



(Above) Remains of the intake pipe which supplied water to the two hydraulic engines 250 feet below.

(Below) Portal of the Sir Francis Level, leading 1500 yards to the two hydraulic engines. Above is an air receiver used for the drills during driving in the 1870s.

SIR FRANCIS THEN AND NOW

Harry M. Parker

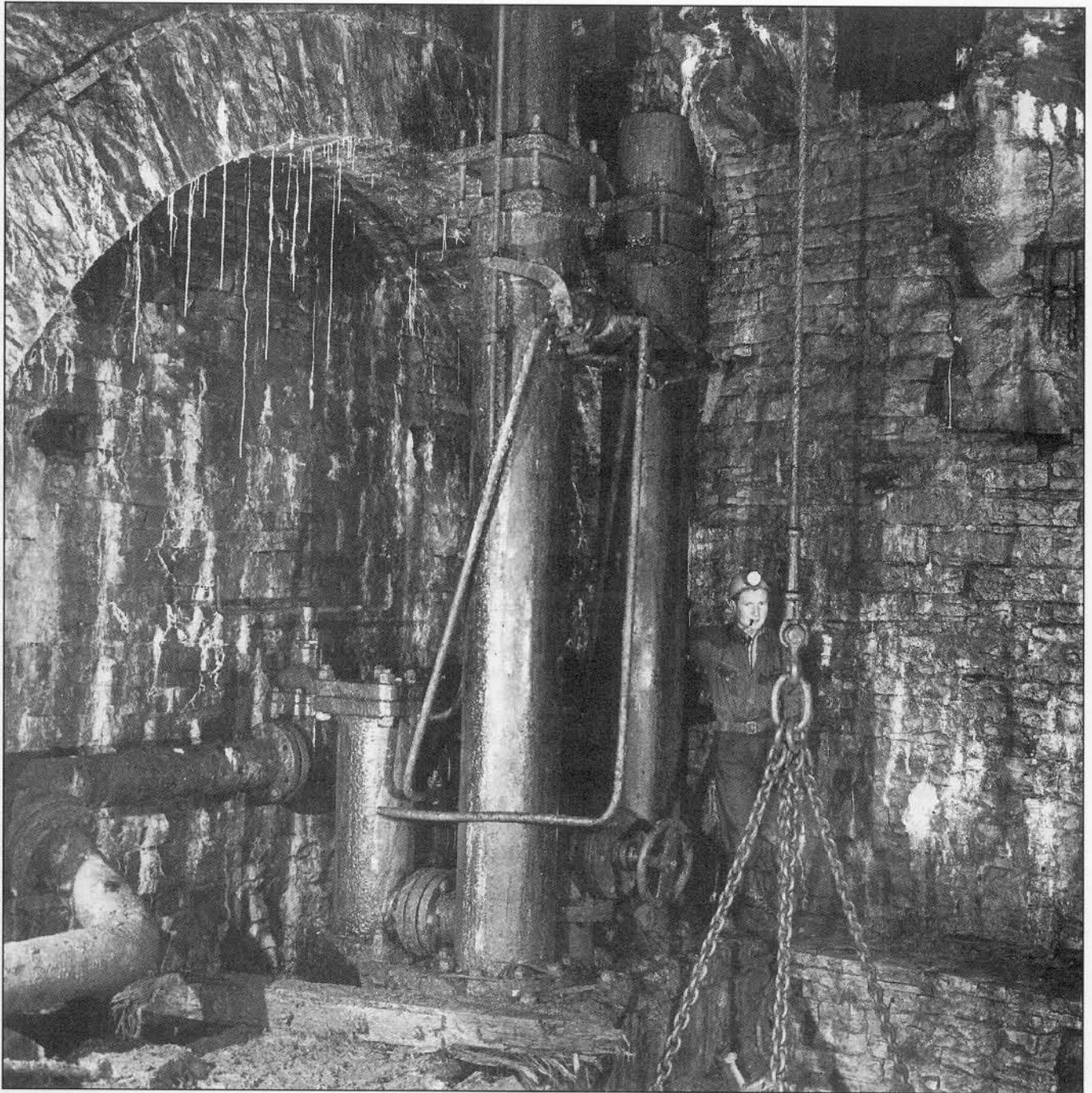
Much water has flowed under many bridges and along many adits since when in the 1960s, I and other enthusiasts journeyed to Gunnerside Gill in Swaledale, Yorkshire, to undertake what I consider to be the ultimate mining experience: a visit to the hydraulic engines deep in the Sir Francis mine.

Access could hardly be described as easy: a drive up a rough, hillside mine track (permission is needed); a rough path down to the adit entrance, which at that time was blocked, and a short ladder climb down the second air shaft on to a muddy bank populated by some very dead sheep.

Ahead stretched an adit waist deep in very cold water along which one had to wade for some 1500 yards, now and then emerging to scramble over fallen plate (slabs of shale). This was in the days when not many had wet suits - I didn't - and, as one walked off the muddy bank and the water rode up one's person, it was a case of "ooh, arrgh, whoops", and, once it had passed the "Plimsol line", of throwing caution to the winds and pressing on regardless. Being burdened with an ammo box containing cameras and flashes plus a tripod the regardless bit can be taken with a grain or two of salt!

At long, long last a junction appeared with the right hand fork going off in the direction of the Old Gang sett - local mining laws required mines to be connected underground - but this uncompleted crosscut has been long blocked by falls. A short distance along the left fork a short flight of steps led up some 12 feet into the engine chamber. Another short passage at the main





level led to a sump containing two cages, one down under water as the sump is flooded) with the other at the top.

The engine chamber houses the winding engine and the Henry Davy-designed water-pressure pumping engine installed in 1879 some 250 feet below the day. They were fed with water from the Sun Hush dam on the moor above giving a working pressure of 200 pounds psi. and calculated to raise a load of two tons from 360 feet below level at 60 feet per minute, and to pump 500 gallons at six-and-a-half strokes a minute from the same depth. Sadly the mine was abandoned in the 1880s/90s when the sump was only down to 120 feet but the engines ARE STILL THERE!

After an hour's intensive inspection and photography we set off to retrace our steps. Time has drawn a kindly veil over the rigours of the return journey, passing the horse stable with its drinking trough, the cold, cold wade and the scrambles over the

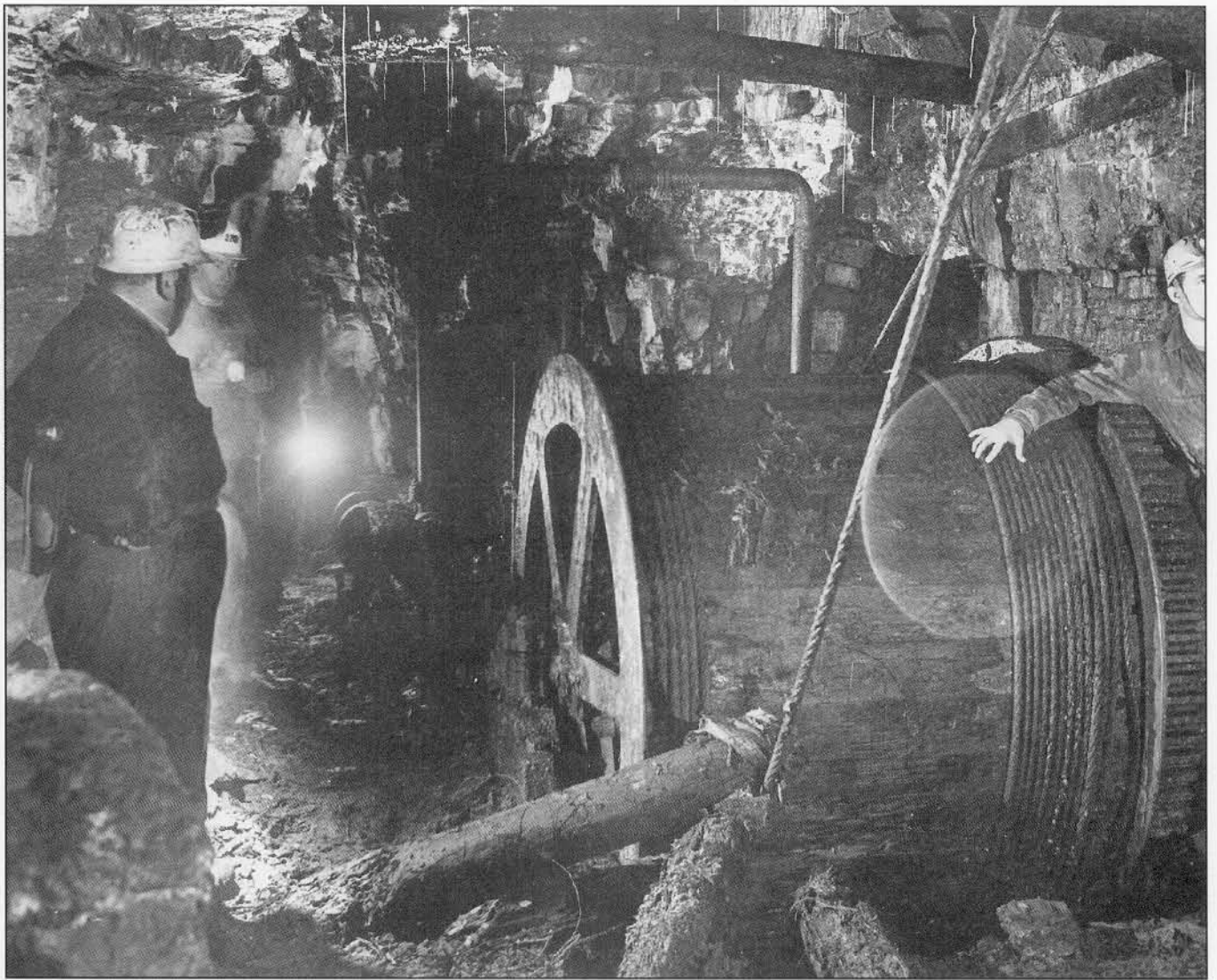
falls to the final grim effort of climbing the short (though at the time it felt anything but) length of electron ladder to the wonderful warmth of a summer afternoon. Hard going? Yes; Worth it? Most definitely.

All this was brought back into sharp focus with an assignment in September 1994 to photograph a remarkable model made by Frank Peel, Society member, engineer, and retired textile mill manager. It is a 1:12 scale working model of the Sir Francis engines complete in every detail including the engine chamber anvil and work bench with opening drawers and miniature hand

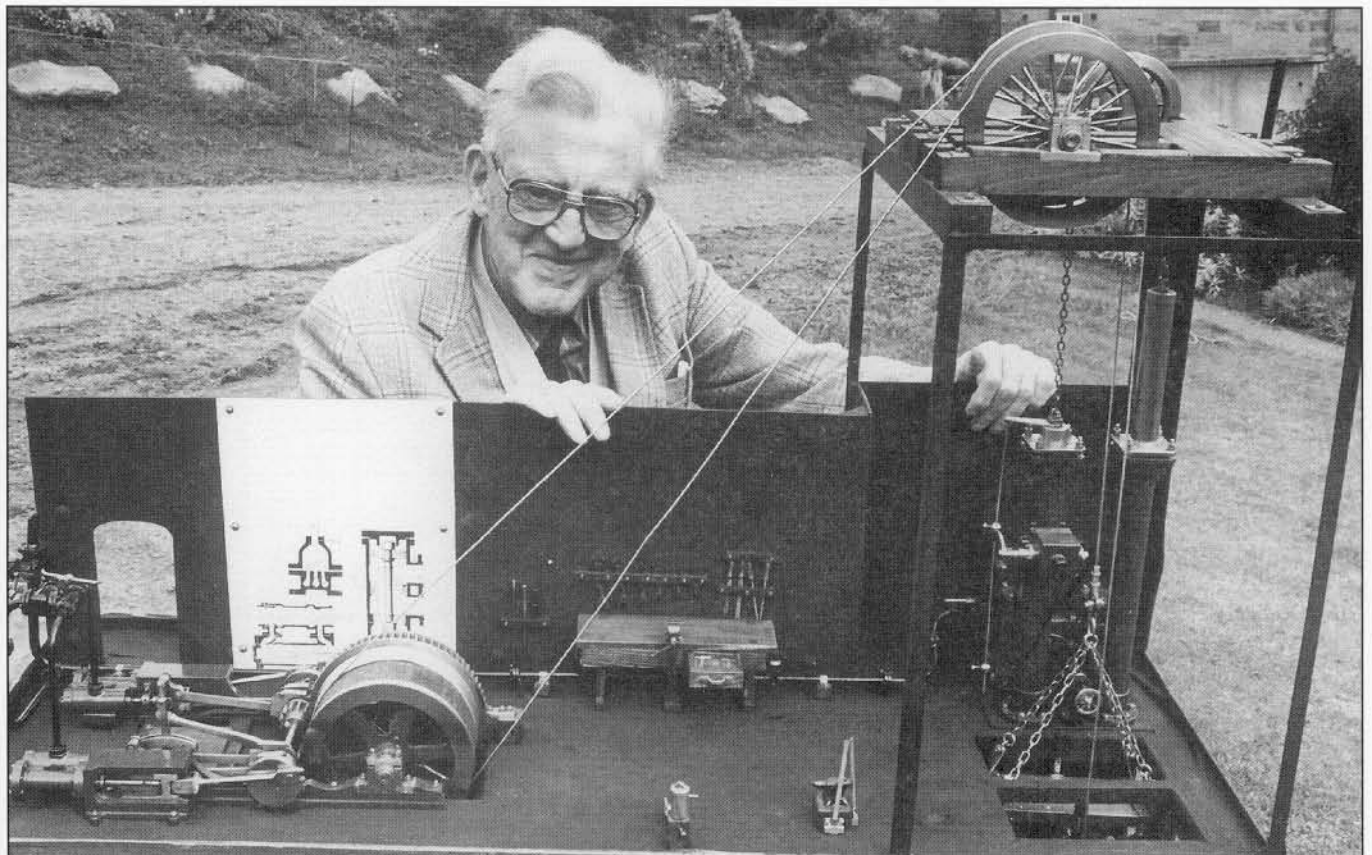
(Above) The hydraulic pumping engine installed 250 feet below surface in 1879.

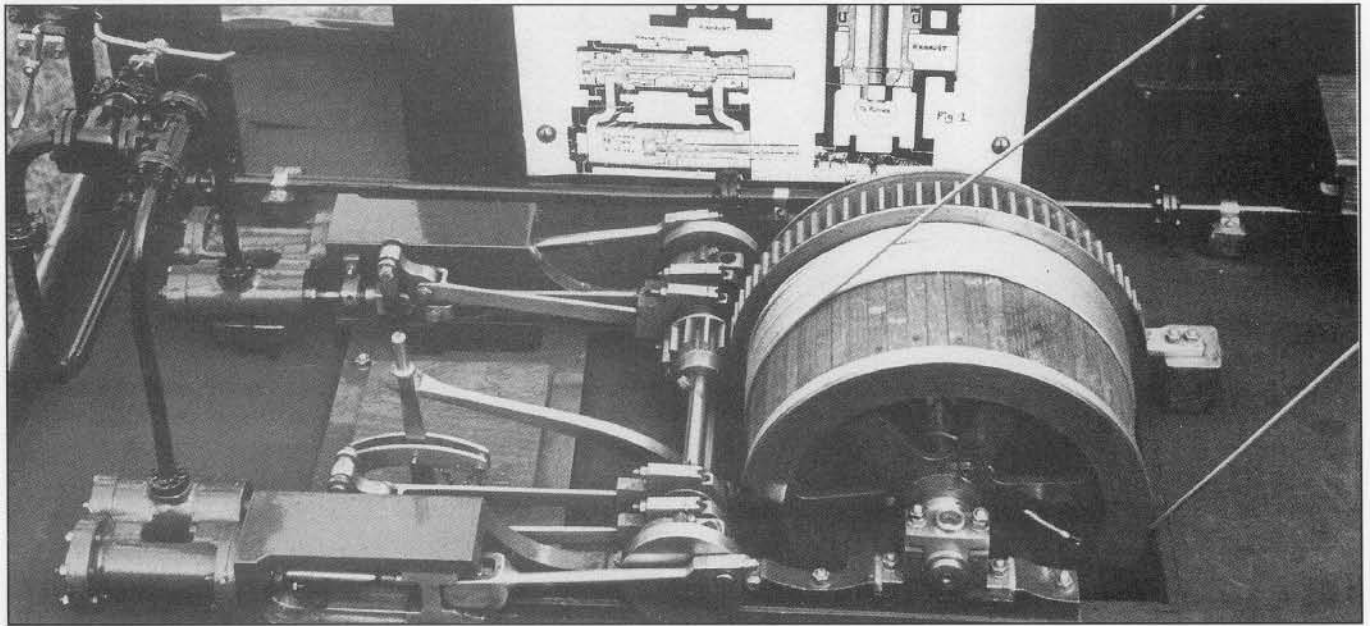
(Top right) The drum of the winding engine in the engine chamber, with, left, the author and self-photographer.

(Bottom right) Frank Peel and his model of the Sir Francis engines.



Historical record of the structure and instruments of the mine of the early days.





Detail of Frank Peel's model of the Sir Francis winding engine.

tools. Made mostly in brass it took Frank two years to complete involving the use of lathe, milling machine and hand tools.

To ensure accuracy he used photographs, consulted published material, a textbook on pumping engines and, in 1993 at the age of 72 with a support party including his son John (also a PDMHS member), made the testing trip to the engine chamber for the checking of measurement, photographs and videos. Frank has, in fact, visited the engines three times, the first some twenty years ago.

The model was to be shown at the Midlands Model Engineering exhibition in the National Farmers Centre at Stoneleigh after which it will be presented to the Society's Peak District Mining Museum at Matlock Bath. There it will join another of Frank's models, the Wills Founder engine which is displayed alongside the actual engine which was raised by PDMHS members when it was in danger of being "lost".

How long the Sir Francis engines will remain accessible is open to conjecture but in Frank's magnificent model his today's craftsmanship has preserved for future generations a wonderful example of the enterprise, initiative and craftsmanship of the "Old Man".

Harry M. Parker.