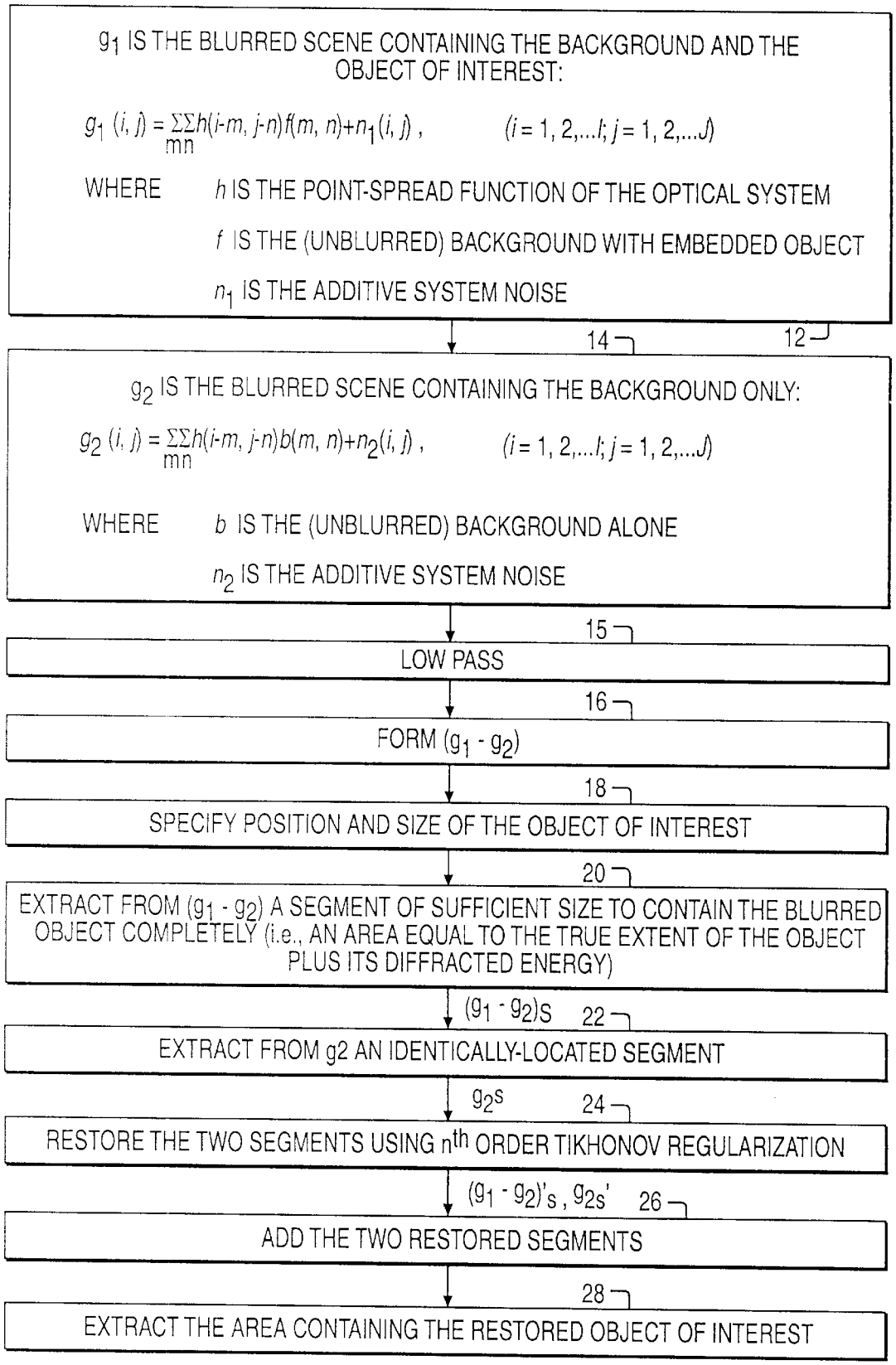
g_1 IS THE BLURRED SCENE CONTAINING THE BACKGROUND AND THE OBJECT OF INTEREST:
$g_1(i, j) = \sum_m \sum_n h(i-m, j-n) f(m, n) + n_1(i, j)$, $(i = 1, 2, \ldots I; j = 1, 2, \ldots J)$
WHERE h IS THE POINT-SPREAD FUNCTION OF THE OPTICAL SYSTEM
f IS THE (UNBLURRED) BACKGROUND WITH EMBEDDED OBJECT
n_1 IS THE ADDITIVE SYSTEM NOISE
12
14
g_2 IS THE BLURRED SCENE CONTAINING THE BACKGROUND ONLY:
$g_2(i, j) = \sum_m \sum_n h(i-m, j-n) b(m, n) + n_2(i, j)$, $(i = 1, 2, \ldots I; j = 1, 2, \ldots J)$
WHERE b IS THE (UNBLURRED) BACKGROUND ALONE
n_2 IS THE ADDITIVE SYSTEM NOISE
15
LOW PASS
16
FORM $(g_1 - g_2)$
18
SPECIFY POSITION AND SIZE OF THE OBJECT OF INTEREST
20
EXTRACT FROM $(g_1 - g_2)$ A SEGMENT OF SUFFICIENT SIZE TO CONTAIN THE BLURRED OBJECT COMPLETELY (i.e., AN AREA EQUAL TO THE TRUE EXTENT OF THE OBJECT PLUS ITS DIFFRACTED ENERGY)
$(g_1 - g_2)_S$
22
EXTRACT FROM g2 AN IDENTICALLY-LOCATED SEGMENT
g_{2S}
24
RESTORE THE TWO SEGMENTS USING n^{th} ORDER TIKHONOV REGULARIZATION
$(g_1 - g_2)'_S$, g_{2S}'
26
ADD THE TWO RESTORED SEGMENTS
28
EXTRACT THE AREA CONTAINING THE RESTORED OBJECT OF INTEREST

FIG. 19