

THE WORLD'S PINS AND NEEDLES.



NEEDLE-STRAIGHTENING.

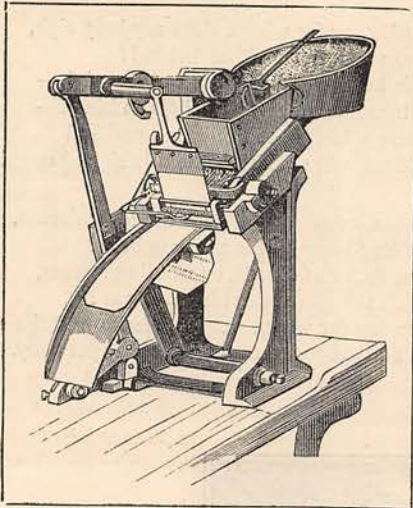
entirely absorbed in the purchase of pins: the provision was intended to cover the expense of a multitude of little feminine necessaries, which word, then as now, was capable of a very elastic signification. In one of those clever but scandalous old comedies which adorned the Augustan age of English literature, there is an allusion to the purpose. A country-knight is negotiating the marriage of his son with the daughter of a wealthy cit, and haggles about the proposed allowance of five hundred a year as pin-money. The other attempts a remonstrance:—

Tipkin: The word pin-money, Sir Harry, is a term—

Sir Harry: It is a term, brother, we never had in our family, nor ever will. Make her jointure in widowhood accordingly large, but four hundred pounds a year is enough to give no account of.

Tip: Well, Sir Harry, since you cannot swallow these pins, I will abate to four hundred pounds

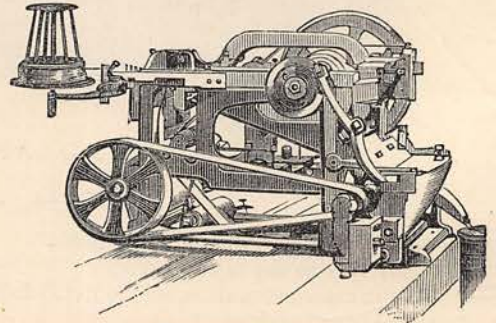
Sir Har.: And to mollify the article, as well as specify the uses, we'll put in the names of several female utensils, as needles, knitting-needles, tape, thread, scissors, bodkins, fans, play-books, with other toys of that nature.



PIN-STICKING MACHINE.

Addison defines pin-money to be "a sum allowed or settled on a wife for her private expenses." Nevertheless, at that time, pins would form no inconsiderable

item in those expenses. Some of us will remember the old ball-headed pin of half a century ago. It was a substantial, not to say clumsy article, which had required much handicraft skill, and many processes, for its manufacture. Adam Smith chose it as an example of the advantages of division of labour. "A workman not educated to this business," he says, "could scarce perhaps, with his utmost industry, make one pin a day, and certainly could not make twenty. But in the way in which this business is now carried on, not only the whole work is a peculiar trade, but it is divided into a number of branches, of which the greater part are likewise peculiar trades. One man draws out the wire; another straightens it; a third cuts it; a fourth points it; a fifth grinds it at the top for receiving the head; to make the head requires two or three distinct operations; to put it on is a peculiar business; to whiten the pins is another; it is even a trade in itself to put them into the paper; and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which in some manufactories are all performed by distinct hands,



PIN-MAKING MACHINE.

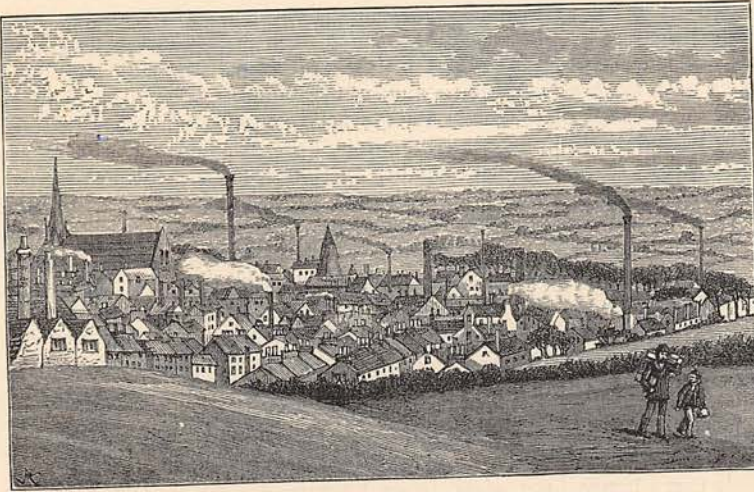
though in others the same man will sometimes perform two or three of them." All this is changed now. The "peculiar trades" have nearly all disappeared. The pin-pointer no longer earns his sixty or seventy shillings a week, living a short life and a muddled one, through inhaling brass-dust and drinking deep potations of ale. Little children, whose tiny fingers alone would suit the work, no longer thread on to the spiky wires the minute coils of fine wire which were to form the pin-heads; the said heads having been previously chopped off from a long spiral by a machine which in grim pleasantry was called a guillotine. The pin-sticker no longer sits before her work-bench, patiently sticking pins into paper with a comb. One little automatic and very noisy machine performs most of the eighteen distinct operations that so interested the father of political economy, devouring brass wire at the one end, and at the other end turning out two or three hundred pins a minute, headed, pointed, and all complete.

The pin of our grandmothers had the sad failing of getting loose and shaky in the head, and sometimes of losing its head altogether: a not uncommon fatality, by the way, with the wearers of pins in those unsettled

times. The introduction of a pin with a solid head—that is, one in which the body and head should be all of a piece—was a simple improvement, but it cost

comes into play and chops it off; then the fingers unclose, and drop it into a receptacle which ranges it in the right position and carries it to the grinding wheels, rough and smooth, against which other contrivances hold it and pass it along, till it gets a fine point and a final polish, when it is allowed to drop off into a pan; the whole process of its formation having occupied about one-fifth of a second.

The pin-sticking machine, again, might well be exhibited as part of a conjurer's magical apparatus, so seemingly rational are its movements. Few things look more inextricably confused than pins in a "ruck." The machine will shake out this ruck, marshal the pins in order, present them point foremost, and push them into the paper in regular rows, as perfect in their dressing as a regiment of Guards.

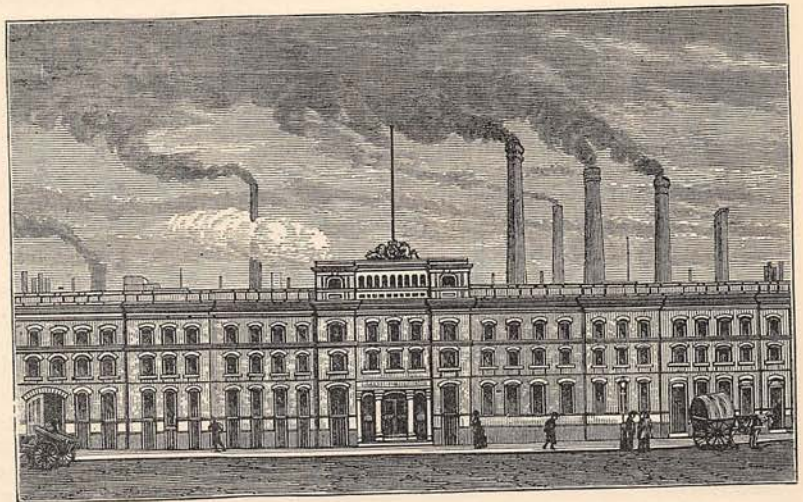


THE METROPOLIS OF NEEDLES.

about seventeen years of labour and ingenuity, and many, many thousands of pounds, to bring it about. Patent after patent was taken out, tried, and thrown aside; manufacturer after manufacturer found his way into the *Gazette*; speculators took up the idea and abandoned it in despair; companies were formed and dissolved—all in the interests of that trifling article, which is universally quoted as the synonym for little-worth. The present method of making pins entirely by machine, and as it were by one operation, dates no further back, as a practical idea, than 1843; at which time it was taken up by a firm of truly representative British manufacturers, of that class which has helped to mould England's commercial greatness, in the same way as her representative statesmen have helped to mould her national greatness. By them was Wright's original machine adopted, perfected, and brought within the magic circle of *profit*—where none of its previous possessors had been able to land it. It would be perfectly hopeless to attempt to explain *how* this intelligent instrument does its work, but this is the work it *does*:—The end of a coil of wire (slung on a reel, ready to be unwound) is presented to it. It seizes that wire, and draws it steadily in, straightening it as it does so; and at the right instant a pair of iron fingers close upon a pin's length of it, and hold it while an iron fist strikes it three blows upon the end, and forms a perfect head; then a cutting instrument

While this is doing, another part of the machine is doubling up the paper ready. A long paper of pins, as we know, is folded over and over, in a compact little parcel to be handed across the haberdasher's counter. The first folds lie close, but as the parcel grows thicker, a wider and still wider interval is required between the rows of pins, or otherwise they would fall upon the edges of the folds. The machine does not forget this, but creases the paper up at a wider distance each time, exactly as the folds require.

The Newhall Works, Birmingham, produce upon an average *ten millions of pins per day*. It need



THE LARGEST PIN-FACORY IN THE WORLD.

hardly be said this is the largest pin-factory in the world. Human life has many unsolved problems, but surely not the least recondite of them is the question, What becomes of all the pins? They don't wear out;

and, as this firm at least makes them, they don't break. They bend to circumstances sometimes, like useful, sensible things as they are; but nobody ever saw a pin showing signs of old age. As a careless housemaid would say, they "get lost." But as matter is indestructible, they must be somewhere; and the enigma is—where are they? When the New Zealander—but no; I won't pursue that figure; *that*, at least, is worn out—when we, with all our powers of never-ceasing productiveness and wastefulness, have passed away, among the buried treasures of the earth will be found some millions of tons of—pins.

Another happy advantage which your grandmother, my dear reader, probably had over her degenerate descendants, was the possession of a tasty and handy little pocket-case called a "housewife," for the carrying of her bodkin, her scissors and thimble perhaps, her knitting-pins sometimes, but especially and always her needles. Needles were needles then—a gold-eyed needle was a thing of price, but that insured for it a steady, stay-at-home character, utterly foreign to its slippery modern representative. It was always to be found when wanted. If it were possible that a button should be found absent or loose, a thing hardly to be supposed in those days of tidiness, lavender and linen-presses, out the little pocket-case would be whipped in a twinkling, and the evil would be remedied at once. Strong, solid, and enduring was the sewing of our grandmothers. From the working of a sampler to the stitching of a shirt-frill, all must be firm and unpickable. And the needle was a sturdy, substantial article too, with a goodly girth in the waist. The finest needle in our grandmother's case would very likely not "look at" the holes in a modern shirt-button; any more than our slim and delicate instruments would take her trusty six-cord. Fine needles there were, and fine work too, but we are now thinking of ordinary work-a-day use. The fair fingers that turn over these pages will probably be familiar with needles finer than those which were formerly kept for very special occasions.

Should the brains, that direct those fairy fingers, have any desire to know some of the curiosities of the needle manufacture, we shall be happy to gratify it. The owner must please follow us in imagination to the pleasant little country town of Redditch, where nearly all the needles made in England, and where almost nothing else but needles, are produced. Here she will see needles in all the stages of their growth; for a needle, unlike a pin, has many, and would well serve the purpose of the political economist. Great rough coils (technically bundles) of black wire will be seen piled up on the railway wharf, or in the yards of the numerous factories, and she will scarce believe that her dainty little embroidery implement owes its extraction to such as these. Yet it is so. In this grimy workshop, which looks like a smithy, we shall see a bundle being cut up into lengths sufficient for two needles, by an enormous pair of scissors, which cuts through two or three hundred wires at once. These lengths all partake of the curvature of the coil, and have to be straightened;

and this is the first curiosity of the manufacture. The workman heats them red-hot, in heaps, and encloses a quantity loosely in two iron rings, which he lays upon a slab. Then he takes an iron bar by its two extremities, and presses down upon the mass, swaying it from side to side so as to make the wires roll over each other, till they all come straight. He would seem to be making them more crooked; indeed, that is exactly what a novice would do, if he tried the process. The wires, being now nice and soft, are taken to another apartment, to be pointed at the two ends; for each wire, as before observed, is to form two needles, and at a subsequent stage they will appear stretched out head to head. We now see them travelling in procession over the wheel of a self-acting grinding machine, which holds and turns them regularly as each is ground to a sharp and perfect point, at the rate of forty thousand an hour.

Quite a small firework exhibition is presented by the showers of sparks—white-hot particles of steel—which fly from the stone, and are sucked down a tube by a fan exhaust. This is curiosity number two. Now the wires, being brightened a bit in the middle, to allow of a clean impression from the die, have their double heads struck up under a stamp. The workman can pick up a wire, hold it in its right position on the bed, strike the blow, and throw the impressed article on to a heap, fifty thousand times a day. Then the eyes are punctured through at a press, still two at a time; and for this work the light fingers of girls are found most suitable. Little children now spit the double needles on long wires, which hold them together while a workman trims the sides of their heads, and when they are broken across the middle, which they now easily submit to, their crowns. The things are needles now, but black and disreputable-looking, and with no stability in their constitutions, as they are still soft, and would bend like lead. They will shortly pass on to be hardened; but first the *insides* of their eyes have to be smoothed and polished, to save them from cutting the thread; and the manner of doing this is another curiosity. They are again spitted on fine wires, which have been roughened. A number of wires, so furnished, are stretched across a frame, which is attached to the machinery and set in motion, shaking to and fro. The suspended needles begin jiggling and twirling in the most comical manner; and the dance is kept up till every eye is rubbed perfectly smooth and round. Hardening and tempering are scientific matters, and require much skill and attention on the part of the workman, but need not detain us.

We will pass on to inspect another curious process, that of scouring or brightening the needles, a much more elaborate and cumbrous affair than might be supposed. A great mill, in a lonely situation across the fields, its lumbering machinery driven by a water-wheel, and making as much noise as the "fulling engines" which so alarmed Don Quixote and his Squire, may be the scene of our inspection. Here the needles, bound tightly in long rolls of canvas, with powdered quartz, emery, soft soap, grease, and other

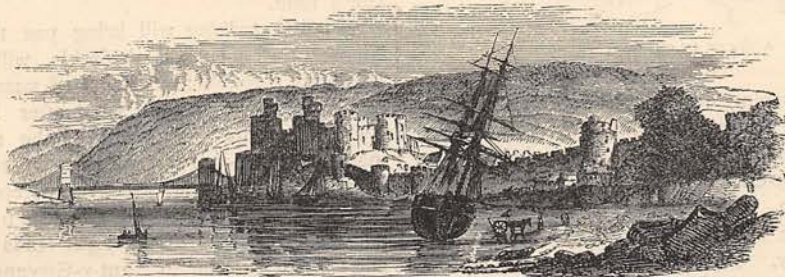
scouring materials, are subjected for days together to a mangling process under heavy slabs weighted with iron; by which means they are not only rubbed bright, but all the inequalities of their figure are subdued to perfect grace and contour. Needle-makers say this process is absolutely necessary: it certainly answers its purpose to a miracle. In the early days of needle-making, this scouring was done in a very primitive manner. The workman, as he sat at work in other branches of the manufacture, rolled the packages of needles under his feet.

There are several further operations, many of them very interesting to witness, before the tiny articles are ready for the market. It is pretty to see the neat warehouse-girls reduce them to order in nice even layers, by stroking and coaxing them with suitable

tools; get their heads all one way by allowing the points to stick in the finger—covered with a wash-leather finger-stall, we are happy to say; and afterwards get out those which are slightly longer than the rest, by the same harmless device. We should admire the surprising way in which the most microscopic faults are detected, and the rigid justice by which the faulty ones are condemned. And we should be fascinated by the nimble dexterity of the fingers that consign them to the tasteful packets, of never-ending variety of design, in which they reach the consumer.

Redditch makes one hundred millions of needles every week: about twelve apiece for every adult female in the United Kingdom. Now, ladies, *can* there be any excuse for our buttons not being sewn on?

CHARLES HIBBS.



CONWAY CASTLE.

OUR LITTLE WALK IN NORTH WALES.



IT is never a very easy matter to make up one's mind where to go for a holiday; but when time is limited, and economy is an important consideration, a decision must be arrived at in no hurried spirit.

A fortnight was the most extended period we could hope to enjoy, and as our available funds were not great, a walking tour in North Wales was determined upon. We also came to this conclusion because, although we could have obtained several "Guides" to Wales, none of them gave any really practical information for pedestrians, and we decided to obtain it for ourselves. In this paper it is proposed to give a brief sketch of our tour, with plain and simple directions respecting the prettiest routes and best halting-places. The route is necessarily a skeleton only, but we have traversed it ourselves on foot, and if any of our readers will go and do likewise we can promise them they will not be disappointed.

We took third-class return tickets to Conway, and our first resting-place was Llandudno. This fashionable resort abounds in hotels, and the traveller will find no difficulty in being taken in. As our motto was "Economy combined with Enjoyment," we chose a commercial house, small and unpretending, but scrupulously clean. The charges were decidedly

moderate, and, although we did not meet any ladies, we were very comfortable. This may appear paradoxical to some minds, but, alas! it is true. Our hotel bill from the Saturday evening till Monday morning amounted to £1 14s. 4d. for two persons.*

There is a good deal to be seen at Llandudno, but if the average tourist ramble round the Orme's Heads, and take a few breezy turns upon the Promenade, he will obtain a very good idea of the place in a short time. On Monday we forwarded our luggage from Llandudno Junction to Bettws-y-Coed Station, and proceeded ourselves to Conway Castle, close by. This splendid ruin will well repay a lengthened visit, and it was two o'clock before we quitted Conway by train (this time), through the somewhat uninteresting country as far as Tal-y-Cafn station, *en route* to Bettws-y-Coed.

There is a steamer plying up the Conway, but only at high water, as far as Trefiew. For lady "walkers" the steamer would be more advantageous, as passengers land not far from Llanrwst, whence the distance to Bettws-y-Coed is easy.

The high road from Conway to Bettws runs along the rail and river, but 'at Llanrwst the pedestrian, if he be wise, will cross the bridge and proceed along the lovely shaded meadow-path beside the river on the left bank. At any rate we took this course so little known, apparently, and we were rewarded.

* A statement of account will be found at the end of this article.