

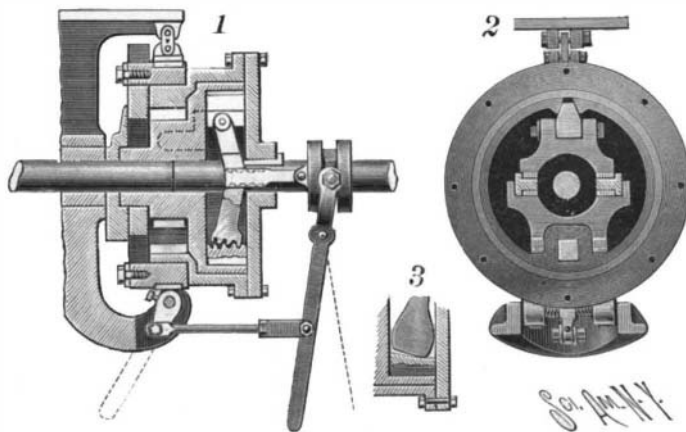
A VARIABLE SPEED POWER CLUTCH.

The clutch shown in the illustration is very similar to one described by its inventor in a paper contributed to Section G of the British Association for the Advancement of Science in 1893, and noticed at the time in SCIENTIFIC AMERICAN SUPPLEMENT, No. 932. It forms the subject of a patent recently issued to W. Worby Beaumont, 100 Palace Road, Tulse Hill, S. W., London, England. The improvement is designed to facilitate the starting of driven shafting or adjacent parts of machinery by overcoming the inertia of rest at a slow speed by positive mechanism, the full speed of the driver being afterward obtained, there being two positive gear speeds with optional intermediate speeds. There are two successively actuated clutches, one containing an epicycloidal gear by which it transmits power through the medium of part of the second clutch, the friction grip surface of which is in part provided with an extension into it of part of or an attachment to the eccentric or shaft in the first clutch. Fig. 1 is a sectional side elevation, and Fig. 2 an end elevation, part in section and the cover of the container removed, of the clutch as arranged for line shafting, Fig. 3 showing a modified form of friction clutch. A fixed eccentric on the driving shaft carries an externally geared ring on which are lugs sliding in slots in a disk, and when the latter does not rotate but slides on lugs on another ring, the first ring, under the action of the eccentric, receives a gyratory motion corresponding to twice the eccentricity of the eccentric. To prevent the rotation of the second ring, a band clutch is closed upon it, when another ring connected with a disk or cover keyed to the driven shaft is caused to rotate, communicating motion to the latter at a speed of perhaps one-fourth that of the driving shaft. The band clutch ring is then released and a second clutch formed by other parts is brought into action, increasing the speed of the driven shaft. By means of a lever the epicycloidal gear part of the combination may be brought into action to start the driven shaft at the speed proper to the ratio of the epicycloidal gear, and a friction full speed clutch may also be put into gear. The invention provides for several modifications of the parts and varying arrangement of the clutches, one of the modifications contemplating the operating of the friction surfaces of one of the clutches by an electromagnet.

RESTORATION OF THE OLYMPIAN STADIUM.

Greece, after exhuming marvels of art from her

soil, is now preparing for a grand revival of the celebrated Olympian games. Thanks to the munificence of a rich citizen of Greece, M. G. Avéroff, the work of restoration of the Olympian Stadium or circus at Athens is now being carried on. Our engraving shows the actual state of progress of the restoration. The arena is situated between two hills. It is 656 feet long and 160 feet wide. The entrance is at the northern end. The southern end from which the photograph was taken ends in a hemicycle. Twenty-five ranges of seats rise on three sides of the arena. The seats, steps, parapet, etc., are built of stone from the Piraeus and of Pentelic marble. The steps are ten feet wide.



BEAUMONT'S VARIABLE SPEED POWER CLUTCH.

Under the hill at the east has been dug a vaulted passage which gives the athletes direct access to the arena. Great care has been taken to reproduce the ancient stadium, the ruins of which have been diligently studied. Fifty thousand spectators can find a place around the arena. From the top of the hemicycle the view is grand, embracing the amphitheater, the palace of the king and the palace of industry. For our engraving we are indebted to L'illustration.

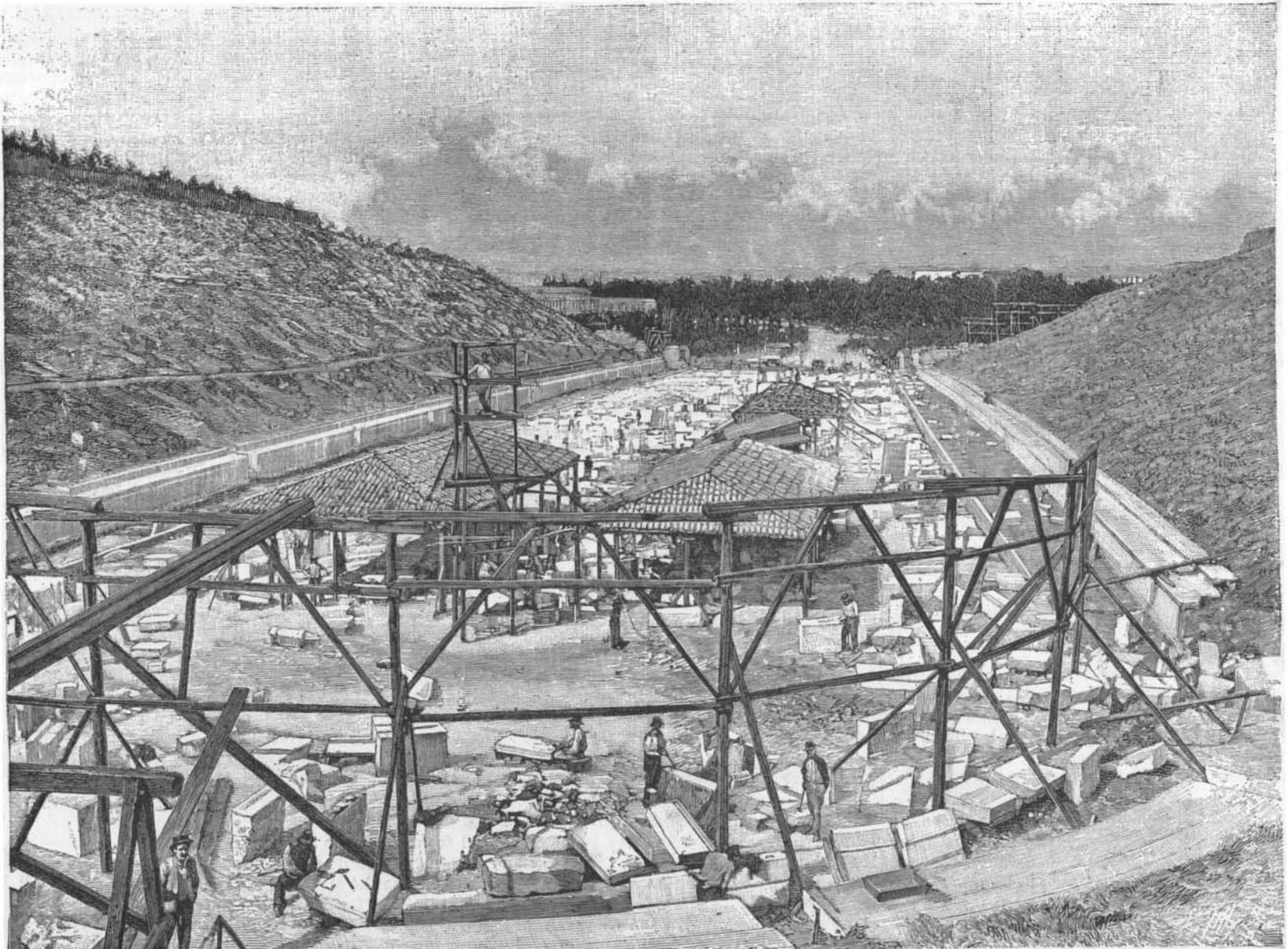
The Alps of Japan.

At a recent meeting of the Royal Geographical Society a paper on "Exploration in the Japanese Alps, 1891-1894," was read by the Rev. Walter Weston, M. A. The range might be briefly described as a backbone or axis of granitic rocks, through or over which vast quantities of igneous and volcanic rocks had been poured from time to time. The most beautiful mountains in form were Hodakayama, whose granite towers gave it the name of the "mountain of the standing

ears of corn," and its northern neighbor Yarigatake, "the Spear Peak," the Matterhorn of Japan, which consisted of an intensely hard, weather-resisting porphyry breccia. The inaccessible character of the range cut off nearly all intercourse between the people on either side. Near the hot springs of Tateyama striking evidences were seen of the terrific power of seismic phenomena. All around the spot was a wilderness of large bowlders, sand, and stones. Although thunderstorms were usually neither frequent nor violent in most parts of Japan, they were by no means uncommon in the central parts of this range. Some of the sulphur springs were very remarkable, especially those on Tateyama toward the north of the range. They were called O jigoku ("great hell"). Jets of steam and sulphureted hydrogen burst forth sometimes with a deafening roar, and with force enough to project lumps of sulphur deposit to a distance of 15 or 20 feet. In the mountains, wherever hot mineral springs were found, the peasantry resorted to them, some for the sake of the healing virtues of the waters and others to kill time pleasantly. The yuba, i. e., "hot water houses," as these bathing establishments were called, usually nestled at the bottom of some deep ravine, or occasionally were found perched high up on the slope of one or other of the great volcanoes. The temperature of the water varied from 100° to 130° Fah.

This taste for bathing was indulged to an incredible extent. In one place he knew of, where the water was just about blood heat, a man would stay in practically for a month on end, taking care, however, to place a heavy stone on his knees to keep him from floating or turning over in his sleep. The caretaker of this particular establishment, a cheery old man of some 70 summers, himself stayed in the bath the whole winter through.

Chief among the animals found in this alpine region was the kuma, or black bear. It sometimes attained a length of over six feet, and its flesh was smoked and eaten. In the north end of the range the badger was very common and was much valued, both for its flesh and its fur. In the forests high up the mountain sides boars were found. Deer were also hunted in the winter. Of birds, the beautiful golden eagle led the way. Besides the kite, which was common, was a curious black and white speckled crow (regarded in Japan as the bird of love), and extremely tame ptarmigan abounded near the upper snowfields. The most remarkable animal of all, however, was now fast dying out. This was the giant salamander (*Cryptobranchus japonicus*), found chiefly in the southwest spurs of the range.



REVIVAL OF THE OLYMPIAN GAMES IN GREECE—RESTORATION OF THE ANCIENT STADIUM.