct branches of trade; but about the end of the last century a workman named Jeanneret invented some machines whereby many of these separate parts might be made much more rapidly than under the old method. The effects of this change were such as generally result from similar occurrences, viz., temporary distress, but ultimate benefit. The hand-workmen could not sustain the competition entailed upon them by the machine-made articles, and many of them experienced a great deal of misery and distress. Several were reduced to pauperism, and became a tax upon the public; while others were enabled to support themselves by embracing other branches of the trade. By degrees, however, this disarrangement ceased to be productive of distress, and the ultimate effect has been, that a very much larger number of watches are now made than when the whole were manufactured by hand, and the execution is much more accurate.

During the winter, which, in the mountainous districts lasts six or seven mouths, the inhabitants remain almost wholly within doors, exercising their ingenuity and industry in watch-making; and nearly a hundred and twenty thousand watches are made annually in these elevated regions, of which about thirty-five thousand are of gold, and the rest of silver. Estimating the average value of the gold watches at a hundred and fifty francs each, (about six guineas English,) and of the silver watches at twenty francs, (about seventeen shillings)*, it makes an aggregate of nearly seven millions of francs annually, (about two hundred and eighty thousand pounds,) independent of the sale of clocks and of the instruments for watch-making, the proceeds for which are very large.

The continual intercourse which the inhabitants have been in the habit of maintaining with those countries where the mechanical arts have received the greatest development, and the frequent voyage and travels of the merchants and manufacturers in those several countries, have had great influence upon the industry and ingenuity of the inhabitants. It is not by any protective laws that their prosperity has been brought about, for the makers have been from the first allowed to conduct their operations in the way most conducive to their own interests. As to the number of workmen employed, it is difficult to form a correct estimate, because the inhabitants are not congregated in large manufactories, but carry on their work in their own houses, and amidst their own families. It is supposed, however, that in the small canton of Neuchatel and its immediate vicinity, there are about twenty thousand persons employed in watch-making, or in manufacturing instruments and articles for the construction of watches. Each artisan working at home, and for whomsoever pays him the best price, — and the merchant having an interest to encourage by paying the best prices to those who furnish him with the

* We must not judge of the value of a Swiss watch in Switzerland, by that of an English watch in England. In our own country the watches are made much more solid, durable, and mathematically correct, while, at the same time, the wages of labour are greatly higher than in Switzerland, These two circumstances account for the low averages mentioned above.

best materials and work, — a kind of emulation is thus engendered among the workmen, to obtain preference and advantage. The workmen are mostly landed proprietors on a small scale: they cultivate their own ground in leisure hours, and live simply and frugally in the midst of their families.

Let us now turn to the town of Geneva, situated somewhat to the south of the canton which has lately occupied our attention. Although the introduction of the art of watch-making into Neuchatel was very singular and interesting, yet in point of time Geneva precedes it by centuries. In the ninth century, clocks were known in Geneva, and it is believed that the art of manufacturing them was imported from Germany. The bell, or sounding part of the machine, was added some time after; and in the eleventh century clocks were not uncommon. Chimes were a later invention, and, as the machinery by which time is measured became more complete and minute, watches became gradually introduced. In the year 1587, Charles Cusin, of Autun in Burgundy, settled in Geneva as a manufacturer of watches, which were at first sold for their weight in gold. He had many apprentices or pupils, and his success naturally attracted labour from less profitable employments, and spread the watch-making trade very rapidly. This trade may be divided into two branches, one of which relates to the making of chronometers, time-keepers, clocks, stop-watches, and all the varieties in which perfection of work is required. The second branch is that which relates more particularly to elegant watches, whose beauty of appearance is more valued than the excellence of the internal works.

For a long time Geneva stood alone; the maker found a ready sale at high prices, and reaped great wealth. By degrees, however, rivals sprang up to share some of her celebrity. Ingenious men from other parts came to Geneva to learn the art, and on being afterwards refused permission to settle there, they carried their skill and knowledge to other cantons and other countries. This rivalry, however, was a benefit rather than an injury to Geneva, for it gave a spirit of emulation to the watch-makers. The demand for watches kept increasing, and in time the ingenuity of individuals was excited to invent machines, to improve the forms, and to display increased taste in the exterior embellishments.

The works or machinery of watches are made principally at Fontainemelon and Beaucourt; and the unfinished work is sent to Geneva to be finished. The manufacture of repeating-watches led to another species of industry; for attention to the various tones elicited from metals, and the education of the people in the science of harmony, soon connected music with machinery. Musical seals, rings, watches, and boxes, were the result, and were produced in great numbers, — the first experiments having indeed been costly; but practice so reduced the price, as to create a large market, and still leave a considerable profit. The success of this new branch of manufacture encouraged other inventions: musical automata of various characters, some combining great perfection of motion with external beauty and perfect harmony, concentrated in an exceedingly small space.

In respect to the probable continuance of the Geneva watch-making trade, and the grounds on which it is partly based, Dr Bowring (to whose valuable Reports we are chiefly indebted for these details) makes the following observations:—

A watch formerly had been an object indispensable for its use: it now became an article of taste and fashion; it furnished a convenient token for the expression of regard, and a present combining utility and taste with positive value. Under whatever form, and for whatever purpose employed, the use of watches became the cause of unbounded activity in the workshops of Geneva. Many fashionable watches, those of a more common description, and those of a still worse class, which sin against all true principles in their construction, those again remarkable from the singularity of their make, are, for the most part, an assemblage of parts destined to last but a little time, even for the first moment of their being put together, which time the watch-makers still farther endeavour to shorten to the utmost of their power. The imperfections of these little machines are a certain warrant of their speedy destruction; besides which, the want of taste, the damage they receive in warehouses, through inattentive and

unskilful hands, a salt or humid atmosphere, all sorts of accidents and want of care on the part of the owners, are further causes, which contribute powerfully to the destruction and demand for watches. If to the causes of destruction here mentioned, we add the vast new sources of demand arising out of increased civilization, the wider spread of general prosperity, the local industry which pervades every spot, the commerce which penetrates the most remote corners, we shall find in these circumstances abundant reason to anticipate a constantly increasing demand for the watches of Switzerland, which perpetually struggles to maintain its pre-eminence for taste and moderation in price. It may, therefore, be presumed that this branch of industry contains within it the seeds of a firm and permanent prosperity and is destined to increase rather than to decline.

Switzerland has long furnished the markets of France with watches. It has been asserted that not ten watches are made in a year at Paris, the whole, with scarcely an exception, being brought from Switzerland. The arrangement is this: France furnishes to Switzerland about fifty thousand watch-movements annually, which the Swiss work up into watches, and send back to France, where the French manufacturers merely examine and rectify them.

This transfer of watches from Switzerland to France is not, however, permitted to be made duty free, a tax of ten per cent, on the value of silver watches, and six per cent. on that of gold, being imposed. The existence of a tax on so portable an article, leads to smuggling on a scale more or less extensive; but in former times, when the duty was a great deal higher, the smuggling trade was carried on with a boldness almost unparalleled. One manner of smuggling watches was to sow a hundred and twenty, or a hundred and fifty, into the smuggler's waistcoat. The object of the French government in imposing the duty, was quite as much to encourage home manufacture by discouraging foreign, as to obtain an increase of revenue; but the attempt was wholly abortive; not an additional watch was manufactured in the country, nor did the producer or the consumer reap the slightest advantage. The pernicious effects of the system were also experienced in another way, — the whole frontier became infested with bands of revenue defrauders, daring and reckless characters, whose avowed profession was to violate the laws. Since the duty has been fixed at a more moderate rate, smuggling has become less profitable; and a considerable number of watches are introduced in a regular and legitimate way.

With respect to the comparative production of watches in Switzerland and in England, it has been stated, by one of the principal manufacturers of Geneva, that one great advantage which the Swiss possess over the English watch-makers, is the low price at which they can produce the flat cylinder watches, which are at the present time much in request. The watch-makers of Great Britain buy largely both at Geneva and Neuchatel, and scarcely a single watch pays the duty of twenty-five per cent., because the risk of clandestine introduction is small. The average annual export to England, is from eight to ten thousand watches, and the average price about ten pounds sterling. In strictness it may be said that the Swiss watches do not interfere greatly with the English home manufacture, because the parties supplied are, in great measure, different. The English watches are far more solid in construction, fitter for service, and especially useful in countries where no good watch-makers are to be found. On the other hand, the Swiss watches require very delicate treatment. English watches, therefore, are sold to the purchaser who can pay a high price; while the Swiss watches supply the classes to whom a costly watch is inaccessible.

The contraband trade is said to be very considerable in this instance, as in that of commerce with France. A considerable sum which might reach the British Treasury if the duty were low, now does not reach it at all; for the duty of twenty-five per cent is so tempting as to lead to smuggling on an extensive scale, carried on chiefly by French houses. This has been well commented on by an intelligent manufacturer of Geneva. —

The English consumer pays the gains of the French smuggler, and pays, too, for that damage, delay, and risk which accompany fraudulent transactions. Can illicit introduction be guarded against in an article of small bulk exposed to heavy duty? Assuredly not; and in as far as seizure can be effectual, the additional cost it imposes must be paid by the consumers of a country which imposes the heavy duty. A low duty would bring to the customs a large quantity of the imported watches. If five per cent. were levied, which is in itself a high duty to impose on the productions of a country that levies no duty at all on British goods of any sort, we think it likely that six or seven thousand watches from Geneva, and nearly double that number from Neuchatel, would be entered at the British custom-houses. Now taking the average value at which these watches would be entered to be six pounds sterling, the amount would hardly be less than £110,000 sterling, which would give a yearly income of £5,500.

In a commercial point of view, the surreptitious introduction of Swiss (or as they are more frequently, but erroneously, termed French) watches into England, is perhaps a more important point than the transfer across the French frontier; but this latter has far more of romance about it. A whimsical instance is narrated as having come under the notice of one of the head customs officers in France. Having on one occasion to travel into Switzerland, the smuggling from which often caused him much official disquietude, he determined to try an experiment on the reputed expertness of the Swiss smugglers. He went to one of the chief watch manufacturers at Geneva, and purchased watches and trinkets to the value of about forty thousand francs; on condition that the seller would guarantee their safe arrival at Paris without paying any duty on crossing the French frontier. The dealer made out the invoice, saying, however, that a premium of ten per cent. must be charged for the risk and expense attending the smuggling of the goods into France; the price and the premium being payable only when the goods had been safely delivered at Paris. The director agreed to all this, and laughed inwardly at the dealer's assertion, that the watches would be at their destination as soon as the purchaser. The director lost not a moment in sending orders to all the customs officers on the frontier to exercise the most active vigilance on the line of posts, to double the frequency of the rounds, to quadruple their patrols, and to search every traveller scrupulously. Meanwhile he ordered his carriage, and posted off to Paris as quickly as the horses could convey him. Hastening into his office, and speaking for a few minutes to some of his attendants, he went to his dressing room, where the first thing he saw on the table was a casket containing the watches! A subsequent inquiry showed that the packet had travelled in the very carriage with himself, it having been very adroitly conveyed into one of the travelling boxes of the director's carriage, during the hurried preparations for the home journey.

We need not inquire after other examples of a similar kind, of which there are doubtless many; but will proceed to notice another system of smuggling. In 1831, the director of the French Customs made a report to the Minister of Finance, on the subject of the fraudulent introduction of watches and other articles, into France by means of *dogs*. An effort had been made in 1825 to check smuggling by horses, but after that time dogs were more employed than before. The first attempts at this singular mode of smuggling were made in the neighbourhood of Valenciennes, from whence it spread to Dunkirk and Charleville, and afterwards to Thionville, Strasburg, and Besançon. In 1823 it was estimated that one hundred thousand *kilogrammes* of goods were thus introduced into France, in 1825 nearly two hundred thousand, and in 1826 a still greater amount; all these estimates being reported as rather under the mark. The calculation has been made, on an average, at two and a half kilogrammes per dog; although the dogs carry sometimes as much as ten or twelve kilogrammes each. The estimate further supposes, that in certain districts, one dog in ten is killed; in other districts, one dog in twenty. In the opinion of many of the customs officers, the number destroyed is very much less than this ratio would indicate. Various manufactured products have been thus introduced, even to the value of ten or twelve hundred francs per dog.

The dogs which are trained to these nefarious purposes, are conducted in packs to the foreign frontier. They are kept without food for many hours, and are then beaten and laden, and at the beginning of the night started on their expedition. They reach the abodes of their masters, which are generally selected at two or three leagues distance from the frontier, as speedily as they can, where they are sure to be well treated and provided with food. The cunning craft of this plan is pretty obvious; for the poor animals, dreading the ill-usage which they receive on the frontier, use all their speed and sagacity to get to the French side, where plenty and good treatment await them. It is said that they do much mischief by the destruction of agricultural property, inasmuch as they usually take the most direct course across the country. They are, for the most part, dogs of a large size.

The report states, that these carrier dogs, being so tormented by fatigue, hunger, and ill-usage, and hunted by the custom-house officers in all directions, are exceedingly subject to madness, and frequently bite the officers. The dogs, it was stated, have also been trained to attack the custom-house officers in case of interference. Not many weeks ago a circumstance occurred illustrative of the hazards which these men run. Some officers, unarmed as it would appear, saw a troop of dogs passing towards the frontier in a manner which excited their suspicion that the dogs, although not actually bearing loads, were smuggling dogs, (in fact they were going to fetch their loads;) and were about to stop them, but the dogs commenced an attack which drove off the officers, and left the way open to the sagacious animals.

Among the measures proposed for the suppression of this mode of smuggling, a premium of three francs per head has been allowed for every frauding dog ("chien fraudeur") destroyed; but this plan appears to have been wholly inefficient, though the cost to the government has been so considerable, viz., eleven thousand francs per annum before 1827, and fifteen thousand francs per annum for some years afterwards. More than forty thousand of these ill-used and hard-working animals were destroyed between 1820 and 1830; and premiums to the amount of more than a hundred and twenty thousand francs were paid for their destruction.

The French Government has tried many and varied plans for abating this nuisance. Severe measures of police have been proposed, too severe in fact to be executed. The prefects have required individuals who conducted dogs in leashes, to take out passports as if for foreign countries. The attempts, however, have been ineffectual.

It will be readily seen, that these modes of smuggling are such as England is in a great measure shielded from, by her sea-girt situation. They tend to show how strong is the temptation to the illicit introduction of articles of merchandize, when the articles are small in bulk compared with their value, the import duties large, and the passage across the frontier not interrupted by physical impediments. We offered these details, in the first instance, in more immediate connexion with the Swiss watch-trade; but they apply to a considerable variety of commodities.