

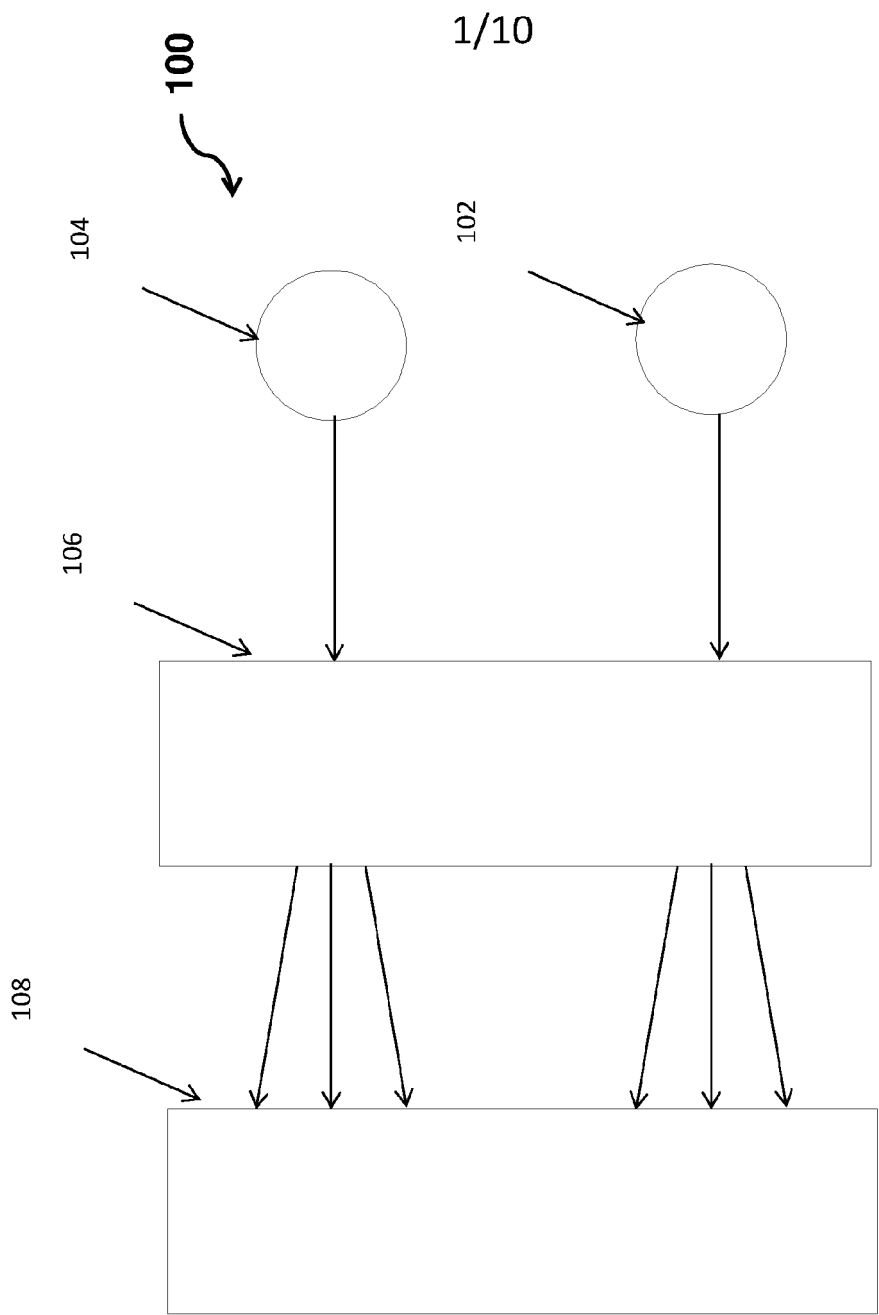


Figure 1

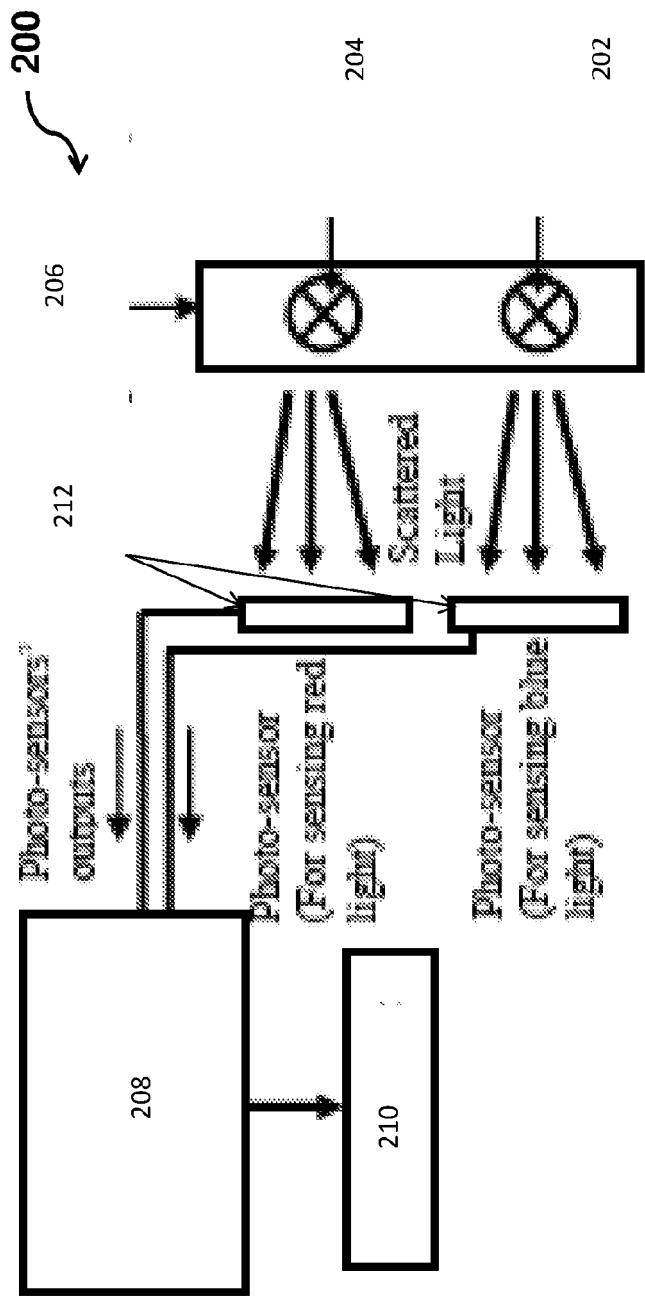


Figure 2

300

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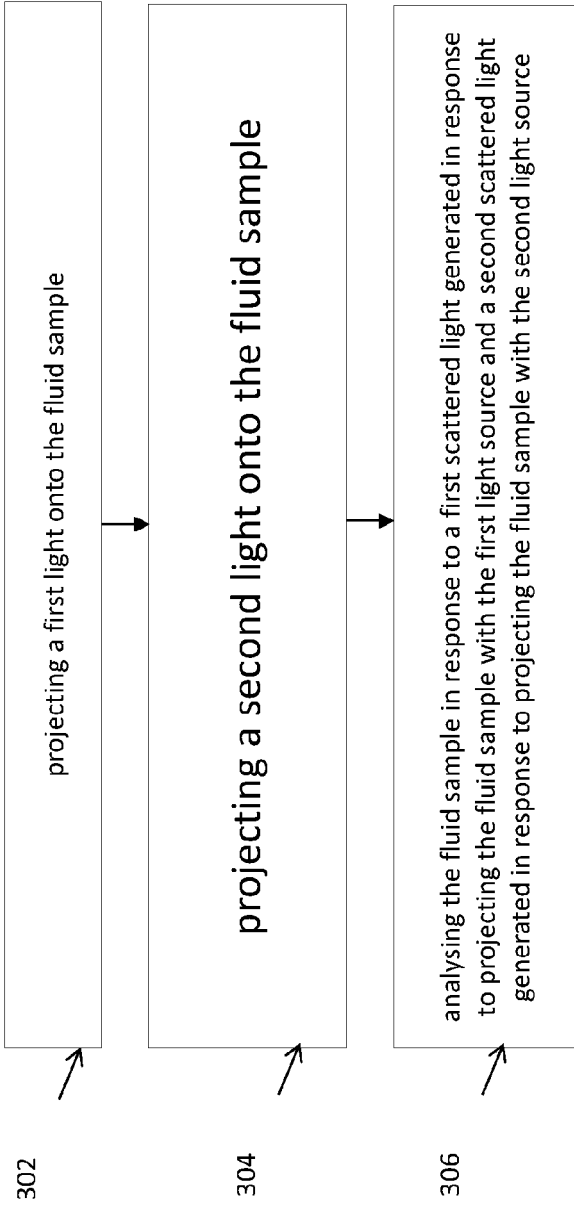


FIGURE 3

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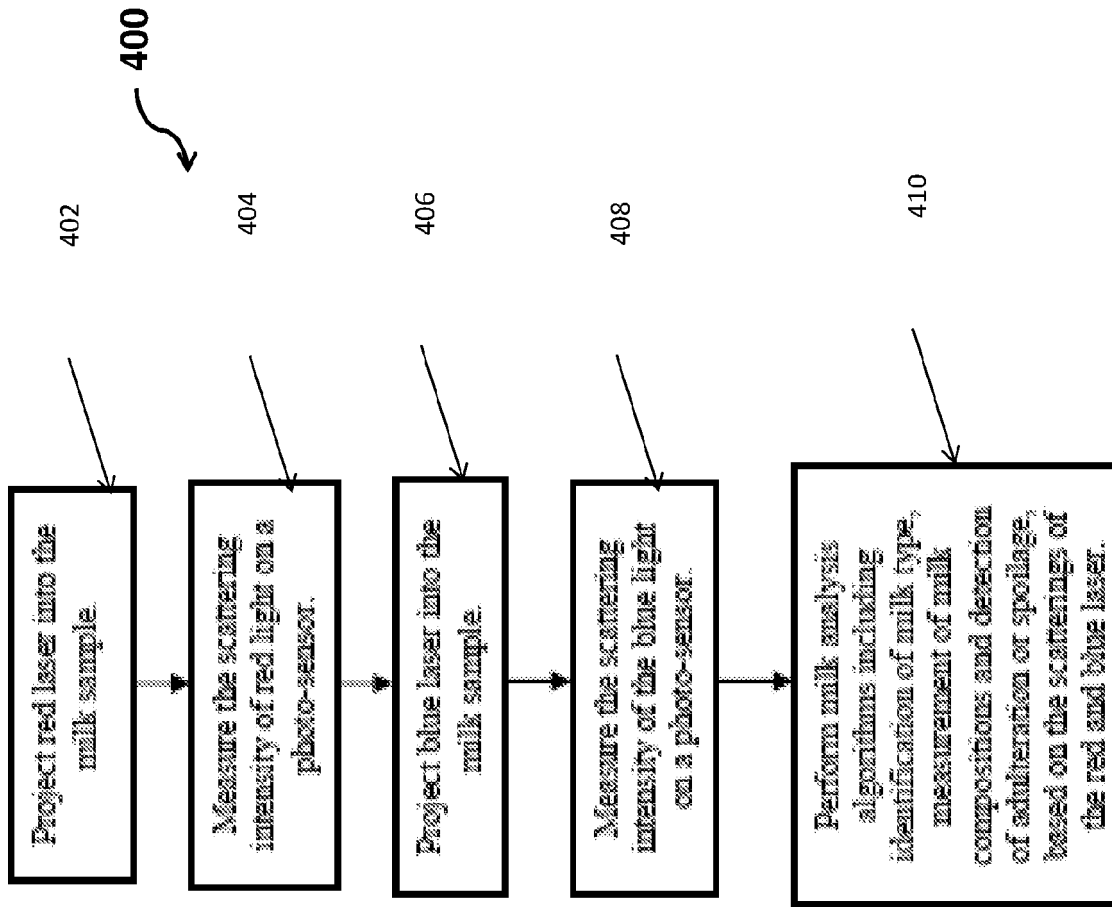


Figure 4

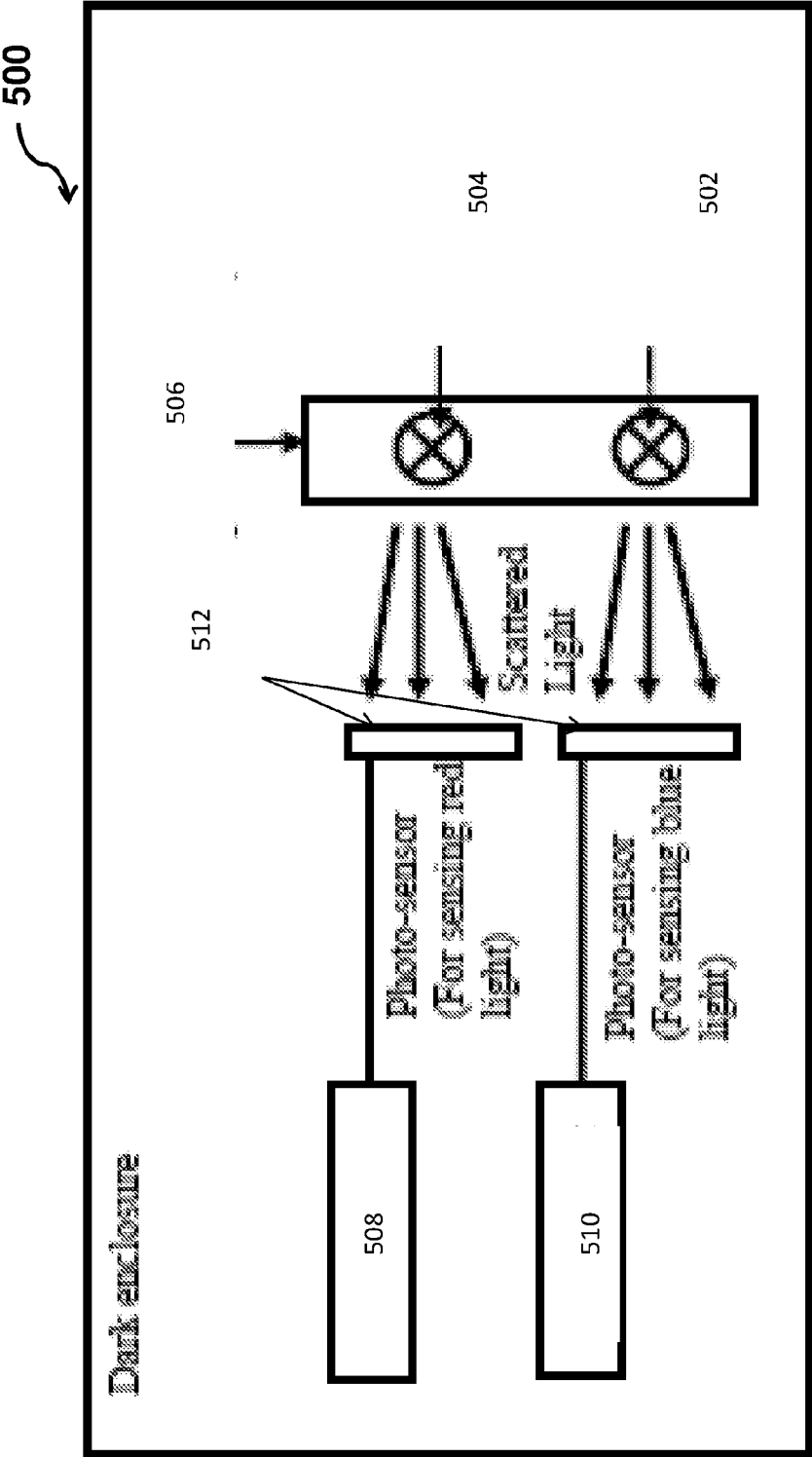


Figure 5

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Sample Label	Fat Conc. (mg/20 ml)	Protein Conc. (mg/20ml)	Milk Type	*Red Light Scattering, R_s (μA)	*Blue Light Scattering, R_b (μA)
SF1	1.90	1.60	Full Fat	0.0904	1.1283
SF2	3.80	3.20	Full Fat	0.1686	2.1746
SF3	1.85	2.00	Full Fat	0.0967	1.0976
SF4	2.78	3.00	Full Fat	0.1350	1.5865
SF5	3.70	4.00	Full Fat	0.1696	1.9772
SF6	7.40	8.00	Full Fat	0.3118	3.6967
SF7	1.90	1.60	Full Fat	0.0808	0.9784
SF8	2.85	2.40	Full Fat	0.1346	1.6067
SF9	3.80	3.20	Full Fat	0.1716	2.0820
SF10	1.80	1.75	Full Fat	0.0896	1.0895
SF11	2.70	2.63	Full Fat	0.1384	1.7155
SF12	3.60	3.50	Full Fat	0.1781	2.2370
SF13	5.40	5.25	Full Fat	0.2416	2.9991
SF14	2.05	1.65	Full Fat	0.1115	0.9967
SF15	4.10	3.30	Full Fat	0.1928	1.8993
SF16	8.20	6.60	Full Fat	0.3309	3.5129
SF17	1.70	1.60	Full Fat	0.0864	0.9121
SF18	3.40	3.20	Full Fat	0.1648	1.9072
SF19	5.10	4.80	Full Fat	0.2127	2.6428
SF20	1.75	1.50	Full Fat	0.0876	0.9196
SF21	3.50	3.00	Full Fat	0.1514	1.6793
SF22	5.25	4.50	Full Fat	0.2195	2.5116
SL1	0.75	1.75	Low Fat	0.0337	0.5422
SL2	1.13	2.63	Low Fat	0.0485	0.7283
SL3	2.25	5.25	Low Fat	0.0894	1.3650
SL4	3.00	7.00	Low Fat	0.1232	1.7291
SL5	0.65	2.00	Low Fat	0.0293	0.3944
SL6	1.30	4.00	Low Fat	0.0595	0.8033
SL7	1.95	6.00	Low Fat	0.0959	1.2897
SK1	0.05	1.95	Skimmed	0.0028	0.1194
SK2	0.10	3.90	Skimmed	0.0116	0.4228
SK3	0.15	5.85	Skimmed	0.0136	0.5350

Figure 6

* Current output of the photo-sensors for sensing the scattering of the respective lights.

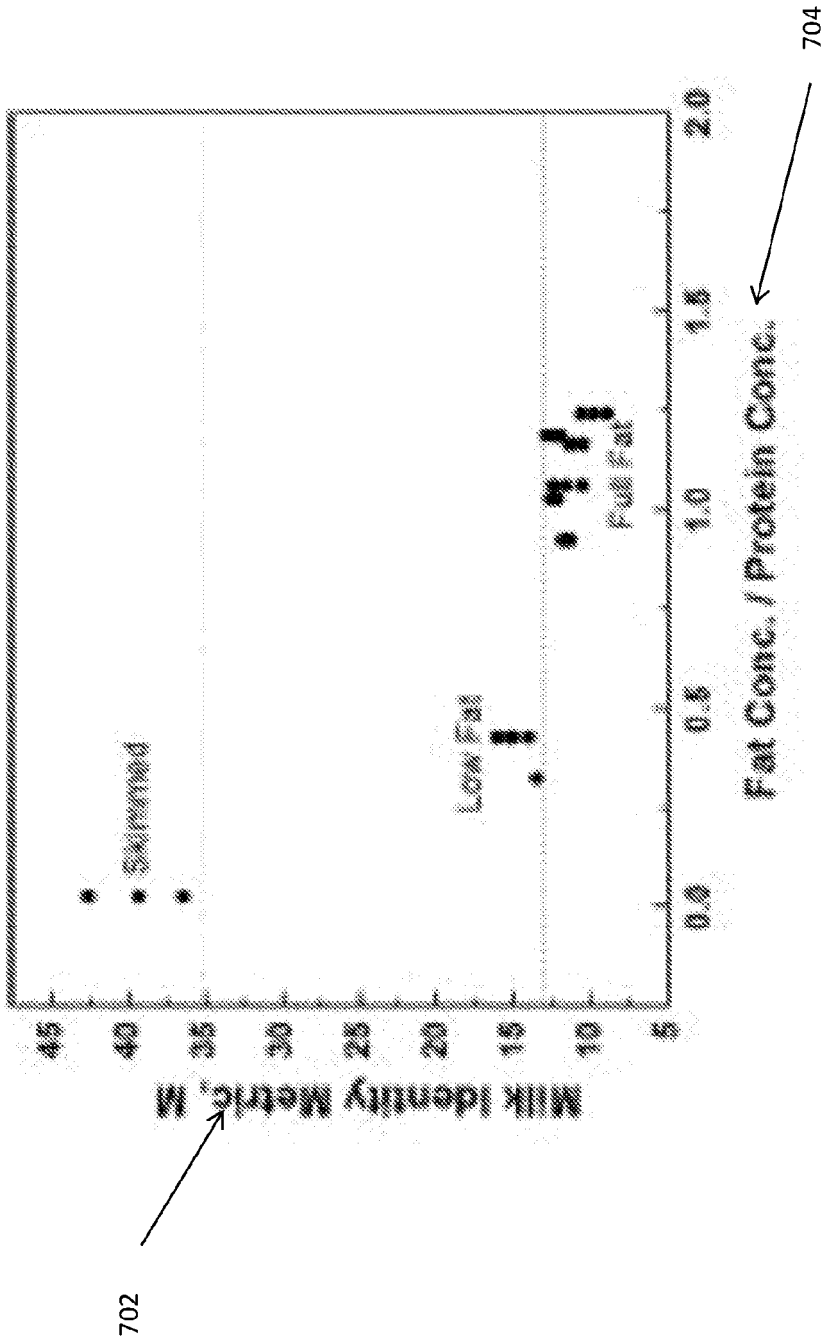


Figure7

Milk Types	Calibration equations
Full-fat	$R_s = 0.0385 X_F + 0.0246$
	$B_s = 0.00237 X_F^2 + 0.4437 X_F + 0.3845$
Low-fat	$R_s = 0.0402 X_F + 0.0051$
	$B_s = 0.07355 X_F^2 + 0.1283 X_F + 0.2251$
Skimmed	$R_s = 0.108 X_F - 0.001$
	$B_s = -38.27 X_F^2 + 0.303 X_F - 0.375$

Figure 8

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Sample Label	Computed Fat Conc. (mg/20 ml)	Fat Computation Error (%)	Computed Protein Conc. (mg/20ml)	Protein Computation Error (%)
SF1	1.71	-10.0	1.66	3.8
SF2	3.74	-1.6	3.66	23.7
SF3	1.87	1.2	1.99	-20.8
SF4	2.87	3.3	2.87	-11.2
SF5	3.77	1.8	3.31	-12.2
SF6	7.46	0.8	7.17	-10.4
SF7	1.46	-23.2	1.33	-17.1
SF8	2.86	0.3	2.71	13.0
SF9	3.82	0.5	3.73	17.1
SF10	1.69	-6.2	1.57	-10.1
SF11	2.96	9.5	2.93	12.5
SF12	3.99	10.8	4.09	16.9
SF13	5.64	4.4	5.72	9.8
SF14	2.26	10.1	1.35	-18.0
SF15	4.37	6.6	3.31	0.4
SF16	7.96	-3.0	6.71	1.7
SF17	1.61	-5.6	1.18	-26.5
SF18	3.64	7.1	3.36	5.0
SF19	4.89	-4.2	4.96	3.4
SF20	1.64	-6.5	1.19	-20.6
SF21	3.79	-5.9	2.88	-4.7
SF22	5.06	-3.6	4.66	3.5
SL1	0.71	-5.1	2.18	24.2
SL2	1.08	-4.0	3.25	24.0
SL3	2.10	-8.8	6.36	21.2
SL4	2.94	-2.1	6.72	-3.2
SL5	0.60	-7.4	1.11	-44.4
SL6	1.35	4.1	3.46	-13.6
SL7	2.26	15.8	5.37	-10.5
SK1	0.04	-20.6	1.79	-8.2
SK2	0.12	16.7	4.35	11.6
SK3	0.14	-9.9	5.31	-9.2

Figure 9

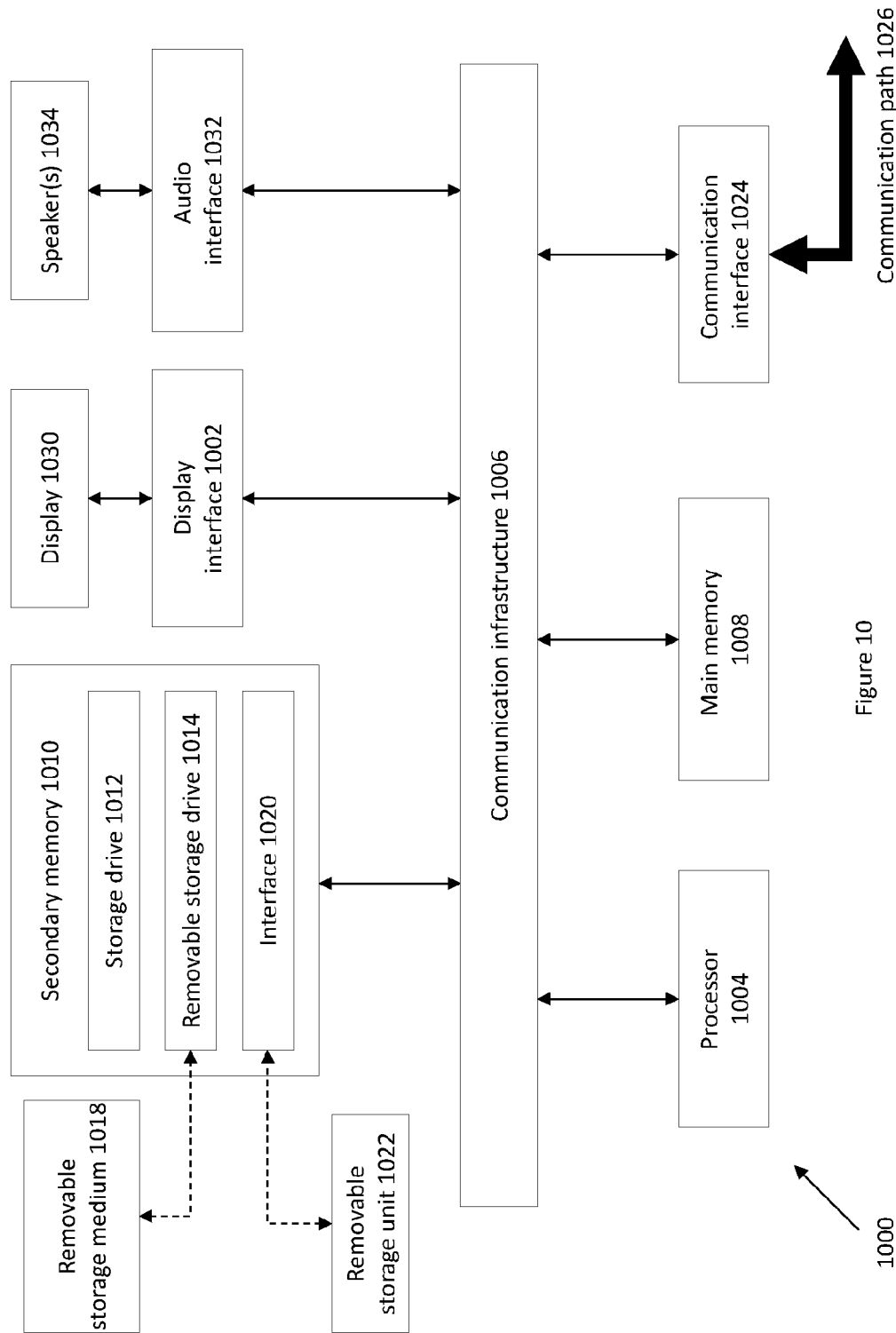


Figure 10