CLAIMS

1. System for guiding a flying machine, such as a missile or the like, using lateral gaseous jets, comprising a gas generator (5) ~~capable of being~~ connected to lateral nozzles (7) by means of rotatable obturating devices (8), which control the flow of the gases from the generator through said nozzles, said nozzles being associated in pairs (P1, P2, P3, P4) such that the nozzles of each pair are aligned along the same axis (A 1) and arranged in opposition to each other, there being, between the two aligned nozzles of the pair, a single controllable obturating device (8) which is connected to said generator (5) and ~~capable of~~ control~~s~~ling the flow of the gases through said nozzles (7) in the two senses, wherein, in each pair of nozzles (7), the single controllable obturating device (8) is configured to continuously :
    - take a neutral position in which the cross sections of flow for the gases from the gas generator (5) through the nozzles are the same; or,
      alter said cross sections of flow through the nozzles, doing so in the reverse manner from one nozzle to the other characterized in that two sets (E1, E2) of four pairs (P1, P2, P3, P4) of aligned and opposed nozzles (7) are provided in planes (PL 1, PL2) which are mutually parallel and are perpendicular to the longitudinal axis of the machine, one (PL 1) of said planes passing through the centre of gravity (G) of said machine.

2. System acccording to claim 1, characterised in that each obturating device (8) comprises a body (14) having an internal passage (15) in which a rotating obturator (6) is received and which has two diametrically opposed openings (17) which are each joined to one of the necks of the aligned and opposed nozzles (7), and an opening (18) which is joined to the gas generator (5).

3. System according to claim 2, characterised in that each obturating device (8) additionally comprises a controllable driver (20) which receives the proportional operating commands and is joined to the obturator (16) so as to move the same and to continuously alter the cross section of flow for the gases flowing through the nozzles (7).

4. System according to claim 3, characterised in that said driver (20) is a torque motor which is joined parallel to or coaxially with a rotating shaft (19) bearing said obturator by means of a connection mechanism (23, 30).

~~5. System according to one of claims 1 to 4, characterised in that the pairs (P1, P2, P3, P4) of nozzles (7) are contained in a plane that is perpendicular to the machine axis which passes through the centre of gravity (G) thereof.~~

~~6.~~5. System according to one of claims 1 to ~~5~~4, characterised in that the pairs (P1, P2, P3, P4) of nozzles (7) are arranged so as to be uniformly distributed relative to one another, the four pairs being diametrically opposed two by two.

~~7. System according to either claim 5 or 6, characterized in that two sets (E1, E2) of pairs (P1, P2, P3, P4) of aligned and opposed nozzles (7) are provided in planes (PL 1, PL2) which are mutually parallel and are perpendicular to the longitudinal axis of the machine, one (PL 1) of said planes passing through the centre of gravity (G) of said machine.~~

~~8.~~6. System according to ~~any of~~ claim~~s~~ 5 ~~to 7~~, characterised in that the nozzle pairs, with each of which a single obturating device (8) is associated, are located at the periphery of the external cylindrical body (2) of the machine and surround the gas generator (5) while in fluid communication therewith.

CLAIMS

1. System for guiding a flying machine, such as a missile or the like, using lateral gaseous jets, comprising a gas generator (5) capable of being connected to lateral nozzles (7) by means of rotatable obturating devices (8), which control the flow of the gases from the generator through said nozzles, said nozzles being associated in pairs (P1, P2, P3, P4) such that the nozzles of each pair are aligned along the same axis (A1) and arranged in opposition to each other, there being, between the two aligned nozzles of the pair, a single controllable obturating device (8) which is connected to said generator (5) and capable of controlling the flow of the gases through said nozzles (7) in the two senses, characterised in that, in each pair of nozzles (7), the single controllable obturating device (8) to configured to continuously :

- take a neutral position in which the cross sections of flow for the gases from the gas generator (5) through the nozzles are the same ; or,
- alter said cross sections of flow through the nozzles, doing so in the reverse manner from one nozzle to the other.

2. System according to claim 1, characterised in that each obturating device (8) comprises a body (14) having an internal passage (15) in which a rotating obturator (6) is received and which has two diametrically opposed openings (17) which are each joined to one of the necks of the aligned and opposed nozzles (7), and an opening (18) which is joined to the gas generator (5).

3. System according to claim 2, characterised in that each obturating device (8) additionally comprises a controllable driver (20) which receives the proportional operating commands and is joined to the obturator (16) so as to move the same and to continuously alter the cross section of flow for the gases flowing through the nozzles (7).

4. System according to claim 3, characterised in that said driver (20) is a torque motor which is joined parallel to or coaxially with a rotating shaft (19) bearing said obturator by means of a connection mechanism (23, 30).

5. System according to one of claims 1 to 4, characterised in that the pairs (P1, P2, P3, P4) of nozzles (7) are contained in a plane that is perpendicular to the machine axis which passes through the centre of gravity (G) thereof.

6. System according to one of claims 1 to 5, characterised in that four pairs (P1, P2, P3, P4) of nozzles (7) are arranged so as to be uniformly distributed relative to one another, the four pairs being diametrically opposed two by two.

7. System according to either claim 5 or claim 6, characterised in that two sets (E1, E2) of pairs (P1, P2, P3, P4) of aligned and opposed nozzles (7) are provided in planes (PL1, PL2) which are mutually parallel and are perpendicular to the longitudinal axis of the machine, one (PL1) of said planes passing through the centre of gravity (G) of said machine.

8. System according to any of claims 5 to 7, characterised in that the nozzle pairs, with each of which a single obturating device (8) is associated, are located at the periphery of the external cylindrical body (2) of the machine and surround the gas generator (5) while in fluid communication therewith.

CLAIMS

1. System for guiding a flying machine, such as a missile or the like, using lateral gaseous jets, comprising a gas generator (5) connected to lateral nozzles (7) by means of rotatable obturating devices (8), which control the flow of the gases from the generator through said nozzles, said nozzles being associated in pairs (P1, P2, P3, P4) such that the nozzles of each pair are aligned along the same axis (A 1) and arranged in opposition to each other, there being, between the two aligned nozzles of the pair, a single controllable obturating device (8) which is connected to said generator (5) and controls the flow of the gases through said nozzles (7) in the two senses, wherein, in each pair of nozzles (7), the single controllable obturating device (8) is configured to continuously :
    - take a neutral position in which the cross sections of flow for the gases from the gas generator (5) through the nozzles are the same; or,
      alter said cross sections of flow through the nozzles, doing so in the reverse manner from one nozzle to the other characterized in that two sets (E1, E2) of four pairs (P1, P2, P3, P4) of aligned and opposed nozzles (7) are provided in planes (PL 1, PL2) which are mutually parallel and are perpendicular to the longitudinal axis of the machine, one (PL 1) of said planes passing through the centre of gravity (G) of said machine.

2. System acccording to claim 1, characterised in that each obturating device (8) comprises a body (14) having an internal passage (15) in which a rotating obturator (6) is received and which has two diametrically opposed openings (17) which are each joined to one of the necks of the aligned and opposed nozzles (7), and an opening (18) which is joined to the gas generator (5).

3. System according to claim 2, characterised in that each obturating device (8) additionally comprises a controllable driver (20) which receives the proportional operating commands and is joined to the obturator (16) so as to move the same and to continuously alter the cross section of flow for the gases flowing through the nozzles (7).

4. System according to claim 3, characterised in that said driver (20) is a torque motor which is joined parallel to or coaxially with a rotating shaft (19) bearing said obturator by means of a connection mechanism (23, 30).

5. System according to one of claims 1 to 4, characterised in that the pairs (P1, P2, P3, P4) of nozzles (7) are arranged so as to be uniformly distributed relative to one another, the four pairs being diametrically opposed two by two.

6. System according to claim 5, characterised in that the nozzle pairs, with each of which a single obturating device (8) is associated, are located at the periphery of the external cylindrical body (2) of the machine and surround the gas generator (5) while in fluid communication therewith.