less, roving adventurers, in quest of sudden riches and ready for deeds of darkness and daring. In the older camps the bulk of the population is composed of wage-earning miners, many of them men of families, who are as frugal and industrious as any other class of workingmen. Prospectors lay the foundations of the newer camps, and the prospector of to-day is a man of intelligence and good sense, with little money to spend on dissipation and riotous living. When his labors are finally rewarded by a rich discovery, and he desires to spend his money on a "good time," he usually seeks one of the larger cities.

And thus the romance and barbarism of Western mining camps have given way to a spirit of cold-blooded business and Sabbath observing respectability.

The Compressed-Air Apparatus at the Reschitza Coal Mine, Hungary.

The compressed-air apparatus installed a few years ago at the "Szecheny" shaft of the Reschitza pit has been very successfully used in working a couple of inclined headings and for separate ventilation on the von Steindl system. This is particularly the case in driving the hauling winch in both headings.

For producing the compressed air a horizontal twin steam engine, situated in the engine-house and having one steam and one air cylinder, with a flywheel fixed between them, is employed. The engine is fitted with circular valve motion, and the air cylinder is provided with a water-jacket for cooling and a return-stroke plate, no suction-valves being required by this arrangement.

In diameter the steam cylinder measures 0·45 m. and the air cylinder 0·40 m.; the common stroke is 0·45 m. and the number of revolutions per minute 120. A pressure of 5 atmospheres is obtainable, and as soon as this height is reached the compressor is set in work until the pressure has receded to 3 atmospheres, whereupon it is disconnected from the machinery. Near the compressor, but outside the building, is the air reservoir, capable of containing 6·8 cubic metres.

Hitherto the greatest length of the compressed air pipes is 1,050 m., of which 320 m. traverse the shaft and 730 m. pass through the hauling roadways. Drawn iron pipes of 70, 80 and 100 mm. internal diameter are used, and are fastened to the scaffolding in the shaft and by wire to the "first" in the roadways. Where considerable variations of temperature are experienced, copper compensating tubing is inserted in the system.

The hauling winch No. 1 is constructed in accordance with Hanarte and Balant's patent, and is driven by a compound motor with intermediate tooth gearing; the winding drums (0·20 m. wide and 0·70 m. long), are arranged for round rope, and fitted with a band brake. The diameter of the large cylinder is 0·360 m., and that of the smaller 0.180 m., the throw being 0·250 m.; the receiver is 0·290 m. diameter and 0·750 in length, and the ratio of the intermediate gearing is 1 : 5. The winch occupies a space of 2·80 m. long, 1·80 m. wide, and 1 m. high. Crucible cast steel cable is used, 10 mm. in thickness, and the maximum load drawn is about 12 cwt., the rate being 1·25 m. per second. The air regulator of the winch is of 2·01 cubic metres capacity. In the whole length of pipe (1,050 m.) the loss of pressure amounts to 0·25 kilogs.

No. 2 is of the Bano and Szuts pattern, and only came into work last year. It is driven by a horizontal twin engine with bayonet guides, and has, with a cylinder diameter of 0·20 m., a stroke of 0·260 m.; the valve motion is plain. Like the winch No. 1, the winding drum, which in this instance is 0·800 m. by 0·42 m., is made to take round cable, is fitted with a hand brake, and driven by tooth gearing with a ratio of 1 : 4·5. The gross load amounts to 12 cwt., and the speed per second 1·2 m.

This installation has behaved in a very satisfactory manner during the sinking of subsidiary shafts and the inclined headings, and so far no inconveniences nor objections to its use have become manifest.

How to Thaw Dynamite.—One of the main sources of accident is from thawing powder, and the only safe plan is the use of heat from hot water. The powder should not be dipped in the hot water, but placed in a water-tight vessel and the vessel set in hot water, or a reg.- powder warmer should be made. These vessels can be obtained from any of the mechanical firms or from the powder companies, at nominal cost. Do not place powder under or on a stove, or in the oven. Do not lay on boiler wall or on back plate of a boiler. Do not heat around a blacksmith forge, or over a burning candle. Do not lay on hot sand, or, in short, do not thaw powder with dry heat. Do not consider these precautions unnecessary, or reason that because you have done so many times there is no danger.

Powder freezes at from 40° to 44° F., explodes, when confined, at from 320° to to 360° F. From a quick application of dry heat, powder is liable to explode at 120° F. A stick of powder heated to 120° F. can be held in the hand with little inconvenience, and this degree of heat is soon reached when placed under or about a stove.

That frozen dynamite is liable to explode from heat quickly applied has been demonstrated many times, and to ignorance, non-appreciation or carelessness of this fact, most accidents are due. If you have heated powder about a stove for years without harm, consider yourself fortunate and stop it. If the warning of those who make the powder has no effect, let the accidents constantly occurring from this cause convince you. If you cannot procure a powder-warmer, take a 5-lb. lard bucket, fill it with powder, and set in warm water. If you have no warm water, put some sharp rocks in the bottom of a larger vessel to keep smaller vessel off the bottom, surround the inner vessel with water and set two lighted "snuffs" about an inch long under the big can, throw an ore sack over the whole, and in a short time the powder is in good condition for use and no risk has been incurred. With slow heat thus applied, dynamite may be heated to temperature of boiling water with safety. Do not use frozen powder to load a hole. It is unfit for use. If it explodes at all it will do poor work. If it does not seemingly burn or explode, it may be smouldering or decomposing, and the dropping in of a spoon, a drill or the stroke of a pick or hammer may be sufficient to explode what is left.

Electrical Underground Haulage.—At the annual general meeting of the northern section of the Societe de l'Industrie Minerale, held at Douai, M. Baily gave an account of the progress achieved in underground haulage by electricity at the Marles Colliery, in No. 4 pit of which the first experiment in underground haulage by electric locomotives was made in 1890. At first nothing but difficulty was encountered; but in 1891 everything worked satisfactorily, and after three years' practical experience it was decided to apply the system on a much larger scale to No. 5 pit. A 500-horse compound steam engine will drive four 80,000-watt dynamos, making 350 revolutions per minute, for actuating 11 locomotives in Nos. 3 and 5 pits. In the roads are laid rolled joists weighing 8.75 kilos. per metre; and each locomotive, weighing 3.2 tons, is actuated by a Gramme-wound dynamo making 10,000 revolutions per minute, receiving the electric current at 500 volts, and giving out a useful work of 15 horses. Each locomotive draws a set of 30 tubs, each holding half a ton of coal, and moving at a mean speed of 14 kilomes. (8½ miles) per hour.

Delicate Mechanical Feat.—An expert tool juggler in one of the great English needle factories, in a recent test of skill, performed one of the most delicate feats imaginable. He took a common sewing needle of medium size, length one and five-eighth inches, and drilled a hole through its entire length from eye to point, the opening being just large enough to permit the passage of a very fine hair.