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Watches and Clocks

L. Aerrens

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Interview with.
Joseph Walton. Watch case maker

His workmen. on piece.

A jealous trade.

The immobility of labour.

Tuesday. March 14th 1893. G.H.D.

Joseph Walton: Gold & silver Watch case maker
7. Upper Charles Street. Northampton Square. EC.
Said he worked for most of the best houses in London. His work was carried on in an old fashioned manner but was thoroughly good.
All his men (10?) worked on piece except one. His best worker could earn £4 a week. The others though working on the same jobs & for the same length of time could not get more than £2.15. – £3.
The trade was a jealous one (almost too much so he hinted). If there was no work on hand in his shop, his men would remain idle, it was almost unknown that one man should seek work in another men's shop, at any rate his men had never done such a thing, & he would not retake anyone whom he heard of doing so.

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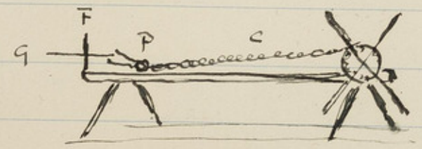
Apprenticeship.

Conditions of Work.

The Process of Watch Case making



G. gold wire. P. pincers to hold gold wire.
F. Frame with holes. C. chain going round pulley

He had been in the trade 40 years & had seen its gradual decline owing to the cheapness of machine made articles.
Apprenticeship lasted 7 years: he looked with horror of proposed technical instruction wh. considered a one year's Apprenticeship sufficient. All his men had served their 7 years.

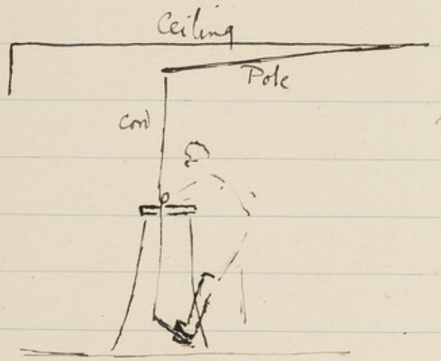
His men worked in two small houses in his back yard: one of two stories the other of one, this being in fact a small lean-to glass House with a wooden roof.

Process of Watchcase making.

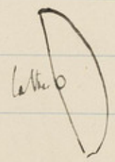
A watch case is made in two parts.
(1). Rim or 'bizzle'.
(2). The Plate which is afterwards fitted to the bizzle.
The gold is mixed with an alloy of silver & copper to its proper fineness in a crucible. It is then made into stripes & is either rolled (by hand, though when work is brisk it is sent to the rolling mills) or pulled through a steel frame containing holes of different sizes until it has reached its proper thickness.

Bizzle.

Plate.



Pole lathe.



Bow lathe.

The thin plate of gold is then stamped into form.

The gold wire when fine enough is made into the Bizzle.

The two are then turned in a lathe & made to fit.

The old pole lathe was used: an ash pole fixed to the ceiling: a cord from the end of the pole going round a lathe: worked by a treadle: the lathe worked backwards & forwards: the downward motion being given by the treadle & the upward by the spring in the ash pole.

One man was still more old fashioned & preferred to turn his lathe by means of a bow whose string ~~was~~ went round the lathe while he managed his work with his left hand only.

The plate & the bizzle when fitted are wired together, the joints are painted with borax to let the solder flow, they are then soldered with a blow pipe. The case is then sent to the assay office to be stamped.

On returning the cases have still to be fitted

The Work of Finishing.

with hinges: The spring (for opening) has to be fixed exactly ~~before~~ beneath the bizzle. (very fine work all done by hand-filing & sometimes very disappointing as the man will find a flaw in the ~~cast~~ steel just before the spring is fitted).
The whole is then hand polished.
Mr Walton makes watch cases & sovereign purses only:
He has promised to fill in the printed forms

P.S.
E. Hetterich in course of conversation stated that he had had an order for getting watches cased by the gross. he had applied to "Walton" the cheapest maker in Clerkenwell' who said he could not do it under 17/6 per watch he had then tried Birmingham where a firm had contracted to make cases at 9/. each

Livelihood now only to be made
by constantly repairing cheap watches.

Constant work obtained by an
all-round man.

Friday March 17th G. H. D.

Joseph Bindley. watch jobber 20 Rahere Street
Worked by himself for a few West end
houses. Said trade was declining London had
been beaten by foreigners and also by Coventry,
though the best work was still turned out
in London & apprentices at Coventry came
to finish their education in London.
Everyone now desired cheapness; in fact if
it were not for the cheap watches which
needed such constant repairs the watch jobbers
would have very little to do.

E. Hetterich.
To whom I was introduced by the sec of the
Cos branch at Clerkenwell.
Said he was an Austrian: had served in Vienna
in Arbelt & in Mannheim (Baden).
He had constant work all the year round
because his work was known to be reliable
& he could manufacture every part of a
watch where the usual men in Clerkenwell
were mere specialists.

Fall of London Watch Trade.

Reasons for this decline.

Inferior work.

PS. Australia takes Rotherham Coventry watches

The Swiss makers.

The trade of London has gone for ever owing to the practise of watch merchants 10 years ago of encouraging inferior work.
London watches were always much more liking than the watches of any other country or town because they were made entirely by hand.
They were & are very costly to buy.
They used to have a very great reputation in the colonies & people were willing to pay a large price & preferred them to foreign goods in spite of their cost.
The merchants then began to trade on the London name & offered lower prices to London makers & accepted inferior work: The men at first found they could make more money even at lower prices per watch if they could sell improperly finished work. They did so & now the colonies refuse to pay for London made watches & prefer Swiss.
The Swiss are the cleverest makers & their best work is better than that of any other nation but what they make is not so durable.
All the ingenious watches are Swiss.

The Germans.

The French

Prices of English & foreign watches.

Wages formerly & now

Mr Etterich had been repairing a watch belonging to Blondin the tight rope man worth £600, & had another in hand worth £300 both were Swiss work

The Germans came off over in great numbers & though they were very clumsy at first they became v. reliable workmen & often settled on finding there was no compulsory military service.

The French came over to finish their education in particular branches, but soon returned as payment for the best work was even higher in Paris than London.

A reliable watch can be bought in the trade for: 5/- to 7/11 (usually sold retail for £1.1/. some even for . 1/11. (all foreign).

An english made watch costs always at least £2 to £3.

The Waterbury watches did not be taken to pieces easily & were to be avoided: a foreign 5/6. was preferable to & better than a 10/6. Waterbury.

Workmen used formerly (10. 20 years ago) to earn £3 or £4 for half a weeks work: now only the best could earn £2-3 for a whole week.

A declining trade.

3 Reasons.

i. Foreign Compet.
ii Large factories.
iii Want of Organisation.

17th March. 1893. J. W. H.

F. J. Britten. Sec. to the Horological Institute
38 Northampton Square.

The trade generally is in a very bad way & is getting worse. Watch making (as distinguished from watch jobbing) is almost extinct in Clerkenwell. Three reasons for this:
(1). Foreign competition
(2). Large factories (in England)
(3). Want of organisation.

Foreign competition.
Cheap foreign watches are better at the price than English ones: it is a mistake to suppose they are inferior. Also the German Americans & Swiss have secured the market & it is difficult to oust them.

Large Factories. Not many in London: several at Coventry: one just started in Farringdon Rd. Can make watches more cheaply than small men.

Want of organisation. Watchmakers have no union & no organisation of any kind among either masters or men. Employees work when their

Wages.

Skill required.

Opposition to machinery

their masters can give them work, if he cannot they remain idle.

Wages. have fallen 30 p.c. in the last 20 yrs. 20 years ago a good jobber got 50/- a week now he wd only get 30/. A few of the very best men get now from 50/- — 60/- a week.

Skill required. A watch jobber does not as a rule have to make the different parts of movements but most good men can do so if necessary.

Generally — it is a trade which requires a great amount of skill.

How taught. Full term of 7 years apprenticeship is not usual: a shorter period is better, since apprentices are usually kept at 'Brushing out' (: cleaning) watches & do not learn the more difficult parts of the trade.

Some time ago before the passing of the Companies Act (? 1862). it was proposed to start a large factory in Clerkenwell. The machinery etc was actually obtained & set up but the watch jobbers opposed it strongly & chiefly owing to their

The Beginning of the American Watches.

opposition, the bill promoted for the formation of the Company was thrown out.
The machinery & plant were therefore broken up & carried straight over to America. that was the beginning of the American watches.

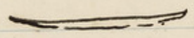
Trade ruined.

By free trade & foreign competition

March 21. 1893. S. A. D.

Clegham & Brinton. watch dial makers. 8 Spencer St. EC.
Complained that their trade was ruined & would never come to the front again.
What they wanted to enable their trade to flourish was for the millions instead of the units to buy their watches - Said a good Clerkenwell silver watch wd cost about £5.
Now they were glad to earn £1 a week where they formerly had made 70/-. One of the best dial painters in Clerkenwell was now in the Shoreditch workhouse breaking his heart tying wood bundles. If they had not been careful men in their youth they would be there too. Existing free trade was the ruin of them but they would more than be able to hold their own with universal free trade.
Said he had once been asked by Waterbury Company to paint some of their better class dials had offered to do it at lowest possible price i 1/7. but had been told that a tender had been received fr. Geneva to do them at 5d. each.

To make a watch dial.



copper frame

Wd not the copper melt?

To make a watch dial.

The dial is made of Copper stamped out to the proper shape making a very shallow cup.

The enamel is then pounded up in water. (it is bought in lumps) which is pasted on both the back & front of the copper plate. (on the back in order to give the copper the necessary stiffness.)

This is then put into a furnace until the enamel dries. Then it is rubbed over & then put in the furnace again to get a polish.

The markings off into hours & minutes is done by hand, the dial being worked on a revolving disc.

March. 27. 1893. G.H.W.

Watch jobbing.

Watch jewaling.

SS. overlapping screws
J. jewel
R. metal rim.

Dowlorf. at watch jobber in Upper Charles Street. E.C.
Said watchjobbing was on the increase owing to use of cheap watches. People would often pay more for having a watch mended than it would cost to buy a new one.
That American & Swiss watches were numbered & that when he wanted a new part to replace an old he had simply to write for the number of the wheel to the manufacturers which was a great convenience as well as being cheaper.
The trade of Clerkenwell was beginning to consist entirely of watchjobbing.

Whitney. a watch jeweler.
Jewels (rubies or diamonds) are used in the better class watches for the pivots to work in, they hold the oil better & are harder than pivot holes of brass or metal.
There are four branches in the jewaling dept. (each done by a man who is looked on as a master in his own line)

The diff.t branches of the jewelling trade

When diamonds are used: they are fitted into the end of the capped garnets. ie a hole is made right through the garnet on to the diamond end-piece against which the pivot then works.

1. Jewel hole maker.
2. Diamond setter (for. what work only).
3. Screw maker.
4. The jeweler who completes.

The Jewel hole maker drills a diminutive hole in the stone in which the pivot end is to work
The Diamond setter fixes the diamond in the metal rim.
The Screwmaker makes the very fine screws for fixing the rimmed jewel in position. The heads of the two screws overlaps & thus the rim is kept firm.
The Jeweler who fits the whole together to the watch.

Complained of the state of trade, that one man could only do one very little part of a watch & the consequent loss of time & expense in sending the watch from hand to hand.

Watch Pallets.

Watch pallet
j.j. Jewels.

Foreshortened view of a pallet.

April 4. 1893 G.H.S.

Jollett - 19 Brewer Street. Watch Pallet maker.

The watch pallet is made of very hard beaten steel which is bought in rods. & then hammered or rolled into the desired thickness. & then filed to fit the escape wheel.

The pallet is used to regulate the amount of power transmitted from the spring.

The two teeth marked j.j. are jewelled to lessen wear & friction. The action of the spring on the toothed wheel w. causes it to press against one tooth T & in doing so it raises T. but lowers d. which in its turn is raised by the action of the pendulum or hair spring & the wheel goes round at a regular rate.

The jewels which are generally garnets are let in at j.j in the lowest fig. & it is against these that the teeth of the escapement wheel works.

Prices given per pallet.

He used to get 3/9 per pallet.

Weekly earnings now. }
formerly }

His sons careers.

Could not himself do any other part of a watch.

He said he was now paid 1/3. 1/6. 1/9 per pallet made according to the fineness. There was only one house which kept to former prices & wd give him a shilling extra & refused even to look at cheaper work saying: to anyone who offered it 'Your work may as good but I am satisfied with mine this man's work & shall continue to give the old prices.
Jones in the Strand & Barrand & Lends were the two big firms who paid well.
He now made an average of 15/- weekly. used to make regularly 30/-
His 3 sons had begun in his line but had all left, seeing nothing was to be made of it: One had gone into Silversmiths work, another into ships log making & another into electricity.
Asked why he did not do wtch jewelling as well (as he had already some jewelling in making pallets). said it was quite a diffl branch & he had no knowledge of anything beyond his own small branch.

Trade 20 years ago.

Wages of Coventry hands.

20 years ago trade had been too brisk. There was no time for good work (now there was too much.

Factory hands at Rotherham's in Coventry only made 4d. an hour.

A London watch was worth its cost owing to its durability

Had given £3.15.0 & £4.5.0 last week in buying 2 London watches (silver) as a commission for a friend.

Ruin of watch trade.

Waltham watches } their wholesale price.
Prescott

Prospects of success for Prescott.

Clocks

April 8th 1893. G.H.D.

Jy. Stockall. 6-8 Clerkenwell Road. watch & clock maker.

Said watch trade (exc. jobbing) was in a low condition. The ruin of the trade without doubt had been the prosperous times 20-40 years ago. Men used then to get such good wages that they refused to work more than 3-4 days a week & used then to hurry & scamp what they ought to have done thoroughly.

Americans were disgusted. The Waltham watches were started, a thoroughly good article: one of their silver best cost wholesale 32/-9- made throughout by machinery.

A new factory just started at Prescott wh. Mr Stockall had been over frequently, all machinery: They could only turn out a watch for 39/- but this price had just lately been reduced from 45/-. He prophesied success for the Prescott factory.

He said that the clock trade was prosperous

German.

Durability of English goods.

Hours at jobbing work.

Causes of failure of London man to hold his own.

there was a good demand for English dials but the Germans had imitated the shape & for every one English he sold nearly 100 German dials.

But durability was the feature of English clocks & watches & would be so as long as the work was thorough: for a foreign article of equal workmanship & equal durability he said you wd have to pay more than for an English one.

There were no young men in the Lad on trade. All the work done in his house was jobbing (56 hours a week 8-1 AM. Lunch 1-2. & then on again with ¼ from 4 till ¼ past for tea & then on again till 7.30. on Saturdays they stopped work at 2).

He had apprentices at jobbing work.

The London workman was too elaborate, he drilled grooves in the pivots which were of absolutely no value as regards making a watch go: this was the case in every wheel of a watch: so much time might be considered wasted, each pivot wd prob. take

Jobbers.

an hour to groove.
Every part of his watch work was done by the small men (specialists) in their own houses. He could do nothing beyond their specialty & were of no use as jobbers.
A good jobber could make nearly a whole watch.
At Coventry 2 men made a watch right away. The first of these men wd make an excellent jobber.
Mr Stockdale promised to send the further returns filled up also a list of the various depts a watch went through in manufacture.

The Clock & Index makers Soc.

Its object.

Wages.

Index making.

Clockmakers. J. A. & G. H. W.

Interview with Mr Palmer & others of the Clock & Index mkers. Soc.

This is a young Society only started 9 months. Its principal object is to check the growing subdivision of labour in the clock trade by advocating the employment only of skilled workmen who have properly learnt their trade & thus keeping up the wages. At present a man rarely makes a clock throughout himself, brass workers (usually inferior workmen) are imported to do the roughest part of the work & one skilled clockmaker does the higher part of the work, putting the clock together etc.

The men doing this inferior work (who sometimes include skilled clockmakers unable to find better work) only get £1 or 22/- a week, whereas a skilled mans wages would be 36/- or £28/-

Many of the best men in the trade are turning their hands to making indexes (for gas meters)

Wages of index makers.

Trade brisk

The Hours of work in Clock & Index trades.

Regularity of work.

automatic & sewing machines & similar mechanical work, finding that, although not such highly skilled work usually it pays better.

Three of the men (although they had served their time as clockmakers) are now index makers. Their standing wage is 8d. an hour which they draw weekly but as they are on piece work there is usually a considerable balance over this to draw when their work is cast up at the end of each month.

Owing to the great demand for automatic indexes to meters (on the penny-in-the-slot principle) trade is very brisk, & as there is 5 or 6 times the amount of work in one of these automatic indexes that there is in an ordinary one, the growing demand gives a wide opening for skilled labour.

The Hours of Work in the clock trade are 60 per week but in the index making 54. There is some times a good deal of over-time.

Work is regular & unaffected by seasons; very few clockmakers are out of employ

Apprentice.

Advantages of being a clockmaker.

Foreign competition.

ment because of their ability to turn their hand to other things.

Seven years is the recognised term of apprenticeship but there are not many apprentices now for they are being taken for indexmaking only but those who have learnt clockmaking have a great advantage as they know both branches: on the other hand those apprenticed to clockmaking are seldom taught the trade properly being kept on the inferior parts on the tackwork system.

The clock trade in England suffers greatly from deception through foreign goods being sold as English. This country has a big reputation for making good clocks & advantage is taken of this in many ways to impose on the public. The works are made abroad & put together here or the case only is made in England. Stockall makes up clocks in this way & sells them as English

Demand for 'Grandfather' clocks.

Difference bet English & foreign work.

No attempt to compete with foreigner on his own ground.

Ingram 3 Clerkenwell road has a very bad reputation for inferior work at rate. Sells much of it to pawn shops &c. whence the goods are passed off as second hand.

There is at present a considerable demand in America for English clocks of the Grandfather pattern & these are now fitted with all the latest improvements & are excellent timekeepers. High prices are given for them.

The English work is quite distinct from the foreign: English clocks always have a fusee chain or gut: foreign clocks do not. The pattern too is quite distinct being mainly of the skeleton or grandfather pattern & are hand made whilst the round clocks (those in marble or stone frames) are all foreign & generally machine made.

No attempt is made in London to compete with the foreigner on his own ground. At Birmingham a man named Davisons had been an overseer at Seth Thomas' in Connecticut (where American clocks of the best kind are made) started a factory for

Attempt to make an American system.

machine-made clocks of the American pattern under the name of the British United Clock Co. was believed to be doing well. One of our informants now thinks that the firm has failed.

※ English clockmakers lack capital to set up necessary ~~fo~~ machinery.
(Mr Palmer will send rules & particulars of the Soc)

※ Mr Stockall said that in the course of a few weeks they would have a clock factory in the Clerkenwell Rd opposite to their present shop.

Thwaites & Reed. clockmakers.

The rage for cheapness.

Clockmaking a dying trade.

The German clock.

April. 18th

S.H.W.

Mess. Thwaites & Reed: chime clock: dial & turret clockmakers. 15 Bowling green Lane. EC.
On an introduction to Mr Reed from E Aves.
Mr Reed had been in the firm 45 years, had been foreman & was now partner.
Said that he had a good trade but that it was dying but not yet dead like the watchmakers.
The desire for cheapness was such that no English firm could compete with foreigners
What had kept clocks above watches in point of life was that this work was done all together in one place & more on the factory system, but that until a complete factory system was set up it would be impossible to compete with foreign work.
The German clock was good enough for all practical purposes it would keep time up to 2 or 3 minutes a week & no business man minded such a small variation but the English clock was more durable

His employees.

Apprentices.

Hours of work.

Overtime in Jubilee Year.

would keep better time was much more expensive.

All his men had been with him at least 7 years. He had no apprentices they were more trouble than they were worth, he used to have 12 but they none of them took any interest in the theory of clock making & always were liable to make mistakes unless someone were constantly by them.

The ordinary term of apprenticeship was 7 years in this as in all other ~~years~~ trades but the full term was seldom served now as it had been in former days.

The men worked from 6 in the morning till 6 at night & until 12 on Saturdays & were contented. There was no recognised rate of time for work. He worked as little over time as possible & tried to keep work at a steady level.

In Jubilee year he had so much work that he had to take on 10 new hands (making 30 altogether) & work over time for many months.

1887 as compared with 1892.

Very little fine work done now.

Demand for Grandfather clocks.

But these new hands were so incompetent (if they had not been incompetent he said they wd not have been out of employment) that at the end of the year he had had a smaller balance than at the end of last year which he considered to be a quiet regular year when they had employed no extra hands & had worked no overtime.
The whole working part of a clock was manufactured on the premises; the movement made & the wheels cut.
There was very little of fine work now, :: people wd not pay for it, people did not now care for anything as long as a clock would go fairly well.
There was less useless finery & finish in a clock than in an English watch.
There was a demand for Grandfather clocks, but there was no skill in making them if a Grandfather clock wd go at all it would keep fairly good time as the conditions were so favourable.
He made no one clock exactly like another

The difference bet very fine work & ordinary

Clockmakers trades union.

Alternative trade.

How Employment is found.

but modified each & planned each to suit the different conditions under which it would have to work. The difference bet very first class work & ordinary fair had very little to do with the goodness of time kept by a clock. In the first class work the pinions were more highly polished & the scratches were taken out of the brass work but as a going, the clock might possibly go worse than one of an ordinary fair make but it would delight a clockmakers very much more.

A clockmakers union had been started but none of his men belonged. There were so few clockmakers that they had had to call in the ~~dial~~ index makers & brass workers to help to form the union.

Most clockmakers now became Index makers where the wages were better and less skill was required.

He supported the Horological Institute but thought that it was very little good.

A man seeking employment went the round of the

Unfair trading.

different houses & w.d be set down to try his hand at the work he said he could do. Benson's had been advertising for men for the last 4 wks but the advertisement was still in the paper shewing how few men there were about.

He said there had been some shoddy business in putting American movements into English cases, by English houses & then trying to sell at Eng. prices & reexporting but he hoped that this was now declining, it had been at its highest 20 years ago.

Foreigners working in England.

He employed no Frenchmen, foreigners were as a rule more attentive to their work & drank less than English workmen, but soon learnt evil English ways.

The men one sees in West End front windows working are generally foreigners but these are now coming over less & less owing to the action of Trades Unions.

The workshops at Thwaites & Reed's

The shops at Thwaites & Reed were large & airy, clock wheels were cut by steam power, most of the lathes cd be worked by either steam or treadles

Waltham watches.

April. G. H. D.

The Waltham Watch Co. Holborn Circus.

Their watches are produced throughout by mch. Their parts are interchangeable. Chiefly 70 pct. produced by women. Have a large sale in England, but business is not very brisk just now. The only factory in England to compare is Rotherhams & he has only just begun to manufacture a watch throughout

London watch trade dead.

garnets are used in cheaper watches.
diamonds are rarely used now. they are endstones i.e. pivot passes through the ruby & turns in the endstone.
Diamonds cost. 1/6. each.
Rubies 1d. "
Garnets ½d "

Reason.

Still a reputation held by english watches.

April 25th 1910.

Charles Romer. 1. Hatton Garden. dealer in watch jewels. chiefly. rubies & sapphires.
Said that he now did no trade in England all his trade was with America.
The London watch trade was dead and had ceased to be through its own fault.
The men employed old fashioned tools & lived in little back houses & would use no machinery.
They had successfully resisted the formation of companies though several attempts had been made.
The English watch still had a reputation though the shipping of unfinished goods some years ago had ruined trade with the colonies & had enabled America to set up her own watch factories.
When the Americans started they knew nothing about watchmaking, they introduced men from Clerkenwell to teach: now they

In praise of the Waltham factory.

were far ahead of us. They only make the movements & send them over to be cased in England.

The women in the Waltham factory earn 30/- to 40/- a week.

A very good jeweller (watch) can turn out 3 to 400 stones in their setting per day. The Waltham machines turn out 3000 & the work is better finished & each setting is equally perfect.

A few years ago the Company decided that gas was unhealthy, they installed electric light at a cost of £6000: now they calculate to save 1/- per head per day in the better health of their workpeople.

The best work is still done in Clerkenwell.

The best work is still done in Clerkenwell and there is still a demand for the best clocks which can only be got there but the good men are dying & there are none to take their place.

The best English work is not more expensive than the best foreign.

Ashley the repeater maker of Clerkenwell

Useless expense in Clerkenwell watches.

Americans buy ingenious Swiss watches.

is perhaps unrivalled but he will not make you a watch under £10, but it will be worth the money.
There is so much useless expense in a London watch but no Clerkenwell man will see this & insists on his old ways.
Every American who comes to Europe gets a watch at Geneva which can 'do things' (is repeat & be used as a stop watch etc). & smuggles it back to his own country. They do not come to London.

Maker of Benson's
Ludgate Hill watch.

Only makes movements

Employs.
32 + 6 + 17. at so much per hr + 6 young persons.
& 17 women

Rate of wages & hours of work.

43. are on piece.

May 1st 1893. G. H. D.

A Gaye. 76 Farringdon Road: watchmaker by machinery.
Mr Gaye makes watch movements entirely by machinery and is the only manufactory in London. He manufactures the Ludgate Hill Watch for Benson.
The dial; watchhands & cases of the watches are not made in the House
Mr Gaye hinted they might come from Geneva, London, or Coventry.
They employ.
32. at a weekly wage depending on the number of hours they work
Full time 55 hrs, they are now (May 1) working 12 hours less.
The rates of pay vary between 6½d at lowest to 1/2 highest.
While 43 are on piece.
(The amount earned by each is given in the schedules).
The 2 engineers earn £1.18.3 & £2.10.0 respectively

Try to give best hands regular work & dismiss less good.

No Trades Unions.

Declining Industry.

A future for machine-made watches.

They try as far as possible to let their good hands have regular work & do not attempt to keep on their less good men by lowering the hours of work all round, though this has (as at the present moment) to be done when trade is extremely slack.

There are no trades Unions or societies: a watchmaker has nothing to look forward to unless he has subscribed 5/- a month to a certain Horological Benefit Soc.

The number of watchmakers is declining & Clerkenwell has lost its trade through the obstinacy of the small masters there & their refusal to have anything to say to machine work.

But there is a possible future for machine made articles in England, if that machinery is of the newest & best & sufficient capital is subscribed to start the same.

The Prescott factory has had to take over much antiquated machinery besides buying new, & paying a large sum for the old mach: Mr Gage does not think it will suc-

Division of Mr Page's business with wages.

Busy & Slack seasons

Regular work according to rate of employment prevailing

Shifting from House to House but not from Employment.

-ceed.

The Business is divided into.

Machinists	Brass turners earning	£1. 10. 0 to £2. 10. 0
	Steel.	1. 5. 0 to 2. 00
	Pivotters. . . .	£1. . . £2. 0. 0
Watchmakers.	Examiners.	£1. 4. 0. £2. 8. 0
	Escapement mkers. .	£1. 7. 0. £2. 15. 0
	Timers & springs. .	£2. 0. 0. £3. 0. 0

Young persons at pivotting work earn from 10/. to 18/.

Work is fairly regular all the year round the busiest season being perhaps October & Nov. in preparation for the Xmas demand. & the slackest for 5 or 6 wks after Xmas.

All his men have regular work for the time of year: to some of the best workmen they contrive to give full time work always, the others have regular work at full time or half time as the case may be.

Extra hands are only taken on in very busy times & these are gen: the first to leave.

The men shift from House to House in search of better pay but not from one branch of employment to another: a man learns only how

No alternative employment.

Apprentice system dead.

May work till any age.

No special diseases.

The Trade demands useless polishing in London watches.

to make one bit of a watch & is useless for any other part: neither has he any alternative employment either outside his own trade nor in his own trade outside of his own speciality.

The Apprentice system is practically dead. McGuge does not take apprentices he takes boys, keeps them to one branch & they never learn any other.

No trade requires so much skill and you may continue to work till any age, McG. has 2 of 70 years still working & one of 80 just dead.

Old men work just as well as young but not so quickly.

There is no special disease remarkable in the trade, the eyesight does not necessarily suffer & they would consider it a healthy trade.

There is no way of dispensing with the useless polishing in London watches. [Admitted that 12 hrs. might be spent over each watch in this way without any betterment in the good going of a watch.] The Americans dispensed with this useless polishing McGuge had tried to introduce a watch with less of this but the trade absolutely refused

2]

to accept ~~them~~ it & now he had given way.
He employs no foreigners: & does not think English work more durable than good foreign.

Mr. Gaye. seemed to be a Frenchman long resident in England.
Was very suspicious as to the objects of the enquiry called his nephew from whom the greater part of the information was obtained.
Made no offer to show me over the factory.

Messrs Smith large clockmakers in St John square. spoken of as doing a 'legitimate' trade.
With an introduction from Mr Stockall, was received by two gentlemen of considerable age & apparent respectability, who said it would be beneath their dignity to give any information.

Institutions in the Watch & clock Trades

The Watch & Clockmakers Benevolent Institution

II. The Clock & Watchmakers Asylum.

iii. Watch & clockmakers Pension Soc.

May. 3rd

F.H.W.

F. Britten: Secy. of Horological Institute.

1. The Watch & Clockmakers Benevolent Institution is a masters soc: and is the oldest existing Benevolent soc: having been founded in 1815. March 6 'for the relief of aged necessitous workmen of good character belonging to the several branches in the manufacture of Chronometers, watches & clocks & of the widows of such workmen'

Pensions. £12.12. per annum to men.
£8.8 ..... women.

There are at present 11 men & 5 women pensioners

2. The Clock & Watchmakers Asylum.

3. The Watch & Clockmakers Pension Soc.

This is gradually failing from want of funds. They are bound by their rules to elect one member every 6 mths: they have now had to disregard this rule.

The Liverpool watch trade.

Date of Clerkenwell's greatest prosperity.

1841. Proposal to start a factory defeated

IV. The Horological Institute in Northampton Square.
was built by subscription.
designed to teach drawing: but very little practical teaching.
Subs. £1.1 full members.
10/6. associates.
All meetings of the Trade soc. are held there.

The Liverpool Watch trade began in 1805 and ended in 1860. At the time of the American war.
The Waltham Company had begun in 1852-7.
& when the English trade was stopped by the war, they succeeded in supplying American demand.
The largest trade was done by Clerkenwell in 1810 but the most prosperous time was 1870.

In 1841. Ingold proposed to start a factory in Clerkenwell to produce machine made watches, the machinery was actually bought & about to be set up.
In those days you had to get a charter through Parliament before starting a company.

The Clerkenwell Interest succeeding in preventing the passing of the Bill, & the machinery was shipped off to Boston (U)

Swiss watches and their introduction

Swiss Watches. Delaune who first introduced Swiss watches into England is only just dead.
The Swiss adopted the cylinder escapement & the going barrel very quickly.
The cylinder escapement was horizontal and enabled a very thin watch to be made.
The English stuck to the old verge escapement which is vertical and gives the shape to the old English "turnips".
Ladies naturally preferred the thinner watches besides, they were more prettily made and more attention was paid to outside ornamentation.

Nielson. N.
Greenwood. G

Other places in London where watches are made.

Watches are also made in Nielson's large factory in Soho Square & at Gaye in Farringdon Road.
Several of the best workmen who work for the best shops live out at Tottenham.
A good West-end House will generally have

End view of turnip

as first-class hand on the premises; this man must be able to plan a watch for exceptional customers who require watches which are able to 'do things'.

Ex. of fusee's work.

Mr Britten found a man polishing the a fusee barrel with great care: he was unaware that the fusee cutter would at once cut it all away.

The old verge escapement caused the shape of the turnip watches.

The distinct branches of London watchmaking

i. Movement.

ii. Dialmaking. — enamel dial makers, gold ... —, silver .... — } branches of Dialmakers.

iii. Indexing.

iiii. Capmaking.

v. Escapement makers.

incl. α. pallet mkr who supplies pallets & escapewheel.

β. Balance mkr. — ι. Gold balance mkr. — ϛ. Compensation balance mkr.

γ) The Jeweller.

The Manufacture of London Watches. May.

The Movement is manufactured in the rough in London. cashier, parts of which are made by machinery. The Movement consists of the frames, barrel, fusee, wheels & pinions in the rough.

Dial. Having procured the rough movement the first thing done is to send the pillar plate to the dial maker who carries out instructions for making a dial for a crystal or circular, plain, with a sunk seconds piece, sunk centre seconds or whatever style may have been ordered.

Index. At the same time the Cock is sent to be indexed.

Capmaking. Should the watch require a cap it is necessary to send the pillar plate, the top plate, & cock to the cap maker.

Escapement maker who is given the frames, 4th wheel & escapement pinion (which have been supplied with the rough movement)

He requires also the escapement wheel & pallets from the pallet maker, a balance whether gold or

6. The Casemaker. (A). Gold casemaker.
(B). Silver "

7. Motion maker.

Keyless notioning

8. Finisher

(a). Mainspring mkers
(b). fusee chain mkers.
(c). Jewelling
(d). Engraving
(e). Gilder.
(f). Fusee cutter.

compensated from the balance maker, he is also given an order for the jeweller for whatever holes are required to be jewelled in the escapement.

Casing. The casemaker requires the frames, cock, cap & dial to make the style of case required

Notioning. The motion maker joints the movement into the box of case & also fits a bolt & spring when necessary, he also supplies a canon pinion & minute & hour wheels in the rough.

Keyless ~~notioning~~ action. this is a separate branch & a flourishing one for the winding work of keyless watches.

Finishing. The watch is now ready for the finisher who requires all the parts heretofore mentioned excepting the case, & also a mainspring & fusee chain, he also requires an order for the jeweller if any wheel holes other than the escapement are to be jewelled; and another for the necessary engraving eg. Fast, slow, number of watch & index scale & another for the gilder.

The duty of the finisher is to pivot in all pinions & plant all wheels & pinions from the

Examiner.

(A). Hand maker.

(B). Glass maker

(V). Hair spring maker.

escapement throughout, to cause all the necessary jewelling, engraving & gilding to be done according to orders supplied, he also sends the fusee to the fusee cutters to be cut.

Secret springers. While the movement is with the finisher the case is sent to the secret springers who supplies & fits the necessary springs, & solders the joints a roughly, when the springs are fitted, the case is sent to the joint finisher who finishes & pins up the joints

Should the case require engine turning it must be sent to the Engine turner, or engraving it must go to a case engraver, & if the case be a half hunter it must have the case enamelled with an outside circle of hour figures.

Examiner. Having got the movement from the finisher & the case from the springer, the whole is now ready for the examiner. He requires besides these a pair of hands & a seconds hand (when required) & a glass fitted to the case, he also wants an order for the gilder to gild the cap. The duty of the examiner is to examine the work of the escapement maker & finisher,

* This is only in the cheaper class of work & only seldom in higher class watches.

Polisher

Springing & adjusting is now a dept by itself in all the really fine high-class work.

See that all parts are free & in perfect order: if any are faulty they must be returned to the responsible workman for correction; he must free & fit the dial, fit & finish the motion work & fit the hands. He frees the cap & gets it gilt,
*V gets a hair spring fits it & times the watch.
Having timed the watch & tested its going

Polisher. the case is sent to the polisher to be finished off. this done the movement is replaced & the watch is now ready for the ~~wearer~~ stock

Adjusting & rating watches for heat cold & in different positions is a separate & special branch of the trade.

Barrand & Lund's.

Machine versus hand made watches.

Foreigners can compete with dials but cannot touch Eng. clock

May 4th S.W.

Barrand & Lund's. Bishopsgate St. E.C.

profess to be the only makers of the really high class London watch.
Say they find it hard now to get workmen to make the highest class of work.
Said there was no alternative trade for watch makers: clockmakers all went off to meter making & electric works.
It is all very well to complain of the lack of machinery, really first class work can not be done by machinery.
The Americans confess this & are beginning hand made watches which are just as expensive as ours.
Workmen was going over a large factory with the manager in America, they admired the works workmen & work turned out at the price, as he (poor) left the manager said to him our work is good but not of the very best you see I am reduced to this — taking out a London made watch made by Barrand & Lund themselves.

August 2. 1894 GHV

Mr Lund of Barraud & Lunds Bishopsgate Street.

Mr Lunds said the reason why the English watches were made more cheaply was to suit the exporters who insisted on having a larger margin of profit for themselves.

Says the London makers insisted on the thicker watch ∴ a thin watch must be weaker ∴ they refused for a long time to have anything to do with them. A thin watch is like a strong woman who has been tight laced. Fashion is now revolting to the thicker watch.

Jobbers do not come from Coventry ∴ Coventry style is so different to London but they do often come from the country.

'High class men always have & do still command their pay'

'Working men have no Imperial interest, all they think about is getting more money'

Striking & chime clocks are made by several men

But 3 ine pieces are for made throughout by a man who gen has a boy to help him.

Fancy gilded clock cases cannot be made in London. He has had Frenchmen over. They failed & say it is the climate. In London the gilding seems to require so much more gold to produce the same as a little gold in paris or Vienna.

'The English workman will never be able to touch the foreigner in delicacy of touch, all Chronograph escapements are made abroad'

But foreign work does not last.

He sells watches not made by hand thought machine can only turn out one quality. High class machine work mean there has been less machine & more hand work

Guye make for Benson (he admitted when asked) he also buys some made in a special way for him. Movements are nearly always machine made (eg the very very best) but a watch with a machine made movement is a very

O. Pt. thing from a machine made watch

He gave an introduction to Mr. Cole & Fisher
who got confirm all he had said

A watch to be made passes through the hands
of 70 diff people

Escapement maker prepares for the
jewel Hole maker.

4 branches in jewelling
- Jewel Hole maker.
- Diamond setter (for watch)
- Screwmaker.
- The jeweller who completes

V m