

that time only six days remain; you must, therefore, come at once. Amy's father is here."

With my mother's ready consent (she had learned in some way a portion of the truth, and Paul's relationship to the dead), Lady Anne and I, attended by Morgan, the major's soldier-servant, left Ellerslie as quickly as possible.

At the hotel in York, to which he had directed us, we found Harry; and after partaking hastily of the refreshment he had in waiting, went with the high sheriff's order to the gaol.

Within the gates—as the order only admitted "Major Somerset and friend" to the prisoner—Lady Anne left us.

Outside the walls, the world was glad and bright—the autumn sun gilding every object it rested upon; within, all was dark, silent, and gloomy; and following the stern, heavy-footed turnkey through the dim corridor, to the still dimmer cell, I seemed, for the first time, thoroughly to realise what imprisonment must be to one accustomed to the free, unfettered life of the woods and lanes.

"He's gettin' dreadful down, sir," said the officer, as he unlocked the door; "I think another month o' this here confinement would kill him, without Jack's help. Here, my lad," he continued, ushering us in, "here's a lady come to see yer."

"A lady!" and the poor fellow sprang to his feet. "Miss Neville, is it you? are you come at last? Ah! you've forgotten me, and no wonder; but I remember you."

I had indeed forgotten him, if this was the boy for whom I had interfered with the keeper in the Ellerslie Wood.

He had grown tall, almost graceful in person, and his features bore so startling a resemblance to those of his father and grandmother, that I absolutely trembled as I looked upon them. Silent, he was the image of the former; speaking, excited, it was the latter's self again.

The picturesque gipsy's garb, which at our last meeting had lent such a wildness to his appearance, was gone; but the close, ugly prisoner's dress could not conceal the ease and grace of the wearer.

All was altered but the voice and eyes; those remained the same—untamed, fearless, and bold.

"I am sorry to see you here, Paul," I said, after a short silence. "This place must be very dreary for you."

"It'll kill me before the gallows," he answered, huskily.

"No, no, you must tell me how to prove your innocence."

"I can't. I can't save my life by turning traitor. I wouldn't do it for her; and now she's gone, and there's nobody to care whether I live or die, I'll never act a sneak's part."

"But there are many who care. Amy—"

"Yes, she would," and a bright, glowing smile crossed the lad's features. "But no one else."

"For her, then?"

"No."

"Why, then, did you send for me?"

"I don't know. Because she bade me, I suppose. And, besides, I wanted to see you, an' tell you I wasn't as bad as they say. You saved me once, an' I wouldn't like yer to think me such a cowardly brute to one as had been kind to me. Half the terribleness of dyin' is leavin' a bad name behind one for people to point at."

"There is more in death that is terrible than that. But if, indeed, you are innocent, and know who is guilty, you ought not to screen him. It was a most cruel and ungrateful deed."

"You're right, it was; but I'd no more hand in it than you. I never saw the poor old cretur after I went in an' begged the broken victuals of her. I saw the money and things on the table, I know, but I never touched 'em (I never prigged nothin' in my life) an' others see 'em too, though, maybe, she didn't notice who was about."

"But she swore it was you who robbed and almost killed her."

"She swore falsely. I never set foot in the place after I went out with the bread and meat she gave me."

"Where did you go when you left the cottage?"

"To a stile, about a hundred yards off, where I sat and eat the victuals."

"And your companions?"

He made no reply.

I repeated the question, adding—

"And when you had finished your meal, where did you go?"

"Across the fields, towards the next town."

"Did you reach it?"

"Not that night. A storm came on, and I lay in a deer hovel in a great park by the road-side. But

the wind rose very high towards morning, and blew down the door right over my face, and bruised and cut it badly; and strugglin' to get up, I knocked and hurt myself a good bit, so that I looked bad enough in the daylight—my hands and face all over cuts and blood."

"When did your friends find you?"

"Another silence."

Then I asked—

"But if you never were in the cottage after the time you say, how was it the watch and spoon were found on you?"

"Ah! that was a shame!" he cried, with flashing eyes; "that was a bitter bad trick. I'd no more knowledge what was in that bundle when I was asked to go and take it to the pawnshop, than you have."

"Why didn't you say so?"

"I did; but who'd believe me? The things couldn't walk into my hands; and when I wouldn't say who gave 'em to me, in course it was natural to think I couldn't."

"But you will now. Oh! surely, Paul, you will not lose your life for the sake of those who behaved so treacherously—planned to throw the charge and suspicion upon you, and then left you to bear the consequences!"

"It is hard. I wouldn't ha' minded if I'd only known as I might get into trouble; but to trap me that way! There needn't have been no fear; I wouldn't ha' had nothing to do with the things, but I wouldn't have peached; though I'm cruel sorry for the poor old cretur, for she was free of her victuals, and kind to me. Oh! she did look at me so at the trial! I think that hurt me worse than all. She downright cried, and said I was the image of her boy as had been dead thirty years; and that was why she was so sure I was the one as robbed, and almost killed her, she had taken such notice of me."

"Was your companion so much like you, then?"

"Now, don't ask me; don't try to catch me," he said sharply, turning away; "and don't try to guess. You'll be sure to be wrong. She couldn't, who thought she knew every livin' soul as I did."

Argument, entreaty, all were vain. The lad had his own code of honour, and it was impossible to shake his allegiance to its laws.

That he was innocent of any part in the evil deed which had been done was certain. No one could look upon his steady eye—listen to his bold, true voice, which never wavered or faltered—without feeling convinced of it; and when, at last, we left the cell without having accomplished anything, our feelings were as sad and sore as can be conceived.

To save him appeared hopeless.

Even had he told us all that we sought to know, it might have been difficult, perhaps impossible, to corroborate and prove his statement; but now, in the face of this persevering silence, without a clue to search or inquiry, what could be done?

Nothing.

And yet how terrible, feeling, knowing him, as it were, to be innocent, to leave him thus to die!

Time, too, was rushing on so fast; there was so little left in which to do anything, or wait for chances or changes. Still hour after hour went on, each stealing somewhat from the scanty store, and bringing no greater hope, that, ere it was too late, the truth would come to light.

It was impossible to go away, leave the lad in his last days of trial; but it was almost equally impossible to stay, miserable, anxious, unhappy, yet unable to be of the least use or service.

(To be continued.)

ELECTRIC SYSTEM—RAILWAY SIGNALS.

THE rail has now become the ordinary mode of travel. Long and short journeys are performed in first, second, or third-class railway carriages, and the nag that draws us is a steam horse, rubbed down with oil, and baited with coal and water. Considering the immense number of passengers, and the extraordinary traffic every day conducted on our iron roads, it is no matter of surprise that the steam horse occasionally meets with some impediment, runs off the line, dashes into a train, or carries his freight over an embankment. In the old coaching times there were accidents. Off leaders fell dead or took fright, and coaches were capsized with the inevitable result of broken limbs to the passengers. But railway accidents are almost always on a gigantic scale, and too frequently the "alarming accidents" duly advertised outside the newspaper offices, are more terrible in their

results than is at first supposed. Crushed limbs and dislocated joints may be healed and set right after a fashion, but a shattered constitution remains, so that many of these alarming accidents are more fatal than appears by the verdict of a coroner's jury. It must, however, be borne in mind that in relative proportion to the number of travellers now and in former times, these accidents, fatal or otherwise, are but slightly, if in any degree, increased. But this is small consolation to a man with a broken leg, or to the widow and orphans of some unfortunate person killed on the line. The question presses—What can be done to lessen the number of these accidents? This, in its turn, calls forth another question—To what causes are these accidents chiefly attributable? The answer is, in very many instances—Neglect of railway officials, especially in regard to the working of signals. An improvement in this respect is, then, obviously necessary, and though it does not fall within our province to suggest what should be done, it may be interesting to know what is done at present.

Everybody who travels by rail—and who does not?—knows that all along the line signals are employed, and that on the waving of a coloured flag, the glare of a coloured lamp, or the elevation of the arm of the semaphore, depends the safety of the train. The systems employed are various, and it is not necessary to describe them all. Taking those which are generally used, we may notice

THE SEMAPHORES.—These are usually upright masts, varying in altitude according to circumstances, with fan-like arms attached, the position of which conveys the necessary information to the drivers of approaching trains. When the arm which is on the left of the engine-driver is at right angles to the mast, it is the signal of DANGER, and the train must be immediately stopped. When the arm is at an angle of forty-five degrees, CAUTION must be observed. If the arm be parallel with the post, it is the signal of ALL RIGHT.

LAMPS are employed at night and in foggy weather, and by the different colour of these lamps the engine-driver of an approaching train is apprised of the condition of the line. Thus, when a red light glares upon it from the signal-post, he knows there is danger in the way; if green, that caution is necessary; if white, that the line is clear, and he may go a-head.

FLAG SIGNALS are also used along the line; the waving of a red, green, or white flag, signifying respectively danger, caution, and all right.

The electric telegraph is also employed with beneficial results on many of our railways. As soon as a train starts the information is immediately signalled to the next station, and thus it is distinctly known what trains are on the line, and at what time they may be expected.

Now, it will be seen at once, that any neglect on the part of an official charged with the signals, any unhappy blunder as to the movement of the semaphore, or the colour of the lamp or flag, may result in the most frightful consequences. If we contemplate for a moment the fearful effect of error in this respect, we shrink back in horror at the picture imagination draws.

Several modifications of these general principles are adopted by various railway companies, and inventors have, from time to time, exhibited models of new plans, which have met with some attention. For example—there is a self-acting railway signal for locomotive engines, by which trains may signal themselves at railway stations at the distance of a mile, or a mile and a-half. Trains are usually signalled, as we all know, by a harsh, shrill whistle; but by the self-acting signal there are certain plugs on various parts of the line immediately connected with the semaphore. As soon as the train passes over one of these plugs the arm of the semaphore is raised during the day, and a bell rung at night.

The double-station signal consists of two semaphores, and is used at junctions where it is obviously necessary that special precautions should be observed to prevent collisions. Attached to these semaphores there is usually a lodge for the official on duty, and a convenient platform for the working of the signals. Let us suppose that on each of the two lines which there form a junction two trains are approaching: if the arms of the semaphore remain at a right angle with the mast, both trains would be stopped, but one of the four stirrups which are arranged side by side, enables the signal-man to lower one of the arms, and the train thus signalled proceeds. The chief utility of this plan is that it facilitates the labour of the official, and renders it perfectly easy to regulate the advance of four trains simultaneously.

Among self-acting signals, we may here allude to the

detonating fog signal, which, by a slight explosion, announces the approach of a train; and a fog signal, the peculiarity of which consists in the fact of red or green lights being produced by triggers being struck by a stop placed at the side of the tramroad.

But it is not our purpose in this article to enumerate the various plans which have been suggested and occasionally adopted for the improvement of our railway signals. The grand object is to procure some one system, easily worked and readily understood, and, by mutual consent of the railway companies, to carry out the same system on every line in the United Kingdom. The adoption of some universal plan is absolutely essential, as the changes which naturally take place in the removal of engine-drivers and signal-men from one line to another are calculated to produce very serious consequences to the public. A man accustomed to one system of signals is suddenly compelled to adopt an entirely different system, and the security of the train depends on the proficiency which he attains in his new lesson. This ought not to be the case; no argument can be urged for its continuance, as a little careful attention to the subject, and a good understanding between railway companies, would render such risks impossible, and make railway travelling—so far, at least, as signals are concerned—as safe as it is economical and convenient.

PIANOFORTES.

AMONG all the varieties of musical instruments, there is not one so universally employed as the pianoforte. To perform on this instrument is an ordinary part of a young lady's education, and in an age such as ours, when music has been popularised amongst all classes, a want of this accomplishment is severely felt.

It is not our purpose, in this place, to furnish instructions for the pianoforte;* but it may be interesting to many of our readers, both musical and mechanical, to introduce some brief account of the construction of the instrument, illustrating our article by appropriate engravings.

In the first place, we notice that the old-fashioned clavichord and still older spinet furnished the original idea of the pianoforte. About a hundred years ago, Viator, a German mechanic, invented the instrument, but he was too poor to perfect his idea, and left it for others, with less ingenuity, but more money, to carry it out. Zumpe, Tabel, Schudi, Bech, Stodart, and a host of others, turned their attention to the new instrument; clavichords and harpsichords went the way of all things, and the pianoforte became at once the rage. A German, Backer by name, came over to this country and made pianos, but did not make his fortune. His contemporary, Zumpe, was more successful, and retired to enjoy his wealth; but whether we owe to Zumpe or to Backer our first knowledge of the pianoforte, is a little doubtful. However this may be, the reputation of the instrument has been now fairly established for many years, and, in the hands of our distinguished makers, has undergone very considerable improvements.

The pianoforte is of various descriptions—*grand, square, upright, &c.* It is sufficient for our purpose to describe one of these—namely, the grand piano, the invention of Schröder, a harpsichord maker of Padua. The case of the instrument is made of oak, Spanish mahogany, rose-wood, &c., all more or less ornamented. The case is well braced, sometimes with iron, sometimes with wood; but

* For instructions on this subject, see *Ladies' Treasury*, published monthly, price 6d.

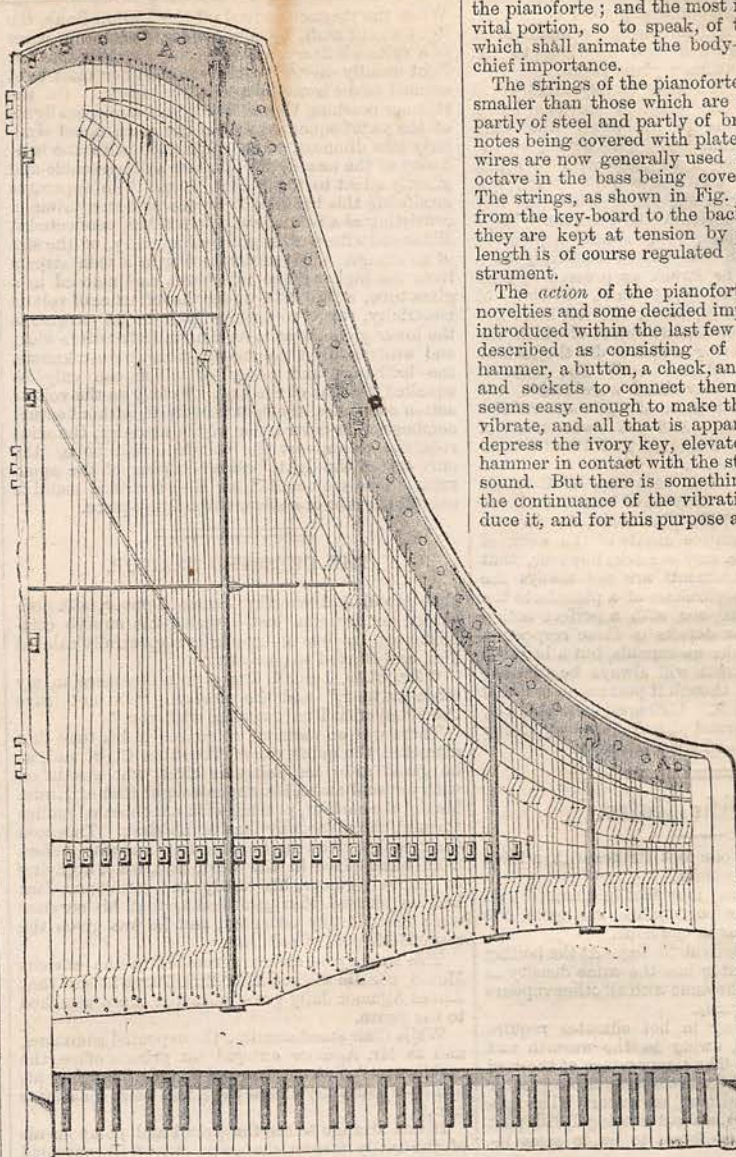


FIG. 1.—THE GRAND PIANOFORTE.

though iron is stronger, wood is more sonorous, and makers are divided as to the respective merits of these materials. The case, however, is the mere body—the mere outward form of

the pianoforte; and the most important parts—the vital portion, so to speak, of the piano—the spirit which shall animate the body—is, in reality, of the chief importance.

The strings of the pianoforte were formerly much smaller than those which are now in use, and were partly of steel and partly of brass, some of the bass notes being covered with plated copper wire. Steel wires are now generally used throughout, about an octave in the bass being covered with copper wire. The strings, as shown in Fig. 1, extend horizontally from the key-board to the back of the instrument; they are kept at tension by small pegs, and their length is of course regulated by the size of the instrument.

The action of the pianoforte—into which several novelties and some decided improvements have been introduced within the last few years—may be simply described as consisting of “a key, a lever, a hammer, a button, a check, and a damper, with rails and sockets to connect them.” At first sight, it seems easy enough to make the strings of the piano vibrate, and all that is apparently necessary is to depress the ivory key, elevate the lever, bring the hammer in contact with the string, and produce the sound. But there is something required to prevent the continuance of the vibration as well as to produce it, and for this purpose a button and check are required, and here most of those delicate variations originate, which distinguish the pianofortes of different makers.

The annexed illustration (Fig. 2) gives a representation of the key-board, and its connection with the hammers in the action of the pianoforte. As the progress of musical science and mechanical art has advanced, new powers have been called for, and new effects given to the action of the instrument. The compass is now considerably increased, and the general manufacture much improved. Grand pianofortes have generally six-and-a-half octaves—sometimes seven—which are quite sufficient for all ordi-

nary purposes of musical composition. Stops are not much employed now in pianofortes. Formerly the damper stop, which, by raising the dampers from the strings, gave continuation to the

tone, and the buff stop, which, by raising a piece of soft leather to the strings, gave it a harp-like sound, were much admired, but are now scarcely ever used. Opinion is also divided on the question of pedals, some performers regarding them as injurious to the mechanism of the instrument, others holding them in high esteem. Most objection is urged against the piano pedal, and in its

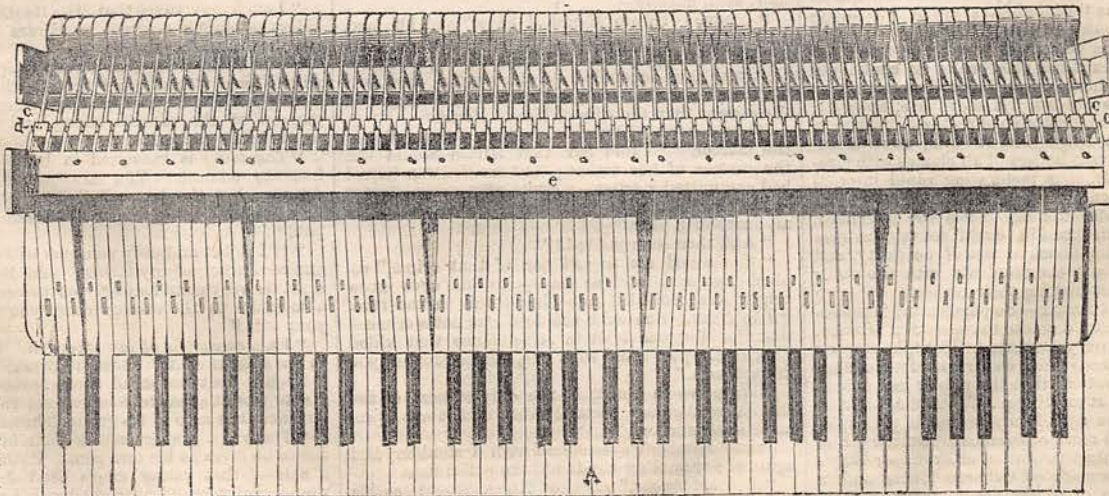


FIG. 2.—THE “OCTAVE” OF A GRAND PIANOFORTE.