RIVER TAMING IN ENGLAND.

The English Government is now at work on a problem which is engaging attention in this and in other parts of the world, viz., the devising of some method by which the surplus water from the mountains may reach the sea without the destructive floodings of the low lands, which now follow the rain storms or snow meltings on the highlands. In England, this flooding of low-lying districts has become more destructive during recent years, because the systematic ditching and underdraining of the uplands give quick passage through the soil into the rivers to the surplus water which formerly was long held on the surface or percolated but slowly through the soil. We find but meager information concerning the provisions of the act which is now before Parliament for the averting of floods, and can do but little more than state the fact without description of methods proposed. It may be said, however, that the subject has been studied by a royal commission and that a scheme has been elaborated from the report of their investigations. The *Agricultural Economist* thinks that the whole project is endangered by the fact that the proposed act orders that a part of the expense of carrying off the water shall be taxed upon the uplands whence the waters come. This, our exchange thinks, will awaken much opposition to the contemplated improvements. We suppose the uplands will hold that as water is prone to run down hill, it is no fault of the hill, but the iniquity is rather in the water, and if those below do not care to suffer injury they must get out of the way, or else corral the water so that its destructive power is held in check. This it is proposed to do by widening the rivers, and the power to carry out these improvements is to be vested in "River Conservancy Boards," who shall have full authority to condemn adjacent property, mill rights and the like, as their plans may require. One recommendation of the report is, that all arterial streams insufficient to carry their waters after heavy rains be widened very considerably indeed, and that the new banks be formed gradually shelving down to the banks of the stream, that they may be available to bear grass either for mowing or for feeding of stock, when the waters are low. If this were carried out, the conservancy boards would no doubt let these river banks by the season, the revenue derived from which would lighten the taxation for the conservancy rate. Although most of the rivers would require considerable widening, this shelving bank system might, in a great measure, prevent the waste of land which would take place if conducted on any other principle.

In addition to preserving the lowlands, it seems that the system of upland reservoirs, for irrigating low land meadows, is also contemplated, and this the *Economist* regards as a very promising feature. This has also been proposed for our own turbulent rivers. It is interesting to note the testimony brought forward in England in favor of irrigation, and comparing their moist climate with our arid one, we can but say if irrigation will do these things in the green tree, what will it do in the dry? Our exchange says that if "there is one thing we are behind in more than another in our British husbandry, it is in making that extensive use of water which is made on the continent and in the East by processes of irrigation." It then proceeds to read English feed growers the following lesson: "The recommendations of old Arthur Young for laying out fresh water meadows might still be studied to advantage by the owners and occupiers of numerous districts, and as to benefits derivable therefrom, the same writer records an instance where nearly five pounds an acre was realized for the feed of a water meadow during six weeks of spring, and that nearly two tons per acre of hay was reaped from the land afterwards the same summer, which, together with the after-grass in autumn, made a splendid return. Yet when the same meadow could not be irrigated owing to some dispute respecting the water rights, very little whatever was grown on it."

These propositions to curb rivers from their wild work and harness them forever in the service of the farm, is one of the most interesting and important which is now advanced for agricultural engineers to reduce to practical operation.

THE EARTH BELONGS TO CHINA.—Dr. Schliemann has found Chinese vases and gauze linen on Trojan soil, dating 1,200 years before Christ. They were on this coast in the fifth century, and are now taking possession of it by right of prior discovery. Li-Fang-pao contends that the Hyperboreans were Chinamen, while here it is claimed that the Lepers are Chinamen.

TO INSULATE WIRE.—Shellac varnish makes a good insulator for wire, provided the wire is wound before the varnish becomes thoroughly dry.

IMPROVEMENT IN FIRE ESCAPES.

We recently witnessed from the upper window of the old post-office some very successful performance of a new fire-escape patented by Edward M. Ball, of Stanstead, Quebec, Canada. The invention it is claimed will permit the escape of any number of persons (one at a time) from a window, roof, or portico of the upper stories of buildings of any height.

It consists, first, in inclosing within a case of iron or other metal a spool (carrying a rope of sufficient strength) connected by gearing to a coiled spring, which as the person descends, will be wound up, and thus made to serve to rewind the rope on the spool, in order that another person may take advantage of the means thus afforded for escape; second, in a metallic friction-strap brake, automatically worked by a governor, which serves to regulate the speed of descent to a sufficiently moderate degree to prevent injury when reaching the ground.

A A′ is the case; B, the cap; C, the spool; D, the intermediate double gear-wheel, and E the spring.

Figure 1 represents a vertical transverse section taken on the line *z z* of the case; Fig. 2, the cap B, a portion of the spool C, and the governor of a machine embodying the invention. Fig. 3 is an interior sectional view, taken on the line *y y*, Fig. 1, of the cap B and friction-strap *m*. Fig. 4 is a sectional view on line *x′ x′* of Fig. 2.

The case is composed of two parts, A being the cylindrical part, with the vertical ribbed plate surmounted by the eye *e*, and A′ the back, being a ribbed plate conforming in shape to the contour of the spring E, double gear-wheel D, and spool C, the plates A A′ and the cap B serving as a frame, in which are the bearings for the machinery within.

The spool C is journaled at one end in the cap B, and at the other in the back A′ of the case. Near the left-hand end of the spool-shaft *s* is mounted and securely fastened thereto a pinion, *w*, which gears with the periphery of the wheel D, the smaller wheel of which gears with the wheel *v*, mounted on the shaft *u*. The coiled spring E is hooked to this shaft in the usual manner, the outer end of the spring being attached to the pin *t* in any substantial manner.

The spool C may carry any kind of rope; but I prefer to use wire-rope composed of very fine wire. The rope should be wound on the said spool in such a manner that when unwinding the tension of spring E, by means of its connection, will be increased to the extent necessary to rewind the rope.

A person being attached to the free end of the rope (which passes through the case by the opening *o* at the bottom of the cylindrical portion), by means of a belt or other safe contrivance, the speed of descent is regulated by the governor, composed of the parts and operated as follows:

The weights *a a′* are rigidly connected by arms *i i* to the heads *j j′*, respectively, which are pivoted on the pins *h h′*, screwed or otherwise secured to the contiguous flange of the spool C. The head *j* carries a pin, *k*, the said flange carrying a similar one, *g*. Inwardly projecting knobs *l l′* enter a connecting block, *d*, having for its axis the spool-shaft *s*, thus connecting the weight *a* with the one *a′*, making the centrifugal force of the latter to supplement that of the weight *a*. The centrifugal force generated by the motion of the spool C separates the weights *a* and *a′*, which, swinging on the pins *h h′*, causes the pins *g* and *k* to approach each other, and they, being connected to an ordinary metallic friction-strap, *m*, which encircles the inwardly circular portion of the cap B, cause the said friction-strap to be drawn closely in contact with it, creating friction, which arrests the speed of the spool C and its connections. To counteract the centrifugal force of the weights *a a′*, and prevent them acting until the requisite speed is attained, the spring *f* is provided. Said spring is secured to the connecting block *d*, as shown in Fig. 1, its free end bearing on the head *j*. The tension or force with which the spring so bears determines the tension of the friction-strap *m*, and, consequently, the speed of descent, a stiffer spring causing the revolutions of the spool C to be more rapid.

LOCATION OF THE GARDEN OF EDEN.—Of the four rivers which encircled the Garden of Eden in Genesis, the Phrat and Chiddekel have long ago been identified as the Euphrates and Tigris. A cuneiform monument in the British museum has a series of geographical names, and among them occur Pisan and Guchan, both canals of the Euphrates. Pisan was a canal running south of the Euphrates, and in the epoch of Alexander the Great, went under the name of Pullakopas canal; it is the Pisan or Pischon of the Bible, and Guchan is the Gihon. The Hebrew people had therefore placed the cradle of the human race in the vicinity of Babylon.