

## CHAPTER XI.

### *NON-PLANE MOTION.*

#### § 62.—THE SCREW.

IN the preceding chapters we have limited ourselves almost entirely to the consideration of mechanisms in which only plane motions occur. These form by far the largest and most important class with which the engineer has practically to deal. We have now to notice some of the principal *non-plane* motions utilised in machinery, and shall in the first instance examine those conditioned by the use of the screw and nut, Fig. 261.<sup>1</sup>

In § 2 we have already noticed the characteristics of screw motion, or twist; and in § 10 we have seen that this motion could be completely constrained by the ordinary screw and nut, a pair of elements which we classed among the *lower* pairs because of its surface contact. Familiar and important as this pair is, there is hardly an instance in which it is used for the sake of its own characteristic helical motion. With scarcely an exception the screw motion is resolved into its two components, rotation and

<sup>1</sup> A more general investigation of screw motion in mechanisms, of which this is the simplest (and a very special) case, will be found in §§ 68. to 70.

