lasking as it has been called ; it is evident from fig. 73. that ſhould any ſhip in this angular line come to be crippled, her way being stopped, might of conſequence occaſion a confusion amongſt the ſhips next aſtern to her, ſome running to leeward and others to windward of the diſabled ſhip ; and thus the time be loſt for affording the neceſſary ſupport to the ſhips ahead, and now so far separated from their com­panions. Should it be said, that a ſtoppage of one ſhip ahead will not neceſſarily produce a ſtoppage of every ſhip astern, becauſe they may go to leeward of the diſabled ſhip; we answer, that the ſhips ahead in the van A (fig. 74. n⁰ 1.) may be now engaged, and of conſequence not having much headway, may be said to be ſtationary ; therefore eve­ry ſhip aſtern, if she ſhall attempt to bear down, as at D, H, from being confined to a determined courſe, muſt be brought into the poſition of being raked when coming down before the wind, as in figs 76. and 69. and conſequently of being completely diſabled long before ſhe can get close enough alongſide of the enemy

Agam, the headmoſt ſhips, or van of B, having attained their ſtation at A, that is, abreaſt of the van of F (fig. 74. n⁰ 1.), and having begun the cannonade, may we not suppoſe that F, whose conduct or deſire has always been to save his ſhips, has inſtructed the commanders of thoſe in the van of his fleet to withdraw from danger as ſoon as they begin to feel the effects of a cannonade ? and if ſo, may not thoſe ſhips, as ſoon as they have thrown in their fire upon the van of B, bear away in ſucceſſion as at H, followed indeed by the whole ſhips of F’s fleet, which, having poured in their fire upon the van of B, may form a new line of battle two or three miles to leeward at II (fig. 74. n⁰ 2.), and there be in readineſs to receive a second attack, if B ſhall be ſo imprudent as to attempt it ? And is it not farther evi­dent, that if any one or more ſhips of the ſquadron of F ſhall be crippled, they will have it in their power to quit their ſtation, being covered with ſmoke, at any time, and to fall to leeward as at G. where they will be in ſafety ?

In order to illuſtrate this ſtill farther, let B (fig. 75.@@) repreſent a fleet putting before the wind, each ſhip with an intent, when brought to at a determined diſtance at A, to take up her particular antagoniſt in the line of the enemy F to leeward ; and, for argument’s ſake, let F be ſuppoſed at rest, without any motion ahead. There ſeems to be no difficulty in conceiving, that while the alternate ſhips of F’s line, under cover of the ſmoke, withdraw from battle to GGG, the intermediate ſhips left behind them in the line will be ſufficient to amuſe even the whole of B’s fleet, till the ſhips G ſhall form a new line HH as a ſupport from the leeward. In such case B, after being disabled, as he muſt be, and not having foreſeen the manœuvre, will neither be able to prevent the intermediate ſhips with which he is engaged from bearing away to join their friends, nor, were he able, would it be advisable to follow them ; for the same manœuvre with equal succeſs can again and again be re­peated.

In order to show the relative motion of both fleets, let F (fig. 76.) be a fleet consiſting of twelve ſhips, drawn up in line of battle, at one cable’s length or 120 fathoms aſunder; and let the length of each ſhip from the end of the jib- boom to the ſtern be 36 2/3d fathoms ; the whole fleet will then occupy a space of two English miles ; alſo, let its rate of sailing be four knots an hour in the direction FG, ſo that in the ſpace of an hour it may have moved from F to G four miles diſtant from its former poſition.

Let B be the opponent fleet, conſiſting alſo of twelve ſhips, and four miles to windward ; and let the point A be 440 yards, or one quarter of a mile, right to windward of the point G. Then if B, by bearing away in the direction BA, ſhall arrive at the point A at the same inſtant that F, the fleet to leeward, has arrived at the point G, the mo­tion of the fleet B will have been at the rate of 5 1/2 miles nearly per hour ; and the angle contained between the di­rection of its line of bearing and present courſe 43⁰ 9', or nearly 4 points. For in the right-angled triangle ABM are given BM = 4 miles, and AM = 3 3/4 miles. Now BM = 4m. : AM = 3 3/4m. : : R : tan. ABM = 43 9', and R : ſec. ABM. 43⁰ 9' : : BM = 4m. : AB = 5.483m.

Again, if F, as in fig. 77. by carrying more sail, ſhall move at the rate of six miles an hour, that is, from F to G; then B, having his courſe made thereby the more ſlanting, will have just so much the greater difficulty of keeping his ſhips in line abreaſt while coming down to the attack : For the leading ſhip meeting with no obſtruction in her courſe, will puſh on ; whereas every accident of obſtruction accu­mulating, as it happens to each ſhip progreſſively, the rear, being affected in the greateſt degree, will for that reaſon be left the farther aſtern. But, from the very form of this ſlanting courſe, every ſhip aſtern will be apt to get into the wake of the ſhip ahead. Therefore the whole fleet of B, van and rear, will not arrive in the same time at the line AD, so as to be in a perfect line abreaſt, and parallel with the fleet to leeward ; but will have affirmed the lasking form, as repreſented at the points M, N, and O, in the dif­ferent parts of the courſe. In this caſe, the diſtance run by the van of B, from B to A, is 7,075 miles, or 7 miles and 132 yards, and the angle contained between the line of bearing and the diſtance BA is 32⁰ O'.

And again, as in fig. 78. if the fleet to leeward ſhall lie UD one point higher, as FG, then the rears of the two fleets will thereby be removed at a much greater diſtance, and the van A of conſequence muſt be ſooner up with the enemy’s van, and evidently ſo much the farther from ſupport ; while F, by bringing up his ſhips in ſucceſſion, will have it in his power to disable the van of A, and will afterwards bear away, as at H, unhurt and at pleaſure ; while B, at this time, by the ſupposition, being crippled, or having his rear D obſtructed, and at a diſtance, will be unable to prevent him. And in all the three caſes, it is evident that the fleet B, ſo ſoon as he ſhall approach within reach of gun-ſhot, muſt be expoſed to the fire of F’s whole line ; for he will be abreaſt of B continually in every part of his courſe. But the diffi­culty of bringing the rear of the windward fleet to action will ſtill be more increaſed, if the ſternmoſt ſhips of the fleet to leeward, in place of keeping their wind, ſhall bear away occaſionally as at ML. All which being admitted, the diffi­culty of bringing adverſe fleets to cloſe engagement may be accounted for, without being obliged to have recourſe to that ſuppoſed inferiority in point of sailing, imputed to our ſhips, compared to thoſe of the French our enemy.

Hence it appears, that a fleet B to windward, by extend­ing his line of battle, with a deſign to stop and attack a whole line of enemy’s ſhips to leeward, muſt do it at a great diſadvantage, and without hope of ſucceſs ; for the recei­ving fleet F to leeward unqueſtionably will have the four following advantages over him : 1. The ſuperiority of a fire above 20 to 1 over the fleet B, while coming down to at­tack. 2. That when the ſhips of B are brought to at their reſpective ſtation, if it blows hard, the ſhot from F, by the lying along of the ſhips, will be thrown up into the air, and will have an effect at a much greater diſtance ; whereas, on the other hand, the ſhot from B, from the same cause, will be thrown into the water, and the effect loſt. 3. That F will have the power of directing and applying at pleaſure the fire of his whole line againſt the van of B, who is now

@@@[mu] Plate CCCCXCIX.