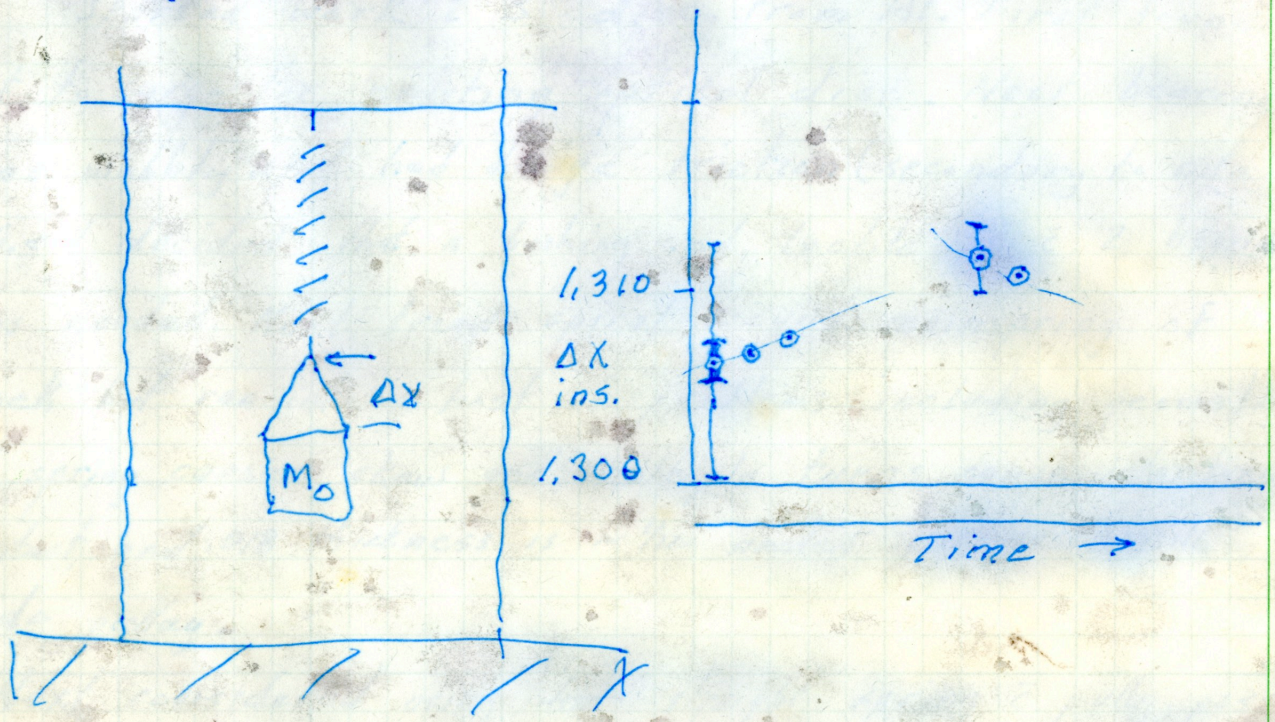
LAMMD LMSC 29 Jan '94

Set up steel spring as below and meas. displ. ē precision commercial unit.



M_o	X_m ins	X_o	M	$X_m - X_o$
M_o = 302.38 gm	.3235		Δm 900 +	
+ 4623.			Pb. ~~108.03~~	2.6243
			897.430	50
"900gm"	1.3063	0	Δ = .68461	59
899.79	71		Δ ≈ ½ %	2.6250
	~~105~~		rep	2.6249
Slope	054			66
F/X =	kg/in 61			91
.68891	56			2.6269
	1.3061 ± .67			
rep. 900.gm.	1.3050		~~rep~~ 900	1.3142
	80			094
	71			134
	1.3067			121
				117
				3122 ± 18
				10 min
rep. 900 gm.	1.3084		rep 900	1.3102
	77			127
	76			115
	1.3079			1.3115

29 Jan 1994

Started work ē 8" disc. from Al. First found it to large for existing optical disc. Next bearing was wobbly and had large friction (secondary to mtg.) D.S. & I decided that a bushing and 'loctite' fit ē 2 bearings was needed. Next tried spiral wound mainspring of clock but ran into a host of problems including geometry of spring causes skew and multiple turns cause inter-turn contact and .015 thickness is ~1/10 needed stiffness. Will redo pulley.

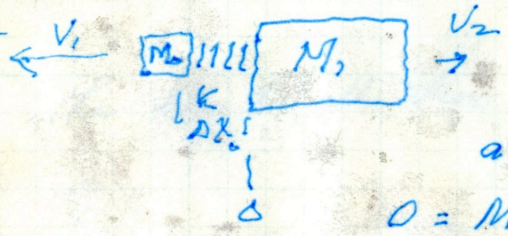
Next considered using ~~the~~ straight spring ē pulley, possibly shaped for linearity. Showed D/S how unsat. std. springs are.

Finally decided to:

1. Redo wheel
2. Get new brgs.
3. Try to find 1-2 turn spring -

? Look at momentum system -

1300 Home



$F = M_0 \ddot{X}_0$ & $M_0 \ddot{X}_0 = M_X \ddot{X}_X$

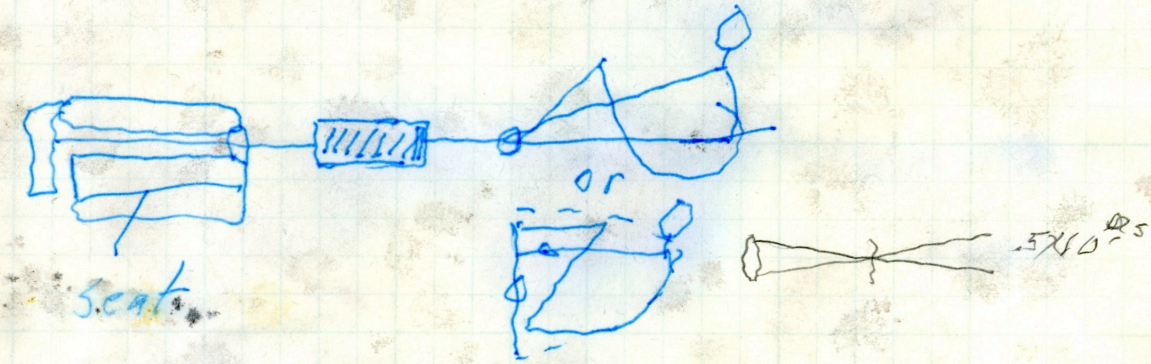
$F = M_X \ddot{X}_X$

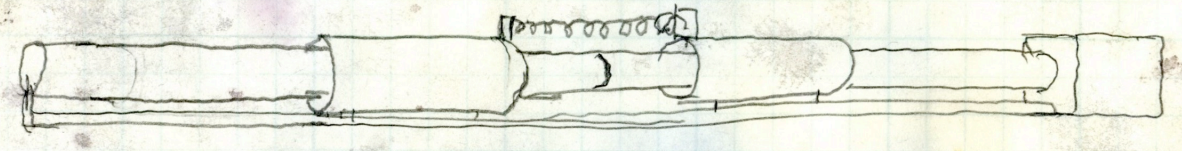
and (including separation)

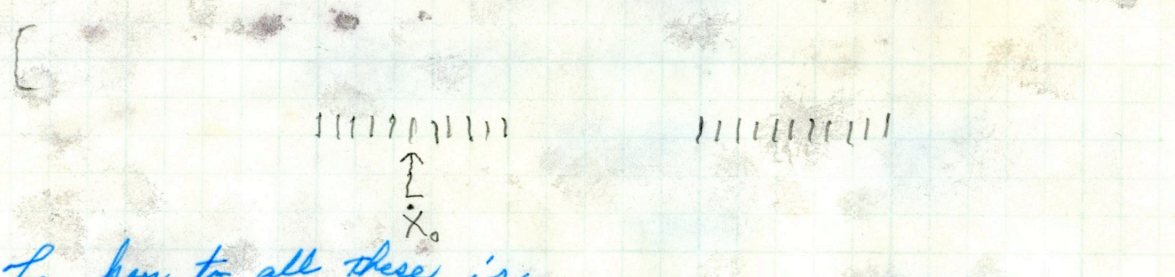
$0 = M_0 \dot{X}_0 + M_X \dot{X}_X$ ∴

$$M_X = -\frac{M_0 \dot{X}_0}{\dot{X}_X}$$

- The following arrangement offers opportunities for both $\dot{x}$ and $\ddot{x}$ comparisons. By placing both M_0, which may be large, and M_2 - person on a common axis (air bearing) many other advantages accrue including a single floating unit & appreciable external velocity eg:







- The key to all these is

NB - I think about ratio arms (mechanical)