

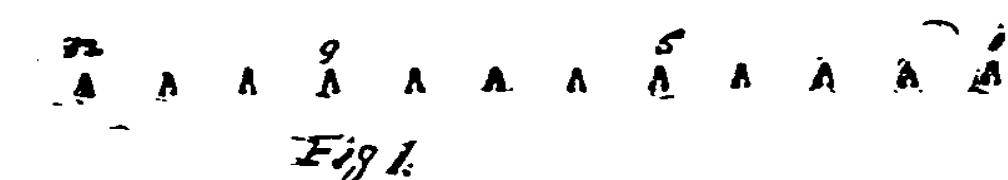
BATTLESHIPS IN ACTION

Tactics Adopted by Naval Strategists and How the Different Manoeuvres Are Made.

THE SIGNAL CODE NOW IN USE

Line, Column, and Echelon the Main Formations—Each Fleet Divided Into Three Divisions—Explanations of Nautical Terms.

When the caravels of Spain used to fight the British adventurers on the Spanish Main, 400 years ago the order of battle used to be to get the two fighting ships as near as possible to each other, and then give a broadside with the cannon. The Captain very often used to take the tiller himself, and, watching a favorable opportunity, would luff his ship alongside his opponent. Grappling irons were thrown over to keep

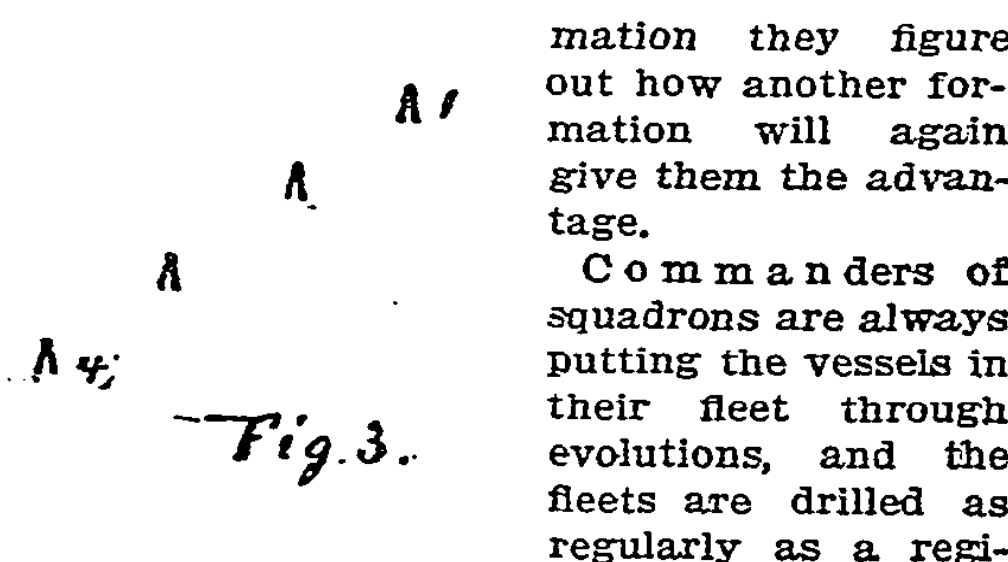


the two fighting ships together, and there would be a desperate hand to hand struggle between the two crews. The system of naval fighting is changed now. Armor-clad vessels go into action, and with their big guns it is not neces-

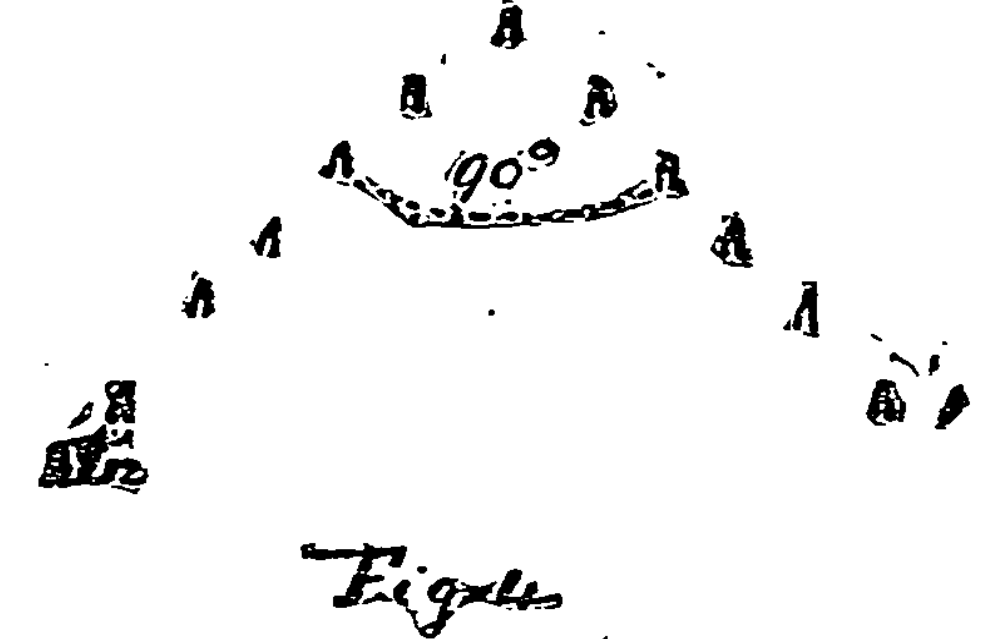
sary to bring the opponents close together. A battle will begin when the belligerents are perhaps two miles apart, and by a system of manoeuvres that are executed just as two opposing armies are manoeuvred the two fleets will try to break up each other's formation.

Naval tactics are as important a branch of study to the cadet who wishes to become a naval officer as gunnery or any other part of the curriculum. Tacticians study how fleets may

be handled so that the opponents can be kept at a disadvantage, and if by any chance the enemy should break their for-



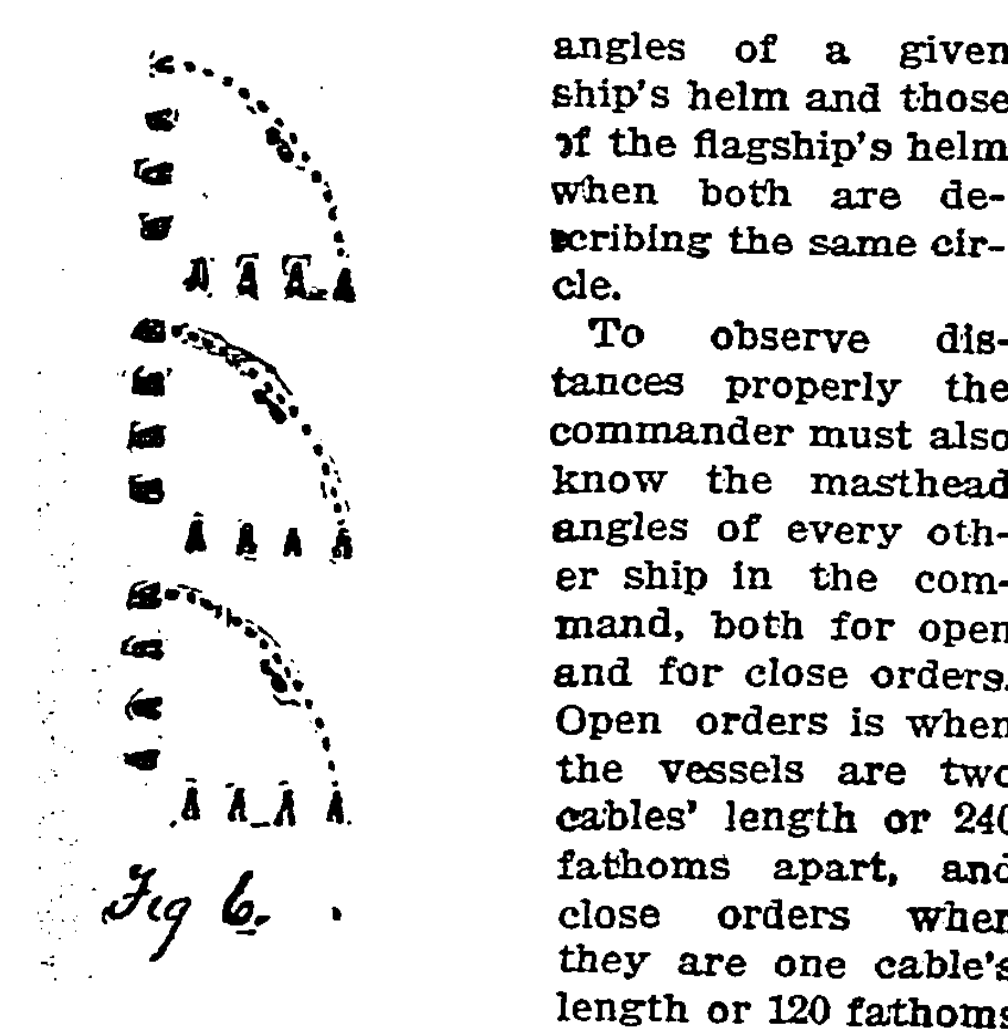
ment of infantry. Rear Admiral S. B. Luce, retired, in an article printed in Hamersley's Naval Encyclopaedia on "Naval Tactics," says on paper tactics appear so simple that it seems impossible that mistakes should be made. "If the weather were always pleasant and the sea smooth; if signals could always be read with certainty and correctly interpreted; if several ships of the command



were all homogeneous; if all maintained the same speed and under similar circumstances described equal arcs of evolution, the manoeuvring of a fleet would be comparatively easy," he says. "But these conditions are rarely if ever fulfilled. Scarcely any two ships will be found possessed of the same facility of turning or able to maintain



the same speed under varying circumstances." Two very important things that it is absolutely necessary that a commander of a vessel should know are the co-efficient of speed and the co-efficients of helm. The co-efficient of speed is the ratio between the number of revolutions per minute of the engines of a given ship and those of the flagship when the speed of both is the same. The co-efficients of helm are the ratios under various conditions of speed between the

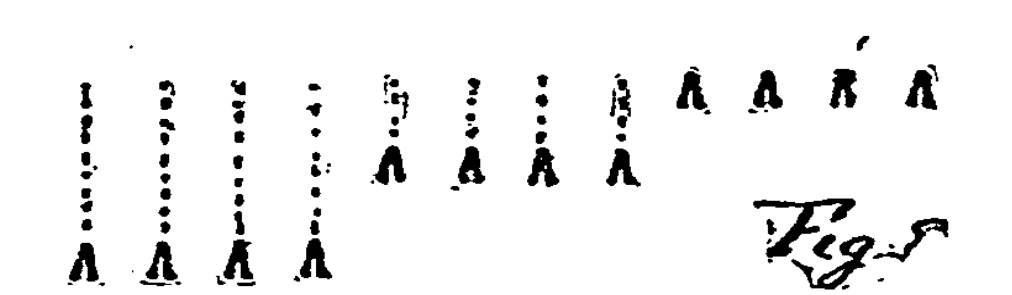


angles of a given ship's helm and those of the flagship's helm when both are describing the same circle. To observe distances properly the commander must also know the masthead angles of every other ship in the command, both for open and for close orders. Open orders is when the vessels are two cables' length or 240 fathoms apart, and close orders when they are one cable's length or 120 fathoms

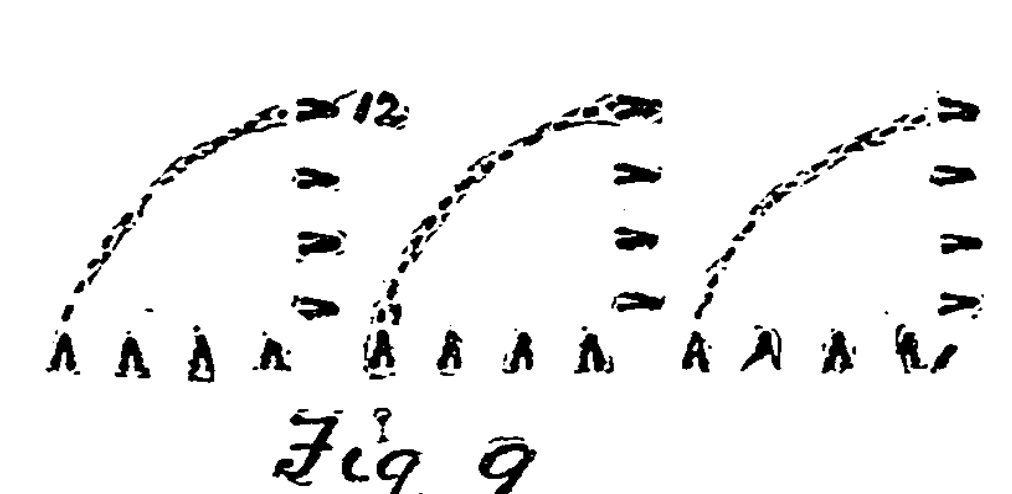


apart. Distances between vessels are reckoned from mainmast to mainmast. The fleet is divided into three divisions of one, two, or three squadrons each, each squadron comprising not less than four vessels. The Commander in Chief commands

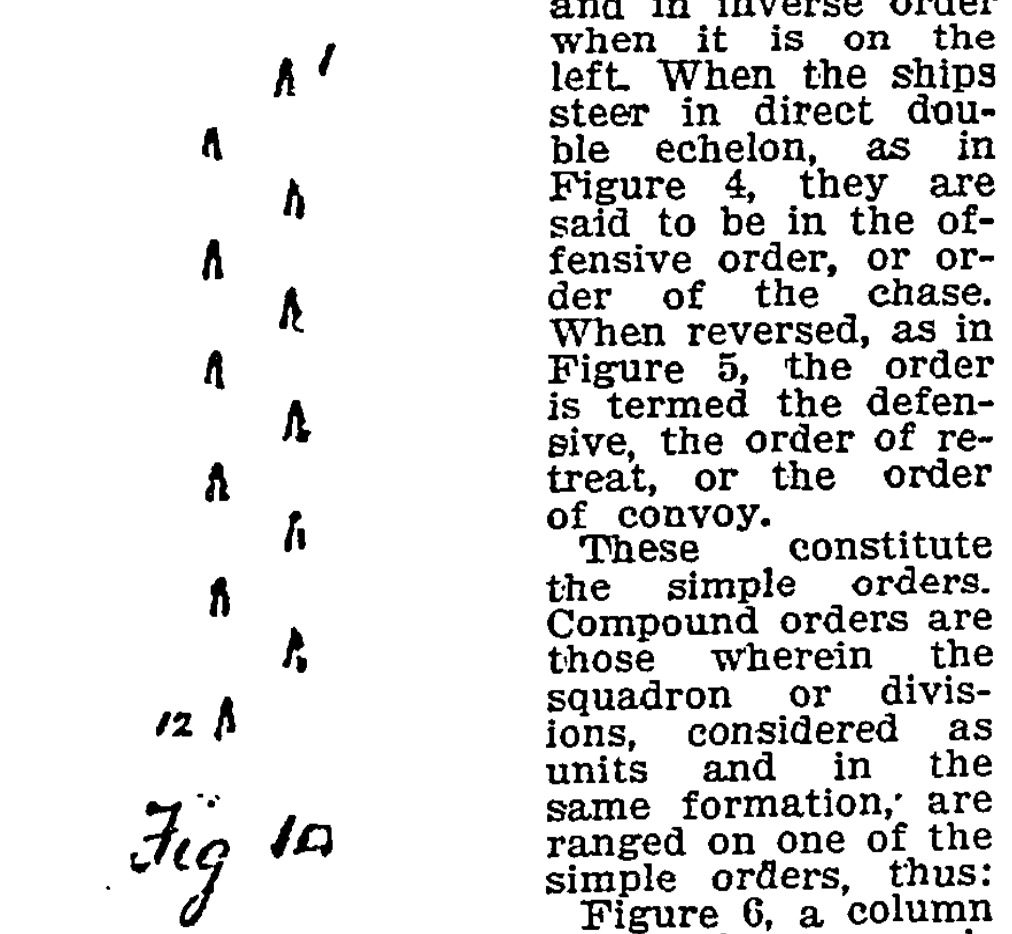
division, and the fourth in command the centre. Twelve or more vessels, not including dispatch boats or transports, is called a fleet, and a naval force of less than twelve vessels is a squadron or a division. The smaller or lighter vessels constitute the light division and the transports the convoy. There are three main formations which govern all the manoeuvres. These are the line, the column, and the echelon. The line is, as its name signifies, when the ships are ranged on a line at right angles



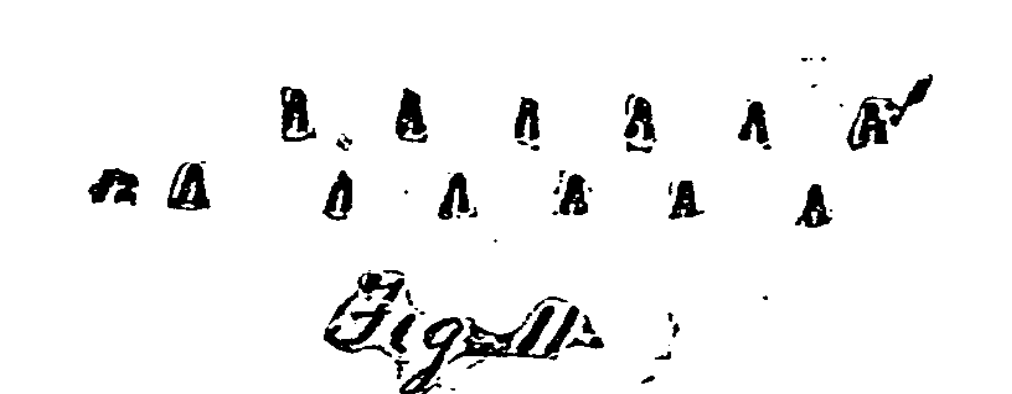
to the course. It is in natural order when the van is on the right, and in inverse order when the van is on the left. Figure 1 shows the formation of the line in natural order. Single column (Figure 2) is when each ship follows in the wake of the leading ship. Double column is when the two leading ships are on a line at right angles to the course and at a prescribed distance from each other, and the two columns are paral-



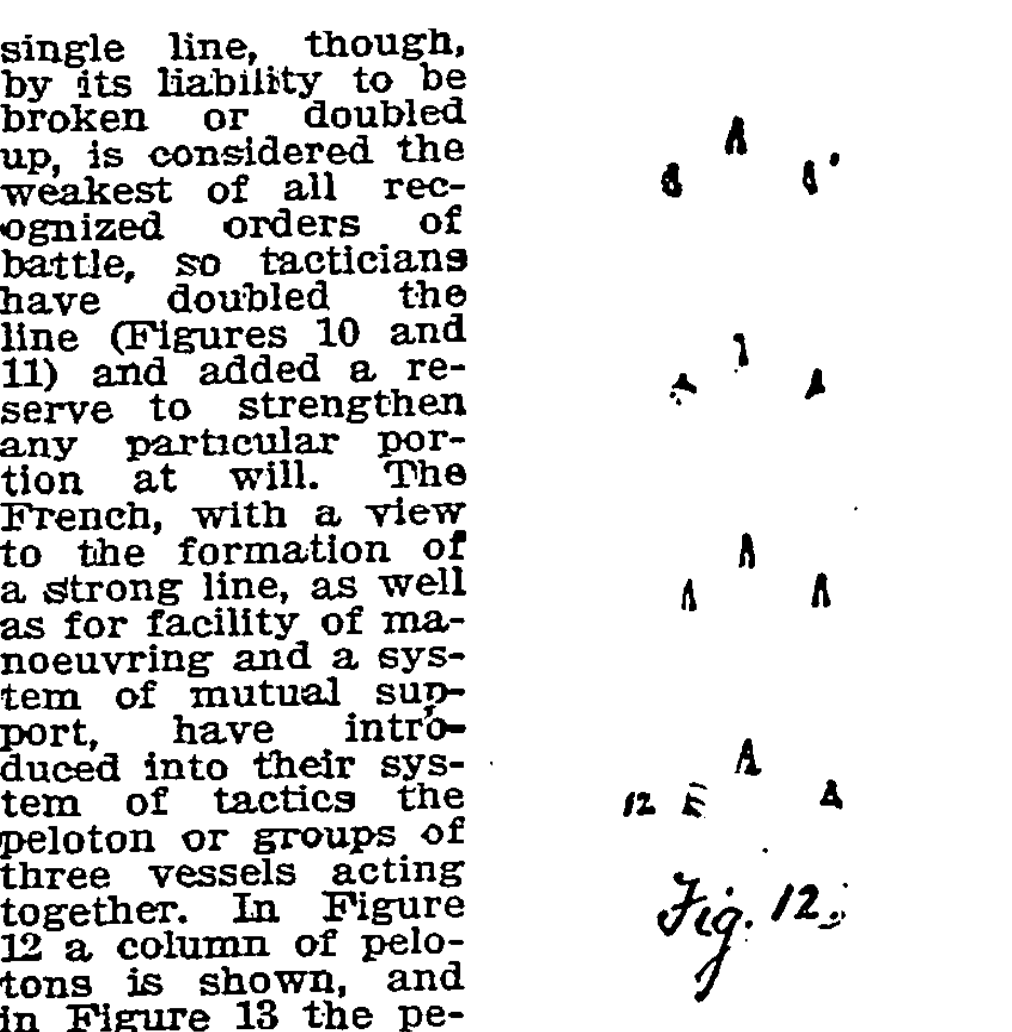
lel. The column is in natural order when the van is leading, and in inverse order when the rear squadron or division is leading. It was while manoeuvring in double column that the English battleship Victoria was sunk by the battleship Camperdown in the Mediterranean in 1893. The echelon is shown in Figure 3. They are in echelon when the ships of the command steering the same course are ranged on a line bearing four points from the course. Four points is equal to 45 degrees, so that the line formed by the ships when in echelon makes an angle of 45 degrees to the course they are steering. Double echelon is when there are two such lines of bearing, the two wings forming a right angle, as shown in Figure 4. The echelon is in natural order when the van is on the right,



and in inverse order when it is on the left. When the ships steer in direct double echelon, as in Figure 4, they are said to be in the offensive order, or order of the chase. When reversed, as in Figure 5, the order is termed the defensive, the order of retreat, or the order of convoy. These constitute the simple orders. Compound orders are those wherein the squadron or divisions, considered as units and in the same formation, are ranged on one of the simple orders, thus: Figure 6, a column of squadrons or col-



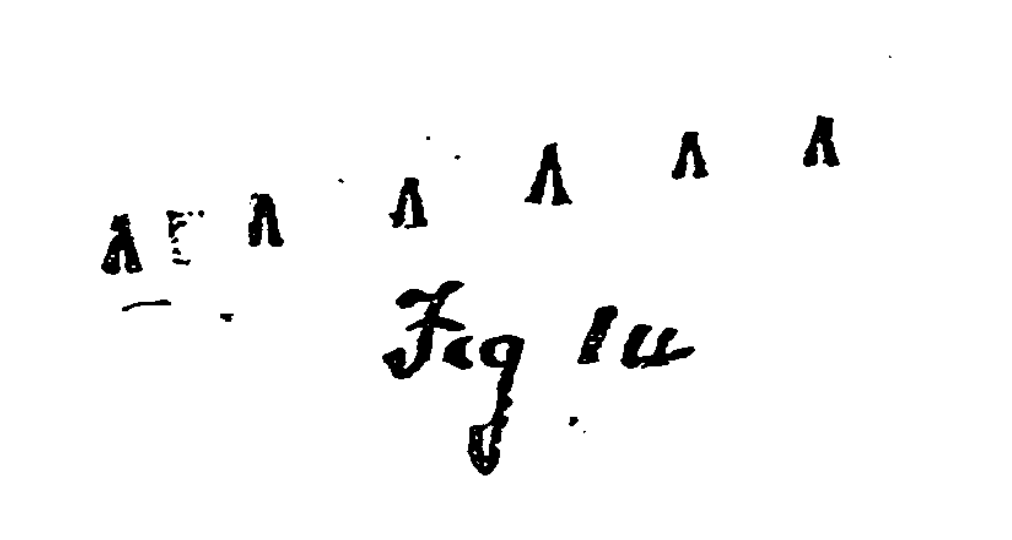
umn of fours, in natural order heading north. Figure 7, columns of vessels abreast by squadrons in natural order, heading north. Figure 8, in echelon of squadrons, natural order, heading north. Naval tactics are very similar to military tactics, and the formations are made in about the same way. The fleet is, for example, in line heading north, and the commander signals, "Fleet by squadrons, wheel to east." The movement is effected as in Figure 9. If the fleet is in column, it



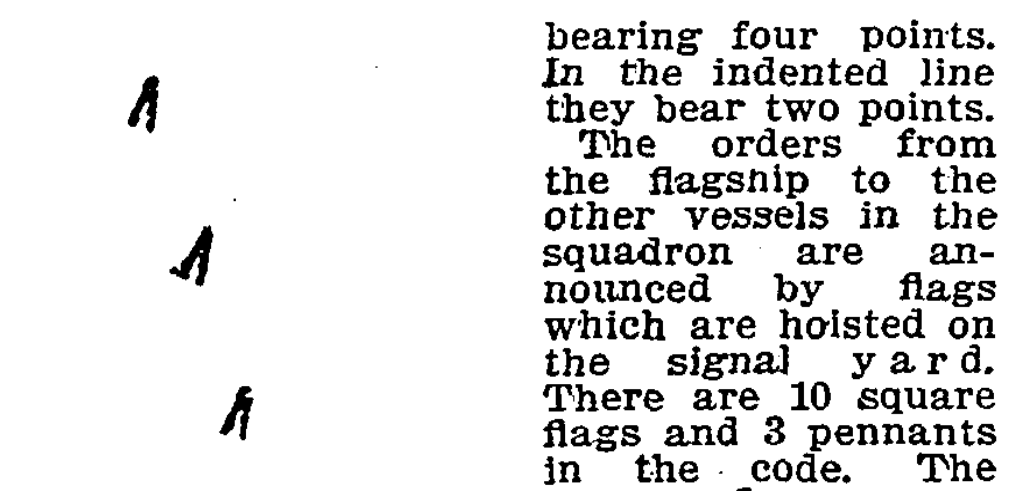
may be brought into line by an oblique movement of the centre and rear divisions, or by the movement illustrated in Figure 6. The most approved order of battle with naval strategists is the column for vessels carrying their batteries in broadsides and the line for vessels whose offensive powers lie in the ram and end-on fire. The



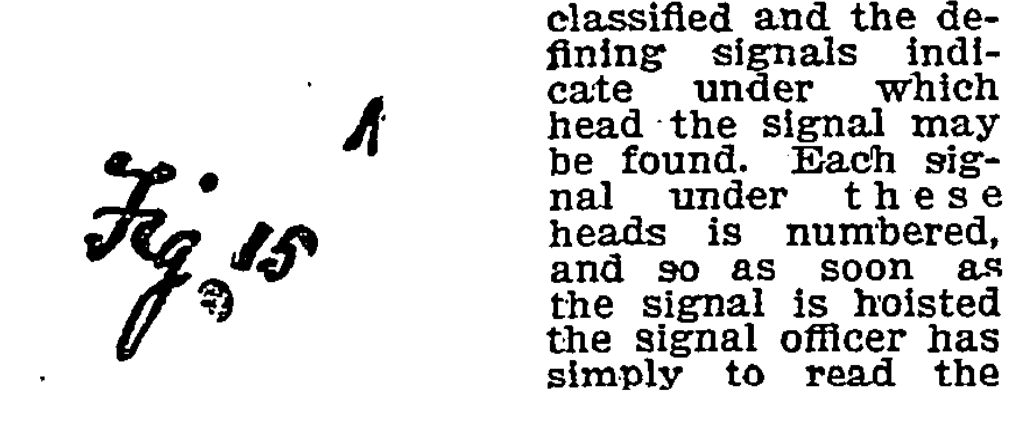
single line, though, by its liability to be broken or doubled up, is considered the weakest of all recognized orders of battle, so tacticians have doubled the line (Figures 10 and 11) and added a reserve to strengthen any particular portion at will. The French, with a view to the formation of a strong line, as well as for facility of manoeuvring and a system of mutual support, have introduced into their system of tactics the peloton or groups of three vessels acting together. In Figure 12 a column of pelotons is shown, and in Figure 13 the pe-



leton in line. These tactics have been adopted in the Navy of the United States. Another formation that is somewhat similar to the peloton is shown in Figure 14. It is called line of groups abreast, and is



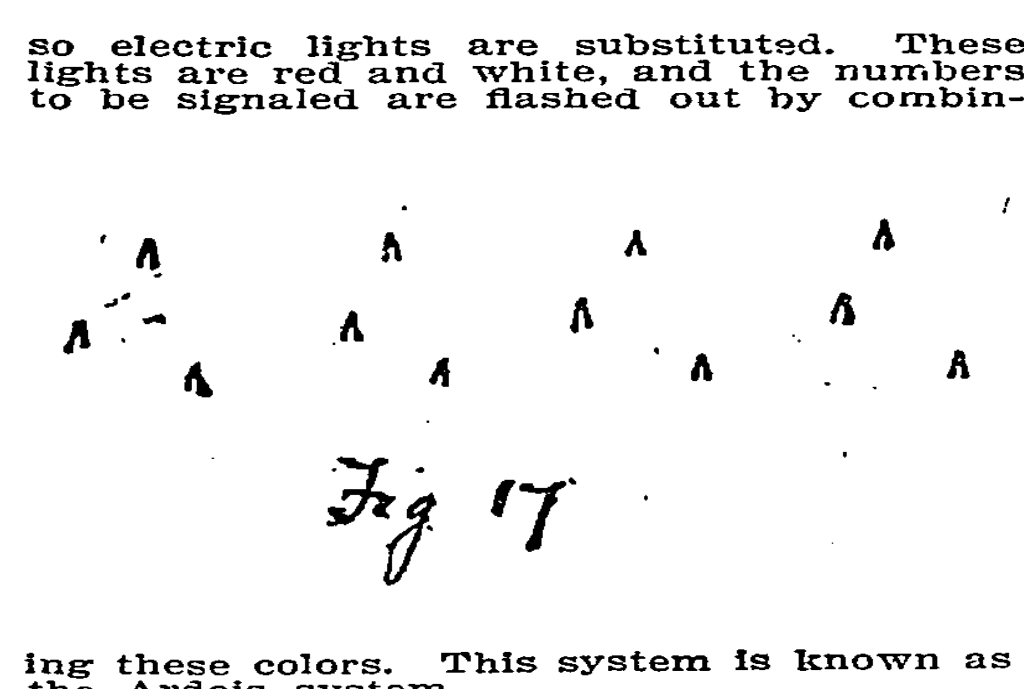
prominent in the English system. Figure 16 shows the line of groups ahead. When the United States fleet sailed from Key West to blockade Havana and the Cuban ports, it kept what is called the indented column. This is shown in Figure



15. The indented line is illustrated in Figure 14. The indented line is somewhat similar to the echelon. In the echelon the vessels steer the same course ranged on a line bearing four points. In the indented line they bear two points. The orders from the flagship to the other vessels in the squadron are announced by flags which are hoisted on the signal yard. There are 10 square flags and 3 pennants in the code. The square flags represent numbers, and the pennants are repeaters. Other flags stand for letters and are defining signals. The code book is classified and the defining signals indicate under which head the signal may be found. Each signal under these heads is numbered, and so as soon as the signal is hoisted the signal officer has simply to read the

defining flag and the number that is indicated by the flags, then turn to that number in the code book and read what has been ordered. The number flags are colored as follows: 1, solid red; 2, yellow with a black disk; 3, blue; 4, red and blue divided obliquely; 5, yellow and red divided obliquely; 6, blue

and yellow divided obliquely; 7, red, yellow, and red, the colors running across the flag and red being at the top; 8, white, red, yellow; 9, blue, yellow, blue; cipher is a quartered flag blue and yellow. The first repeater is a red pennant, the second is yellow, and the third blue. To signal a number that has a repetition of figures these repeaters are used; thus if the number to be signaled is 112 the flag for the figure "1" would be hoisted, then the first repeater and then the flag for the figure "2." By combining these flags any number can be signaled. At night it is, of course impossible to distinguish flags, and



so electric lights are substituted. These lights are red and white, and the numbers to be signaled are flashed out by combin-



ing these colors. This system is known as the Ardois system.