

already prepared for conveying the electric fluid, thus having but one thin wire to be fixed up, a matter of no great difficulty. The Leclanché batteries now universally employed may be kept in a cellar or cupboard, or in fact, any out-of-the-way place, and require no attention for months.

Now as regards motive power for ordinary domestic requirements, a small gas engine is the simplest and most economical apparatus, suitable in every respect for supplying a continuous and steady flow of force. Engines of this description are now made in very portable and handy sizes, and constructed to consume but a small quantity of gas. They may therefore be fixed in a cellar or outhouse and connected by means of slight shafting, or fine endless band with, say, the kitchen, for it is in this department more especially power is required. The shaft or band would terminate in a small pulley or pulleys arranged in a position available from all parts of the room. It is evident that to this pulley other bands might be attached communicating at their other ends with washing, wringing, knife-grinding, sausage-making, mangling, coffee-grinding, apple and potato paring machine, a roasting jack, ice-making apparatus, and the numerous little labour-saving contrivances now being introduced from the United States. Finally, a band might be conveyed under the flooring to an adjoining apartment, for the purpose of driving a sewing machine, lathe, or punkah, or further extended and attached to a pump for irrigating a garden, washing windows, or extinguishing fires. When once the power is obtainable and conveniently situated for application, there will be no dearth of uses, and fresh ones will be continually cropping up.

It is impossible here, of course, to go fully into the question of the utilization of practical science in the house; it is too exhaustive a subject to treat in a short article. We have merely attempted to sketch some suggestions for its general application, and the benefits arising therefrom. It is a matter interesting to both builder and householder, and its economical utilization and further development, tending as they do to the simplification and speedy accomplishment of multitudinous operations attendant upon daily life, are worthy of every consideration.

PRESTON GILD FESTIVAL.

At Preston it has long been the custom to hold once every twenty years what is really called the "Guild Merchant," but popularly known as the Guild Festival. The time for this event has come round, and after most elaborate preparations the proceedings have been in progress this week.

A large part of the programme is occupied with matters relating to the textile industries of Preston and the district, but other trades have formed a part, and on Wednesday the procession of trades was held. In this grand procession which, we believe, was so elaborate as to occupy three hours in passing a given point, the following trades other than textile industries were represented:—Tinplate workers, fire brigade, stonemasons, saddlers and harness makers, boiler makers and iron ship builders, black and white smiths, butchers, soap manufacturers, iron foundries, plumbers, and painters, carpenters and joiners, cabinet makers and upholsterers, bricklayers, coach makers, mungo manufacturers, lamplighters, engineering trades, brickmakers, paviors, omnibus proprietors, printers and lithographers, tailors, lacemakers, and underclothing manufacturers, plasterers, wire workers, and sewing machine makers.

The procession, as a whole, may be described as an industrial exhibition on wheels. Each of the trades represented was shown in operation on the trolleys which carried the delegates. Fishergates the main thoroughfare of the borough presented a view which was striking and curious to those who were privileged to view it with anything like comfort from any elevated position. The enthusiastic populace in holiday dress and holiday humour, the colours of innumerable flags and banners, the glittering regalia of the various orders and societies, with a confusion of sounds from drums, trumpets, and fifes, contributed to a scene of animation rarely equalled. About 150 tinplate-workers occupied the premier place in the procession. They were preceded by two mounted trumpeters and a workman clad in tin armour, lorries following containing a tape cylinder in course of construction, illustrations of gas-fitting and meter-making, workmen engaged in coffin tins and a wheel guard. Next came a fine exhibition of fire-engines, tenders, and reels, resembling on a large scale that which forms an attractive feature of the May-day procession with which Liverpoolian are familiar. The members of the

brigades, in their neat uniforms and glittering helmets, looked remarkably well. The Preston corps of firemen was augmented by the brigades of private firms. The stonemasons, coming next in order, numbered about 250, and wore wash-leather aprons trimmed with blue silk. They carried flower vases, finished and unfinished, and also showed building stone in process of dressing and the operation of stone-laying. Saddlers and harness-makers formed in the rear of the stonemasons, and were headed by a silk banner borne by youths dressed in spruce jockey costumes. A four-in-hand, with handsome silver-mounted harness, contained the masters, and in an old mail coach were seated journeymen saddlers. A lorry was fitted up in the form of a saddler's and harness-maker's workshop, and on it were four men busy at their craft. Boiler makers and iron ship-builders, to the number of 150, followed with a beautiful banner bearing the motto, "Excelsior; ever onward," and with three waggons, upon which were exhibited the combustion chamber of a marine boiler with men employed, rings of boiler casing and corrugated flues, a marine boiler, and models of steamships. The black and white smiths had men at work on four lorries—general smiths with a lorry containing steam engine and boiler, a steam hammer, a smith's fire, and a complete set of tools; shoeing smiths with a smith's fire, and the requisite implements showing a horse in process of being shod; whitesmiths engaged on some ornamental work; and agricultural smiths manufacturing farming implements. Among the smiths were three men clad in full suits of armour, and a boy in an ancient steel suit. With the iron-founders and range-makers were marble masons and polishers at work, and also range-founders and black and white smiths. The plumbers, painters, and glaziers were accompanied by the band of the Liverpool schoolship *Indefatigable*, and the boys, in their neat sailor costumes, attracted general attention, being frequently applauded along the route. The plumbing department of the procession contained a model of the interior fittings of a well-appointed house, a pump and fountain in operation. Men were at work on various kinds of painting, marbling, and writing, and others illustrated the paperhanging branch. The men, who numbered 350, wore aprons emblazoned with their trade coat of arms. A model of a church with men working, and a model of a joiner's shop with men employed, were carried by the carpenters and joiners. Cabinet makers and upholsterers, bricklayers, brickmakers, plasterers, and wireworkers also gave illustrations of the methods employed in their respective trades. The coachmakers, with a model of the Lord Mayor's coach borne by apprentices at the head of their procession, appeared with a four-in-hand coach, a Parisian phaeton, a landau with a canoe body, and a miniature brougham. Lamplighters, wearing a navy-blue uniform, each carrying a new lamp, were followed by a large representation of the engineering trades, headed by members of the Steam-engine Makers' Society, which was established at Liverpool in 1824. These were accompanied by lorries conveying a 9-pounder breech-loading field piece, sent by Sir Joseph Whitworth, Manchester; a model of Stephenson's first locomotive, a pair of brass horizontal engines, a pattern-maker's bench, wheel-moulding machine, and a pair of machine-made bevel and mortice wheels, with men at work; a smith's shop, boiler, and engine; a steam hammer, smith's fire and anvil, with smith at work; a turning shop, fitted with horizontal engine and boiler; a side lathe and shaping machine; a ring-spinning throstle, on Booth and Sawyer's principle, in process of being fitted up, etc. The Corporation paviors and flaggers exhibited a model street. The model, which weighed about three and a half tons, was carried on the largest lorry belonging to the London and North Western Railway Company, drawn by four of the finest horses from the Corporation stables.

THE Transit of Venus observing parties appointed by the United States are already on the way to their destinations. There will probably be four stations in the southern hemisphere. One is at the Cape of Good Hope, under Professor Newcomb; one at New Zealand, under Edwin Smith, of the Coast Survey; one at Santiago, Chili, under Professor Boss; and one in Santa Cruz, Patagonia, under Lieutenant Very, of the United States Navy. Some of the stations in the United States will be Cedar Keys, Florida; San Antonio, Texas; and Fort Thorn, New Mexico. The directors will be Professors Hall, Harkness, Eastman of the Naval Observatory, and Professor Davidson of the Coast Survey.