fixed in any poſition, and then any ſmall movements may be given it by the finger plates A and C.

This ſtand is very ſubject to briſk tremor, either from ex­ternal agitation of the pedestal, or from the immediate ac­tion of the wind; and we have ſeldom ſeen diſtinctly through teleſcopes mounted in this manner, till one end of the tube was pressed againſt ſomething that was very ſteady and unelaſtic. It is quite aſtoniſhing what a change this produces. We took a very fine teleſcope made by James Short, and laid the tube on a great lump of ſoft clay, preſſing it firmly down into it. Several perſons, ignorant of our purpoſe, looked through it, and read a table of logarithms at the di­ſtance of 310 yards. We then put the teleſcope on its ſtand, and pointed it to the ſame object ; none of the com­pany could read at a greater diſtance than 235 yards, al­though they could perceive no tremor. They thought the viſion as ſharp as before ; but the incontrovertible proof of the contrary was, that they could not read at ſuch a di­ſtance.

If the round plates were of much greater dimenſions; and if the lower one, inſtead of being fixed to the pillar, were ſupported on four ſtout pillars ſtanding on another plate ; and if the vertical arch had a horizontal axis turning on two upright frames firmly fixed to the upper plate— the in­finiment would be much freer from tremor. Such ſtands were made formerly; but being much more bulky and incon­venient for package, they have gone into diſuſe.

The high magnifying powers of Dr Herſchel’s teleſcopes made all the uſual apparatus for their ſupport extremely im­perfect. But his judgment, and his ingenuity and fertility in reſource, are as eminent as his philoſophical ardour. He has contrived for his reflecting teleſcopes ſtands which have every property that can be desired. The tubes are all ſup­ported at the two ends. The motions, both vertical and ho­rizontal, are contrived with the utmoſt ſimplicity and firmneſs. We cannot more properly conclude this article than with a deſcription of his 40 feet teleſcope, the nobleſt mo­nument of philoſophical zeal and of princely munificence that the world can boaſt of.

Plat DV. repreſents a view of this infiniment in a meri­dional ſituation, as it appears when ſeen from a convenient diſtance by a perſon placed to the ſouth-weſt of it. The foundation in the ground conſiſts of two concentric circular brick walls, the outermoſt of which is 42 feet in diameter, and the inſide one 21 feet. They are two feet ſix inches deep under ground ; two feet three inches broad at the bot­tom, and one foot two inches at the top ; and are capped with paving ſtones about three inches thick, and twelve and three quarters broad. The bottom frame of the whole apparatus reſts upon theſe two walls by twenty concentric rollers III, and is moveable upon a pivot, which gives a ho­rizontal motion to the whole apparatus, as well as to the te­leſcope.

The tube of the teleſcope A, though very ſimple in its form, which is cylindrical, was attended with great difficul­ties in the conſtruction. This is not to be wondered at, when its ſize, and the materials of which it is made, are conſidered. Its length is 39 feet four inches ; it meaſures four feet ten inches in diameter ; and every part of it is of iron. Upon a moderate computation, the weight of a wooden tube muſt have exceeded an iron one at least 3000 pounds ; and its durability would have been far inferior to that of iron. It is made of rolled or ſheet iron, which has been joined together without rivets, by a kind of learning well known to thoſe who make iron-funnels for stoves.

Very great mechanical ſkill is uſed in the contrivance of the apparatus by which the teleſcope is ſupported and di­rected. In order to command every altitude, the point of ſupport is moveable ; and its motion is effected by mechaniſm, ſo that the teleſcope may be moved from its moſt backward point of ſupport to the moſt forward, and, by means of the pulleys GG ſuſpended from the great beam H, be ſet to any altitude, up to the very zenith. The tube is alſo made to rest with the point of ſupport in a pi­vot, which permits it to be turned ſidewiſe.

The concave face of the great mirror is 48 inches of poliſhed ſurface in diameter. The thickneſs, which is equal in every part of it, remains now about three inches and a half ; and its weight, when it came from the call was 2118 pounds, of which it muſt have lost a ſmall quantity in poliſhing. To put this ſpeculum into the tube, it is ſuſpend­ed vertically by a crane in the laboratory, and placed on a ſmall narrow carriage, which is drawn out, rolling upon planks, till it comes near the back of the tube ; here it is again ſuſpended and placed in the tube by a peculiar ap­paratus.

The method of obſerving by this teleſcope is by what Dr Herſchel calls the *front view ;* the obſerver being placed in a ſeat C, ſuſpended at the end of it, with his back to­wards the object he views. There is no ſmall ſpeculum, but the magnifiers are applied immediately to the firſt focal image.

From the opening of the teleſcope, near the place of the eye-glaſs, a ſpeaking pipe runs down to the bottom of the tube, where it goes into a turning joint ; and after ſeveral other inflections, it at length divides into two branches, one going into the obſervatory D, and the other into the work­room E. By means of the ſpeaking pipe the communica­tions of the obſerver are conveyed to the aſſiſtant in the ob­ſervatory, and the workman is directed to perform the re­quired motions.

In the obſervatory is placed a valuable ſidereal time piece, made by Mr Shelton. Cloſe to it, and of the ſame height, is a polar diſtance-piece, which has a dial-plate of the same dimenſions with the time-piece : this piece may be made to ſhow polar diſtance, zenith diſtance, declination or altitude, by ſetting it differently. The time and polar diſtance pie­ces are placed ſo that the aſſiſtant fits before them at a table, with the ſpeaking-pipe riſing between them ; and in this manner obſervations may be written down very conve­niently.

This noble instrument, with proper eye-glasses, magnifies above 600 times, and is the largeſt that has ever been made. Such of our readers as wiſh for a fuller account of the machinery attached to it, viz. the ſtairs, ladders, and platform B, may have recourſe to the second part of the Tranſactions of the Royal Society for 1795; in which, by means of 18 plates and 63 pages of letter-preſs, an ample detail is given of every circumſtance relating to join­er’s work, carpenter’s work, and ſmith’s work, which at­tended the formation and erection of this teleſcope. It was completed on Auguſt the 28th 1789, and on the same day was the ſixth ſatellite of Saturn diſcovered.

TELL (William), an illuſtrious Swiſs patriot, chief instrument of the revolution which delivered the Swiſs can­tons from the German yoke in 1307. Griſler, the gover­nor of theſe provinces for the emperor Albert, having or­dered him, under pain of death, to ſhoot at an apple placed on the head of one of his children ; he had the dexterity, though the diſtance was very conſiderable, to ſtrike it off without hitting the child. The tyrant, perceiving he had another arrow concealed under his cloak, aſked him for what purpoſe ? To which he boldly replied, “ To have ſhot you thro’ the heart, if I had had the misfortune to kill my ſon.” The enraged governor now ordered him to be hang­ed ; but his fellow-citizens, animated by his fortitude and