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THE MINES INSPECTORS AND THE ACCIDENTS AT GLASSHOUSE COMMON IRONSTONE MINE, 1865 AND BADDESLEY COLLIERY, 1882

Barry Job

Abstract: The early Mines Inspectors were faced with a very difficult task. The men selected for these posts needed to have wide practical experience plus a range of other qualities. Yet little is known of their backgrounds. This paper examines the first appointments, and goes on to describe two accidents which illustrate the Inspectors' qualities and general attitudes to safety at that time.

In spite of fierce opposition, the Act for the Inspection of Coal mines (13 & 14 Vict., C.100) received the Royal Assent in August 1850. Under this Act, four mines' inspectors were appointed in the following November (Job 1991). They were: Charles Morton, Joseph Dickinson, Mathias Dunn, and J. Kenyon Blackwell. The latter resigned almost immediately for a more lucrative position, and was replaced by Herbert Mackworth. It was said that, "the Home Office had made every effort to select the most able and practical men". Little biographical material is available for Morton, but, like the others, he was undoubtedly an established mining engineer. Dunn was nearly fifty when he was appointed. He had been a pupil, and later, assistant to the famous John Buddle. He had published books which became standard works, and had earned a reputation for integrity and honesty. He had been employed as a check viewer in the north eastern coalfield for many years, but reputedly was dogmatic about preferring experience over theory. Henry Dickinson was born in Newcastle-upon-Tyne in 1818. He studied under Thomas Sopwith, a mining and civil engineer, before moving to South Wales in 1840 to work for the Dowlais Mining and Iron Company. In 1847 he went to the Nitherdale Ironworks, Scotland, and earned a reputation for taking a keen interest in scientific subjects. He was also a man of considerable integrity, he showed understanding of the harsh working and social conditions of the miners, yet was sharply crtical of men who endangered themselves or others. By contrast, Mackworth was the nephew of a baronet. Born in 1804, he was educated at King's College, London, and was offered a professorship in geology at the age of 27. He worked for two years at Thomas Powell's Collieries in South Wales, and had been "the principal engineer of several railways, of the Stanedge, Scout, and Stalybridge tunnels . . .". He was said to have "the most fertile and enquiring mind of he early inspectors".

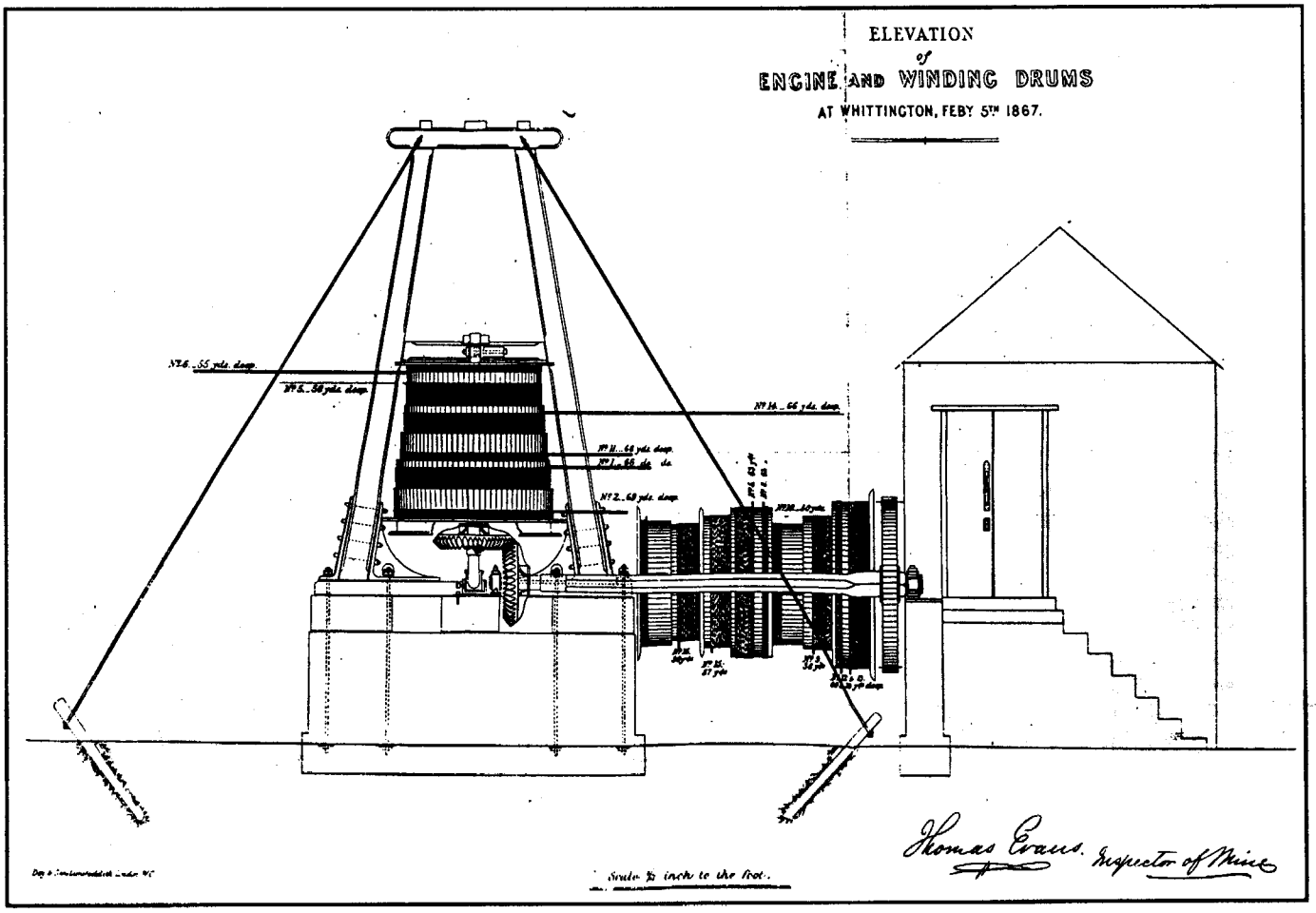
The Inspectors often remained in post until death or retirement through ill-health intervened. Mackworth died in 1858 and Morton retired in 1866 in direct consequence of the strain of the Oaks Colliery explosion. Dunn also retired in the same year through ill-health, but Dickinson remained an inspector for 41 years, and following his retirement he continued to be an active member of the Manchester Geological and Mining Society until his death in April 1912, aged 95.

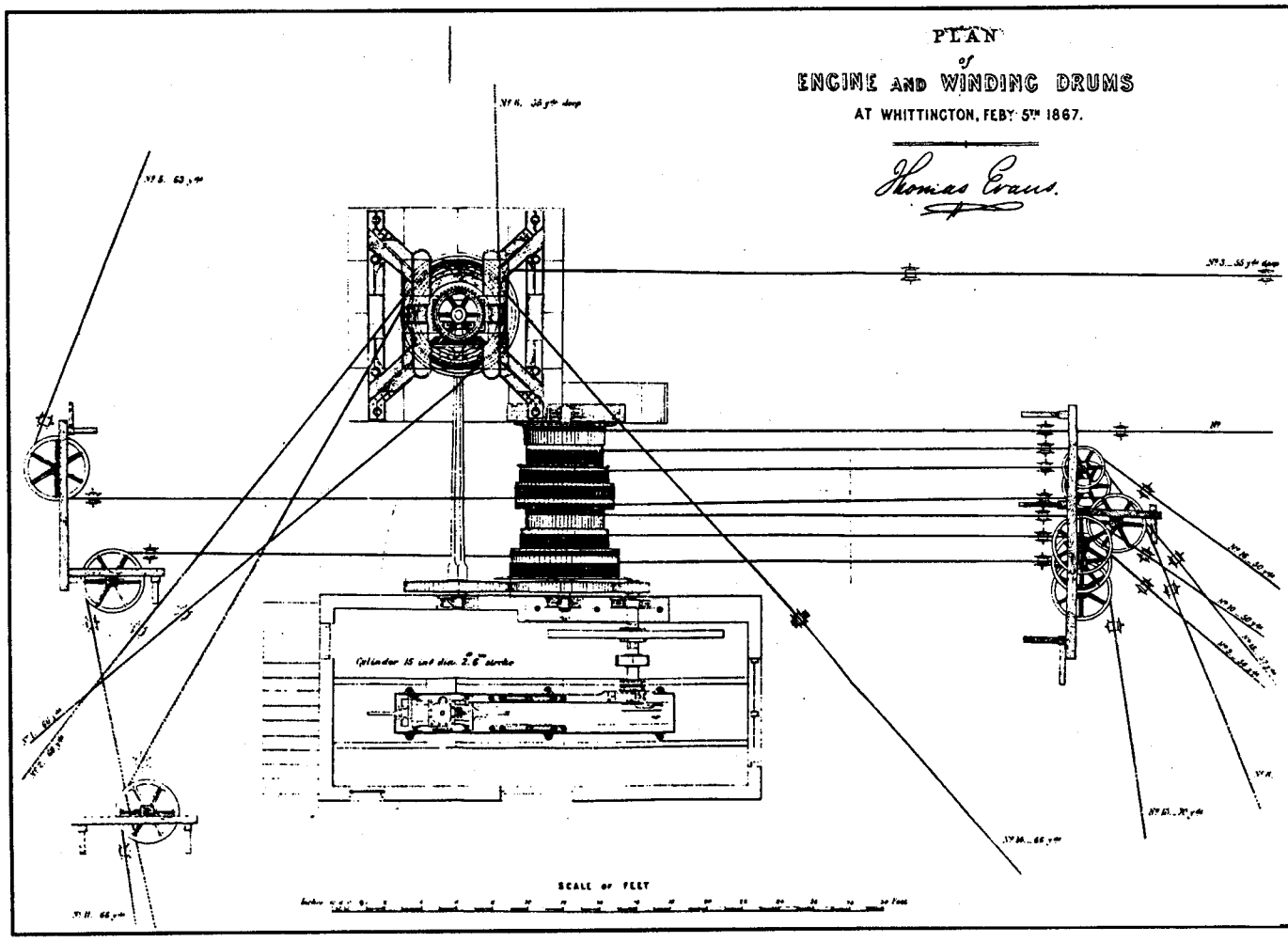
Thus the government were able to appoint men of high calibre and at well below the going rate for their abilities. Why did they accept? Dunn and Dickinson had for many years been campaigning for government inspection of mines and no doubt Morton and Mackworth were strongly in favour as well. They were offered a novel appointment which gave them complete freedom of action to stop abuses and to promote and develop something they firmly believed in. This must have been a powerful temptation, whilst they also continued to carry out consultancy work to supplement their salaries. The government initially frowned on this practice, and finally stopped it altogether.

The four inspectors covered over 2000 collieries, and it was soon appreciated they were too few in number, so in 1852 their number was increased to six. The 1850 Act was to remain in force for five years only, but by 1855 the good work of the inspectors was so well accepted that another five year act was passed. In 1856 the number was increased to twelve, including the appointment of Thomas Evans to cover the Inspection District of Nottinghamshire, Derbyshire, Warwickshire and Leicestershire. A large number of mines worked iron stone in conjunction with the adjacent coal seams, and sought to evade the interest of the Inspector by calling themselves ironstone mines rather than collieries. In the 1860 Act this loophole was closed, and applied to all mines working exclusively coal, or ironstone mines worked in conjunction with coal.

On 15 August 1865 the attention of Thomas Evans was drawn to the Glasshouse Common Ironstone Mine at Whittington, near Chesterfield. Two men had been killed in a winding accident: He attended the inquest and visited the pit where he found the winding arrangements to be "most complicated". A surprisingly small steam engine was placed in the middle of sixteen quite separate mine shafts and one inclined plane. Via rim gears the engine drove a horizontal shaft carrying seven winding ropes, and a vertical shaft carrying ten winding ropes. The system was partially balanced by ascending cages being wound against descending. The shafts were between 50 and 70 yards deep, and the distances from the engine varied between 40 yards to 350 yards, these differences being accommodated by the winding drums on the shafts being of different diameters. The practical operation of this system, with the winding-engineman receiving presumably 34 sets of signals which he would have to observe, take note of, and respond to, is difficult to imagine. The system obviously appealed to the management because the engine was so well utilised, but in practice, any delay or breakdown must have stopped production on all the others. Quite possibly the shafts were standing because of delays in the system longer than they were actually working.

At the time of the accident five men were descending two different shafts in otherwise empty cages against others loaded, when "within a few feet of the top the full cages


ELEVATION
of
ENGINE AND WINDING DRUMS
AT WHITTINGTON, FEBY 5TH 1867.
Thomas Evans. Inspector of Mines
Scale ½ inch to the foot.

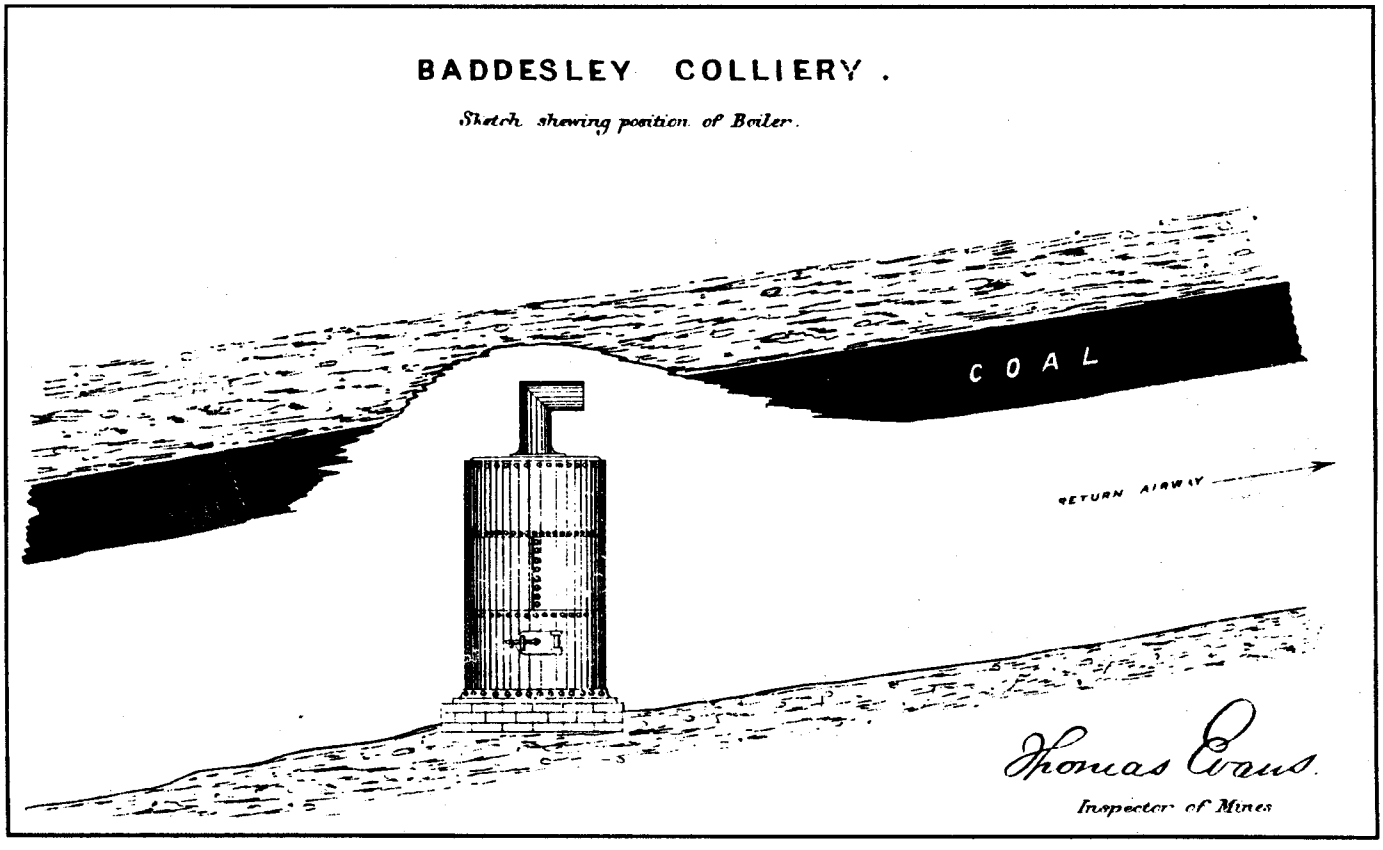

PLAN
of
ENGINE AND WINDING DRUMS
AT WHITTINGTON, FEBY 5TH 1867.
Thomas Evans.
SCALE OF FEET

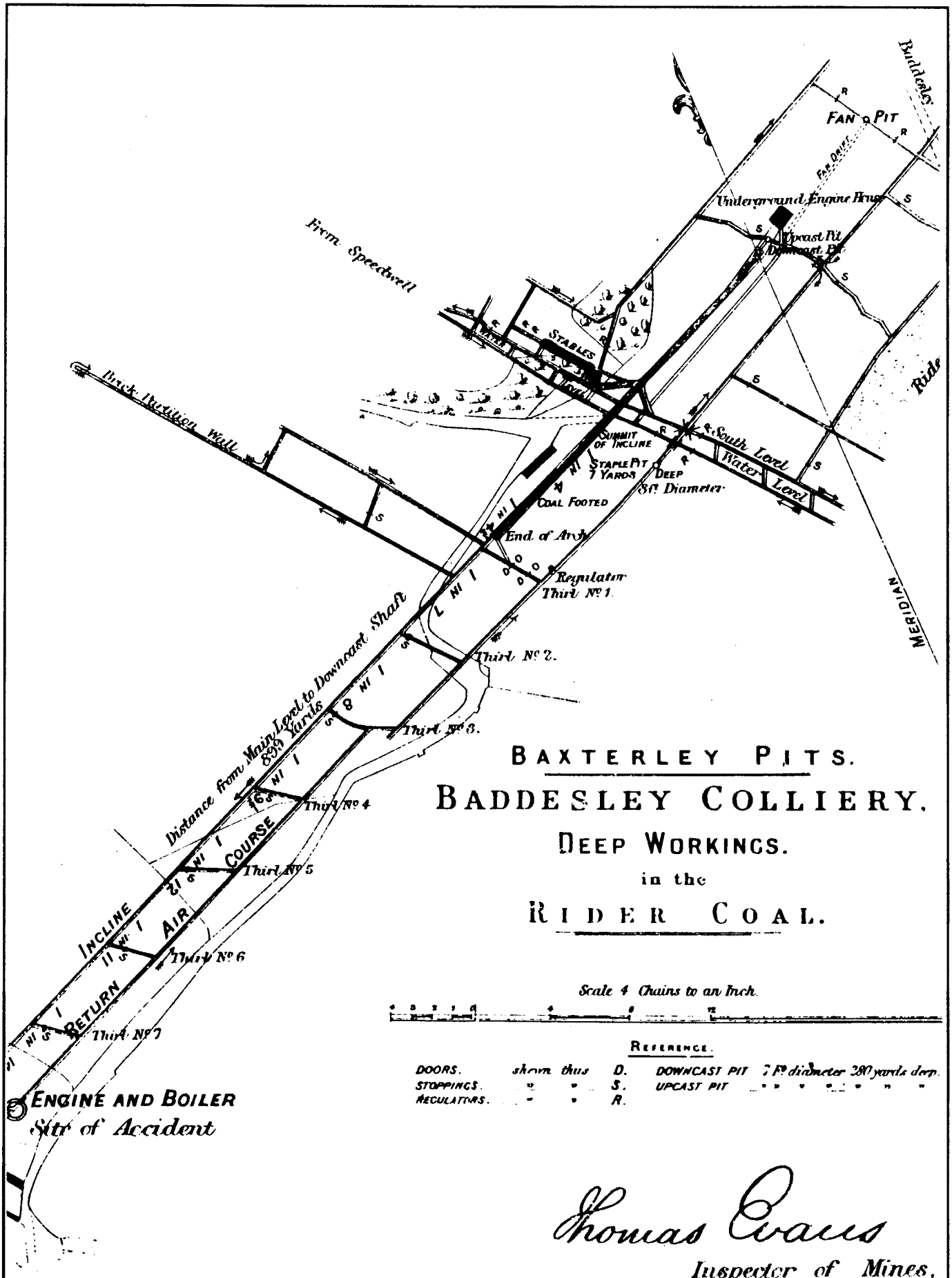
suddenly reversed, fell to the bottom, drawing the men and cages up the other shafts and over the pulley wheels; Two poor fellows were killed, and three wonderfully escaped by jumping out at the bottom". On examination, the vertical drum shaft was found to be broken-off in its lower bearing, so that it was no longer under the control of the engineman.

Thomas Evans served the Sheepbridge Iron Company, the owner, with a notice to the effect he believed the system of winding was inherently unsafe. The owner first contended the mine did not come under the Mines Inspection Act, but Evans proved before the local magistrates that as the ironstone workings had been developed from the Black Shale coal seam, and as a thin coal seam was still being worked, that the mine indeed did come under the Act. However the winding system remained in operation, and Evans served another notice in 1866. In February 1867 he provided a sketch of the winding arrangements, which now had nine ropes on the horizontal shaft, and six on the vertical. The owners contended the system was safe, and the case eventually went to arbitration. Both arbitrators agreed that there was justification in Evans' complaint. One reported that if the number of ropes was reduced to twelve, and the winding speed did not exceed 150 feet per minute, he would then regard it as satisfactory, whilst the other suggested the engine should not drive more than one shaft, and the ropes on it should not exceed ten. It is not recorded what was carried out. The case illustrates the attitude towards safety at the time, which is also shown in the following example.

The Coal Mines Regulation Act of 1872 had retained the twelve Inspection Districts of 1856, but appointed an Assistant Inspector to each one. In 1882, Thomas Evans was still the Inspector of the "Midland" district, but he was assisted by Arthur Stokes (who had already carried out a successful rescue at Black Engine Lead Mine, Eyam, in July 1979). At the Baddesley Colliery, Baxterley, in Warwickshire, the Stratford Workings were some considerable distance inbye, and had been troubled with water for some time. A steam pump was installed, but attempts to supply it with steam from a surface boiler were unsuccessful due to condensation. Thus the decision was taken to install a vertical steam boiler underground on site in the return airway. Today this would be seen as a remarkable decision because of the potential danger. The boiler was so tall that a cutting had to be made in the roof in the Thick Coal Seam roof, to take the flue. Admittedly the engineer ordered that the boiler should be isolated by brickwork, but this was not done. Thus the smoke, fumes and waste steam from the boiler entered the return airway and the hot gases and flame played directly on to the coal roof. Not surprisingly the coal set alight as soon as the boiler was used and a hose and water was provided specifically to extinguish the burning coal. Thus the situation was aggravated by appallingly bad mining practice.

On the morning of monday, 1st May, 1882, the alarm was given when smoke was seen emerging from the upcast shaft. The return airway was ablaze and nine men were trapped inbye. George Parker, the manager, and a group of officials attempted to enter the smoke-filled roadways. They were beaten back. Further courageous but unsuccessful attempts were made until they were all "prostrated and overcome". W.S. Dugdale, the colliery owner, lived at Merrivale Hall, directly overlooking the colliery. He came straight to the pit and expressed much concern for the miners: "You won't abandon the poor men will you, without doing all in your power to save them?" Thus Mr Pogmore the agent, Mr Smallman the mining engineer, and George Parker decided to take a group of twenty rescuers below ground. They were accompanied by Dugdale, who, although not aquainted with mining, thought that "his presence amongst his brave men might impart to them confidence and encourage them in their noble efforts to save life". They entered the Stratford engine plane, but were beaten back by the smoke. For two-and-a-half hours they struggled until about 8.30 am. "when suddenly the air became motionless, then followed a loud report and roar like that of thunder, accompanied





BAXTERLEY PITS.

BADDESLEY COLLIERY.

DEEP WORKINGS.

in the

RIDER COAL.

Scale 4 Chains to an Inch.

REFERENCE.

DOORS.	shown thus	D.	DOWNCAST PIT 7 Ft diameter 280 yards deep.
STOPPINGS.	" "	S.	UPCAST PIT " " " " " "
REGULATORS.	- -	R.	

Thomas Evans

Inspector of Mines,
Derby.

instantaneously by flames of fire". The flames lasted about a minute, and only Smallman was able to escape from the effects of the explosion, the others were dead or dying.

With Inspector Evans away from home, Stokes immediately left for the Colliery when news arrived. He arrived at just after 9 o'clock, and found Smallman lying in the enginehouse, but so badly burnt that he did not recognise him. Smallman said that, although "another explosion might occur at any moment, an attempt should, if possible, be made to rescue the surviving volunteers". Stokes, accompanied by five men, went down the pit and entered the engine plane. The incline was "just as if you had drawn a black curtain across it, the smoke was so dense".

Stokes and two men carried a wooden frame, to the shape of the roadway, covered with brattice cloth to push the smoke back. The three other men, each carrying a safety lamp, were directly behind, so that, "if one falls the other is ready to pick him up and drag him out". They "groped their way almost in the dark along the engine plane" for 150 yards. Then when they called, they heard a reply. Having told him to "keep shouting and we will rush to you", they went forward and dragged-out Dugdale. They wrapped him in a blanket and brought him to the surface when one of the men said "Oo do you remember when Mr Dugdale was calling noticing the sounds as if they were going away. Depend upon it there is another man beyond where we found Mr Dugdale" So they went back down again into the smoke, and brought out a man called Collins, who reported another man behind him. So once more they descended and brought out a man called Till. Further rescue attempts were impossible, and all three men rescued subsequently died. On the Wednesday morning the shafts were sealed. The death toll was 9 men trapped and suffocated, and twenty-three rescuers killed by the explosion.

The aftermath concentrated on the undoubted heroism of the rescuers, the loss of men from the village, and the death of W.S. Dugdale. Whilst there was some censure in the judgement, of placing an unprotected boiler in such a potentially dangerous position, with Smallman still seriously ill, and the agent dead, the verdict was "accidental death". Stokes and three of the rescuers received the Albert Medal First Class, and six the Second Class Medals.

Thomas Evans died in April 1887, and was replaced by Arthur Stokes. These two examples illustrate not only the practical qualities required of an Inspector, such as surveying and drawing, but also the more intangible qualities such as perseverance, leadership and courage.

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Barry Job.