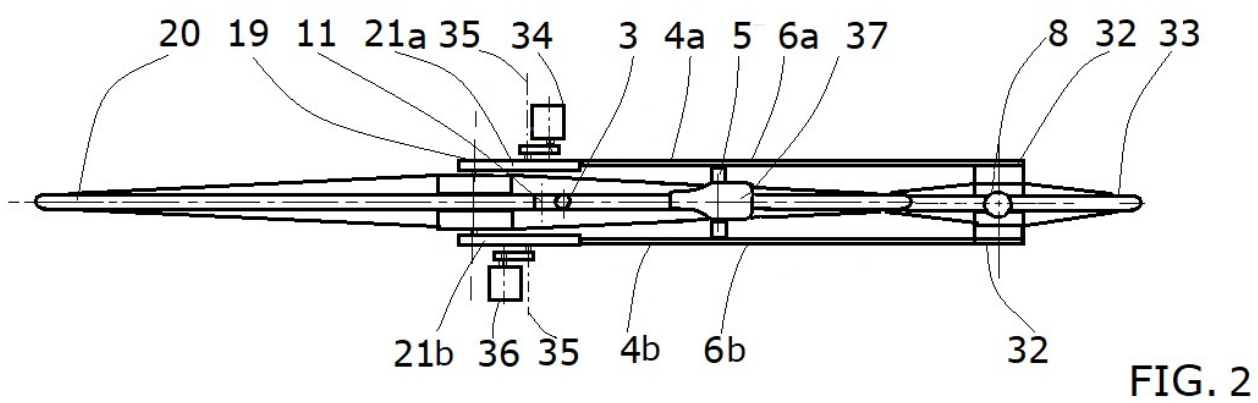
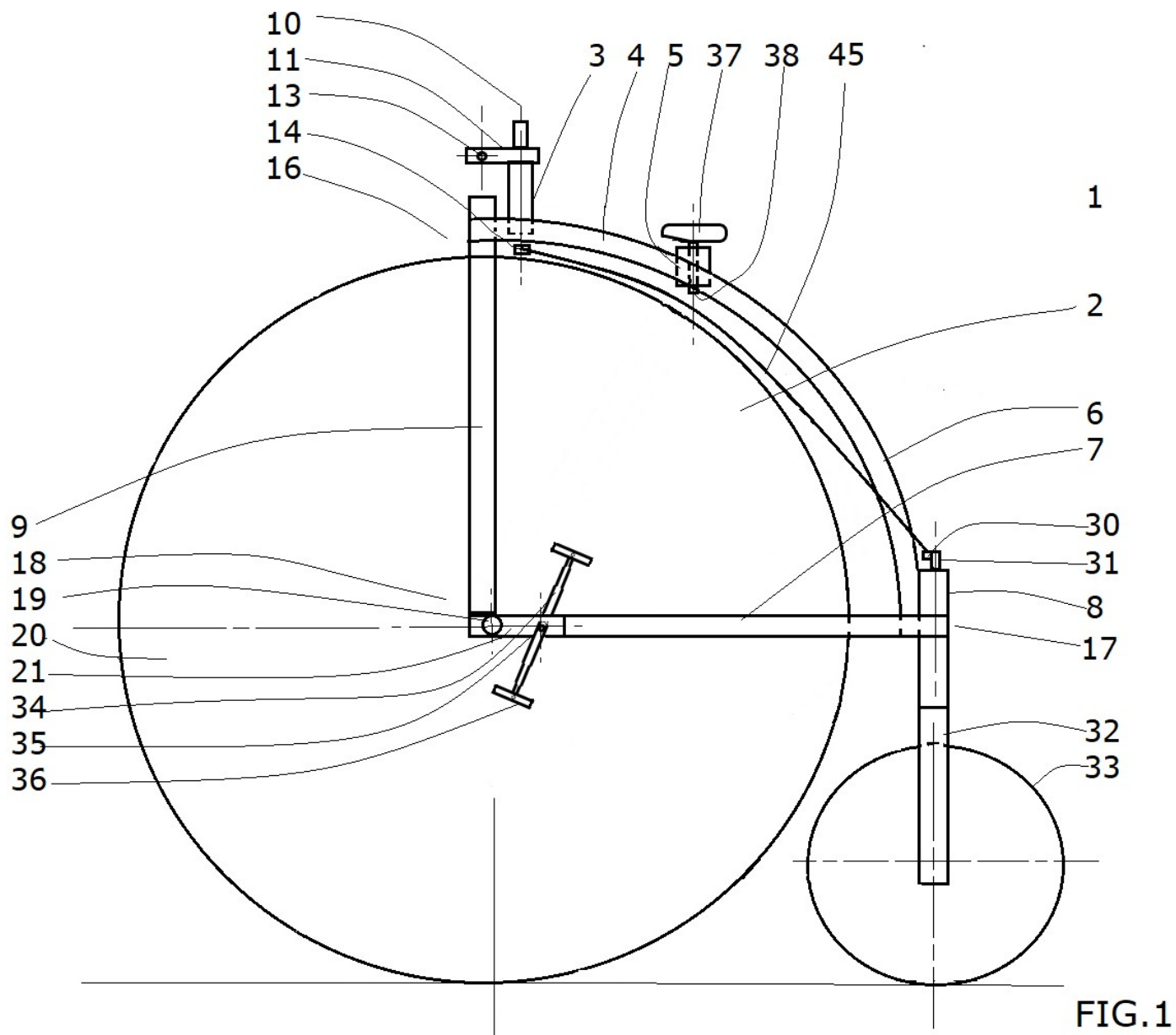
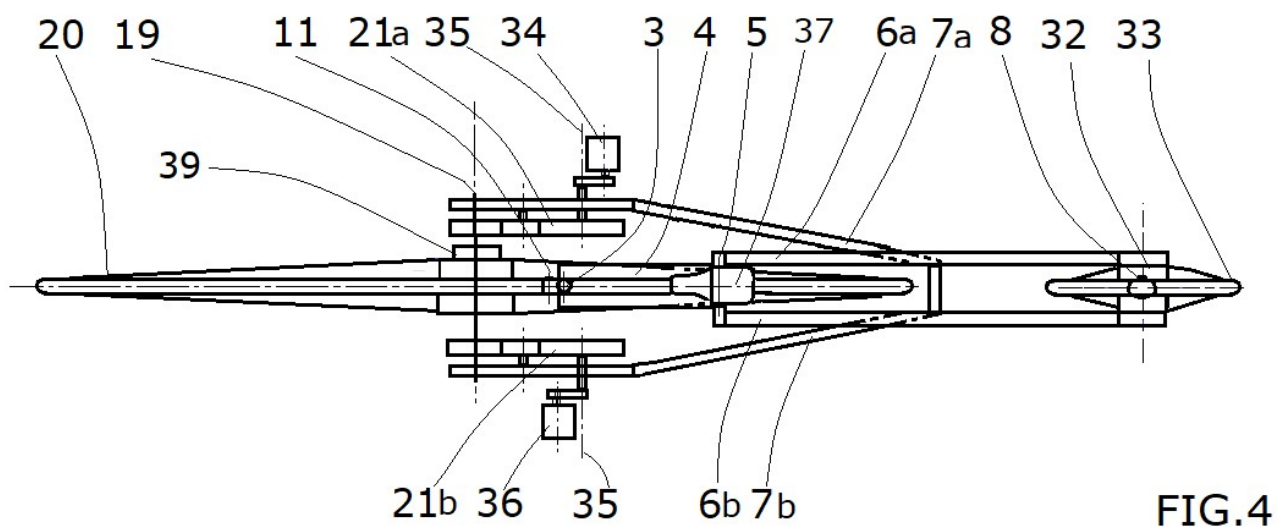
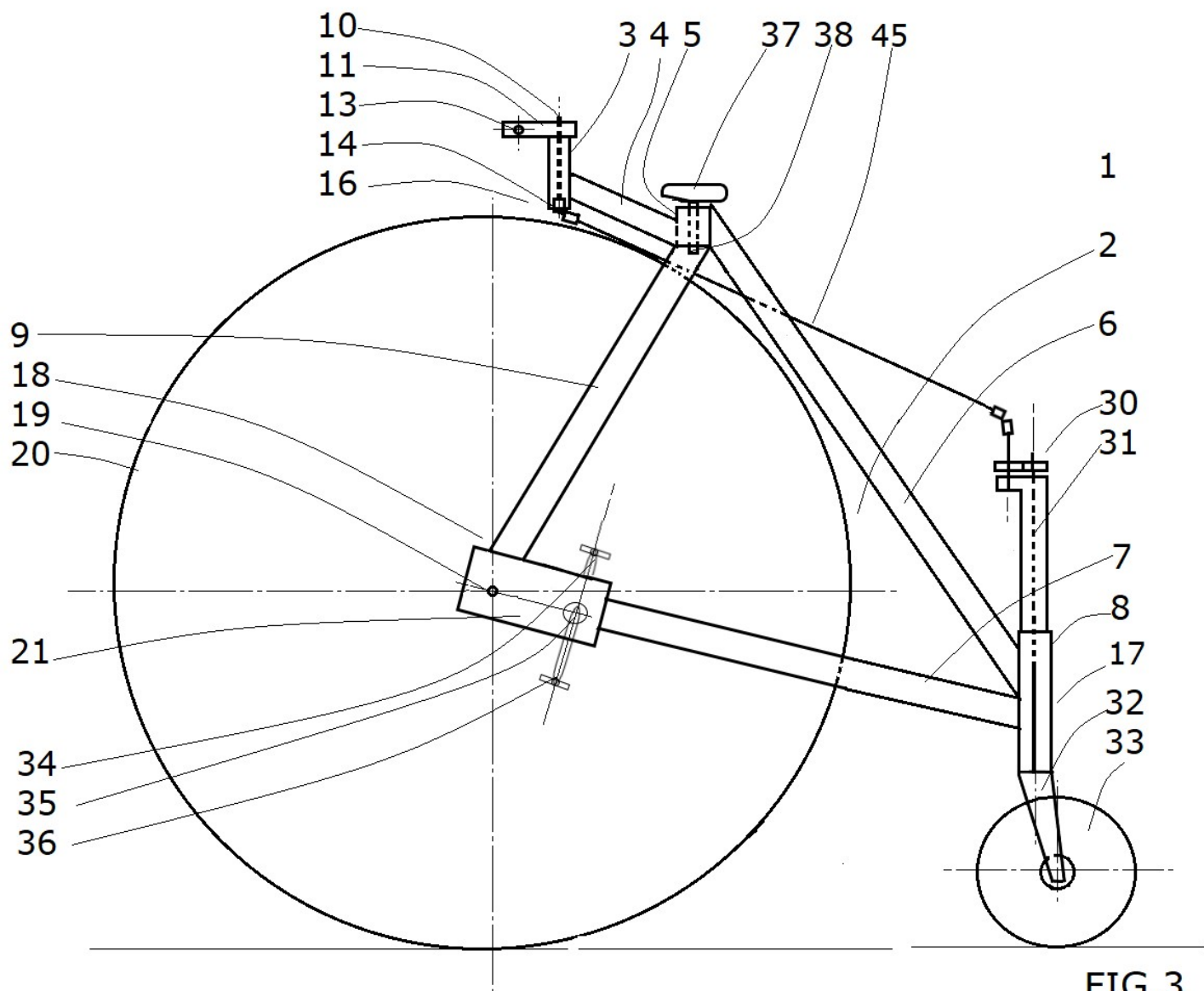
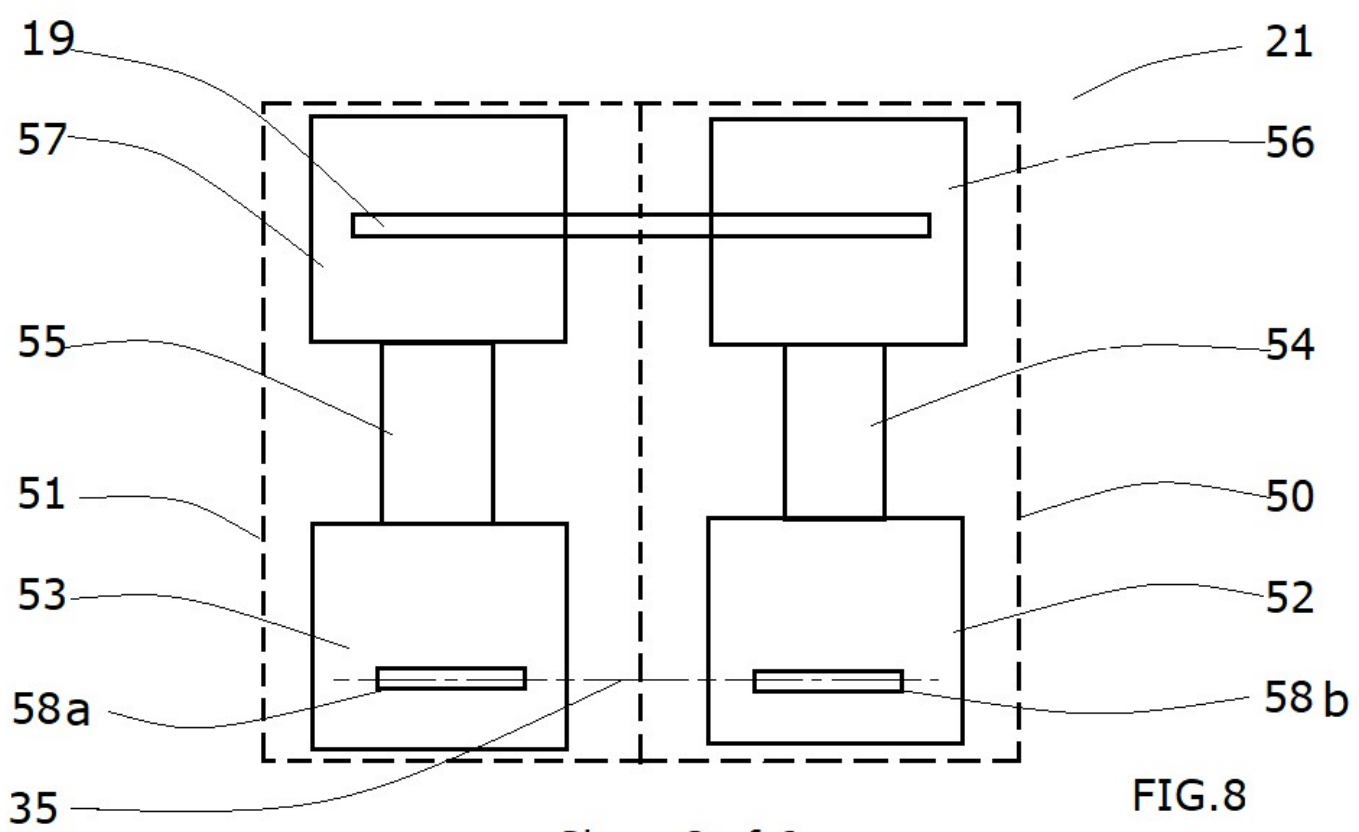
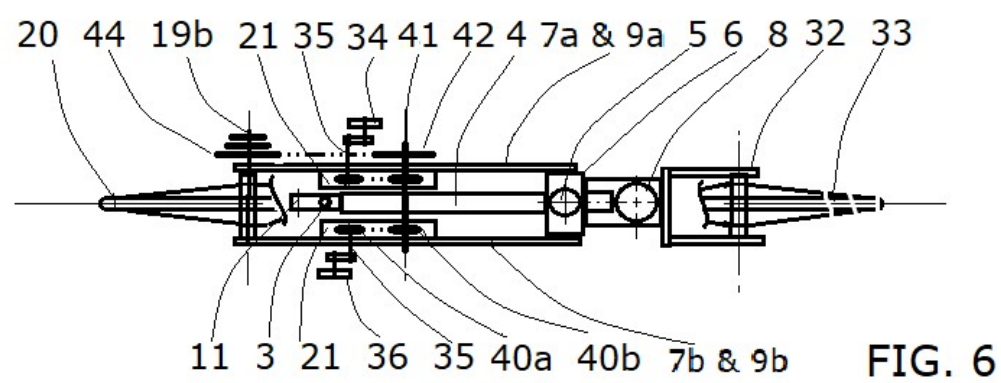
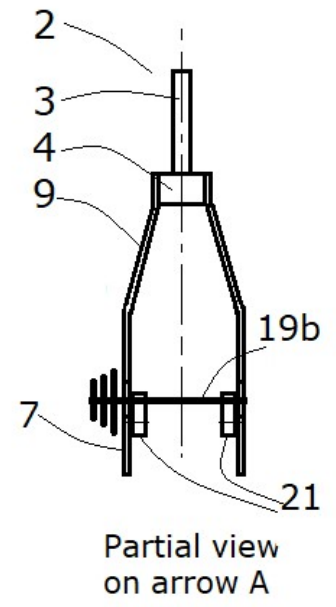
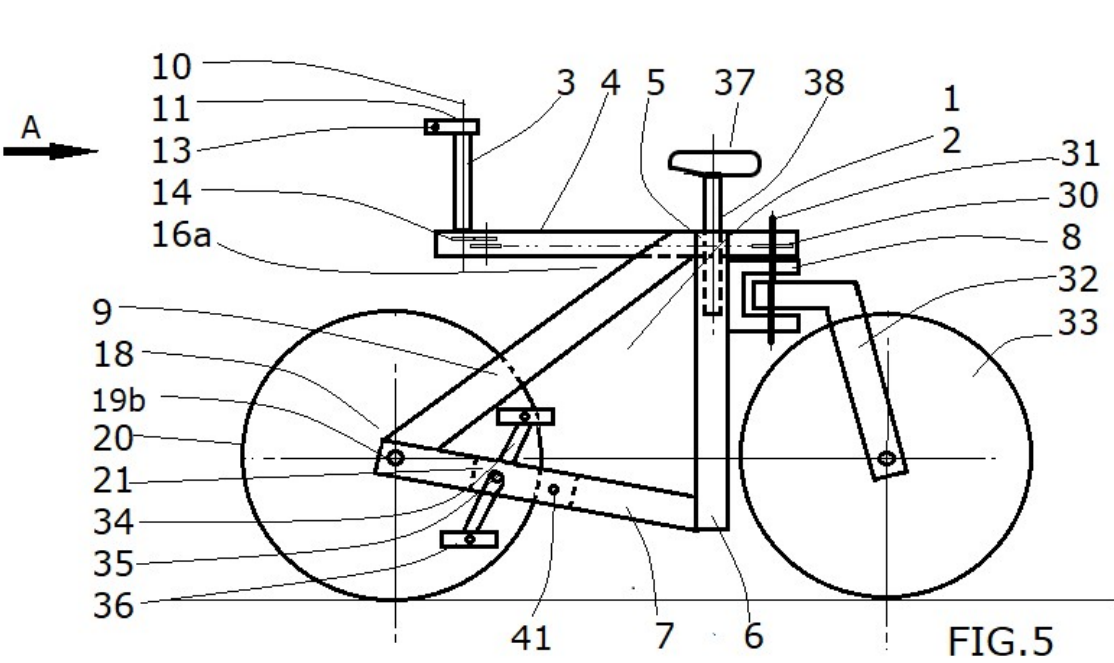








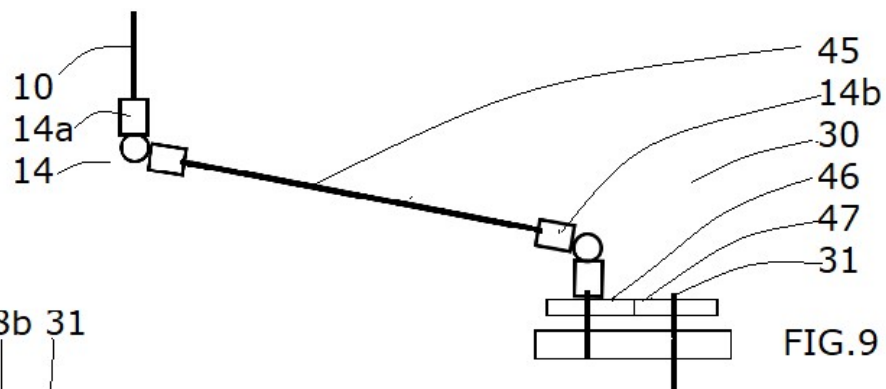


FIG. 9

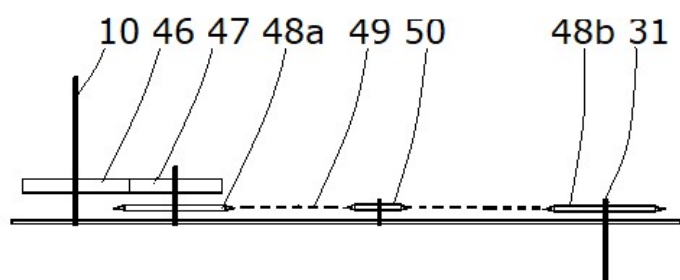


FIG. 10



FIG. 11

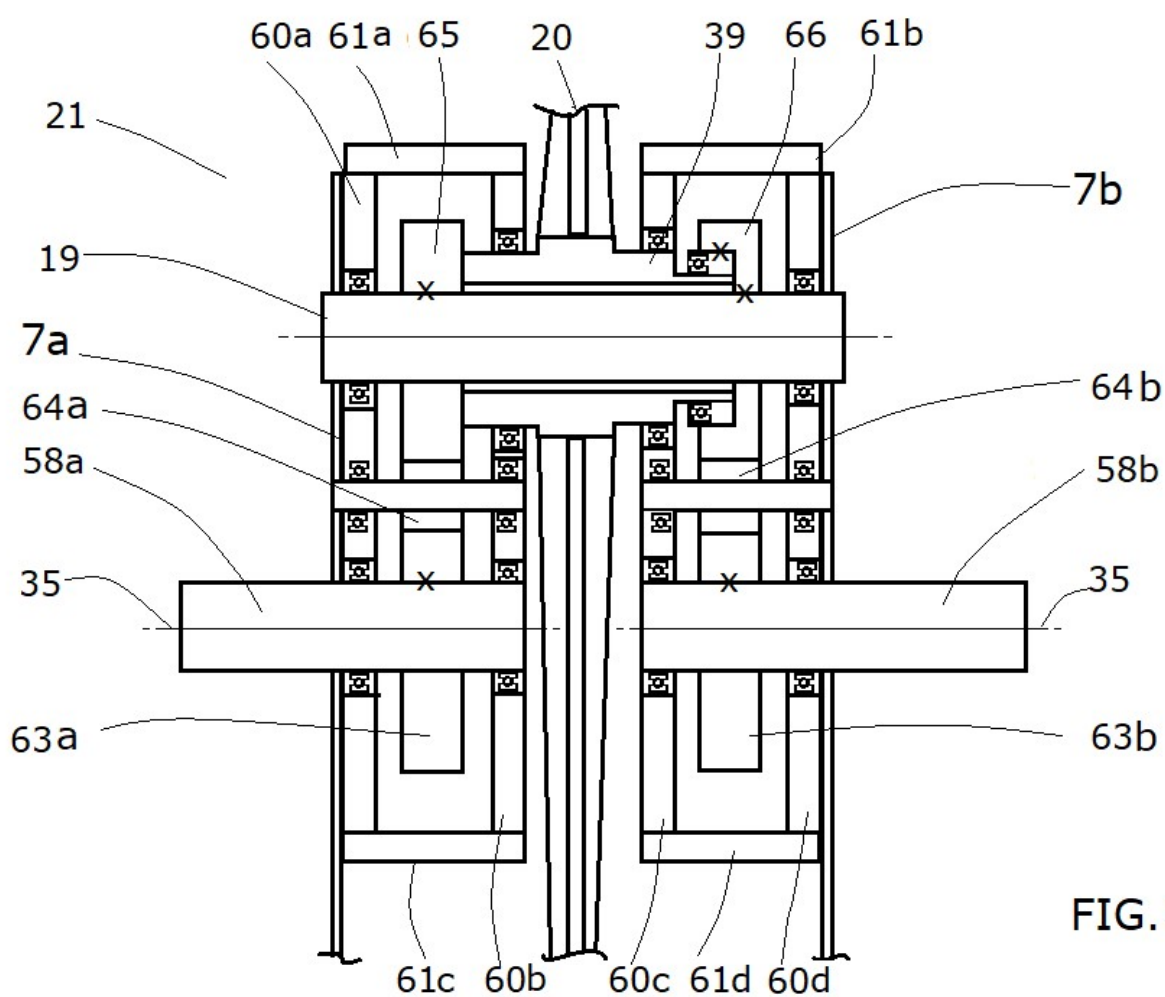


FIG. 12

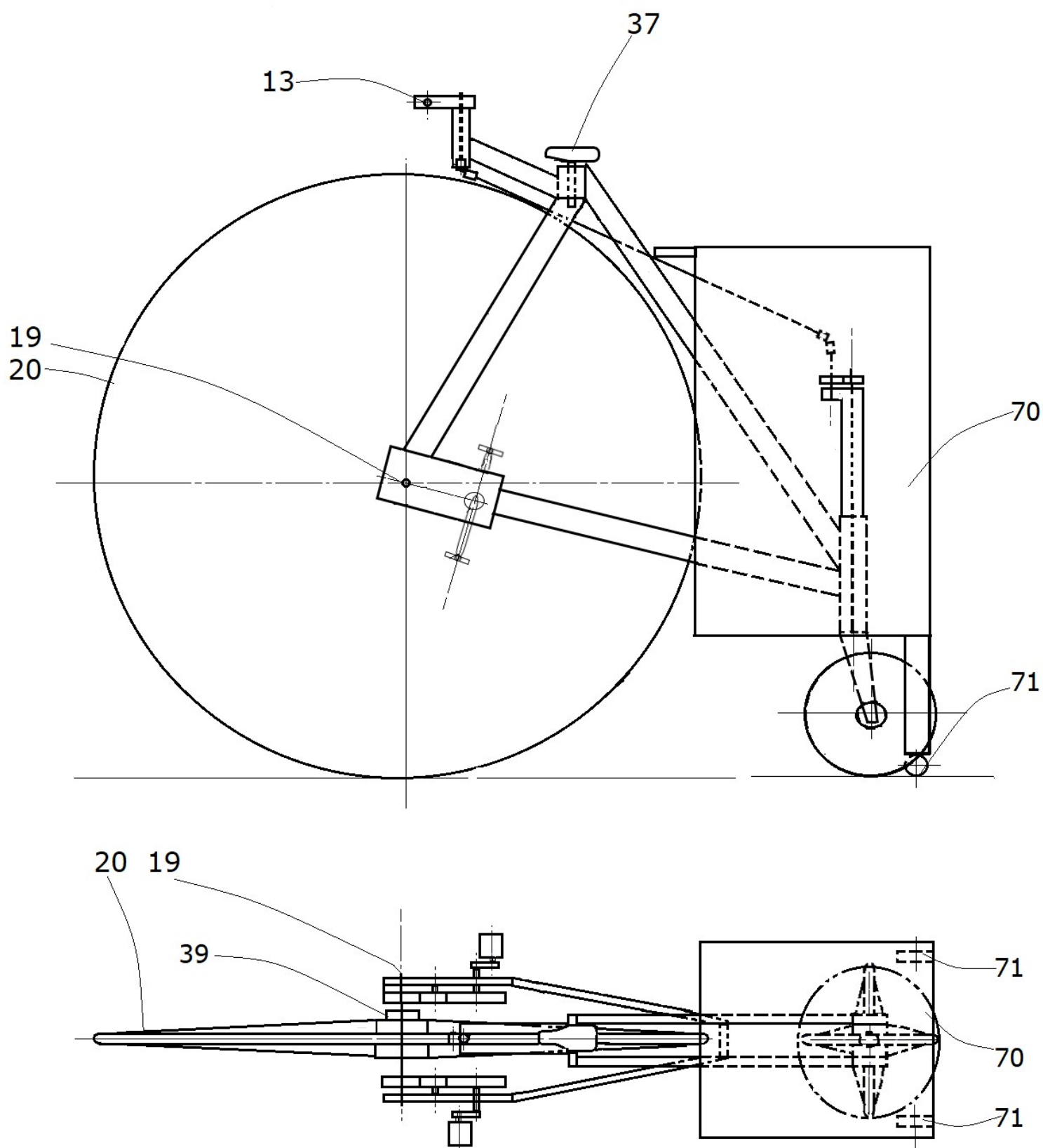


FIG. 13

2023 02 12	Reference	Typical	Typical	Proto 1	Remarks
Notes:	design	design	design	design	
0,0 at front wheel contact with ground	base	without	with	compact+	
All horizontal values have prefix x	values	cargo	cargo	cargo	
All vertical values have prefix y	-	means	means	means	
Name	mm	mm	mm	mm	
Front wheel diameter	1295	1200	1200	592	custom made
Front wheel center height - ywcf	647.5	600	600	296	
Rear wheel diameter	244	408	408	130	16 inch child bike wheel
Rear wheel centre height - ywcr	122	204	204	65	
Wheel base - xwb	728	750	750	550	
Total length - xt看	1497	1554	1554	911	Front to rear wheel end to end
Crank length - crl	152	152	152	152	6 inch BMX bike square shaft type
Seat ht - ys	1335	1235	1235	840	Adjusted to suit pedal crank shaft
Front wheel to seat offset - xfs	243	280	280	200	
Drivebox shaft centres - drcl		50	50	34	
Drivebox drop - dd		10	10	0	
Frontwheel to crank centre - xfc		49	49	34	
xcs = xfs - xfc		231	231	166	
ycs = ys - ywcf + dd		645	645	544	
Seat to crank centre	687	685	685	569	
seat to pedal minimum	535	533	533	417	
seat to pedal maximum	839	837	837	721	
Handlebar height yhb	1457	1360	1360	1000	Adjusted relative to new position of seat
Front wheel to hbar offset - xhb	-10	-60	-60	-60	
Seat to H Bar offset - xhbs	253	340	340	260	
Seat to hb ht - yshb	122	125	125	160	
CG (Center of Gravity) of rider - ycg	1518	1417	1417	1022	
Seat to CG of rider - yscg	182	182	182	182	
CG of rider to top of rider	579	579	579	579	
Rider height	2096	1996	1996	1601	
Weight ratio Front:Rear wheel	0.67	0.63	0.63	0.64	
Front resisting moment arm = xfs	243	280	280	200	
Front toppling arm ytaf = ycg-ywcf	870	817	817	726	
Topple forward angle degrees	15.61	18.92	18.92	15.4	
Rear resisting arm xsrw = xwb-xfs	485	470	470	350	
Rear toppling arm ytar = ycg-ywcr	1396	1213	1213	957	
Topple back angle degrees	19.16	21.18	21.18	20.09	
Calculations with cargo trolley					
Cargo trolley wheel diameter			120	50	
Wheel base with cargo trolley xwb			894	590	
Front wheel to seat offset - xfst			320	210	
Weight ratio Front:Rear wheel for trolley			0.642058166	0.6440678	
Front resisting moment arm = xfst			320	210	
Front toppling arm ytaft = ycg-ywcf			817	726	
Topple forward angle degrees	15.61		21.39	16.13	
Rear resisting arm xsrwt = xwb-xfst			574	380	
Rear toppling arm ytart = ycg-ywcr			1357	997	
Topple back angle degrees	19.16		22.93	20.87	

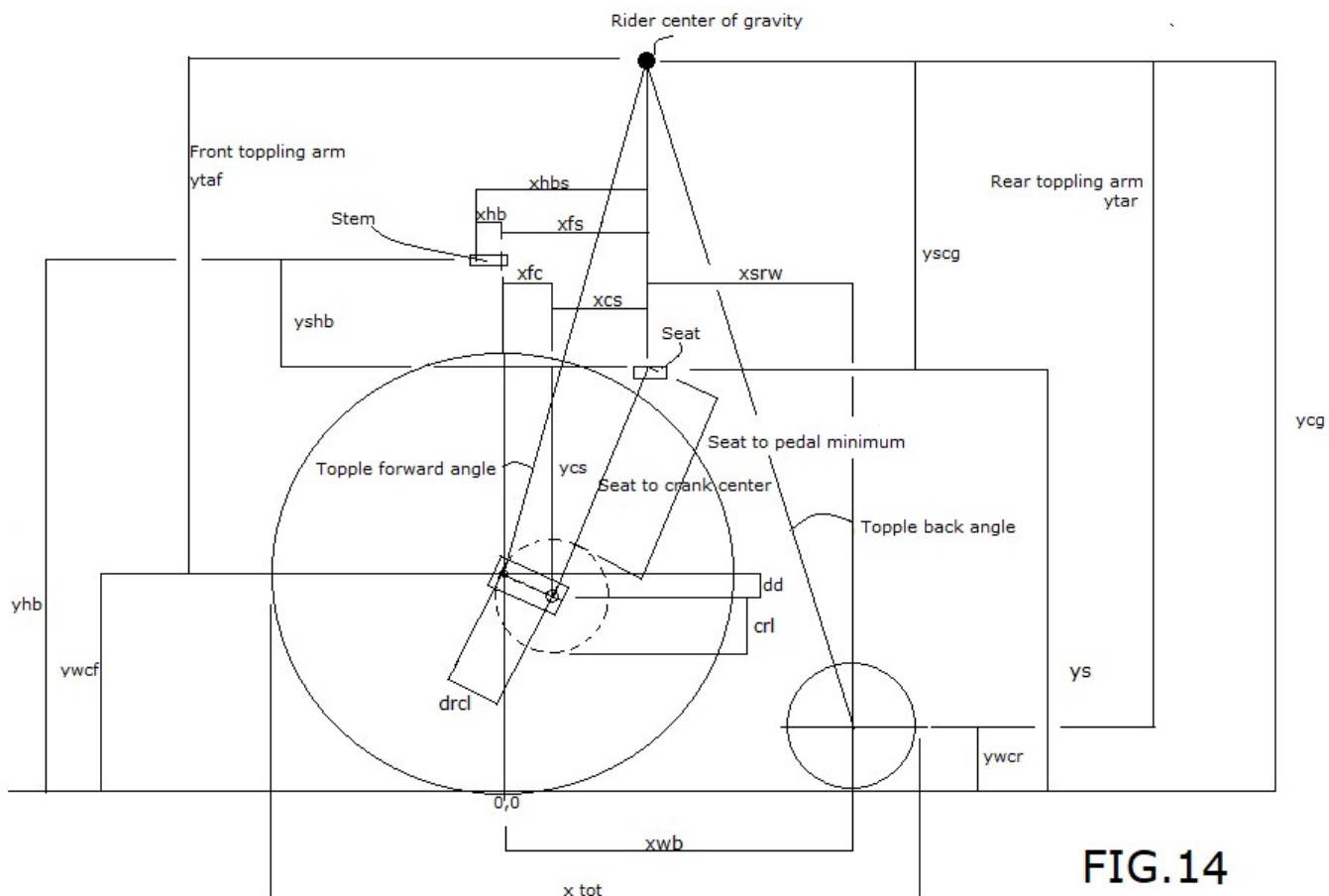


FIG.14