compared to a hydraulic ram, and a magneto-electric machine to a fly-press; both might be capable of raising a given weight, but one would do it more suddenly than the other.

In conclusion, it was remarked that it was impossible to believe, that nature, whose laws, science, as she progressed, invariably proved to be simpler and yet more simple, should have one law for one conductor, and another for another; and that electric eurrents. having all the same properties in common, should be differently affected when their intensity was increased, or diminished.

The second Paper read was "Description of the Improvements on the Second Division of the River Lee Navigation, with Remarks on Canals generally," by Mr. R. C. Despard.

In the year 1854, Mr. Beardmore, M. Inst. C.E., communicated to the Institution an account of the works on the first division of this navigation, extending from the Thames to Old Ford Lock, entirely within tidal influence. The second division commenced at Old Ford and terminated at Tottenham, a distance of  $4\frac{1}{2}$  miles. The works on the latter division, which were not proceeded with until the end of 1855, consisted of,—

First—The removal of Old Ford Lock, and the construction on its site of a pair of locks of greater width and increased depth of water over the sills.

Second—The construction of wharf and towing-path walls, and raising the old, or forming new banks between Old Ford and Homerton Lock, a distance of one mile three furlongs. Also removing Homerton Lock, so as to make the whole length, from Old Ford to Tottenham, into one level.

Third—The construction of a pair of stop-gates and a new bridge at Pond Lane, between Homerton Lock and Lee Bridge; and

Fourth-Deepening, by means of dredging, the main river from Homerton Lock to Tottenham.

The works for the Old Ford locks were commenced by forming a cofferdam, consisting of a single row of whole timber piles, below the old lock ;—a trench having been previously excavated, which was filled

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