

No. 26. *May 28th, none injured.*—Cornish, 40 lb. pressure. The tube was rent, having been much weakened by external corrosion.

No. 27. (See Fig. 16.) *June 4th, 1 killed, 3 injured.*—Portable, multitubular 7 ft. 6 in. long, by 2 ft. 9 in. diameter, $\frac{3}{8}$ in. plates, thirty-six tubes, $\frac{3}{4}$ in. diameter, 50 lb. pressure. The front plate gave way, having been much weakened by the holes for fittings being in one line.

No. 28. (See Fig. 17.) *June 9th, 1 killed.*—Model boiler, 11 in. long, by 4 in. diameter, made of copper, with slightly dished ends, seams all soldered. Heated by a spirit lamp, which having been accidentally shifted, melted the solder, and allowed the back end to be blown off, when the reaction from the issuing steam blew the boiler against the head of the lad who made it.

No. 29. (See Fig. 19.) *June 10th, 3 killed, 8 injured.*—Cornish, 18 ft. long, by 5 ft. diameter, $\frac{3}{8}$ in. plates. Tube 3 ft. diameter, 30 lb. pressure. The tube collapsed nearly from end to end, from shortness of water. There was no fusible plug, and the usual level of water was only 4 in. above crown of tube.

No. 30. (See Fig. 10, page 152.) *June 26th, none injured.*—Locomotive, 10 ft. 6 in. long, by 4 ft. 3 in. in diameter, $\frac{1}{2}$ in. plates, 120 lb. pressure. Gave way from furrowing of the strap plates, where it covered the "butt" joint.

No. 31. (See Fig. 20.) *June 26th, 4 killed, 2 injured.*—Marine. One of two, 12 ft. long, by 9 ft. diameter, $\frac{1}{2}$ in. plates, 80 lb. pressure. The safety valve was out of order, and did not work freely, and over-pressure forced the dome from its seat, tearing it through the line of rivet holes at the base.

No. 32. *July 1st, 3 killed, 1 injured.*—Marine, 65 lb. pressure. The dome was blown off; being of inferior metal, and badly attached to the shell, gave way from over-pressure, the free action of the safety valve having been prevented.

No. 33. (See Fig. 21.) *July 5th, 4 injured.*—Lancashire. One of two, 28 ft. long, by 6 ft. 6 in. diameter. Tubes 2 ft. 6 in. diameter, $\frac{3}{8}$ in. plate in shell, $\frac{7}{16}$ in. in tubes, 15 years old, 54 lb. pressure. External corrosion had so reduced the strength as to make it unable to bear the usual working pressure.

No. 34. *July 7th, 1 injured.*—Sulphur boiler, cast iron, 6 ft. high, by 6 ft. diameter, supplied with steam at 35 lb. pressure. The outlet became stopped, and the boiler pressure thus coming on the pan, was more than it could bear, and the boiler gave way, and the top was blown to a height of forty yards, demolishing a wooden shed in its descent.

No. 35. *July 8th, none injured.*—Multitubular, 65 lb. pressure. It was torn to pieces by over-pressure.

No. 36. *July 14th, none injured.*—Lancashire, 35 lb. pressure. Ruptured in the bottom, where much weakened by external corrosion.

No. 37. (See Fig. 22.) *July 15th, 2 killed, 5 injured.*—Plain cylinder, 37 ft. 8 in. long, by 6 ft. diameter, $\frac{3}{8}$ in. plates, 30 lb. pressure. The flues of the boiler were so arranged that the flame was carried too near the surface of the water, causing such quick formation of steam bubbles, as to prevent the perfect contact of water with the iron. The plates thus became overheated, and were ruptured, as shown in the sketch.

No. 38. (See Fig. 23.) *July 20th, 3 injured.*—Vertical. Bone boiler, 9 ft. 0 in. high, by 6 ft. diameter, $\frac{3}{8}$ in. plates, and supplied with steam at 40 lb. pressure from another boiler. The top being flat; was too weak to bear the pressure, and rent off, allowing the top to be blown upwards.

No. 39. *July 23rd, 2 injured.*—Locomotive, 10 ft. 6 in. long, by 3 ft. 10 in. diameter, $\frac{1}{16}$ in. plates, 120 lb. pressure. Gave way at ordinary pressure, having been much weakened by internal corrosion or "pitting."

No. 40. *July 28th, 3 killed, 1 injured.*—Plain cylinder, 36 ft. long, by 5 ft. 3 in. diameter, $\frac{3}{8}$ in. plates, 56 lb. pressure. Gave way at the usual pressure, having been weakened by external corrosion, caused by leakage from fittings.

No. 41. *July 30th, none injured.*—Plain cylinder, 36 ft. long, by 3 ft. diameter. Ruptured at two plates in the bottom, from overheating by accumulation of deposit.

No. 42. *July 31st, 1 killed, 6 injured.*—Economiser or feed-water. Gave way from over-pressure, as the valve did not work freely.

No. 43. (See Fig. 24.) *August 10th, 2 killed, 12 injured.*—Plain cylinder, 28 ft. long, by 5 ft. diameter, $\frac{3}{8}$ in. plates, 40 lb. pressure. The plates in the flue at the front end became overheated from shortness of water, and caused rupture, the first ring of plates being thrown some distance, and the egg end still further through the roof and first floor of a cottage, 250 yards distant.

No. 44. (See Fig. 25.) *August 18th, 1 killed, 10 injured.*—Plain cylinder. One of three, 38 ft. 6 in. long, by 5 ft. 6 in.

diameter, $\frac{3}{8}$ in. plates, 48 lb. pressure. Gave way at a seam rip, where a patch had caused straining in the holes of an old plate.

No. 45. *August 15th, none injured.*—Tubulous, similar to No. 62. One tube over the fire ruptured, in consequence of overheating.

No. 46. *September 2nd, none injured.*—Plain cylinder, 40 lb. pressure. Ruptured at a seam rip near a patch, the rent extending till the boiler was torn into two pieces, one being blown to a considerable distance.

No. 47. (See Fig. 26.) *September 3rd, none injured.*—Cornish. One of eight, 25 ft. long, by 6 ft. diameter, $\frac{7}{8}$ in. plates. Tube 2 ft. 9 in. diameter, $\frac{3}{8}$ in. plates, 70 lb. pressure. Gave way from overheating of the plates, caused by accumulation of deposit.

No. 48. *September 7th, 6 killed, 3 injured.*—Revolving rag boiler, 19 ft. 6 in. long, by 7 ft. diameter, $\frac{1}{16}$ in. plates, about ten years old, steam being supplied from two Cornish boilers at 60 lb. pressure. The ends were flat, and the large manholes, for convenience of filling, were insufficiently guarded, and cracked at the edges, and too weak to bear the ordinary working pressure and strain of the material constantly falling as the boiler revolved.

No. 49. *September 8th, none injured.*—Two-flued furnace boiler, 45 lb. pressure. One flue collapsed from end to end, being too weak to bear the ordinary pressure.

No. 50. *September 10th, 1 killed.*—Economiser or feed-water heater. One of the pipes burst in consequence of overheating.

No. 51. (See Fig. 27.) *September 22nd, 1 killed.*—Vertical, 5 ft. 3 in. high, by 3 ft. 2 in. diameter, internally fired, and external annular flue. Firebox 3 ft. by 2 ft. 6 in., 70 lb. pressure. The top gave way, being unstayed and of weak form, the first rent commencing at the unguarded manhole. The safety valve was blowing a short time before the explosion, but the attendant foolishly held it down to stop the noise, causing more pressure than the boiler could bear.

No. 52. *September 29th, none injured.*—Vertical, 11 ft. high by 5 ft. diameter, 50 lb. pressure, $\frac{5}{16}$ in. plates. Smoke tube 14 in. diameter, not protected by lining. The tube collapsed at the part which passed through steam space, from overheating.

No. 53. (See Fig. 28.) *October 15th, 1 killed, 1 injured.*—Lancashire, 23 ft. 8 in. long, by 7 ft. diameter, $\frac{3}{8}$ in. plates. Tubes 2 ft. 10 in. diameter, 68 lb. pressure. The right-hand tube collapsed from end to end, and was shot forward, carrying the front end of the shell. The shell containing the other tube was thrown backwards about 60 yards. The tubes were too weak to bear the usual pressure, not being stayed or strengthened in any way.

No. 54. (See Fig. 29.) *October 26th, 4 killed, 8 injured.*—Balloons, 12 ft. high, by 12 ft. diameter, $\frac{3}{8}$ in. plates, 15 lb. pressure. The boiler gave way by the dome-shaped bottom being forced downwards until the crown plates ripped out and the rent extended round the plates joining the bottom and top of the boiler, when the reaction of the issuing contents sent the top upwards, and its fall divided it into two parts. The boiler was worked at far too high a pressure, but the immediate cause of the explosion was the giving way of one of the internal stays, and the sudden strain upon the others caused them to give way also, and the whole fabric was ruptured.

No. 55. *October 29th, 1 injured.*—Ammonia still. One of two, 12 ft. high by 8 ft. diameter. All openings were by mistake left closed, and the pressure accumulated to more than the vessel could bear.

No. 56. *November 8th, 1 killed.*—Still, 6 ft. high by 4 ft. diameter, $\frac{3}{8}$ in. plates. Ends flat, $\frac{7}{16}$ in. thick, steam being supplied from a range of boilers at 40 lb. pressure. One of the doors by which the still was filled was blown out, owing to the giving way of one of the fastenings.

No. 57. *November, none injured.*—Vertical, 5 ft. 6 in. high, by 3 ft. $\frac{1}{2}$ in. diameter, $\frac{3}{8}$ in. plates. Failed at the unguarded manhole, the rupture extending through a line of rivets in crown of shell, which was blown off.

No. 58. *November 9th, none injured.*—Ammonia still, 12 ft. high, by 9 ft. 6 in. diameter. Shell $\frac{3}{8}$ in. thick, ends $\frac{1}{2}$ in. Flat bottom. There was no safety valve, and all outlets were closed, and the pressure ruptured the bottom of the shell, through a line of rivets.

No. 59. (See Fig. 30.) *November 13th, 1 killed.*—Marine, 14 ft. 6 in. long, by 7 ft. 6 in. diameter at front end and 6 ft. 6 in. diameter at back end. The tubes collapsed from accumulation of salt.

No. 60. (See Fig. 31.) *November 18th, 1 killed, 5 injured.*—Plain cylinder, 18 ft. 2 in. long, by 3 ft. 8 in. diameter, $\frac{1}{16}$ in.