red copper, I of braſs, 15 of grain-tin, and 3 of white arſenic. The proceſs given by the late J. Ed­wards, who was rewarded by the Board oſ Longitude for diſcloſing it to the public, was publiſhed in the Nautical Almanack for 1787, and is as follows ; Melt the copper in a large crucible, employing ſome black flux, compoſed of two parts of tartar and one of nitre ; when melted, add to it the braſs and the ſilver. Let the pure tin be melted in another crucible, alſo with ſome black flux. Take them both from the fire, and pour the melted tin into the fuſed maſs in the large crucible. Stir the whole well with a dry ſpatula of birch, and pour off the fuſed metal immediately in­to a large quantity of cold water. The ſudden chill of the water will cauſe the fluid metal to divide into an in­finite number of ſmall particles, which will cool inſtantly.

2. If the copper be completely ſaturated, the frac­ture of one piece of this mixed metal will appear bright, and of a gloſſy look, reſembling the face of pure quick- filver. But if it is of a brown reddiſh colour, it wants a little more tin. To aſcertain the required proportion, melt a ſmall quantity, known by weight, of the mixed metal, with a known very ſmall part of tin ; and, if neceſſary, repeat the trial with different dozes, till the fracture of the new mixture looks as already deſcribed. Having now aſcertained the neceſſary addition of tin that is required, proceed to the laſt melting of the whole metal, together with the additional proportional doſe of tin ; fuſe the whole, obſerving the ſame cau­tions as before ; and you will find that the mixture will melt with a much less heat than that for the first fuſion. Have ready as many ounces of white arſenic in coarſe powder as there are pounds in the weight of the metal ; wrap up the arſenic in a ſmall paper, and put it, with a pair of tongs, into the crucible ; ſtir it well with the ſpatula, retaining the breath to avoid the arſenical fumes or vapours (which however are not found to be hurtful to the lungs) till they diſappear ; take the crucible off the fire, clear away the droſs from the top of the metal, pour in about one ounce of powdered rosin, with as much nitre, in order to give the metal a clean ſurface, and pour out the metal into the moulded flaſks.

3. The ſpeculum ſhould be moulded with the concave ſurſace downwards, and many ſmall holes ſhould be made through the fand upwards, to diſcharge the air. The moulding fand from Highgate near London, uſed by the founders, is as good as any for casting theſe metallic mirrors. The cast metal ſhould be taken out from the sand of the flaſks whilſt it is hot, or else it may happen to crack if left to cool within. See Telescope.

Speculum, a looking glaſs or mirror, capable of re­flecting the rays of the fun.

Speculum, in ſurgery, an infiniment for dilating a wound, or the like, in order to examine it attentively. See Surgery.

SPEECH, in general, the art or act of expreſſing a perſon’s thoughts by means of articulate founds, which we call words. See Language, Grammar, Reading, and Oratory, part iv.

SPEED (John), an eminent Engliſh hiſtorian, was born at Farington, in Cheſhire, in 1542. He was by profeſſion a taylor, and freeman of the company of merchant-taylors in the city of London. In 1606, he pub­liſhed his Theatre of Great Britain, which was after­wards reprinted in folio, under the title of the *Theatre of the Empire of Great Britaine.* His Genealogies of Scripture were first bound up with the Bible in 1611,when the first edition of the preſent tranſlation was printed. In 1614 appeared his *History oſ Great Britaine,* which has been tranſlated into Latin ; and in 1616 he publiſh­ed his *Cloud oſ Witneſſes,* in octavo. He lived in marri­age 57 years with his wife, by whom he had twelve ſons and six daughters ; and died in 1629. He was interred in the church of St Giles’s, Cripplegate, London, where a monument was erected to his memory.

SPEEDWELL, in botany. See Veronica.

SPELL, a charm conſisting of ſome words of occult power, generally attended with ſome ceremony.— In order to explain it, we will produce a few examples. On St Agnes’s night, 21st of January, take a row of pins, and pull out every one, one after another, ſaying a Pater-noſter on flicking a pin in your ſleeve, and you will dream of him or her you ſhall marry.

Another method to ſee a future ſpouſe in a dream. The party inquiring maſt lie in a different county from that in which he commonly resides, and on going to bed must knit the left garter about the right-legged flocking, letting the other garter and flocking alone ; and as he rehearſes the following verſes, at every com­ma knit a knot :

This knot I knit,

To know the thing I know not yet ;

That I may see

The man (woman) that ſhall my husband (wife) be ;

How he goes, and what he wears,

And what he does all days and years.

Accordingly, in a dream, he will appear with the insignia of his trade or profeſſion.

Another, performed by charming the moon, thus ; At the first appearance of the new moon, immediately after the new year’s day, (though ſome ſay any other new moon is as good), go out in the evening, and stand over the ſpars of a gate or stile, and, looking on the moon, repeat the following lines :

All hail to the moon ! all hail to thee !

I prithee, good moon, reveal to me

This night who my husband (wife) must be.

Immediately after you must go to bed, when you will dream of the perſon deſtined for your future husband or wife.

SPELLING, in grammar, that part of orthogra­phy which teaches the true manner of reſolving words into their syllables.

All words are either simple or compound, as *use,diſuſe ; done, undone ;* and the rules for dividing each must be ſuch as are derived from the analogy of language in general, or from the establiſhed custom of ſpeaking ; which, for the Engliſh language, are re­duced to the following rules : 1. A conſonant between two vowels must be joined with the latter in ſpelling, as *nature, ve-ri-ly, ge-ne-rοus ;* except, however, the letter *x,* which is joined to the first, as *in flux-en, ox- en,* &c, and compound words, as in *up-on, un-uſed,* &c.

2. A double conſonant must be divided, as in *let-ter, man-ner,* &c. 3. Thoſe conſonants which can begin

a word must not be parted in ſpelling, as in *de-fraud,*