Friday, March 15.

SECOND DIVISION.

HENDERSON *v.* CARRON COMPANY.

BARRISCELL *v.* CARRON COMPANY.

Reparation—Master and Servant—Negligence—Unsafe State of Master's Plant.

A workman was fatally injured while engaged in putting coal in a furnace. The furnace was at the time, in the knowledge of the employer, liable to send up rushes of flame owing to the caking or "scaffolding" of the fuel and ironstone, and it had been in that condition for about nine months, during which attempts, known by the employers to have been ineffectual, had been made to remove the cause of accident. It would have been possible to remove it by a method which would have been somewhat expensive, and which, after the accident, was resorted to with success. *Held* that the employer was responsible for the accident.

On 10th November 1887 Alexander Henderson, a labourer in the employment of the Carron Iron Company at Carron, was severly injured while putting a barrow load of coal and ironstone into No. 9 furnace there, by an explosion resulting in a rush of flame through the door near the top of the furnace which he had opened for the purpose of pouring in the coal and ironstone. Henderson was so much injured that he died on the following day.

On 31st December 1887 John Barriscell, also a labourer there, was severely burned from the same cause at the same furnace.

An action was subsequently raised by William Henderson, the father of Henderson, against the Carron Company for damages for his death. An action was also raised by Barriscell for damages for the injuries he sustained.

The pursuers averred that the accidents were caused by the negligence of the defenders.

The facts proved were as follow—The cause of the explosion in each case was that the fuel and ironstone in the furnace had "scaffolded"—that is, part of it had adhered to the brickwork on the sides of the furnace, and there had thus been formed masses of overhanging material within the furnace which was burned away, more or less, below, but remained caked above. At intervals when such a condition of the furnace occurs pieces of the overhanging material falls into the burning part, and the result is a rush of flame, which may pass out by the safety-valves, or if the door be open in the course of the work, will more probably pass out by it. "Scaffolding" is a troublesome state of the furnace difficult to cure, and deleterious to the quality of iron produced. The furnace at which the accidents happened, No. 9, was like the other furnaces at Carron, a close-top furnace of a well-known kind. It was charged by a door being opened near the top, and the barrow load of material being throw in upon the burning mass in the furnace. In this respect it was unlike the defenders' other furnaces near it, which were charged by the material being placed upon a "bell" or platform of the shape of an inverted bell which was lowered by machinery into the furnace, and then raised again, the labourer being meantime behind a screen. In the bell furnace accordingly the labourer is not exposed to the same danger from the rush of flame in the event of a slip as in the furnace in question, in which the labourer has to stand close to the open door and without a screen, it being impossible as the defenders maintained to provide a screen for it. The bell furnace, however, according to the defenders' evidence, is liable at times to explosions more serious than those which were likely to occur at No. 9 furnace. It was proved that explosions had occurred at bell furnaces, but there was no proof of injury to workmen from these explosions.

The "scaffolding" at the furnace in question had lasted for a considerable time. It was proved that it had taken place for several weeks prior to the coming to the works on 1st May 1887 of a new manager, Mr Love, that it had then continued for several weeks more before he was satisfied from observation of the furnace that it was taking place. It was also proved that on becoming aware of it he had adopted measures by blowing the furnace down somewhat on at least three occasions before the injuries to Henderson occurred. The means he had taken were in themselves, according to the evidence of men of skill, proper and ordinary means. After the accident to Barriscell the furnace was blown out and cleared and again kindled. The scaffolding in question was proved to be a very bad case in point of degree as well as in the length of time it lasted, and the pursuers sought to show that the proper course in the circumstances was to blow out the furnace altogether and rekindle it after clearing it out. The defenders led evidence to show that to blow out the furnace and rekindle it would have caused great expense, and was not a usual course, though their witnesses admitted it to be the final remedy after all others had failed.

The contentions of the parties and the nature of proof led so far as not above detailed are fully given *infra* in the note of the Sheriff-Substitute (ERSKINE MURRAY).

The Sheriff-Substitute pronounced this interlocutor in Henderson's case:—"Finds (1) that the defenders the Carron Company have a close-top blast-furnace, No. 9, charged by doors from above, which was started in the spring of 1887: Finds (2) that a new manager, Love, being appointed in April, found the furnace not working satisfactorily, as 'scaffolds' or adhesions of material took place in it, which caused 'slips,' and deteriorated the quality of iron made: Finds (3) that he had made several attempts to remedy the evil by blowing down the furnace partially, and directing the blast to the root of the 'scaffold,' and on each occasion improved the working of the furnace, but his successes were only partial and temporary: Finds (4) that scaffolding, and its consequence—slipping—are evils of which the true cause and the complete remedy are not yet known: Finds (5) that on 10th October 1887 Alexander Henderson, a young man, son of pursuer, earning about 28s. a-week, who had worked on the top of No. 9 for about eight or ten weeks, but had been away from it for a month, was again sent there to open the furnace doors for men who were putting in the charges: Finds (6)

that when he had opened one of the doors, a slip took place in the furnace, causing an uprush of flame and gas, by which he was burnt severely, in consequence of which he died: Finds (7) that his father, the pursuer, has raised the present action of damages: Finds, on the whole case in law, that pursuer has failed to prove that the death of his son was occasioned by any fault on the part of defenders, or those for whom they are responsible: Therefore assoilzies the defenders from the conclusions of the action, &c.

"*Note.*—Some years ago blast-furnaces for the production of pig-iron were made with open tops. The gases escaped, rushing away with the flames into the atmosphere. Of late years close-topped furnaces have been devised, by which the gases, instead of being allowed to escape, have been turned down and utilised. This is a great gain both for the furnace owners and for the public, the emission of noxious gases being thus minimised. The gain has not, however, been unaccompanied with a certain loss. In blast-furnaces there exists more or less a tendency in the material when partly fused to adhere to the brick-work forming the inside of the furnace. This is termed 'scaffolding,' probably in consequence of the similarity of the adhering masses to scaffolds against a wall. Sometimes it is called 'ringing,' when the material adheres in a ring all round, which it does principally in the lower parts or 'boshes' of the furnace, which resemble an inverted cone. When once a scaffold gets rooted in this manner, the material piled in from above clings to and increases it, and the ore gets unequally fused—the lower parts in the centre nearest the blast being more easily melted, and coming away, leaving gaps under an arch of material like those caused by water in winter under a bank of snow. From time to time, as the superincumbent mass of material gets too heavy, portions of the scaffold or bridge thus made break away and fall down into the fiery gulf below. These are called 'slips,' and are naturally accompanied by a great upward rush of fire and gas. Scaffolding may take place in a furnace whether almost new or growing defective through old age. Science has not yet discovered the cause of it; it is probably the result of a combination of chemical and mechanical causes. Its effect is a deterioration in the quality of iron produced; instead of No. 1 there may only come out No. 3 or No. 4 in consequence of the imperfect and irregular fusion. Now, although scaffolding and slips were not unknown even with the old open-topped furnaces, they have become more prevalent with the close-topped furnaces, and while science has not yet discovered their cause, neither has it discovered a satisfactory remedy for them. The usual method adopted to get rid of scaffolding has been to blow down the furnaces as far as possible, and then by directing the blast on what is supposed to be the root of the scaffold, to melt it away and thus get rid of it. This succeeds generally if the scaffolding has been of short duration, and even sometimes if it has been of long duration, though apparently the longer the scaffolding has existed the more uncertain is the success of this remedy. Still, even if a permanent cure is not thus effected, the furnace is often thus put into good working order for a time, though it may relapse into its bad habits. Failing this remedy, the only other is the complete blowing out of the furnace and allowing it to cool, in the course of which most of the scaffolding comes away, and what remains can be then taken away. But this process is very rarely resorted to for several reasons. In the first place it is very expensive; much material is wasted, much time is wasted, much labour is wasted; several hundred pounds may thus be expended, and after all, though the particular scaffolding then in existence may thus be removed, this by no means ensures that when the furnace is started again the scaffolding may not begin afresh and run a new course. For scaffolding, as has been mentioned, may commence in a newly-started furnace, and as its cause is not known, it is almost impossible to prevent it by antecedent action. So an entire blowing out is a very exceptional matter, and a furnace owner cannot be bound to have resort to it except in very exceptional cases indeed.

"In the present case the scaffolding had commenced very shortly after the furnace had been started, before the witness Love entered on the management. Love made three or four different attempts to get rid of the scaffolding in the usual way by blowing down the furnace as far as possible. On each occasion he improved the working of the furnace, so that for a time it drove all right, but it always relapsed into its bad ways; his last attempt was made after the accident to Henderson, and before that to Barriscell. After that to Barriscell, despairing of success in the usual way, he blew out the furnace entirely at the end of December, got rid of the scaffolding, and started the furnace anew on the 7th February, since which, as yet, it appears to have been 'driving' satisfactorily. Only a month and a-half, however, have yet elapsed.

"The accidents to Henderson and Barriscell happened in much the same way. Henderson on 10th November, and Barriscell on 31st December, were engaged in the operation of aiding at the charging of the furnace No. 9, a close-topped furnace, by opening the charging doors. A door had been opened to charge, a slip happened at the moment, a gush of flame and gas rushed out. Henderson was so severely burned that he died. Barriscell was more lightly injured, but was off work for some time.

"In the first action Henderson's father sues for damages for the loss of his son; in the second Barriscell sues for the damages to himself.

"The pursuers' main contention is that the defenders were in fault in not adopting sooner the remedy of blowing out the furnaces entirely. On the whole, the Sheriff-Substitute is unable to agree with this contention. It was a matter of opinion which remedy was the better to adopt; and the Sheriff-Substitute does not think that defenders were in fault in not adopting sooner the very exceptional and unusual course of blowing the furnace out, which, it must be remembered, would by no means necessarily ensure the future efficiency of the furnace.

"Another ground stated on record is, that the defenders were in fault in the way they charged their furnaces, putting in too much metal in comparison with coal, and thus causing scaffolding. This is abundantly disproved.

"A third ground of liability is, that whereas on some of the blast-furnaces there is a shelter for the men, there was none on No. 9. This arises from

the nature of the furnaces. Some of the close-topped furnaces are on the bell system. In furnaces on this system there is inside the furnace a 'bell' or inverted funnel, which when raised touches with its sides the sides of the mouth of the furnace, so that all round it there is a circular cavity into which material, or as it is technically called, 'burden,' and coals are thrown; while this is being done there is no danger whatever, as there is no opening down to the furnace. But when the outsides of the bell are fully charged the bellman, by machinery at a little distance, lets down the bell; of course all the material falls off into the furnace, and there being so much of it there is necessarily an upward rush through the large opening of flame and gas. To shelter the men on the bell furnaces at the moment of lowering the bell, a screen has been erected. But No. 9 is not charged by a bell, but by four doors. Only one door is opened at once, and thus a comparatively small charge is put in. But thus, while on the one hand there is not the reason, as in the case of the bell furnaces, to expect a fiery rush, there is on the other hand no possibility of sheltering the men, for they must bring the barrow to the door, and empty it right into the open furnace. So a screen in the case of No. 9 would be useless.

"Again, the pursuers contend that there is a defect in the defenders' ways, &c., in their not providing sufficient valves or explosion doors, by means of which the force of the explosion would have expended itself otherwise, instead of rushing through the charging doors at which Henderson and Barriscell were burned.

"But the ordinary valves of No. 9, though not quite so large as those at Gartsherrie, seem large enough for all practical purposes. There are also explosion doors at the ends of the upper cross tube, with the view that if such a heavy explosion were to take place that the gases could not readily enough escape by the valves, they might find a vent without blowing off the machinery. But whether or not the explosion doors had in this case got jammed intentionally or unintentionally is really a matter of little moment, for even had they been in working order the gas would have preferred to rush out by the charging door, which was wide open than to take the trouble of opening a door at all, as it always must follow the line of least resistance.

"On the whole, therefore, the Sheriff-Substitute cannot see that the accidents either to Henderson or Barriscell were occasioned by any fault on the part of the defenders. There was no fault on the part of the men injured, so the fatality must be put down to misadventure."

In the action by Barriscell the Sheriff-Substitute also assoilzied the defenders.

The pursuers appealed to the Court of Session, and argued—That there had been fault in allowing a bad "scaffolding" to exist for nine months uncured. Some time might no doubt be allowed for the endeavours of the manager to cure the evil by partial blowing down, but the time he had taken during which the men were exposed to daily danger was unprecedented and excessive. It was said that the course of total blowing out was expensive and uncertain, but (1) the proof showed that the defenders' estimate of the cost was excessive; and (2) even if the cost had been very great the defenders were not justified in exposing men to the risk for so long a period on the mere ground that it would be a source of expense to remedy it. Further, the fault was the greater that there was not, and according to the defenders could not be, a screen for the protection of the men, and that, as the defenders argued, and as the Sheriff said, the rush of flame was on scientific grounds certain to come through the open door. If so, the men should not have been exposed to the danger. But that danger was not unavoidable. If a bell furnace had been used the men would have had a screen, and would both have been saved.

The defenders supported the interlocutor of the Sheriff-Substitute.

At advising—

Lord Justice-Clerk—Without going into any detail I think this case may be very shortly dealt with. The defenders have certain bell-topped furnaces and other furnaces fed by doors. The case for the defenders is that to feed these latter furnaces it is absolutely necessary the material should be emptied into them by men. I accept that as a fact, and I also accept it as a fact that these furnaces are of the ordinary build and are fitted with all the modern appliances yet devised. But inside all furnaces—since the tops were closed—there is a tendency for the material to cake at the top of the "boshes," by which "scaffolds" of hanging material are formed at the sides.

These "scaffolds" are injurious to the satisfactory output of iron, and are dangerous to those employed in charging the furnaces, because if they "slip" there is a considerable rush of flame upwards, and that goes out at the doors if they are open as the easiest mode of escape. I accept the defenders' statements that science has not yet explained how that "scaffolding" occurs, and that no remedy has yet been devised to protect workmen against such risks. I accept also the statement that there is no means by which coals and ironstone can be admitted without the man feeding the furnace being burnt to death if there should be a rush of flame to the door. That such should be the case is incredible to my mind, but I accept it because it is stated in evidence. The question then is, whether the defenders were entitled to go on struggling with this "scaffolding" for nine months, or whether they were not bound to put an end to it before then by the admittedly competent method of blowing out the furnace? I think their action was not justifiable. Seeing that the danger was unavoidable except by one method they were not entitled to go on for nine months without having recourse to that method. That the danger was considerable is shown by the fact that two very serious accidents occurred within six weeks of each other. I am therefore for recalling both interlocutors and finding both pursuers entitled to damages. I propose that we allow £100 of damages to the workman who lost his son, and £50 to the workman who was himself injured.

Lord Young and Lord Lee concurred.

Lord Rutherfurd Clark was absent.

The Court pronounced this interlocutor in Henderson's case:—

"Find in fact (1) that on the occasion libelled the pursuer's son Alexander Hender-

son, then in the employment of the defenders, was sent by their night superintendent to the top of their furnace No. 9, to open its doors for the men putting in charges of coal and ironstone; (2) that on his opening one of the doors a 'slip' or fall of material adhering to the interior of the furnace took place causing an uprush of flame, by which he was burnt severely, and in consequence of which he died; (3) that the said furnace had been in a dangerous state from the formation of 'scaffolding' therein which had repeatedly caused such slips in the furnace during the previous nine months, and the death of the said Alexander Henderson is attributable to the fault of the defenders in allowing the furnace to be worked for so long a period in the state in which it was, notwithstanding the fact that all efforts to remove the 'scaffolding' had failed: Find in law that the defenders are liable in damages and *solatium* to the pursuer for the loss of his son: Therefore sustain the appeal: Recal the judgment of the Sheriff-Substitute appealed against: Assess the damages and *solatium* at One hundred pounds: Ordain the defenders to make payment of that sum to the pursuer: Find him entitled to expenses in the Inferior Court and in this Court: Remit to the Auditor to tax," &c.

A similar interlocutor was pronounced in Bariscell's case.

Counsel for the Pursuers—Sym. Agent—W. Cotton, W.S.

Counsel for the Defenders—D. F. Mackintosh, Q.C —Guthrie. Agents—J. C. Brodie & Sons, W.S.

Friday, March 15.

SECOND DIVISION.

[Lord Trayner, Ordinary.

MILLER & COMPANY *v.* HOGARTH AND OTHERS.

Ship—Charter-Party—Hire—Freight.

In a charter-party there was this provision —"In the event of loss of time from . . . breakdown of machinery . . . whereby the working of the vessel is stopped for more than forty-eight consecutive working hours the payment of hire shall cease until she be again in an efficient state to resume her service." The hire was to be paid monthly in advance. On the voyage her engines broke down so as to render her unseaworthy, and she had to put into a foreign port. There were no means of repairing her injuries in that port. A tug was sent out to bring her home under an agreement between the owners and the charterers, by which the cost of the tug was to be treated as general average. The ship arrived at the port of discharge with the aid of the tug. The charterer paid his proportion of the cost of the tug. In an action for the freight from the time she left the foreign port till her discharge was complete, *held* (*rev.* Lord Trayner) (1) that she was unseaworthy from the time of the breakdown till she arrived, the assistance of the tug not having rendered her seaworthy, and therefore that having in view the terms of the charter-party the owner was not entitled to freight for the voyage under tow; (2) (*dub.* Lord Young) that hire was due for a reasonable time for unloading at the port of discharge although the repairs necessary to make the ship seaworthy had not been completed.

By charter-party dated 26th February 1887 Alexander Miller, Brother, & Company, merchants, Glasgow, hired from Hugh Hogarth, the managing owner, the steamship "Westfalia" on a charter for a voyage to the West Coast of Africa and back, with the option of continuing the hire for another voyage. Hire was to be paid at 8s. per ton per month in advance. The owner undertook to provide officers and crew, and maintain the vessel in stores, and "in a thoroughly efficient state in hull and machinery for the service." It was also provided—"That in the event of loss of time from deficiency of men or stores, breakdown of machinery, want of repairs, or damage, whereby the working of the vessel is stopped for more than forty-eight consecutive working hours, the payment of hire shall cease until she be again in an efficient state to resume her service, but should the vessel be driven into port or to anchorage by stress of weather, or from any accident to the cargo, such detention or loss of time shall be at the charterers' risk and expense. Quarantine (if any) at charterers' expense. That should the vessel be lost, any freight paid in advance, and not earned (reckoning from the date of her loss), shall be returned to the charterers. The act of God, the Queen's enemies, fire, restraints of princes, rulers, and people, and all other dangers and accidents of the sea, rivers, machinery, boilers, and steam navigation throughout this charter-party always excepted." The ship performed one voyage, and under their option the hirers continued to send her for another voyage. She left the West Coast of Africa with a cargo of kernels and palm oil on the 14th September 1887. On the 30th September the high-pressure engine broke down, by the piston-rod breaking. She made her way to Las Palmas in the Canary Islands under sail, and by the help of her low-pressure engine. She reached Las Palmas on the 2nd October. She was surveyed there, and the surveyors declined to give a certificate of seaworthiness. News of her condition was sent to the owners. It was impossible to repair her without great delay and expense. The surveyors declined to authorise an attempt to proceed home under her low-pressure engine. After certain negotiations between the owner and the charterers an arrangement was come to by which the tug "William Joliffe" was sent to her assistance. The expense of the tug was to be treated as general average, the charterers paying in proportion to the value of the cargo, the owner in proportion to that of the vessel. The tug went out and took the "Westfalia" in tow, and left Las Palmas upon 18th October. She arrived at Harburg, her port of destination, on 31st October, and commenced discharging her cargo. The discharging of the cargo took