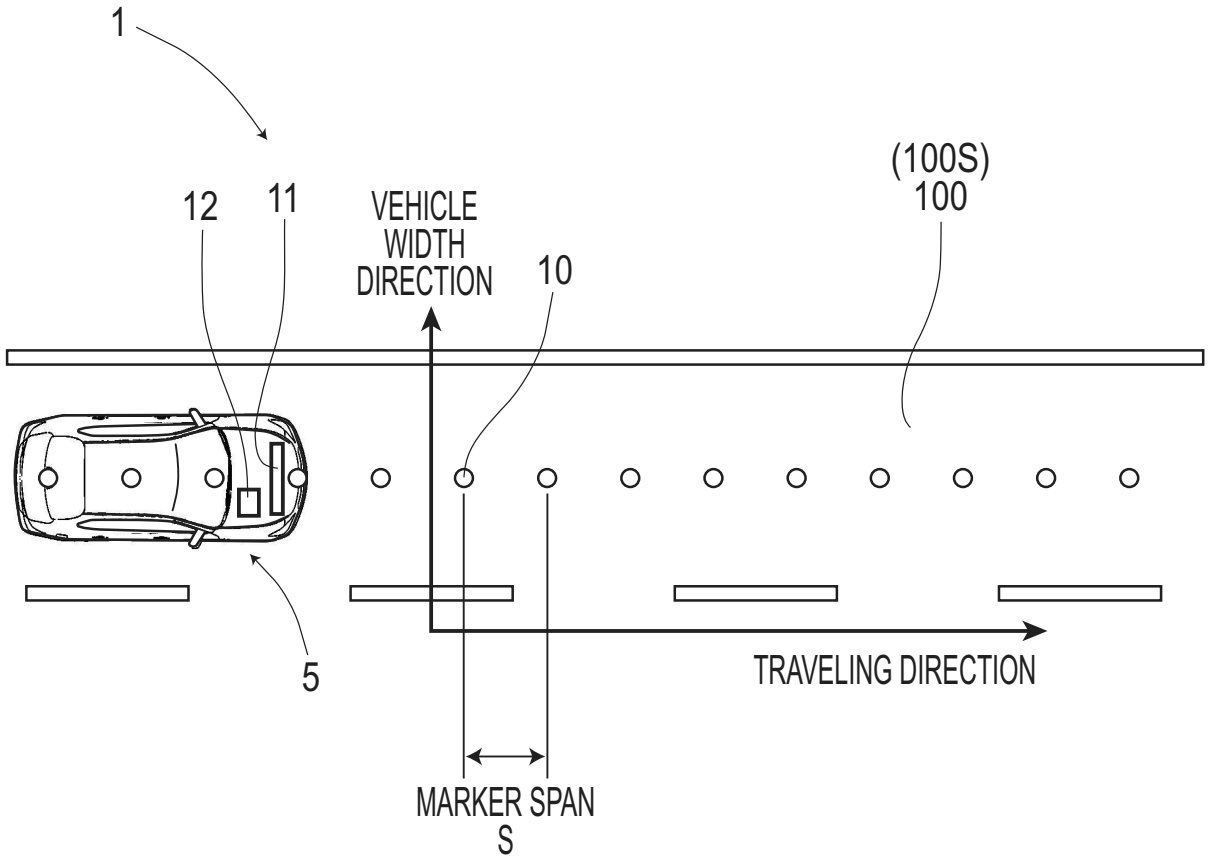
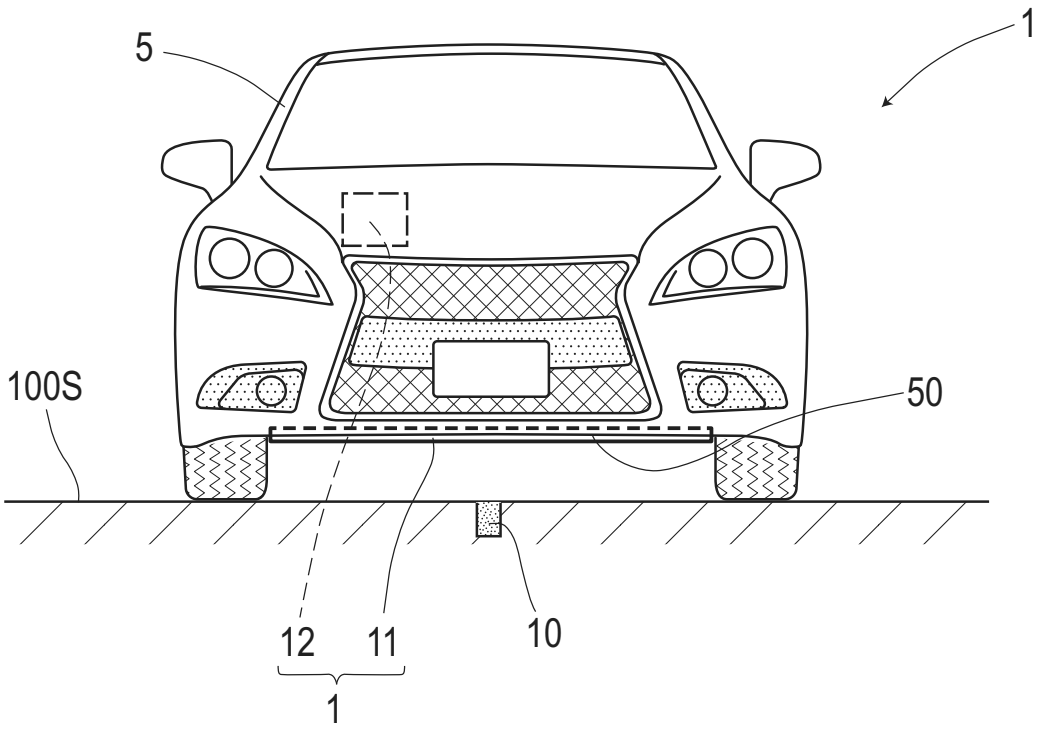
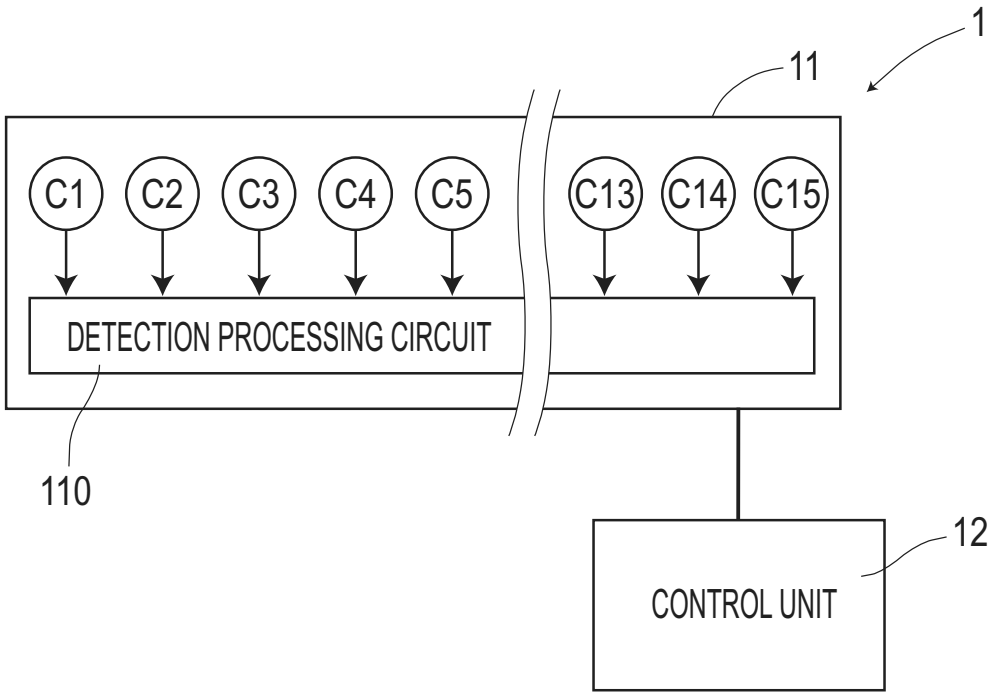
[FIG. 1]


1
12
11
VEHICLE WIDTH DIRECTION
10
(100S)
100
5
TRAVELING DIRECTION
MARKER SPAN S

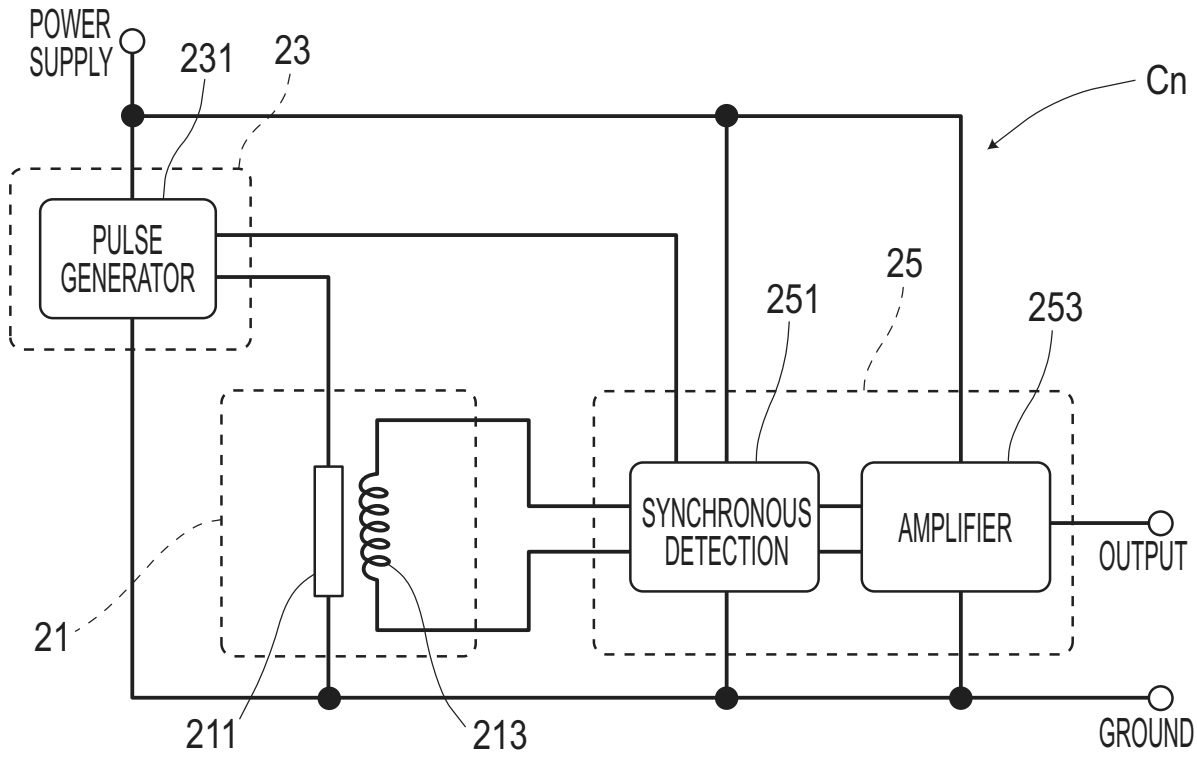
[FIG. 2]



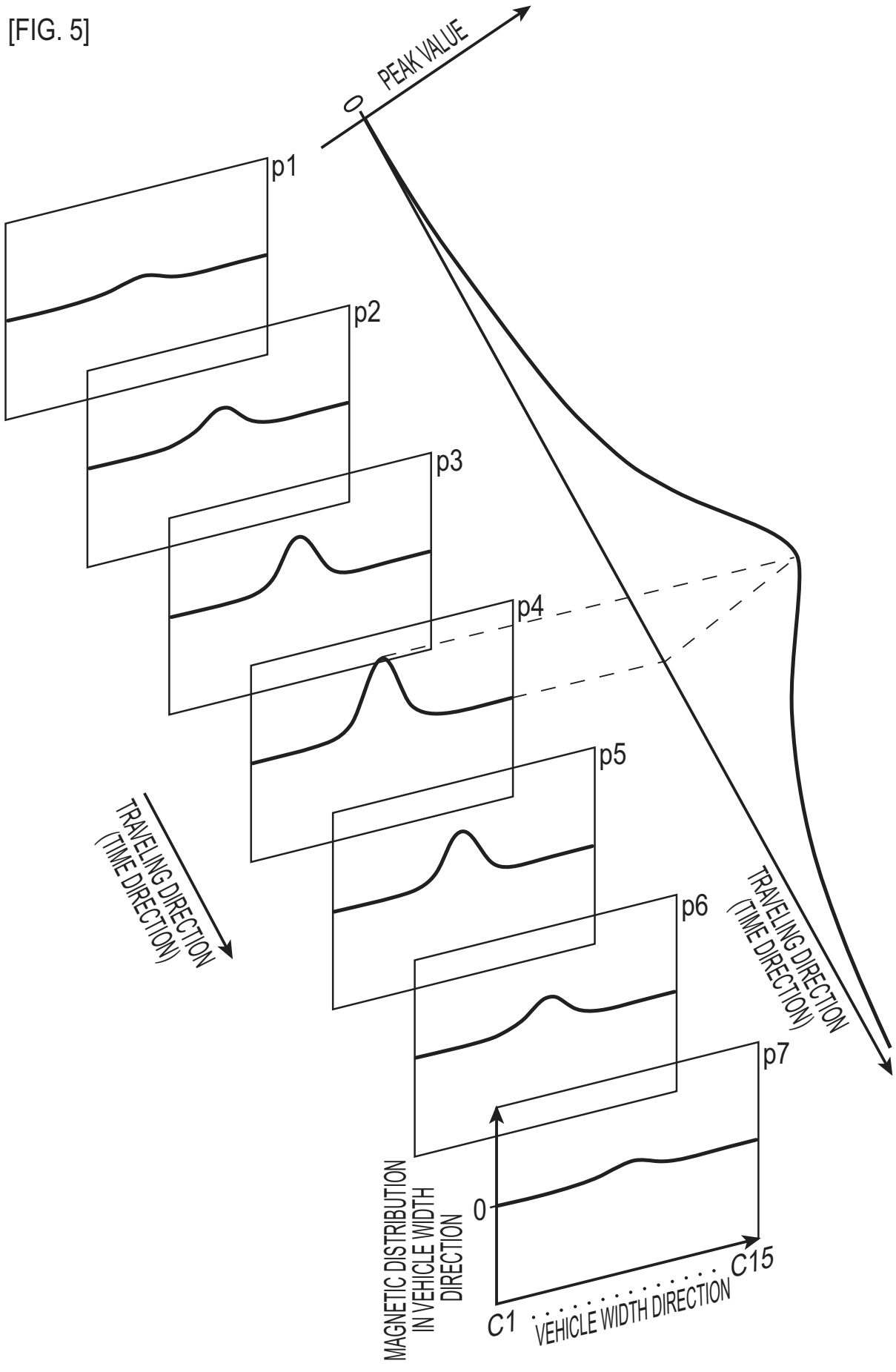
[FIG. 3]


1
11
C1
C2
C3
C4
C5
C13
C14
C15
DETECTION PROCESSING CIRCUIT
110
12
CONTROL UNIT

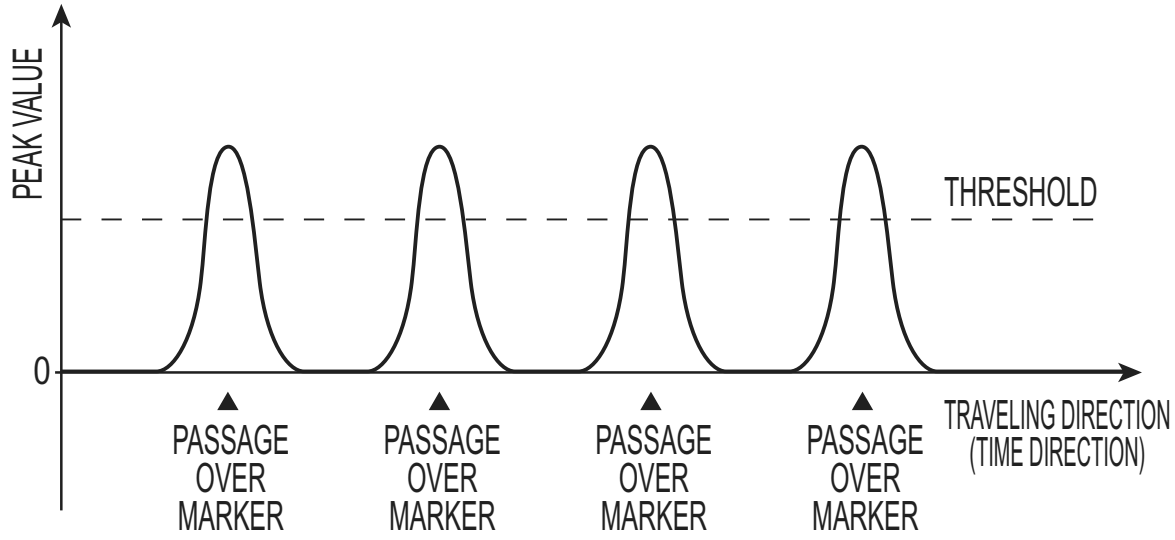
[FIG. 4]


POWER SUPPLY
231
23
Cn
PULSE GENERATOR
25
251
253
SYNCHRONOUS DETECTION
AMPLIFIER
OUTPUT
21
211
213
GROUND

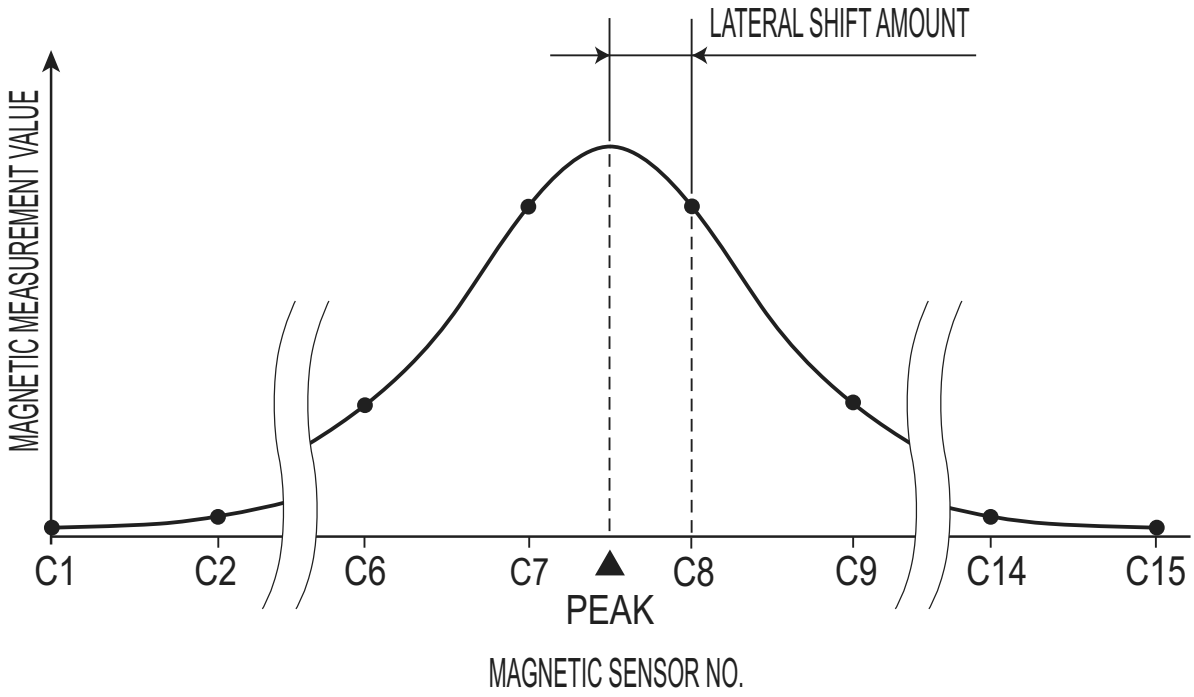
[FIG. 5]


PEAK VALUE
0
p1
p2
p3
p4
p5
p6
p7
TRAVELING DIRECTION
(TIME DIRECTION)
TRAVELING DIRECTION
(TIME DIRECTION)
MAGNETIC DISTRIBUTION
IN VEHICLE WIDTH
DIRECTION
0
C1
VEHICLE WIDTH DIRECTION
C15

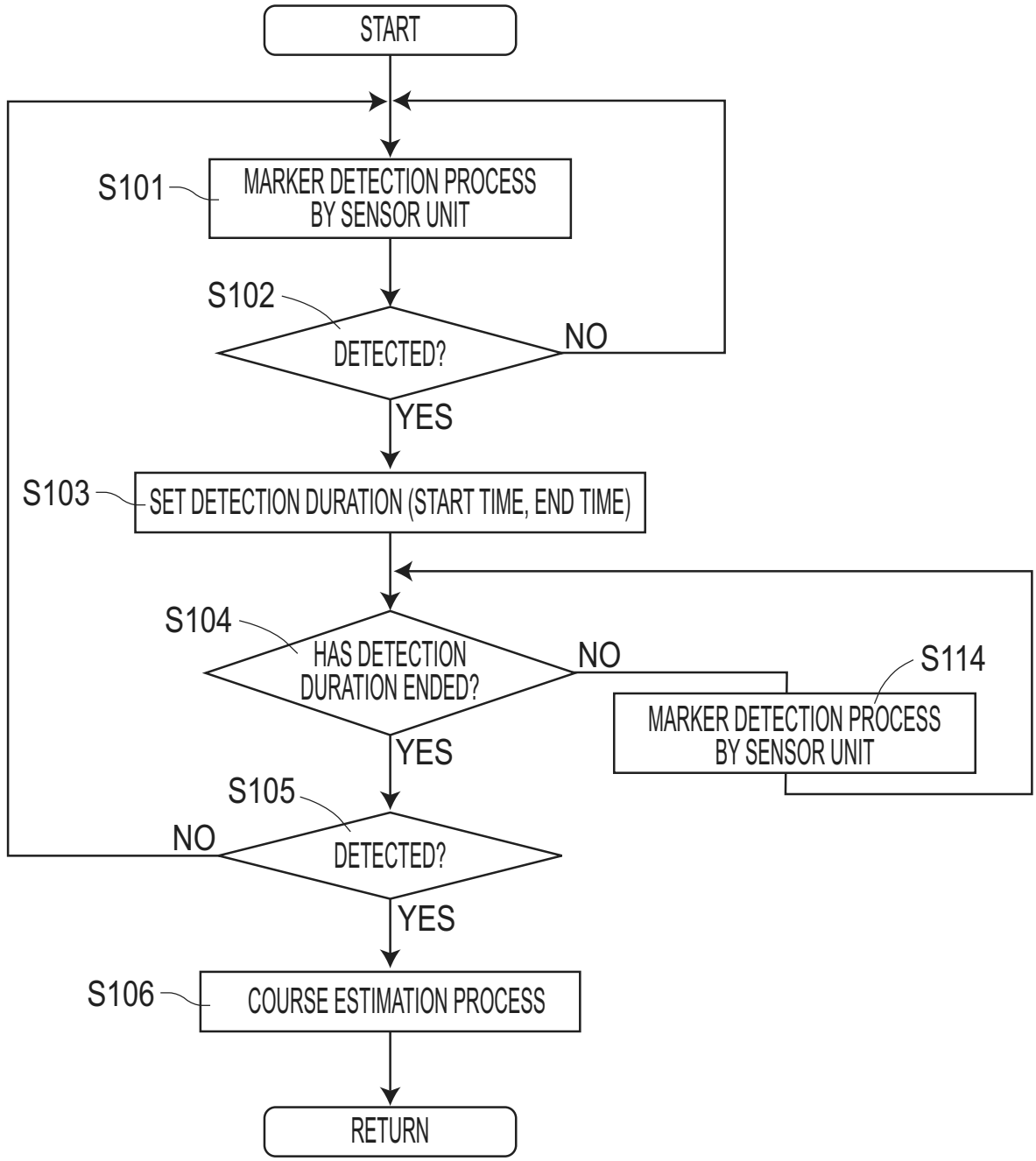
[FIG. 6]


PEAK VALUE
THRESHOLD
0
PASSAGE OVER MARKER
PASSAGE OVER MARKER
PASSAGE OVER MARKER
PASSAGE OVER MARKER
TRAVELING DIRECTION (TIME DIRECTION)

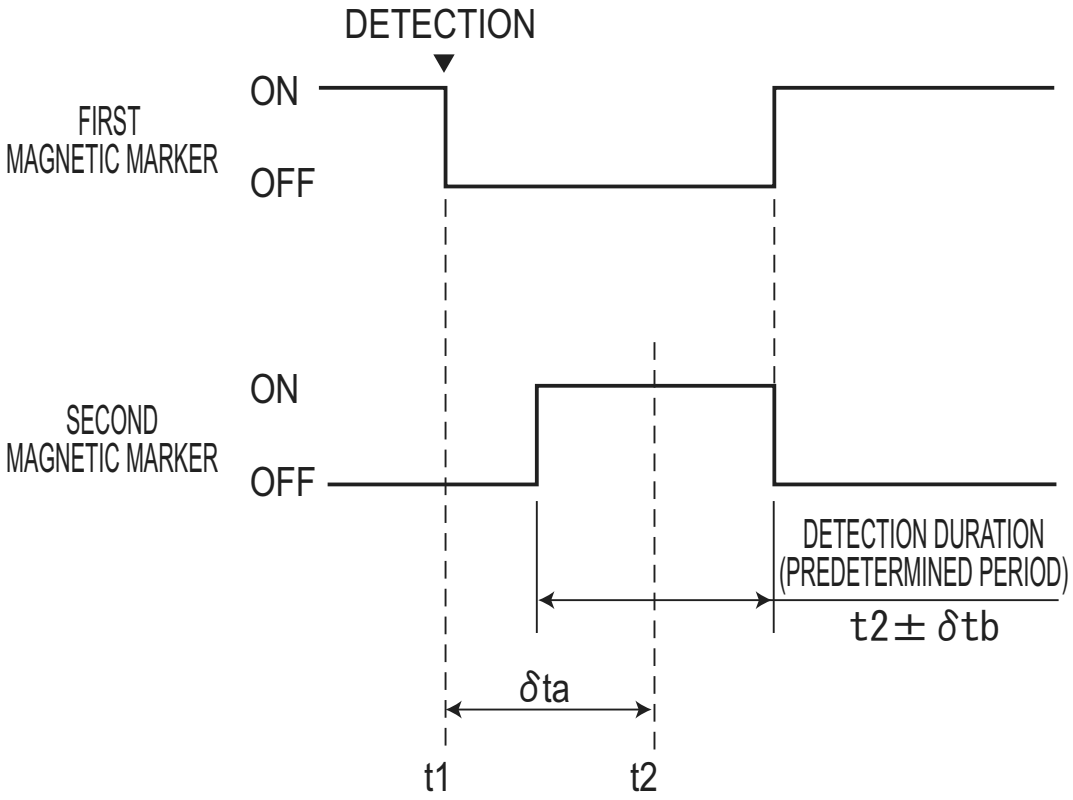
[FIG. 7]


LATERAL SHIFT AMOUNT
MAGNETIC MEASUREMENT VALUE
C1
C2
C6
C7
C8
C9
C14
C15
PEAK
MAGNETIC SENSOR NO.

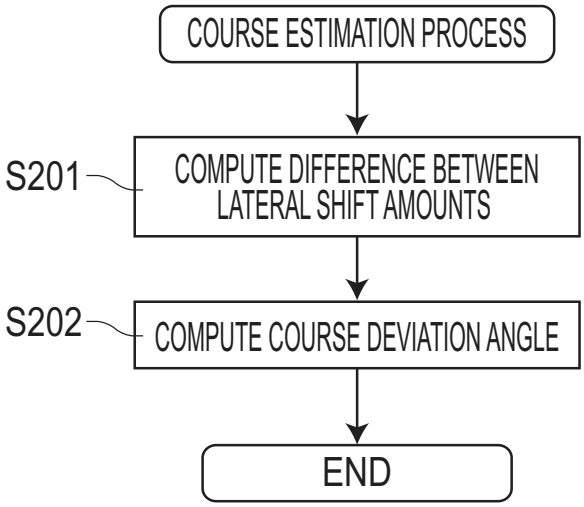
[FIG. 8]


START
S101
MARKER DETECTION PROCESS BY SENSOR UNIT
S102
DETECTED?
NO
YES
S103
SET DETECTION DURATION (START TIME, END TIME)
S104
HAS DETECTION DURATION ENDED?
NO
S114
MARKER DETECTION PROCESS BY SENSOR UNIT
YES
S105
DETECTED?
NO
YES
S106
COURSE ESTIMATION PROCESS
RETURN

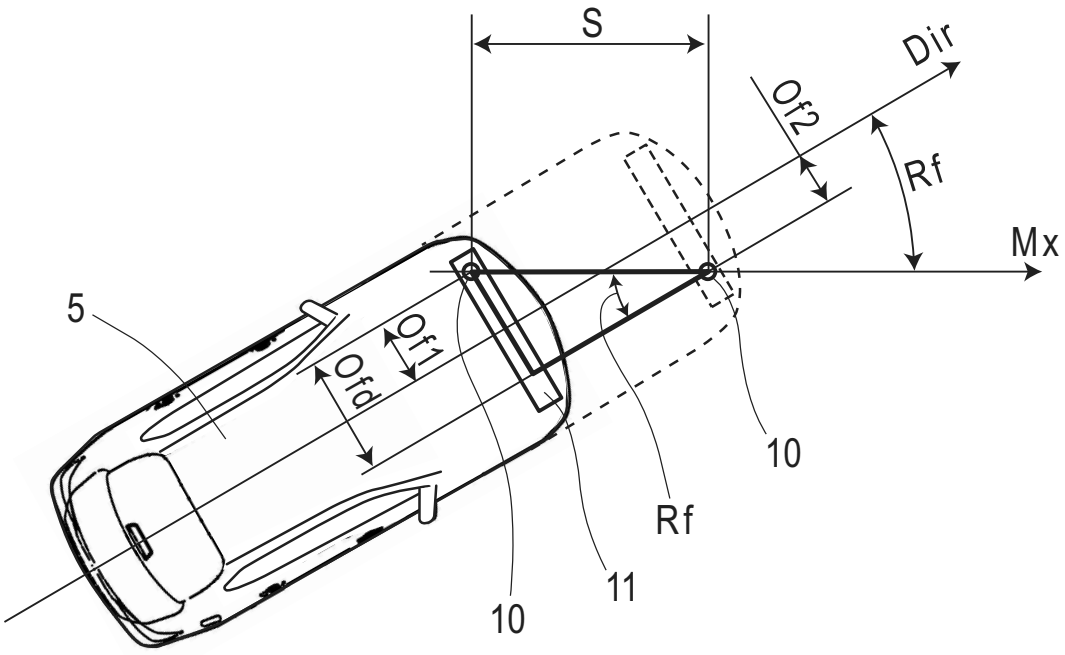
[FIG. 9]


DETECTION
FIRST
MAGNETIC MARKER
ON
OFF
SECOND
MAGNETIC MARKER
ON
OFF
DETECTION DURATION
(PREDETERMINED PERIOD)
t2± δtb
δta
t1
t2

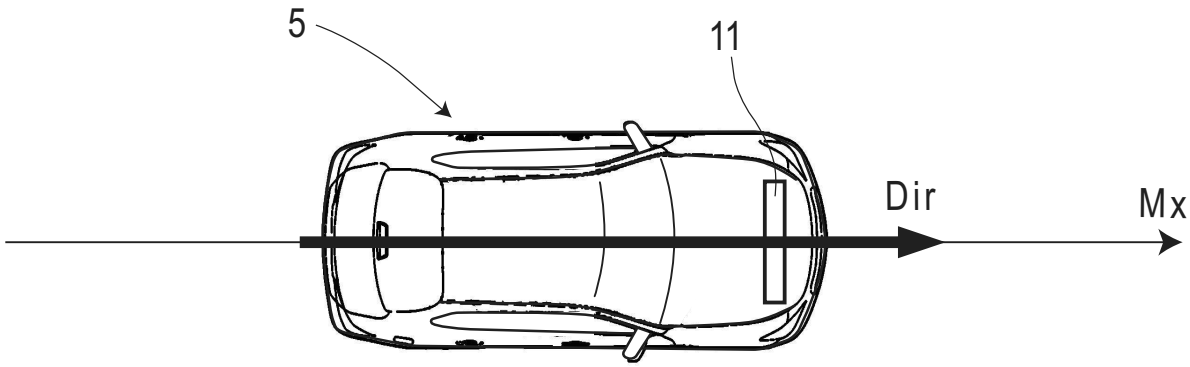
[FIG. 10]


COURSE ESTIMATION PROCESS
S201
COMPUTE DIFFERENCE BETWEEN LATERAL SHIFT AMOUNTS
S202
COMPUTE COURSE DEVIATION ANGLE
END

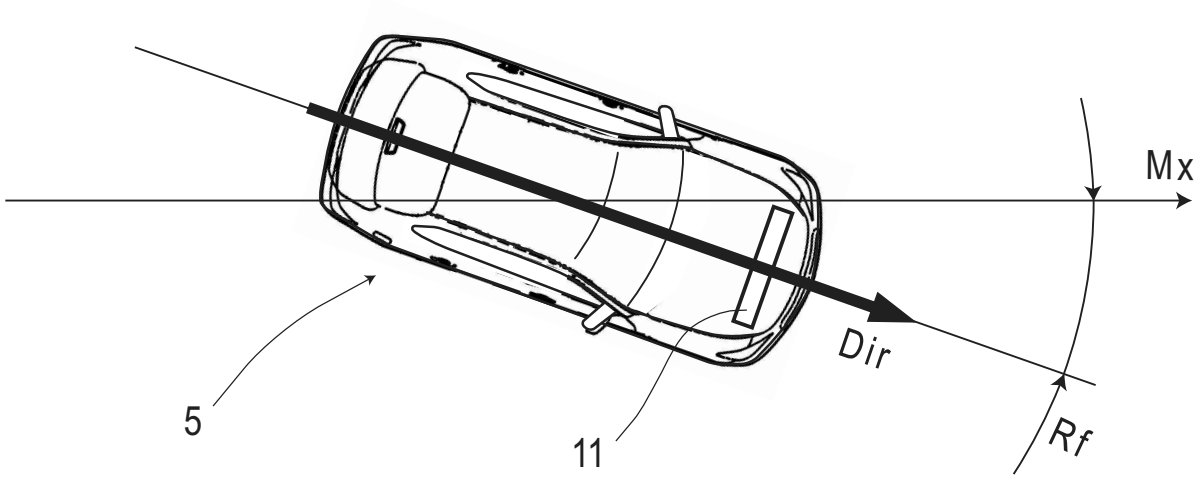
[FIG. 11]



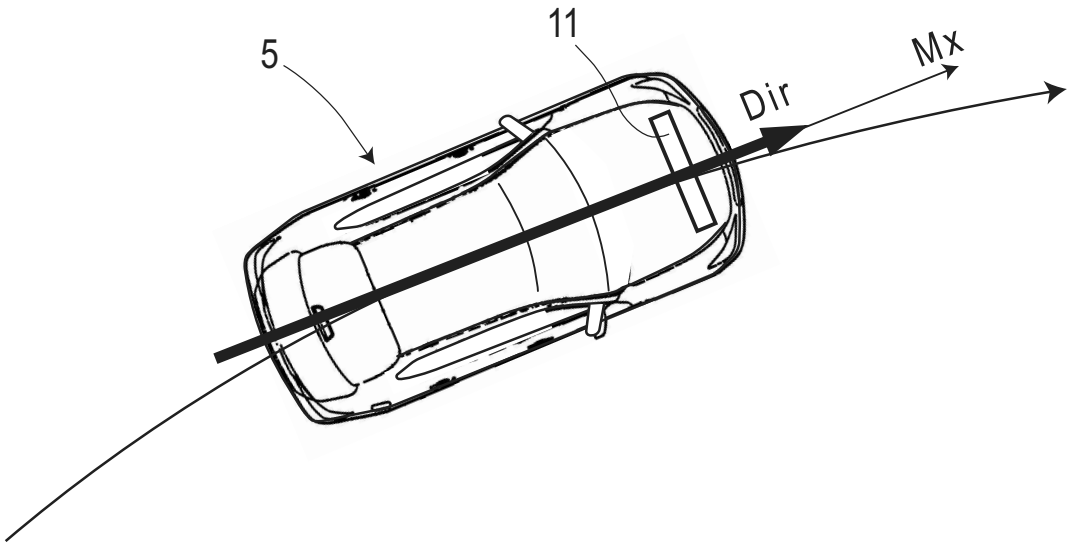
[FIG. 12]



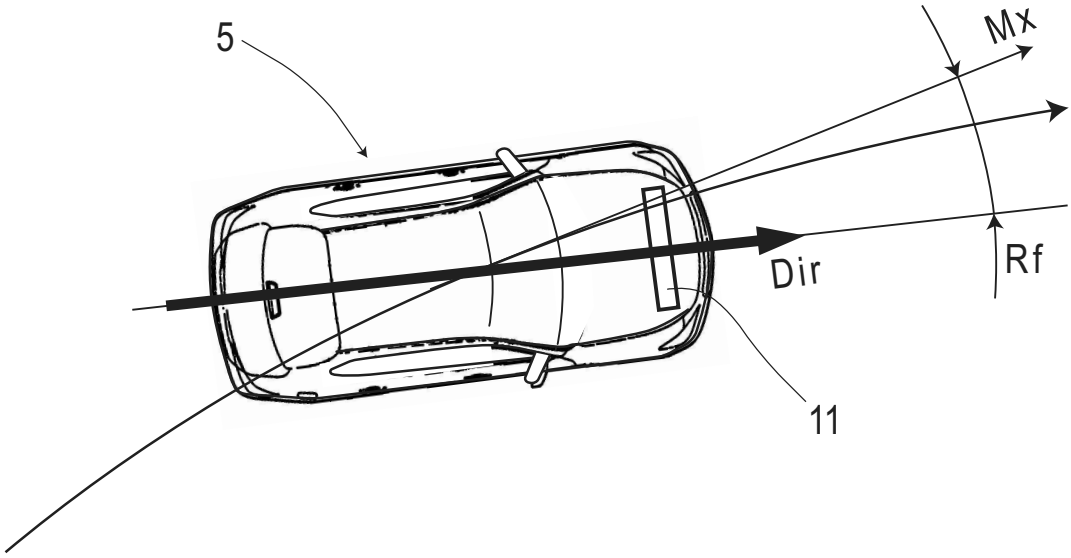
[FIG. 13]



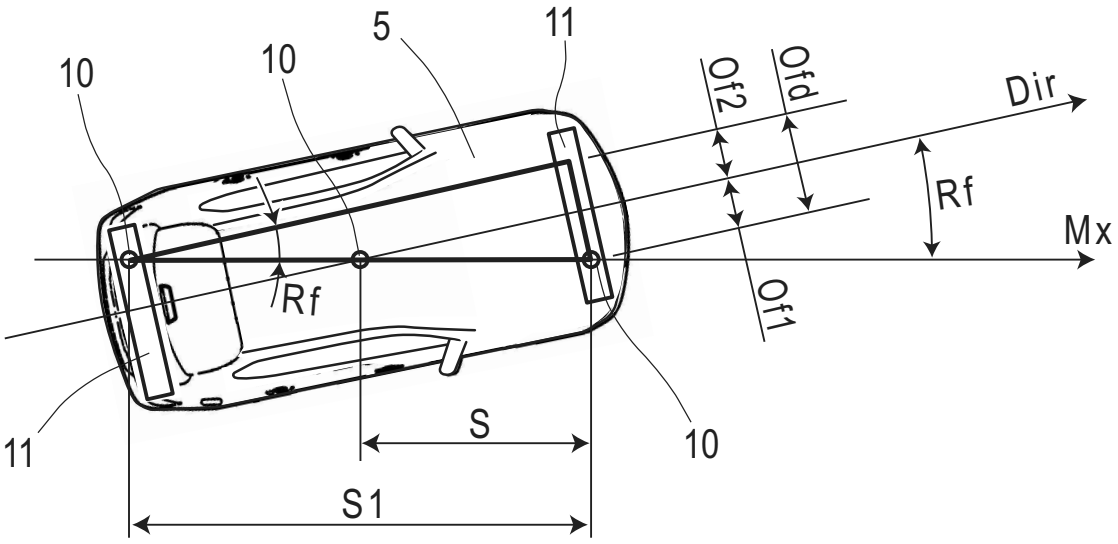
[FIG. 14]



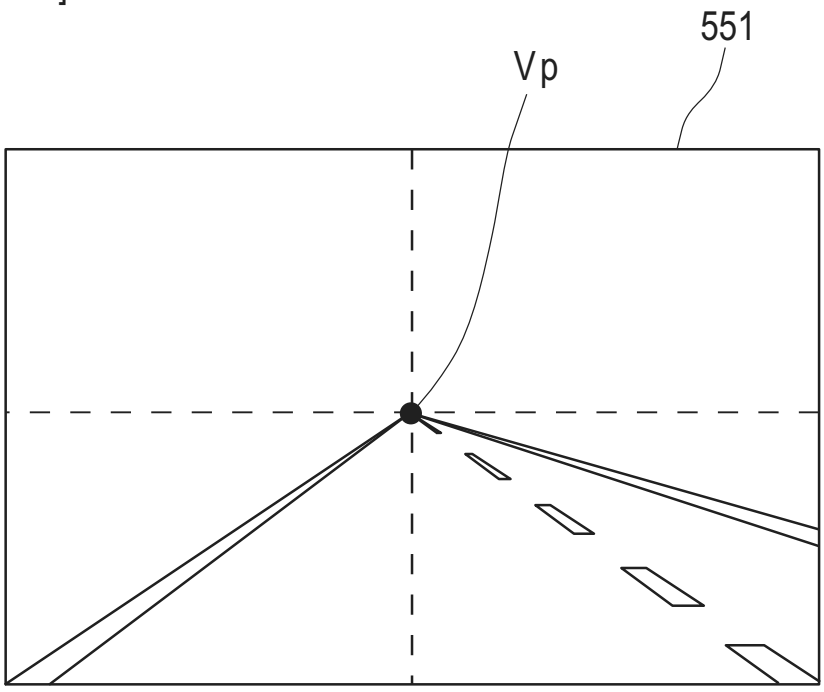
[FIG. 15]



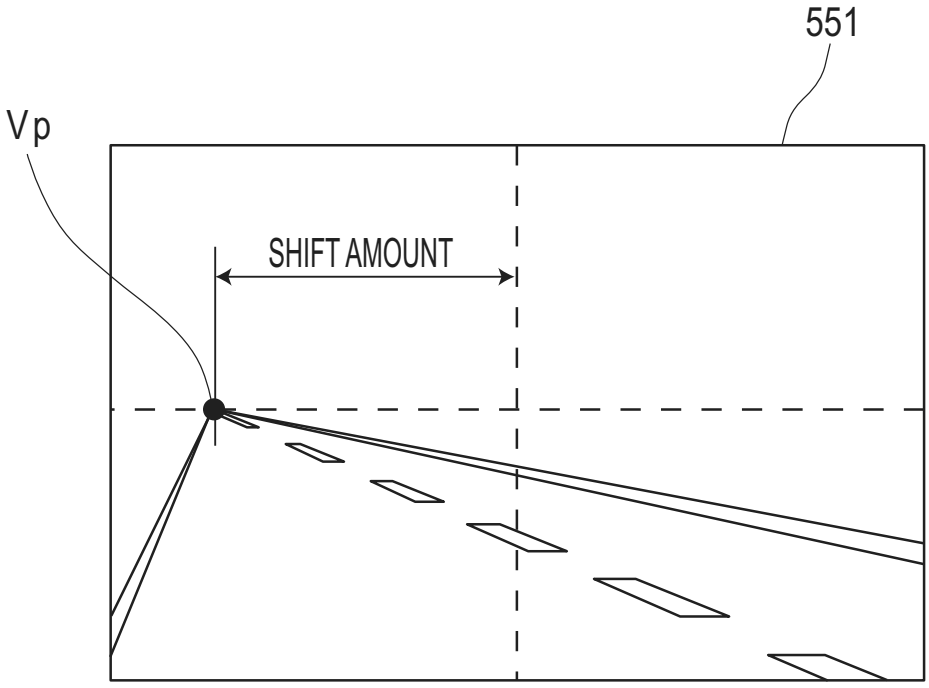
[FIG. 16]



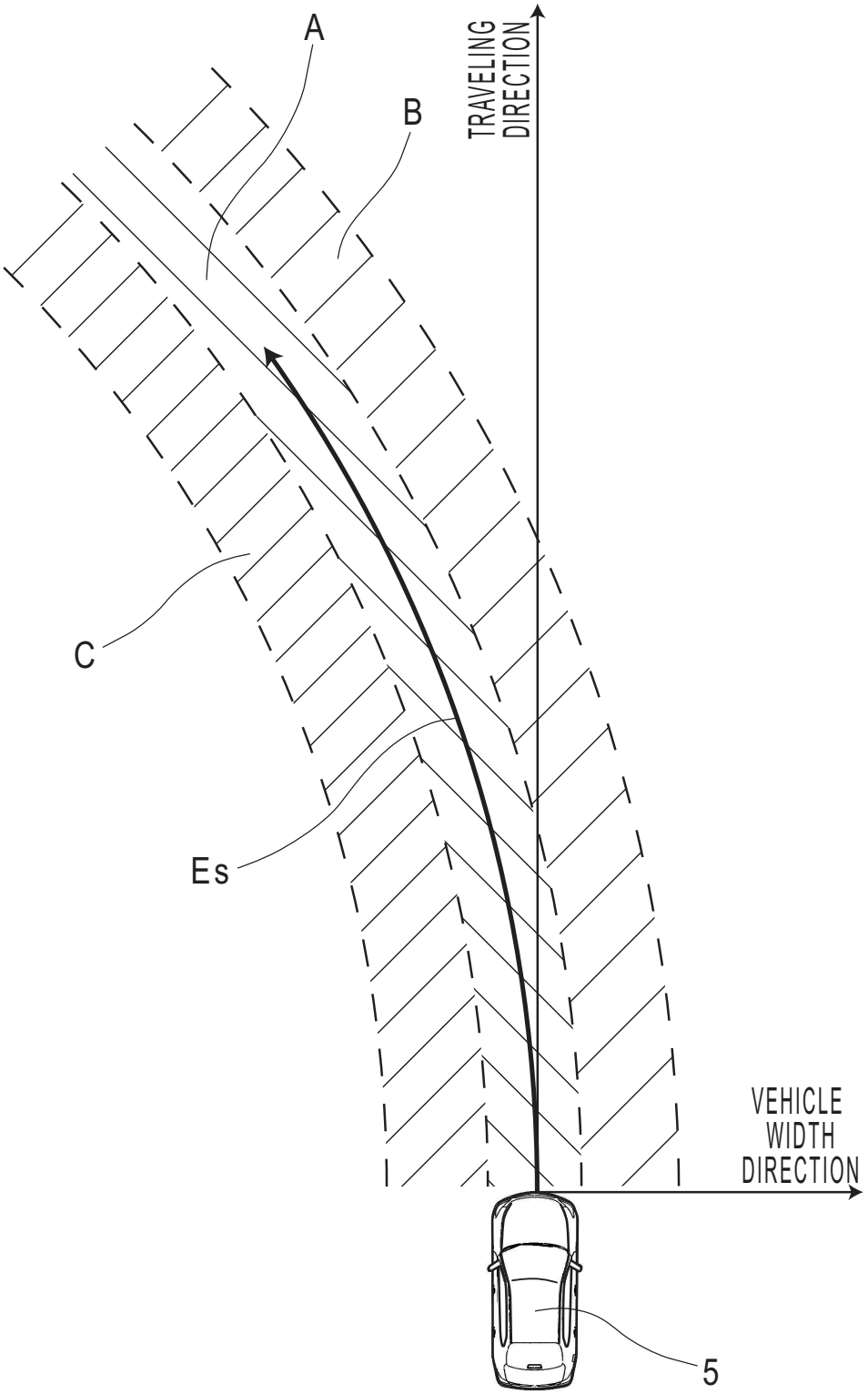
[FIG. 17]



[FIG. 18]



[FIG. 19]



[FIG. 20]

