VALUE ANALYSIS REPORT

of

GENERAL ELECTRIC X-RAY CORPORATION
1/10 SEC., SYNCHRONOUS TIMER
PRINT #9020

Compiled by

John A. Keyes
April 15, 1949

Schenectady, April 12, 1949

Mr. R. F. Allen
Manufacturing Policy Division
General Electric X-Ray Corporation
4855 Electric Avenue
Milwaukee, Wisconsin

Dear Ray:

We transmit herewith Value Analysis survey and suggestions applicable to the General Electric X-Ray 1/10 second synchronous timer, print #9020.

We have followed through on numerous ideas given to us by your men and also by Mr. Gross who spent some time reviewing the problems and suggesting possibilities when he was in Schenectady.

Mr. C. B. Adams has copies of all quotations.

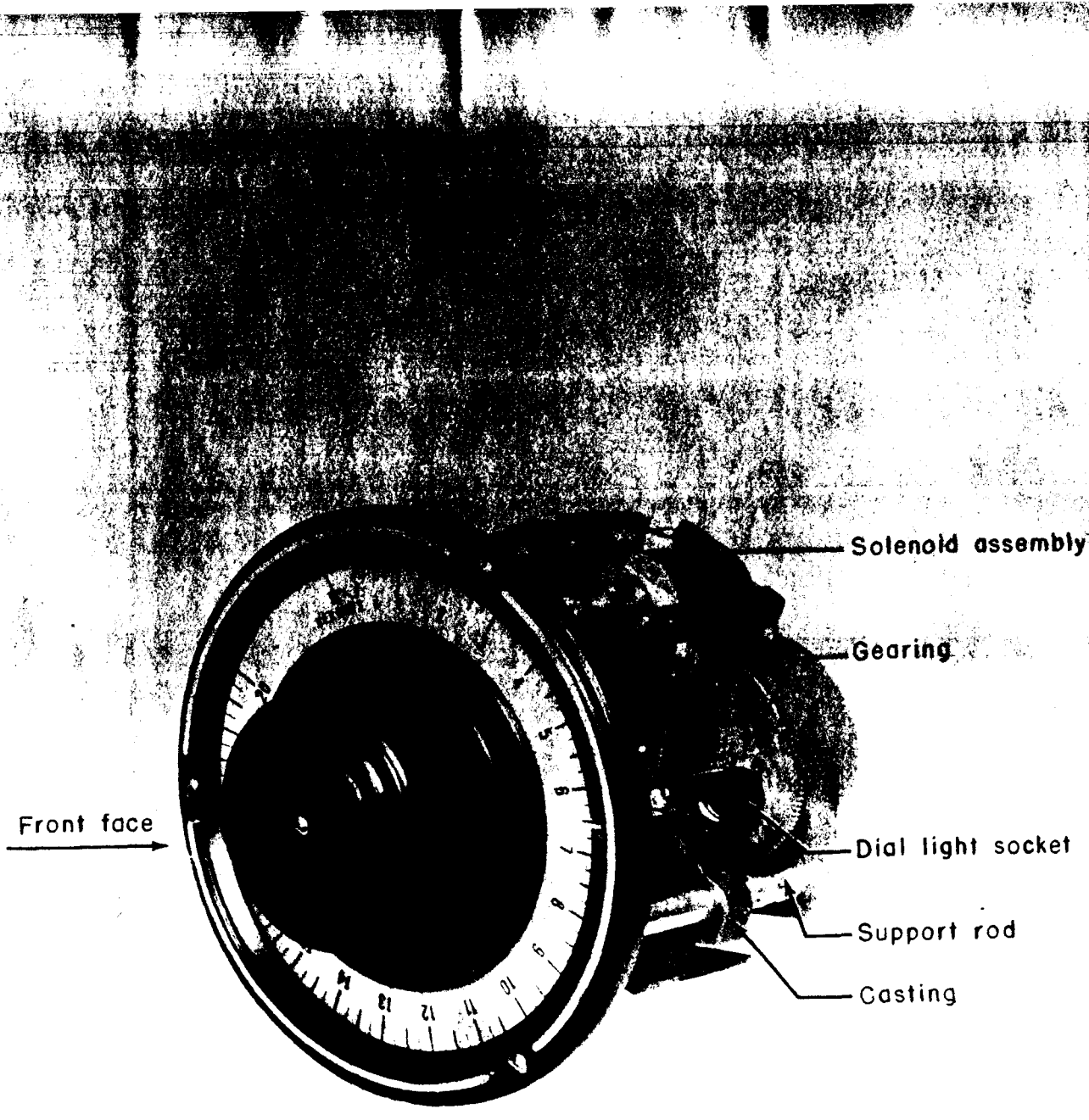
We are fortunate in that two men Jim Young and Harold Alberts, who will be doing Value Analysis work at the X-Ray Corporation are now in Schenectady. They have reviewed the job in detail and will be most helpful to all departments involved in hastening realization of suggested economies.

Thank you for the opportunity which you offered to us to participate in this study. If we can be of further assistance at any time, please advise.

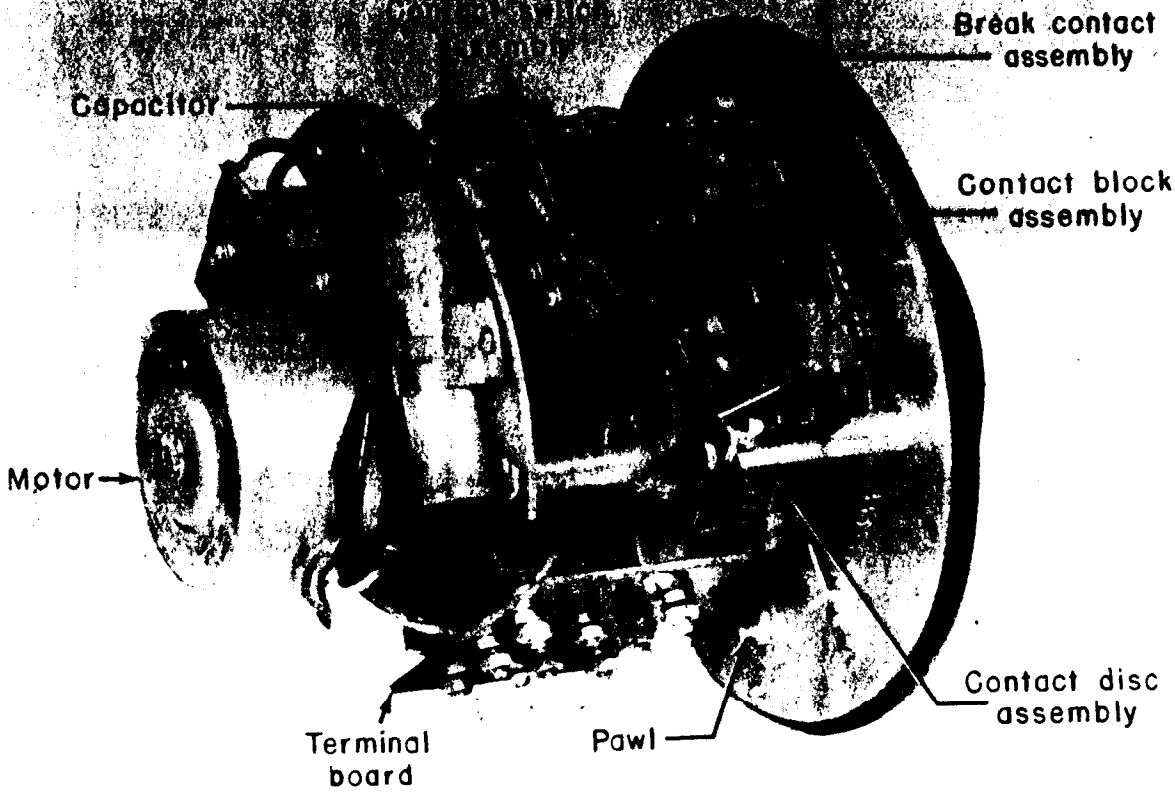
PURCHASING DEPARTMENT

L. D. Miles
Value Analysis Division

LDM:AEM



1066 229 G-E X-RAY SYNCHRONOUS TIMER, 0.1- TO 20-SEC. FRONT VIEW OBLIQUE FROM RIGHT, SHOWING NAMEPLATE AND FACE.



1066 227 G-E X-RAY SYNCHRONOUS TIMER, 0.1- TO 20-SEC. LEFT-SIDE VIEW, OBLIQUE, REAR AT LEFT.

E353.9 3-14-49

FRONT FACE

and

SUPPORT MEMBERS

FRONT FACE AND SUPPORTING MEMBERS

	Print #	Present Cost	Proposed Cost Ordering Quantities 200	500
Solenoid Bracket	1-6110	3.54	.288	.208
Bracket Contacts	1-6123	1.76	.238	.188
Rod	9-1783	1.98	.56	.40
Front Disc	10-1303	1.47	.61	.537
Back Up Disc	10-1313	.12	.085	.074
Rear Disc	10-1422	1.55	.629	.547
Handle	14-407	.945	.945	.945
Stop	16-266	.02	.02	.02
Trim Ring	36-105	1.09)	.375	.375
Trim Ring	66-403	.29)		
Nameplate Assembly	37-503	Unav.	est. .025	.025
Front Disc Assembly	37-564	Unav.	est. .36	.36
Nameplate	55-487	.28	.28	.255
Total		13.045	4.415	3.934

Bracket Contacts
1-6123

Present Cost

Material	
Iron casting	$ .21
Labor	
Grinding all machining	.43
[illegible] (260%)	1.12
TOTAL COST for pieces req'd (1)	$1.76

Proposed Costs

Suggest making this part as a stamping in order to overcome the high cost of machining.

Vendor quotes as follows:

Ordering quantities of 200	29¢ ea
Ordering quantities of 500	13¢ ea
[illegible]	$65.00

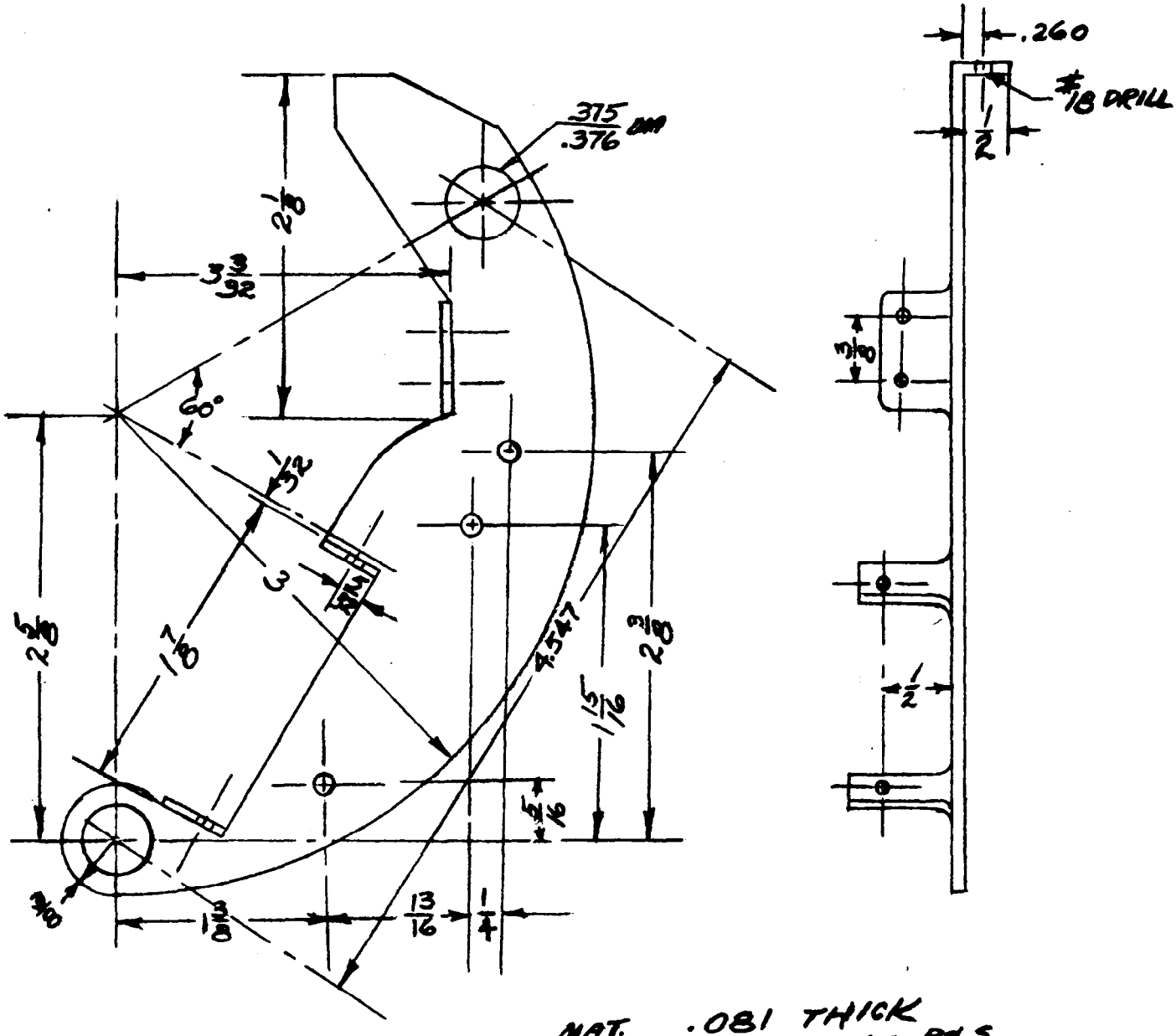
COMMENT:

[illegible]

A sketch of the proposed stamping is shown on the following page, and all dimensions are given. [illegible]

Proposed cost [illegible]

M/



MAT. .081 THICK #12 GAUGE B&S STEEL

REVISIONS

GROUP	DESCR.	G. NO.

BRACKET FOR CONTACTS

FIRST MADE FOR

BEGUN BY [illegible] TRACED BY MAR 9, 49

FINISHED BY [illegible] INSPECTED

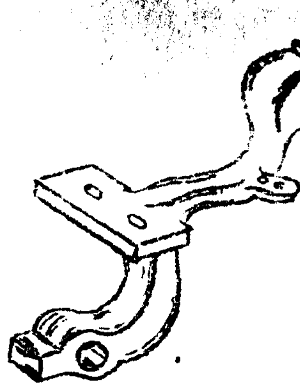
GENERAL ELECTRIC WORKS

REVISION OF X-RAY PRINT # 1-6123

PRINT TO

FF-569-B (10-47) PRINTED IN U.S.A.

Solenoid Bracket
1-6110



Present Cost

Material	$	.23
Iron Casting		
Labor		.92
Including all machining		
I. M. E. (260%)		2.39
TOTAL COST for pieces required (1)		$3.54

Proposed Cost

Suggest making this part as a stamping similar to the sketch on the following page to eliminate machining costs.

Best quotation received from a vendor was as follows:

Ordering quantities of 200	.283
Ordering quantities of 500	.208

Tool Costs
Initial order only $182.00

COMMENTS:

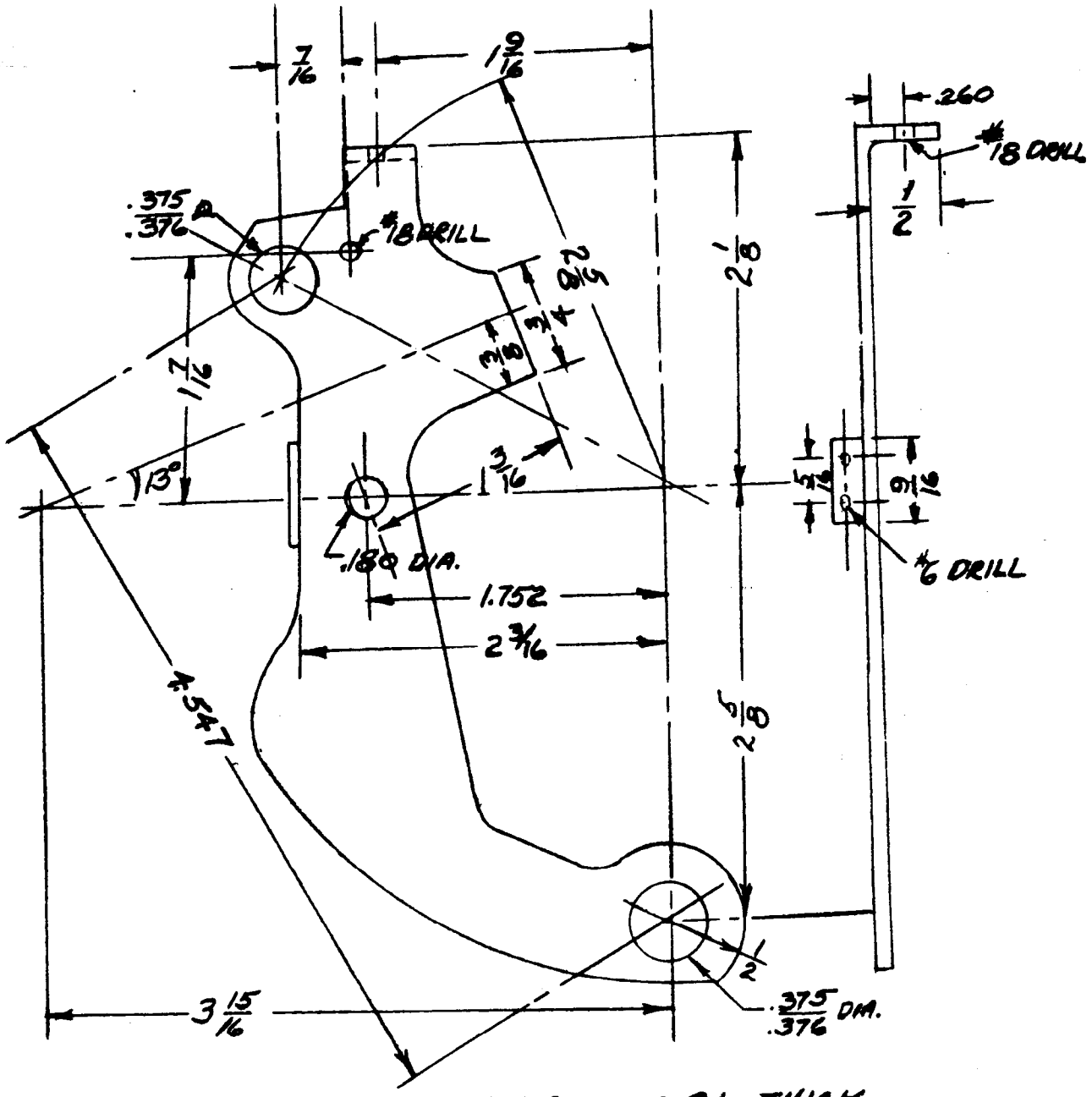
The quotation shown for this part was also obtained from a low cost die company as it was [illegible] part #1-6[illegible]

In order to make this part a simple punching [illegible] which was mounted on the "rear disc" part #10 1[illegible] [illegible], the rear disc was revised as shown in the [illegible] sketch [illegible] that part.

The proposed costs include plating of the stamping and holding the tolerances on holes as accurately as on the casting.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/



MAT. .081 THICK
#12 GAUGE B & S
STEEL

REVISIONS

GROUP	DESCR.	G. NO.

SOLENOID BRACKET

FIRST MADE FOR

BEGUN BY [illegible] TRACED BY [illegible]

FINISHED BY [illegible] INSPECTED [illegible]

GENERAL ELECTRIC WORKS

REVISION OF G.E. X-RAY 1-6110

FF-5o9-B (10-47) PRINTED IN U.S.A.

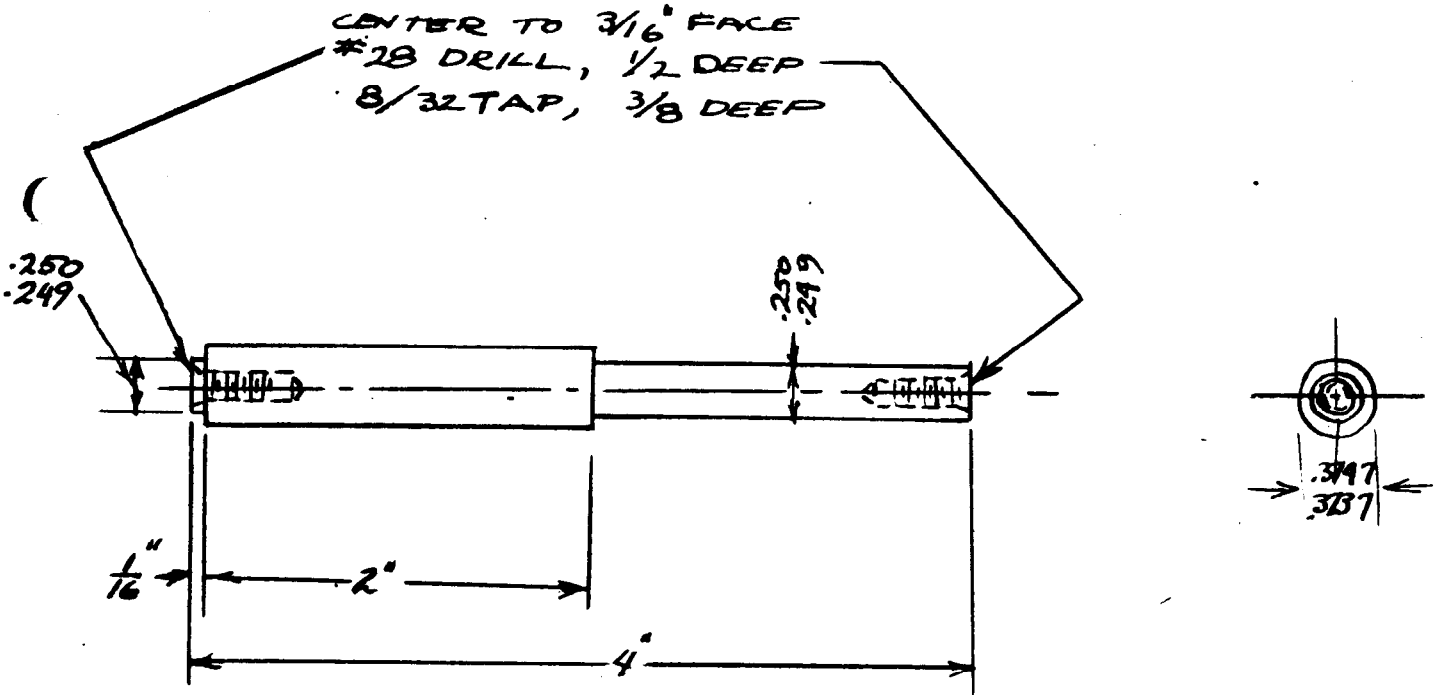
COMMENTS:

In order to substitute the stampings suggested for parts #1611, solenoid bracket; and #1-6123, bracket contacts; it is necessary to substitute a "rod" similar to 9-1783 plus cut-off tubing to the size necessary.

This will be a "sandwich type" assembly rather than a rod and casting attached by a set screw.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/



FINISH

ZINC OR CADMIUM PLATE (MAX. THICKNESS .00

MAT. C.R. STEEL ROD

REVISIONS

GROUP	DESCR.	G. NO.

ROD

FIRST MADE FOR G.E. X-RAY TIMER

BEGUN BY [illegible] FINISHED BY John Keyes

TRACED BY [illegible] INSPECTED Feb 7, 1949

GENERAL ELECTRIC WORKS

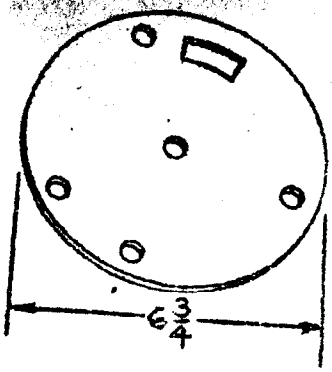
SCHDY

REVISION OF G.E. X-RAY 9-1783

PRIN TC

FI-569-B (10-47) PRINTED IN U.S.A.

Front Disc
10-1303



Present Costs

Material	$ .57
Brass Sheet, #12 B & S Gauge	
Labor	.25
Blank, pierce, ream	
I. M. E. (260%)	.65
TOTAL COST for pieces req'd	$1.47

Proposed Costs

Low cost die vendor quotes the following:

Ordering quantities of 200	.61 ea.
Ordering quantities of 500	.537 ea.
Tool Cost	$160.00

COMMENTS:

The above proposed costs are the for part finished complete with all holes, etc. shown on the print 10-1303.

The stop part 16-266 could be eliminated by pierce and forming the front disc such that the stop is formed from the disc.

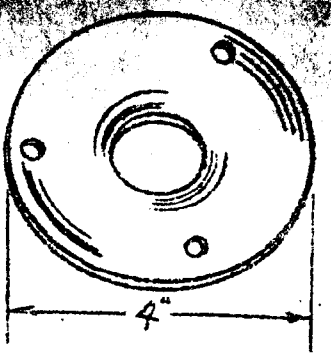
This idea was not incorporated in the proposed cost as the stop costs just .04 each. With the low production of this item, it would not be economical.

The proposed costs for this part are for using #12 B & S Gauge Steel Cadmium plated rather than brass.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

Back-Up Disc for Nameplate
10-1313



Present Costs

Material Steel, #22 Gauge	$ .0092
Labor Cut, blank, punch	.032
I. M. E. (260%)	.083
TOTAL COST for pieces required (1)	$ .12

Proposed Cost

A low cost die stamping house quotes on this part as follows:

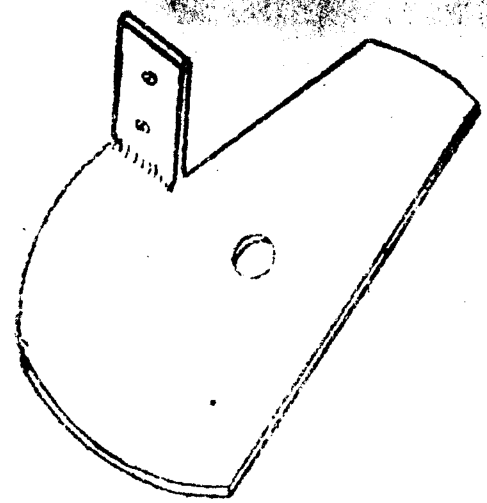
Ordering quantities	200	500
Material, steel	.022	.020
Labor all	.063	.054
	.085	.07

This is the proposed cost as shown on the drawing including plating.

There is also a tool charge of $23.50 on the initial order.

M/

Rear Disc
10-1422



Present Costs (without bent-up lip)

Material	$ .29
Brass sheet #12 Gauge	
Labor	.35
Complete with [illegible] holes	
I. M. E. 25[illegible]%.	.91
TOTAL COST [illegible] pieces required (2)	$1.55

Proposed Costs

The vendor [illegible] on this part with the bent-up lip as follows:

[illegible]	.200	.220
	.286	.252 ea.

[illegible]

[illegible]

The proposed cost included blanking, punching, piercing and forming, but did not include countersinking or reaming. Another vendor quotes this part complete as follows:

Ordering quantities of 200	.629 ea.
Ordering quantities of 500	.527 ea.

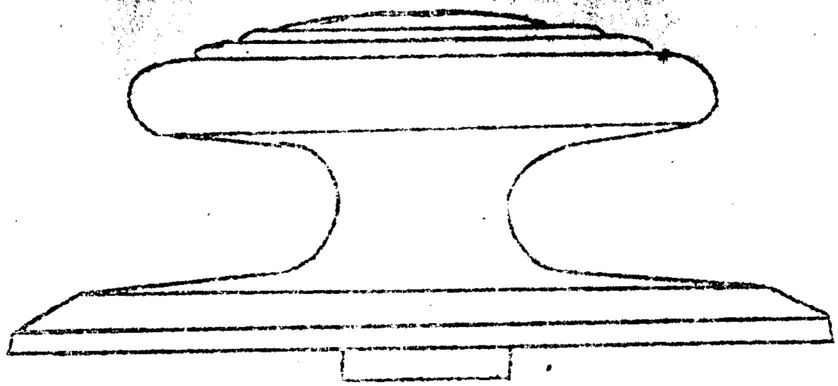
However there is a tool cost of $175.00

The proposed costs for this part are for using cadmium plated steel rather than brass sheet.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

Handle
14-407



Present Costs

This part is presently purchased from a plastic molding vendor in General Electric X-Ray molds.

Present Purchase Cost	.819 ea.
Machining costs as follows:	
Labor	.035
Drill holes	
I. M. E. (260%)	.091
TOTAL COST for pieces [illegible]	.945

COMMENTS:

This part is made in a single [illegible] and as such is inherently expensive.

An attempt was made to find a [illegible] standard handle.

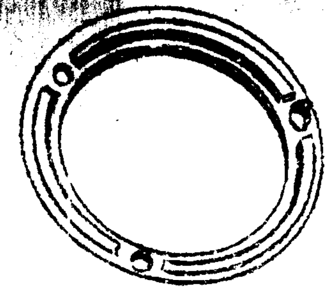
The present handle has a [illegible] [illegible] suitable for this application [illegible] and could be obtained [illegible]

In order to use this handle [illegible] the same general appearance [illegible] diameter disc of black laminated [illegible] proposed handle. In this way, the [illegible] would appear to have a [illegible]" skirt.

The present supplier could furnish [illegible] handle for $.45 each by making a semi-automatic [illegible] this would involve a $1,000 [illegible]

[illegible] DEPARTMENT
[illegible] Analysis Division
[illegible] 19[illegible]

Trim Ring
66-403
36-105



Present Costs

Name of Part	Print #	Present Costs
Molded Part	66-403	.294
Machining Part #66-403	36-105	1.09
TOTAL COST for pieces required (1 ea.)		1.384

Proposed Costs

Name of Part	Print #	Proposed Costs Ordering Quantities 200	500
Molded Part	66-403	.265	.265
Machining and Finishing Part #66-403 Including 260% I.M.E.	36-105	.11	.11
TOTAL COST for pieces req'd		.375	.375

COMMENTS:

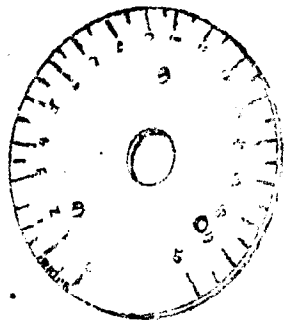
Part #66-403 is a molded part. The vendor supplying this part will revise the cost to us as shown if we continue buying it. They will make the mold semi-automatic at [illegible] expense.

[illegible] grinding and [illegible] operation. [illegible] the [illegible] saving [illegible] be realized for this part.

PURCHASING DEPARTMENT
Value Analysis [illegible]
April 1, 19[illegible]

M/

Nameplate
55-187



Present Costs

This part is presently purchased from an outside vendor. Our latest actual cost is as follows:

Nameplate	.28 ea.

Proposed Costs

This part was submitted to various specialty vendors and the present cost represents good value.

One specialty vendor quoted as follows for a laminated vinylite construction:

Ordering quantities of 200	28¢ ea.
Ordering quantities of 500	25¢ ea.

[illegible]

ELECTRICAL CONTACT

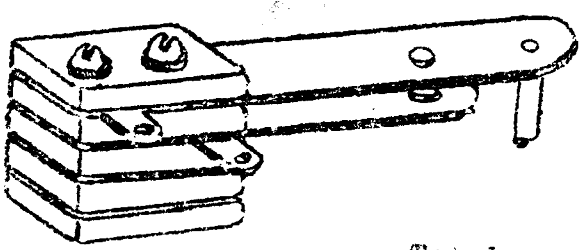
and

SWITCH ASSEMBLIES

ELECTRICAL CONTACT AND SWITCH ASSEMBLIES

		Present Cost for Pcs. Req'd	Proposed Cost Ordering Quantities 200	500
Contact Switch Assembly				
Contact Switch Assembly	37-501	.1[illegible]		
Riveting of Contact	37-494	.02		
Riveting of Contact	37-495	.0[illegible]		
Heavy Contact Spring	32-369	.11		
Plunger	21-287	.06		
Movable Spring	17-1701	.06		
Contact	17-731	.05		
Contact	17-354	.06		
Connector	17-351	.01		
Insulating Bushing	15-707	.28		
Contact Spacer	12-934	.0[illegible]		
Total Cost		.36	.16[illegible]	.1[illegible]
Contact Block Assembly				
Contact Block Assembly	37-492	.2[illegible]	.0[illegible]	.05[illegible]
Insulating Block	5-742	.2[illegible]	.1[illegible]	.1[illegible]
Contact Support	8-746	.1[illegible]	.06[illegible]	.0[illegible]
Contact	17-170[illegible]	.1[illegible]	.09	.0[illegible]
Spring for Contact Block	32-363	.0[illegible]	.0[illegible]	.0[illegible]
Total Cost		.3[illegible]	.4[illegible]	.3[illegible]
Break Contact Assembly				
Contact Assembly	37-50[illegible]	.[illegible]	.[illegible]	.[illegible]
Break Contact Assembly	37-51[illegible]	.[illegible]	.[illegible]	.[illegible]
Shaft	9-1787	.0[illegible]	.[illegible]	
Pin for Spring	11-14[illegible]	.0[illegible]	.[illegible]	
Stud for Contact Block	13-178[illegible]	.[illegible]	.[illegible]	.[illegible]
Stop	16-282	.[illegible]	.[illegible]	.[illegible]
Upper Contact	17-170[illegible]	.0[illegible]	.04	.0[illegible]
Lever Contact	17-169[illegible]	.0[illegible]	.03	.0[illegible]
Contact Block	17-183[illegible]	.[illegible]	.[illegible]	.[illegible]
Roller	21-49[illegible]	.0[illegible]	.[illegible]	.[illegible]
Lever	21-89[illegible]	.[illegible]	.[illegible]	.[illegible]
Insulating Block	66-[illegible]	.[illegible]	.[illegible]	.[illegible]
Spring for Contact Lever	67-[illegible]	.0[illegible]	.0[illegible]	.0[illegible]
Total		.0[illegible]	.0[illegible]	.[illegible]

Contact [illegible] [illegible]sembly
37-501



Present [illegible] ([illegible] entire assembly)

Name of [illegible]	Drg. #	Req. per Timer	Mat'l	Labor	I.M.E.	Total Cost for Pcs. Req'd
Heavy [illegible]	32-369	1	.012	.027	.07	.11
Movable [illegible] Contact	17-1701	1	.007	.015	.039	.06
Connector	17-351	2	.004	.002	.006	.01
Contact	17-721	1	.042	.003	.007	.05
Contact	17-35[illegible]	1	.0[illegible]7	.004	.01	.05
Insulating [illegible]	1[illegible]-707	[illegible]	.0[illegible]9	.078	.20	.28
Contact [illegible]	1[illegible]-9[illegible]4	7	.01[illegible]	.008	.02[illegible]	.0[illegible]
Plunger.	2[illegible]-287	1	.02[illegible]	.011	.029	.06

[illegible]-Assemblies

			[illegible]	[illegible]	[illegible]	Total
Riveting Contact	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.[illegible]2
Riveting Contact	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.02
Switch Assembly	[illegible]	[illegible]	.03[illegible]	[illegible]	[illegible]	.1[illegible]

Present Total [illegible] .86

Proposed Cost

It is propo[illegible] the contact switch as[illegible] purchased from a vendor [illegible] in this type product.

The lowest quotation received for this [illegible] a vendor was as follows:

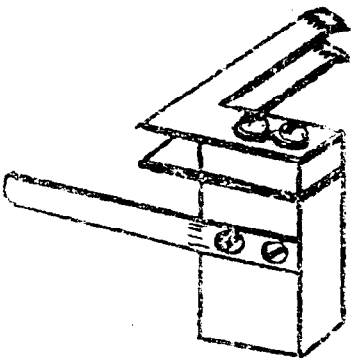
Ordering quantities of 200 .162 ea.
Ordering [illegible] of 500 .1[illegible] [illegible]

COMMENTS:

The quotation [illegible] contact switch a[illegible] the actuating plunger (print #21-287) attached [illegible] (see sketch). This is an advantage as we are [illegible] with a stamping and unless the plunger [illegible] would be necessary to insert a guiding [illegible].

PURCHASING [illegible]
Value Analysis Division
April 1, 19[illegible]

Contact Block Assembly
37-492



Present Costs (of entire assembly)

Name of Part	Drg.No.	Req. per Timer	Matl	Labor	I.M.E.	Total Cost for Pcs. Req'd
Contact Support	8-742	1	.05	.06	.15	.26
Insulating Block	8-746	1	.02	.035	.09	.14
Contact	17-1700	2	.008	.0136	.032	.13
Spring for Block	32-368	1	.0023	.022	.057	.08
Assembly	37-492	1				.28
TOTAL COST for pieces required						.89

Proposed Costs

Name of Part	Drg.No.	Req. per Timer	Ordering Quantities 200	500
Contact Support	8-742	1	.159	.123
Insulating Block	8-746	1	.067	.049
Contact	17-1700	2	.09	.078
Spring for Block	32-368	1	.035	.021
Assembly	37-492	1	.054	.054
TOTAL COST for pieces required			.405	.325

COMMENTS:

For the two linen base bakelite parts #8-742 and #8-746, the proposed costs above were obtained from specialty fibre fabricating companies.

There would be a tool charge of $14.00 for part #8-742 but is subject to rebate in full when orders (regardless of length of time) aggregate $200.

The quotation on part #32-368 was obtained from a specialty vendor and there would be a tool charge of $20.00.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

Shaft
9-1787

Present Costs

Material	.002
Steel Rod 9/64 Rd.	
Labor	.25
Screw Machine	
I. M. E. (260%)	.65
TOTAL COST for pieces required (1)	$ .90

Proposed Costs

screw machine vendor quotes as follows:

Ordering quantities	200	500
	.059 ea.	.029 ea.

Tool Costs $7.20

COMMENTS:

Rounding the end of the shaft is not necessary for operation of the lever and it was omitted in the above quotation.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

Stud for Contact Block
13-1728

Present Cost

Material 5/16" Rd., Phosphor Bronze	.003
Labor	.05
I. M. E. (260%)	.14
TOTAL COST for pieces required (1)	.20

Proposed Cost

A specialty vendor quotes as follows:

Ordering quantities of 200	.053 ea.
Ordering quantities of 500	.057 ea.

Tool Cost $20 on initial orde.

COMMENTS:

This part would be furnished exactly as shown on the print. The material used would be brass, however, rather than phosphor bronze.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 19[illegible]

M/

Stop
16-284

Present Cost

Material 5/16" Rd. linen base Bakelite	.017
Labor Cut off, drill, tap	.026
I. M. E. (260%)	.068
TOTAL COST for pieces required (1)	.11

Proposed Cost

A specialty vendor quotes on this part as follows:

Ordering quantities of 200	.075 ea.
Ordering quantities of 500	.068 ea.

COMMENTS:

This part would be exactly as shown on the print.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

Roller
20-494

Present Cost

Material ¼" Rd., Steel C. R.	.0004
Labor Screw machine I. M. E. (260%)	.022 .057
TOTAL COST for pieces required	.079

Proposed Cost

A specialty screw machine vendor quotes on this part as follows:

Ordering quantities of 200	.065 ea.
Ordering quantities of 500	.028 ea

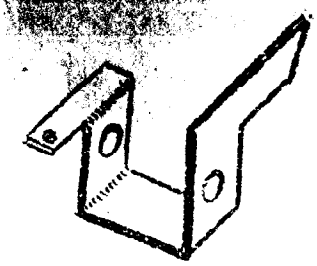
COMMENTS:

The above quotation includes plating. The part would be furnished complete as shown on the print with no tool charge.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

Lever
21-284



Present Cost

Material	.002
Sheet Steel--1/32" x 2"	
Labor	.039
Punch, form, ream	
I. M. E. (260%)	.10
TOTAL COST for pieces required (1)	$ .141

Proposed Cost

A specialty, low production stamping vendor quotes this part as follows:

Ordering quantities of 200	.14 ea.
Ordering quantities of 500	.085 ea.

Tool Cost $64.00

COMMENTS:

The present cost of this part compares favorably with that proposed by a vendor, for small ordering quantities.

PURCHASING DEPARTMENT
Ven[illegible]
Appr[illegible]

M/

MAIN SHAFT ASSEMBLY

MAIN SHAFT ASSEMBLY

	Print #	Present Cost	Proposed Cost Ordering Quantities 200	500
Main Shaft	9-1794	1.78	.22	.14
Contact Disc Assembly				
Contact Disc Assembly	37-535	Unav.	est. .036	.036
Contact Disc Sub-Asm.	37-507	Unav.	est. .036	.036
Contact Disc Sub-Asm.	37-505	.17	est. .025	.025
Contact Assembly	37-515	.12	est. .011	.011
Insulating Board	8-744	.22	est. .072	.072
Contact Disc	10-1302	.36	.24	.198
Contact Disc	10-1305	.51	.29	.204
Set Screw Contact	13-1733	.61	.06	.05
Contact	17-1698	.17	incl. in 10-1302	
Contact Pivot Block	17-1699	.25	eliminated	
Contact Block	17-1710	.21	incl. in 10-1305	
Insulating Board	66-383	.17	.122	.122
Total		2.79	.821	.764
Miscellaneous				
Index Disc	10-1299	1.47	est. .735	.735
Collar for Main Shaft	10-1306	.18	.073	.047
Stop Pin	11-1412	.54	.046	.026
Bearing for 92 tooth gear	15-1060	1.35	.296	.263
Bushing for index disc	15-1065	1.45	.155	.122
Spring for Contact	32-365	.04	.093	.067
Total		5.03	1.398	1.260

Main Shaft
9-1794

Present Costs (Complete)

Material Steel C. R. 21/64" Round	.02
Labor Includes all machining and plating	.49
I. M. E. (260%)	1.27
TOTAL COST for pieces required (1)	$1.78

Proposed Costs (Complete)

This part was sent to outside vendors for quotations. The best proposition received is as follows:

Ordering quantities of 200	.22 ea.
Ordering quantities of 500	.14 ea.

Tool Costs $20.00

COMMENTS

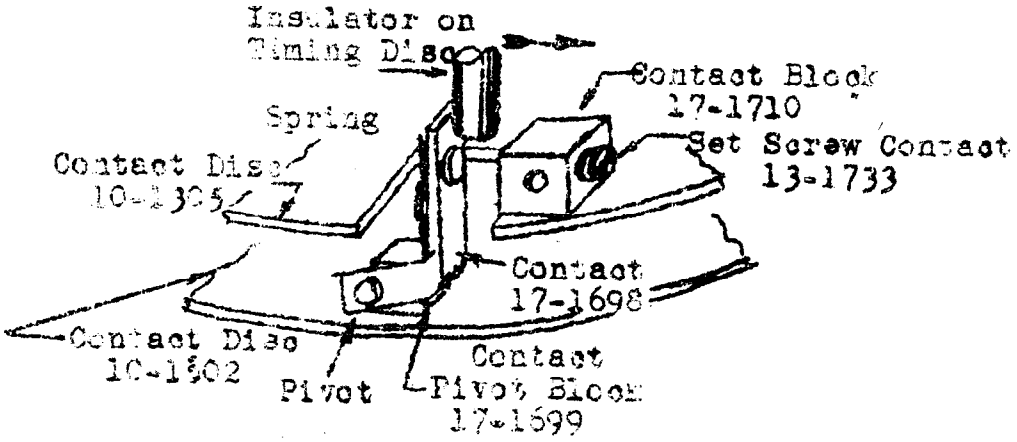
The quotations received on this part are for the shaft exactly as shown on print #9-1794.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

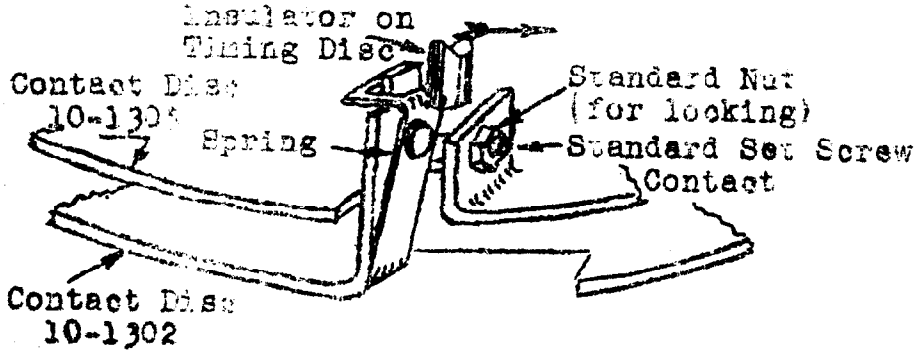
M/

CONTACT DISC ASSEMBLY

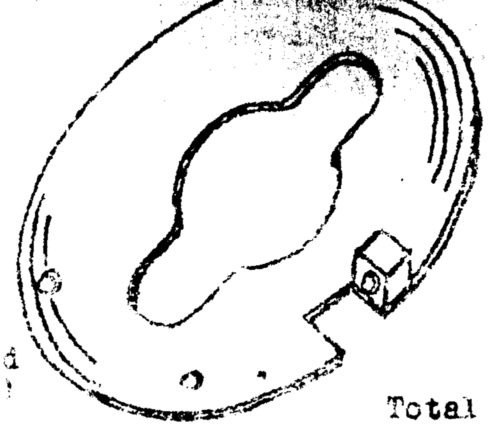
Present Method



Proposed Method



Contact Disc
10-1305



Original Costs (For contact disc and contact)

Name of Part	Print No.	No. per Timer	Mat'l	Labor	I.M.E.	Total Cost per Timer
Contact Disc	10-1305	1	.11	.11	.29	.51
Contact Block	17-1710	1	.006	.058	.15	.21
Set Screw Contact	13-1733	1	.002	.17	.44	.61
SUB ASSEMBLY Contact Disc	57-5[illegible]	1		.048	.125	.173
TOTAL COST for pieces required (1)						$1.50

Proposed Cost

Name of Part	Print No.		Ordering Quantities 200	500
Contact Disc	10-1305	Sketch on follg. page	.22[illegible]	.204
Set Screw Contact	13-1733	Vendor's standard	.06	.06
SUB-ASSEMBLY	57-5[illegible]	new Incl. I. M. E.	.025	.025
TOTAL COST for pieces required (1)			.30[illegible]	.289

(Tool cost on the contact disc $72.00)

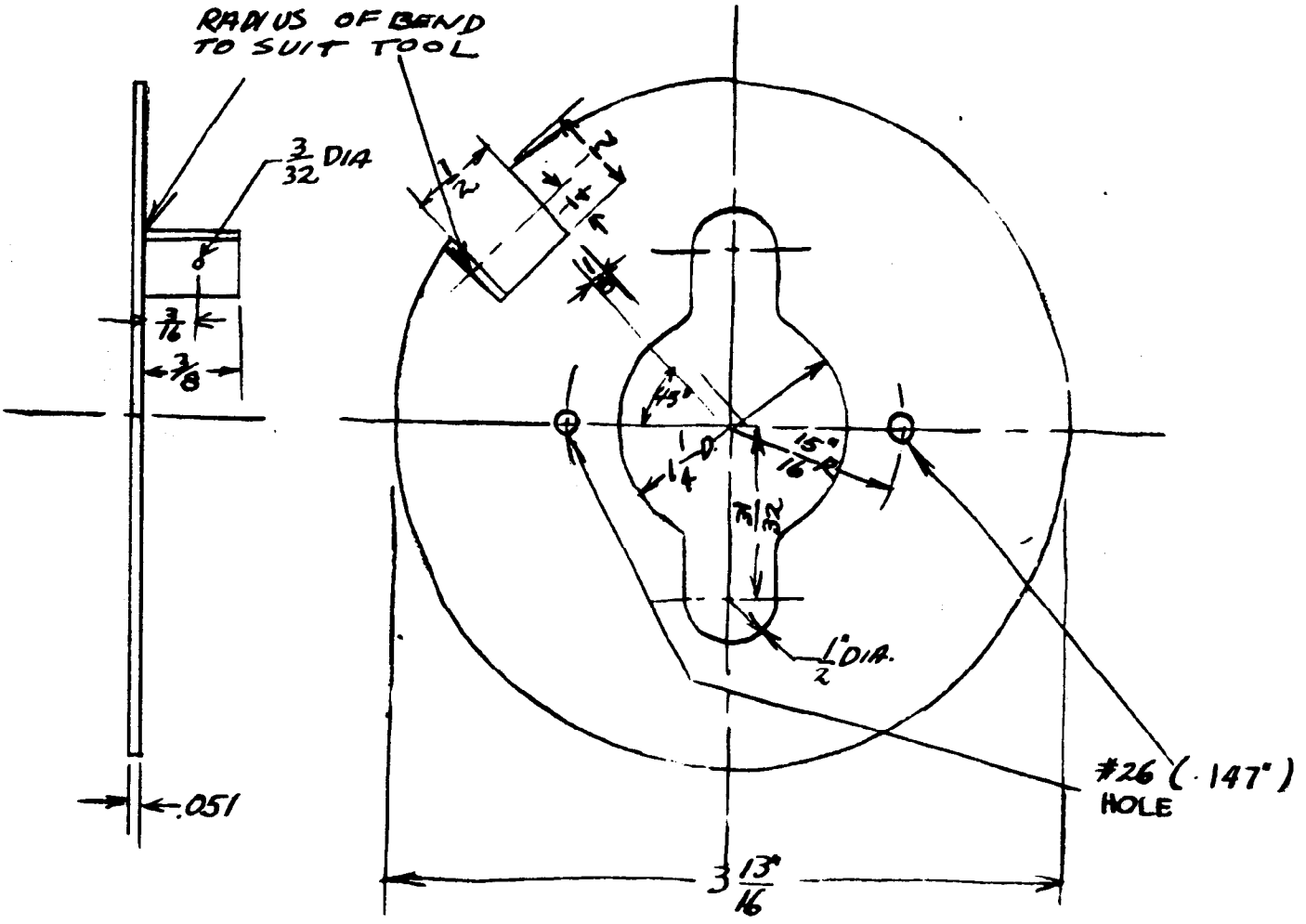
COMMENTS:

A specialty vendor for low quantity stampings quoted on the contact disc as shown on the following page.

By bending up a lip on the contact disc, it was possible to eliminate the contact block, print #17-1710.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 19[illegible]

M/



MAT. BRASS SHEET #16 B+S GAUGE
1/4 HARD

REVISIONS

GROUP	DESCR.	G. NO.

CONTACT DISC

FIRST MADE FOR

BEGUN BY

FINISHED BY

TRACED BY Jakeyan Feb 22 49

INSPECTED

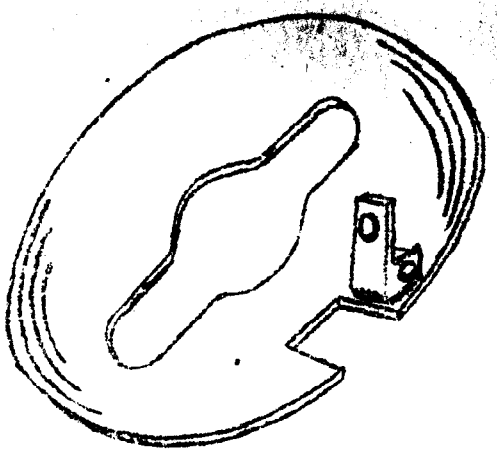
GENERAL ELECTRIC WORKS

SCHDY

REVISION OF G.E. X-RAY

10-1305

Contact Disc Sub-Assembly
37-507



Present Cost

Name of Item	Part #	Mat'l	Labor	I.M.E.	Total
Contact Disc Sub-Assembly	37-507		Unavailable		
Contact Assembly	37-515		.03	.08	.11
Contact Disc	10-1302	.12	.07	.17	.36
Contact	17-1698	.02	.04	.11	.17
Contact Pivot Block	17-1699	.003	.07	.18	.25

PARTIAL COST for pieces required (1 ea.) .89

Proposed Cost

Name of Item	Part #	Ordering Quantities 200	500
Contact Disc Sub-Assembly	37-507	.038	.036
Contact Assembly	37-515	.011	.011
Contact Disc	10-1302	.24	.198
Contact	17-1698	Eliminated	
Contact Pivot Block	17-1699	Eliminated	

TOTAL COST for pieces required (1 ea.) .287 .245

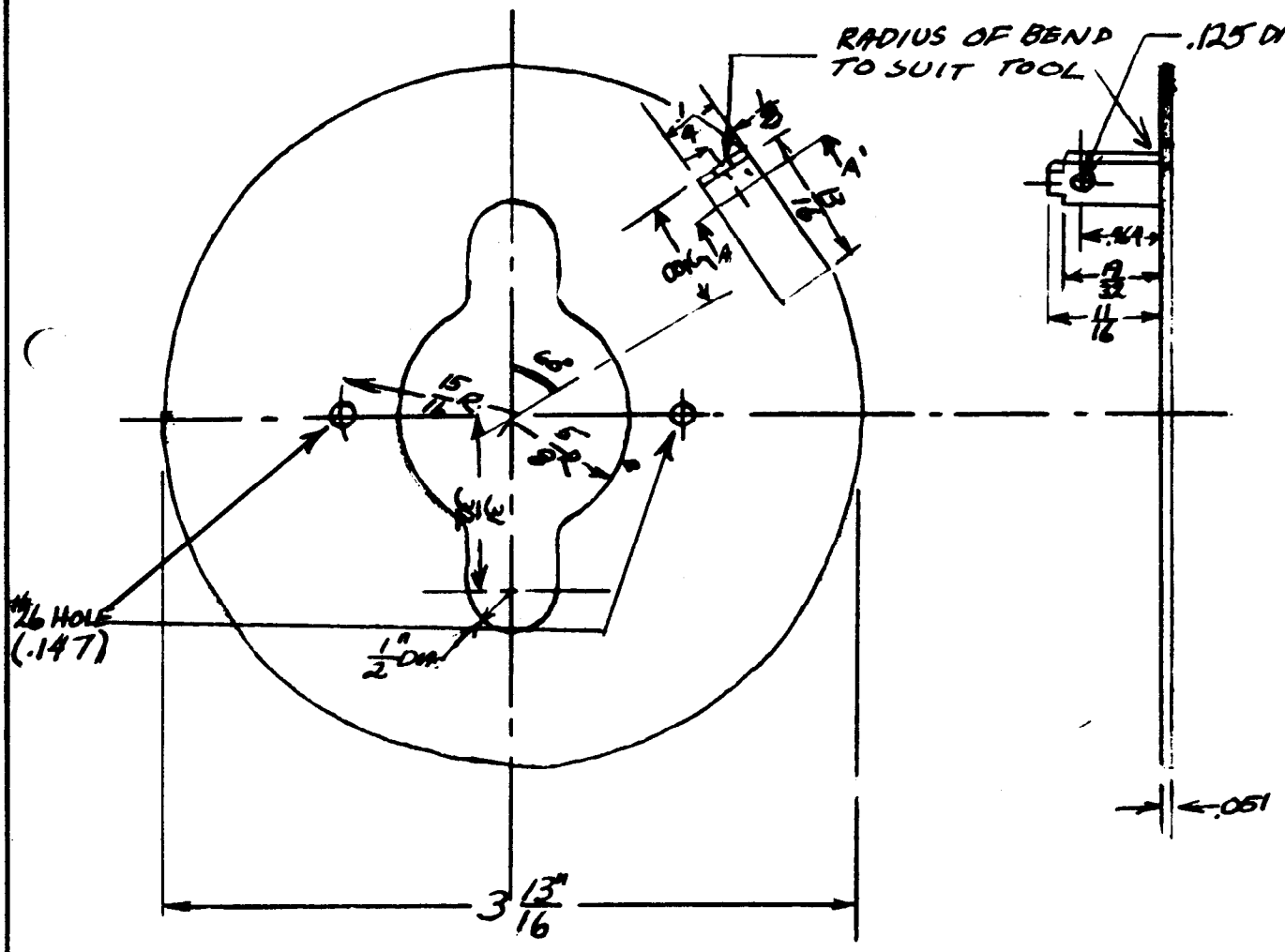
COMMENTS:

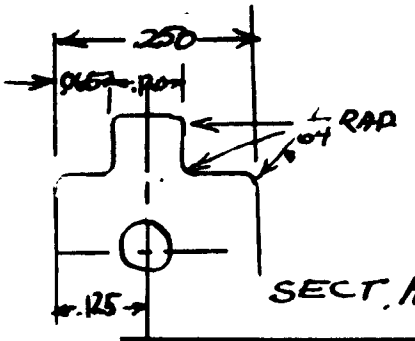
By forming the "Contact Disc, #10-1302" as shown on the following sketch, the Contact and Contact Pivot Block, Part #17-1698 and #17-1699 were eliminated. The method of obtaining a pivot is shown under the discussion of the "Spring For Contact" part #32-365.

The proposed cost of the "Contact Disc" part #10-1302 was obtained from a specialty vendor complete with the formed lip.

The low assembly cost of part #37-515 was achieved as the contact is now placed on the spring part #10-1302 and polishing and buffing operations were eliminated.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 19[illegible]





MAT. BRASS SHEET #16 B&S GAUGE
1/4 HARD

REVISIONS

GROUP	DESCR.	G. NO.

CONTACT DISC

FIRST MADE FOR

BEGUN BY
FINISHED BY
TRACED BY Robin Kayes
INSPECTED

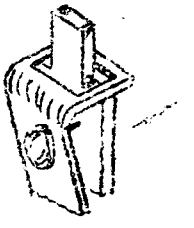
GENERAL ELECTRIC WORKS
SCHDY

REVISION OF G.E. X-RAY
10-1302

Spring for Contact
32-365

Present Cost

Material .0035" thick, spring phosphor bronze	.001
Labor Cutting, punching, forming	.012
I. M. E. (260%)	.031
TOTAL COST for pieces required (1)	.04



Proposed Cost

In order to eliminate the "contact pivot block" part #17-1699 and "contact" part #17-1698, it was necessary to use a spring as shown on the following page.

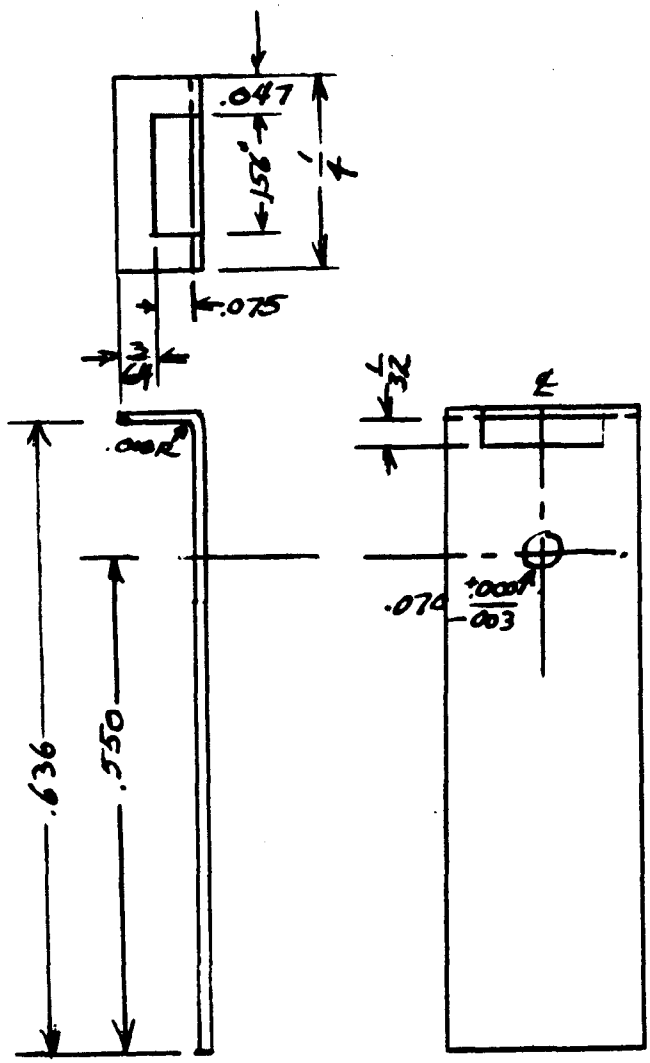
A specialty vendor quotes on this part as follows:

Ordering quantities of 200 .093 ea.
Ordering quantities of 500 .067 ea.

Tool cost $48.00

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/



TO BE ASSEMBLED
TO 10-1302

MAT. 4% PHOSPHOR BRONZE

REVISIONS

G. NO.	GROUP	DESCR.

CONTACT SPRING

FIRST MADE FOR G.E. X-RAY TIMER

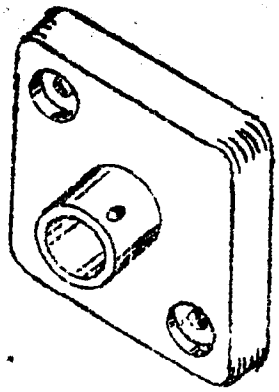
BEGUN BY _____ TRACED BY _____

FINISHED BY _____ INSPECTED _____

GENERAL ELECTRIC WORKS SCHDY

REVISION OF X-RAY CONTACT SPRING SKETCH #3

PR-569-R (10-47) PRINTED IN U.S.A.



Insulating Board
66-383
8-744

Present Cost

Part #66-383	
Purchased part, molded plastic	.168
Part #8-744	
This print calls for a ream drill and tap operation	.22
TOTAL COST FOR pieces req'd (1 ea.)	$ .388

Proposed Costs

Part #66-383	
Purchased from same vendor	.122
Part #8-744	
Estimated cost for a drill tap and ream operation including 260% I. M. E.	.072
	.194

COMMENTS:

The present vendor for the molded plastic part will make the mold semi-automatic at his expense, providing we continue purchasing the part. The new quotation is shown above.

The possibility of making this part as a screw machine part pressed into a fabricated plastic sheet was investigated.

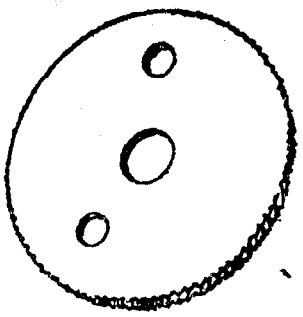
The best quotations received were as follows:

	Ordering quantities 200	500
Screw Machine Part	.09 ea.	.072 ea.
Marking plastic part	.22 ea.	.196 ea.
Total Cost	.31 ea.	.269 ea.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

Index Disc
10-1299



Present Costs (complete)

Material #14 Gauge, Clock Brass Sheet	.14
Labor Punch, Drill, Turn, Mill, Rivet, Ream	.37
I. M. E. (260%)	.96
TOTAL COST for pieces required (1)	$1.47

Proposed Costs

A specialty vendor quotes on the piercing and blanking operations, using commercial brass as follows:

Ordering quantities of 200 or 500		.275
Estimated cost of other operations based on milling 50 together on an arbor		
(a) Assembly on arbor and turn 50. each	.01x360%	.036
(b) Mill 85 slots on each	.02x360%	.072
(c) Drilling and pining 11-1412	.03x360%	.108
(d) Ream and press on part 15-1065	.04x360%	.144
TOTAL COST for pieces required (1)		.635
Tool Cost on the stamping	$14.00	

COMMENTS:

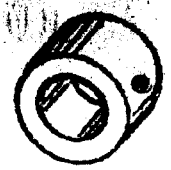
The drilling and riveting of part #11-1412 could be eliminated by piercing and bending up "ears" on the index disc. This was not included in the proposed cost as it would then be impossible to stack the parts on the milling machine. Piercing and forming after milling would be feasible, however.

Aluminum 24S should be investigated for this part rather than brass for additional material savings.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

Collar for Main Shaft
10-1306



Present Cost

Material Steel, C. R., 7/16 Rd.	.001
Labor Screw machine, drill, finish	.051
I. M. E. (260%)	.13
TOTAL COST for pieces required	.18

Proposed Cost

A specialty screw machine vendor quotes on these parts as follows:

Ordering quantities of 200	.074 ea.
Ordering quantities of 500	.047 ea.

Tool Cost $20.00

COMMENTS:

The above quotation is for the part exactly as shown on the print.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

Stop Pin
11-1412

Present Cost (complete)

Material Brass 5/32" Round	.005
Labor Screw machine	.146
I. M. E. (260%)	.38
TOTAL COST for pieces required (2)	.54

Proposed Cost

A specialty screw machine vendor quotes on this part as follows:

Ordering quantities	400	800
	.026 ea. set.	.02 ea.
TOTAL COST for pcs. req'd (2)	.052	.04

COMMENTS:

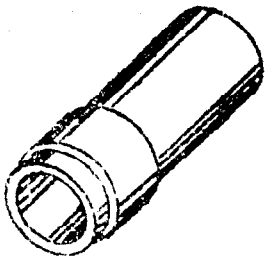
This part would be exactly as shown on print #11-1412.

For additional comments, see "Comments" on Index Card 10-1299.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M

Bearing for 92 tooth gear
15-1060



Present Cost (complete)

Material 4% Phosphor Bronze 3/4 Rd.	.31
Labor Screw machine, riveting	.29
I. M. E. (260%)	.75
TOTAL COST for pieces required 1)	$1.35

Proposed Cost

A specialty vendor quotes on this part as follows:

Ordering quantities of 200 .296 ea.
Ordering quantities of 500 .263 ea.

Tool Cost $25.00

COMMENTS:

The material cost of the phosphor bronze was [illegible].
The proposed cost is for the bearing made of brass.

PURCHASING DEPARTMENT
Value Analysis Division
April [illegible], 1945

M

Lever Extension
21-288

Present Costs

Material Steel Strip 1/16 x 5/16	.001
Labor Cut and form	.16
I. M. E. (260%)	.42
TOTAL COST for pieces required (1)	$ .58

Proposed Costs

A low cost die vendor quotes as follows:

Ordering quantities of 200	.051
Ordering quantities of 500	.033

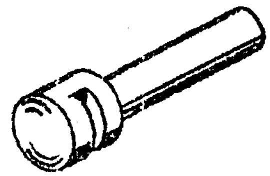
Tool Costs $12.00

COMMENTS:

The proposed tools are for making the part complete as shown on print [illegible] This includes cadmium plating.

PURCHASING DEPARTMENT
Value Analysis Section
April [illegible] 1958

Actuating Lever
21-308



Present Costs (Complete)

Material	.002
Steel, C. R. 5/16 Rd.	
Labor	.058
Screw machine, milling, plating	
I. M. E. (260%)	.15
TOTAL COSTS for pieces required (1)	$ .21

COMMENTS:

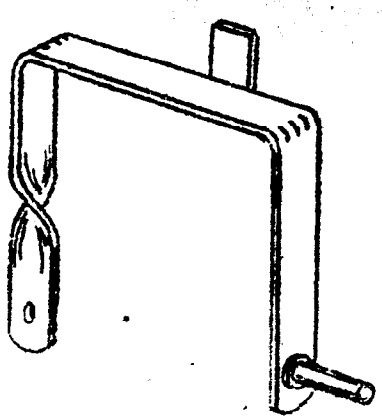
This part has been eliminated.

By mounting the solenoid on the rear disc and mounting the timing lever, part #21-310, on the proposed "bracket for contacts" (part #[illegible]), it is possible to use the standard solenoid plunger furnished by the vendor.

PURCHASING DEPARTMENT
Value Analysis [illegible]
April [illegible]

M/

Timing Lever
21-310



Present Costs

Material Steel strip 1/16 x 5/16	.011
Labor Cutting, forming, drilling	1.82
I. M. E. (260%)	4.73
TOTAL COST for pieces required (1)	$6.56

Proposed Costs

A low cost die stamping vendor quotes on the part as follows:

Ordering quantities	200	500
	.175 ea.	.11 ea.
Welding, lever extension 21-288	.004 x 360% =	.014 ea.
Riveting, Pin for lever 11-1409	.004 x 360% =	.014 ea.
Riveting, Rivet for Ball Bear. 28-704	.004 x 360% =	.014 ea.
TOTAL COST for pieces req'd	.217 ea.	.152 ea.

Tool Cost on the stamping $69.00

COMMENTS:

The vendor quoted on the stamping only. The welding and riveting operations must be performed at the X-Ray plant.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

Rivet for Ball Bearing
28-704

Present Cost

Material C. R. Steel, 5/32" Rd.	.001
Labor Screw machine I. M. E. (260%)	.33 .86
TOTAL COST for pieces required (1)	$1.19

Proposed Cost

A specialty vendor quotes on this part as follows:

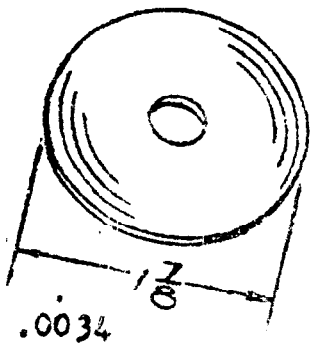
Ordering quantities of 200	.044
Ordering quantities of 500	.024

COMMENTS:

The above proposed could be exactly as shown in the drawing, except it is to be made of brass rather than steel. This would make better bearing for the ball.

PURCHASING DEPARTMENT
[illegible]
April [illegible], 1941

Disc for Spring
10-1309



Present Costs

Material Steel Sheet, #22 Gauge	.0034
Labor Punch and Plate	.021
I. M. E. (260%)	.055
TOTAL COST for pieces required (1)	$ .08

Proposed Cost

The following costs were submitted by a cold-rolled steel die firm.

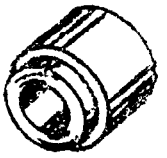
Ordering quantities of 200	.047
Ordering quantities of 500	.038

By submitting to a cold-rolled steel die vendor, the tool cost is just $5.00.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

Bushing for Inder Disc
15-1065



Present Cost

Material Brass 11/16 Round	.05
Labor Screw machine, turning I. M. E. (260%)	.39 1.01
TOTAL COST for pieces required (1)	$1.45

Proposed Cost

One specialty vendor quotes on this part as follows:

Ordering quantities of 200	.155 ea.
Ordering quantities of 500	.122 ea.

Tool charge $40.00

COMMENTS:

This part would be supplied by the vendor exactly as shown on the print.

PURCHASING DEPARTMENT
Value Analysis
April 1, 19[illegible]

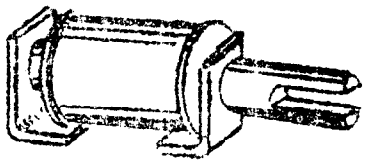
By

SOLENOID AND CLUTCH ASSEMBLY

SOLENOID AND CLUTCH ASSEMBLY

	Print #	Present Cost	Proposed Cost Ordering Quantities 200	500
Solenoid and Lever Assembly				
Solenoid Assembly	37-599	.07	eliminated.	
Solenoid	59-182	1.20	1.17	1.07
Pin for Lever	11-1409	2.20	.069	.042
Lever Extension	21-288	.58	.051	.038
Actuating Lever	21-308	.21	eliminated	
Timing Lever	21-310	6.56	.217	.152
Rivet for Ball Bearing	28-704	1.19	.044	.024
Timing Lever Assembly	37-499	.03	.011	.011
Total		12.04	1.56	1.34
Clutch Assembly				
Clutch Assembly	37-547	Unav.	est. .072	.072
Disc spring	10-1307	.06	.06	.06
Disc for Spring	10-1309	.08	.047	.038
Slotted Collar for Spring	10-1320	.26	.067	.047
Timing Disc	10-1719	.28	.19	.19
Pin for Timing Gear	11-1[illegible]	[illegible]	.05	.023
Bearing for Timing Disc	15-10[illegible]	[illegible]56	.208	.172
Stop for Contacts	16-26[illegible]	[illegible]	.0[illegible]3	.035
Guide for Lever	21-[illegible]89	1.10	.266	.186
Pad for Timing Disc	27-742	.02	.02	.02
Assembly of Timing Disc	34-[illegible]64	.94	.036	.036
Spring for Timing Disc	67-232	.01	.01	.01
Total		3.55	1.07	.892

Solenoid
59-1[illegible]2



Present Costs (Continued)

This is presently a purchased part from a specialty vendor. The cost for the 50/60 cycle, 115 volt solenoid is as follows:

Present Cost $1.20 ea.

Proposed Cost

The same specialty vendor manufactures a standard solenoid with the same mounting dimensions as the above with the following rating:

[illegible] volts
[illegible] cycles
[illegible] stroke
[illegible] pull
[illegible] duty

Cost of this solenoid is as follows:

Ordering quantities of 200 $1.17 ea.
Ordering quantities of 500 1.07 ea.

COMMENTS:

This includes the cost of an actuating lever eliminating part 21-308.

PURCHASING DEPARTMENT
Value Analysis Section
April 1, 19[illegible]

M/

Pin for Lever
11-1409

Present Costs

Material Steel, C. R., 3/16 RD.	.002
Labor Screw Machine I. M. E. (260%)	.61 1.59
TOTAL COST for pieces required (1)	$2.20

Proposed Costs

Outside vendor quotes for this part as follows:

Ordering quantity of 200	.069 ea.
Ordering quantity of 500	.042 ea.

Tool Cost $20.00

COMMENTS:

This part would be supplied [illegible] on the drawing. It would be [illegible] of steel and thus eliminate [illegible]

Slotted Collar for Spring
10-1320

Present Cost

Material Brass 9/16 round	.008
Labor Screw machine, slotting	.07
I. M. E. (260%)	.18
TOTAL COST for pieces required (1)	.26

Proposed Cost

A specialty vendor quotes on this part as follows:

Ordering quantities of 200	.067 ea.
Ordering quantities of 500	.047 ea.

No Tool Cost

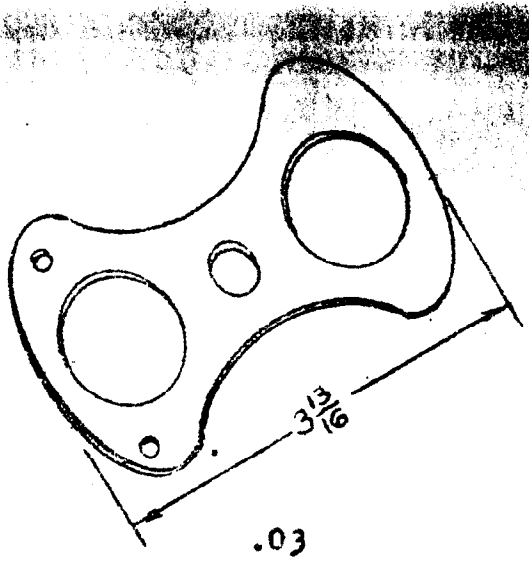
COMMENTS:

This part would be furnished by the vendor exactly as shown on the print.

PURCHASING DEPARTMENT
Value Analysis Division
April [illegible], 1949

M/

Timing Disc
10-1719



Present Costs

Material Steel Sheet .059"	.03
Labor Cutting, Punching, Drilling	.07
I. M. E. (260%)	.18
TOTAL COSTS for pieces required (1)	$ .28

Proposed Costs

A low-cost die vendor quotes on this part as follows:

Ordering quantities of 200	.216
Ordering quantities of 500	.196

Tool cost $36.00

COMMENTS:

The part as purchased from the vendor would require a finishing operation on the center hole in which .015 ea. was allowed.

Another vendor quotes on this part less countersinking and reaming as follows:

Ordering quantities from 200 to 999	.165
Countersinking and Reaming estimated	.025
TOTAL COST for pieces required	.190

Tool Cost $38.00

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

Pin for Timing Gear
11-1411

Present Cost

Material Steel, C. R. 1/8" Rd.	.0007
Labor Screw machine, Finishing	.04
I. M. E. (260%)	.10
TOTAL COST for pieces required (1)	.14

Proposed Cost

A specialty vendor quotes on this part as follows:

Ordering quantities of 200	.019 ea.
Ordering quantities of 500	.023 ea.

COMMENTS:

This part would be furnished complete to the print. The material, however, would be brass instead of [illegible] for a plating operation.

[illegible]

M/

Bearing for timing disc
15-1058

Present Cost

Material 4% Phosphor Bronze, 9/16" rd.	.06
Labor Screw machine I. M. E. (260%)	.14 .36
TOTAL COST for pieces required (1)	.56

Proposed Cost

A specialty vendor quotes on this part as follows:

Ordering quantities of 200	.208 ea.
Ordering quantities of 500	.175 ea.

Tool Cost--$25.00

COMMENTS:

The proposed cost is to furnish the part exactly as called on the print with the exception of using bronze other than Phosphor Bronze.

M/

Stop for Contacts
16-268

Present Cost

Material Linen base, Bakelite, 1/4" rd.	.017
Labor Screw machine, drilling, tapping	.02
I. M. E. (260%)	.06
TOTAL COST for pieces required (1)	.10

Proposed Cost

A specialty plastic fabricating company quotes as follows on this part:

Ordering quantities of 200	.0[illegible] ea.
Ordering quantities of 500	.03[illegible] ea.

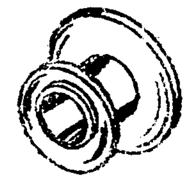
COMMENTS:

This gear would be furnished for the above proposed costs exactly as shown on the print.

[illegible]
Value Analysis Division
April [illegible]

M/

Guide for Lever
21-239



Present Costs (Complete)

Material	.02
S. A. E. 1013 Steel [illegible] 1/8" Rd.	
Labor	.30
Screw Machine, Grind, Finish	
T. M. E. (260%)	.78
TOTAL COSTS for pieces required (1)	$1.10

Proposed Costs

A specialty vendor quotes on this part as follows:

Ordering quantities of [illegible] .66 ea.
Ordering quantities of 500 .156 ea.

Tool Costs $30.00

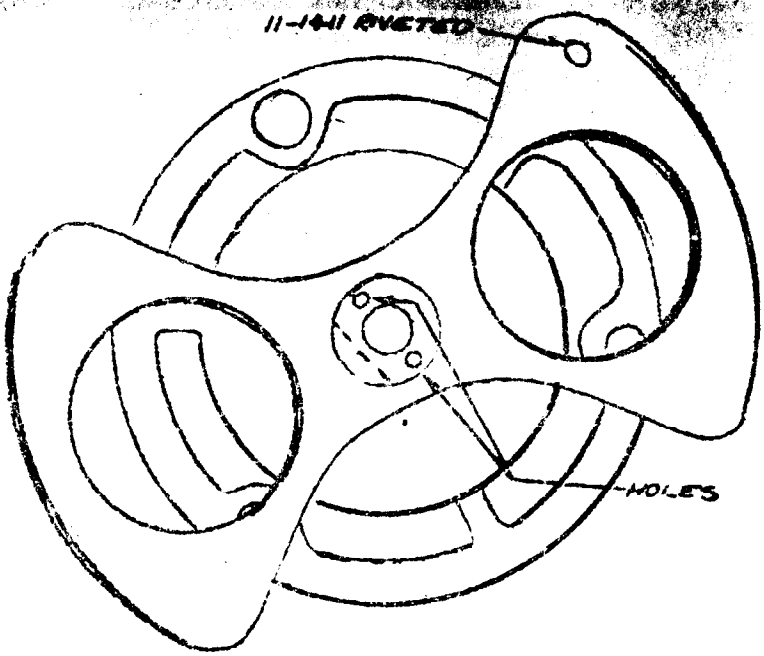
COMMENTS:

This quotation is for the part exactly as shown on print including plating. The excessive present labor cost is partly due to the time required for the machine operator to procure and register for the "special" steel.

PURCHASING DEPARTMENT
Value Analysis Division
April [illegible], 1949

M/

Assembly of Timing Disc
24-364



Present Cost

The present labor cost for this assembly is .94 ea.

Proposed Cost

This assembly is re-planned estimating each operation as follows:

Operation	Labor	Labor / I.M.E.	Total
Rivet on part [illegible]	.007	x 360%	= .025
Stack parts in fix. #55 Drill 2 holes .12/16 deep #54 Drill 2 holes .37/64 deep Drive rivets	.06	x 360%	= .216
Broach to .2500 to .2505 Dia.	.007	x 360%	= .025
Face end of [illegible] on bench grinder	.01	x 360%	= .036
TOTAL COST [illegible] pieces required (1)			.302

COMMENTS:

A study of the factor involved indicates that the above proposed cost is adequate.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

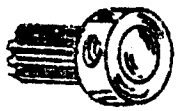
GEAR ASSEMBLIES

GEAR ASSEMBLIES

Print #	Name of Item	Present Cost	Proposed Cost Ordering Quantities 200	500
10-1714	Collar for 12 tooth gear	.50		
20-506	12 tooth blank	.94		
71-273	12 tooth gear	.15		
	Total	1.59	1.03	.91
20-496	20 tooth gear blank	.20		
71-357	20 tooth gear	.08		
	Total	.28	.28	.22
15-1064	Bushing	.36		
20-497	100 tooth gear blank	.26		
34-358	100 tooth gear	.15		
71-266	Assembly	.58		
	Total	1.35	.81	.71
20-496	20 tooth gear blank	.89		
71-357	20 tooth gear	Unavailable		
	Total	.89 +	.23	.15
37-539	Intermediate Gear Asm.	Unavailable	.06	.05
	Total for all parts	$4.12 +	2.43	2.00

M/

12 Tooth Gear and Hub Assembly
20-506



Present Cost

Name of Item	Part #	Mat'l	Labor	I.M.E.	Total
Collar	10-1714	.002	.14	.36	.50
Assembly	20-506		.26	.68	.94
Steel Spur Pinion	71-278		Purchased		.15
TOTAL COST for pieces required (1) ea.					$1.59

Proposed Cost

A specialty gear manufacturing company quotes on this part as follows:

Ordering quantities of 200	1.03 ea.
Ordering quantities of 500	.91 ea.

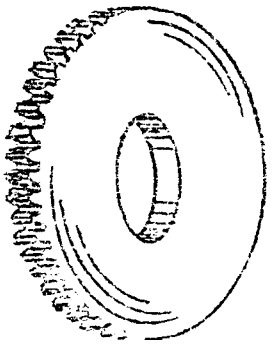
COMMENTS:

This part would be furnished completely assembled as shown on the present prints.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

92 tooth gear
20-498



Present Costs

Name of Item	Print #	Mat'l	Labor	I.M.E.	Total
92 tooth gear blank	20-498	.15	.013	.034	.20
92 tooth gear	71-247	Purchased			.08
TOTAL COST for pieces required (1)					.28

Proposed Cost

A specialty gear manufacturer quotes as follows:

Ordering quantities of 200	.32 ea.
Ordering quantities of 500	.22 ea.

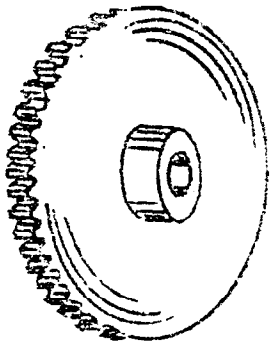
COMMENTS:

The present cost is good value and a lower cost by purchasing from a vendor would be realized only for larger ordering quantities.

A specialty vendor will supply a comparable substitute for this part consisting of brass spur pinion with an I. D. of .1875--.1878. This would not be to present drawings and therefore was not included in the "Summary of Costs".

Ordering quantities of 200	.23 ea.
Ordering quantities of 500	.17 ea.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949



Gear & Hub Assembly
34-358

Present Costs

Name of Part	Part #	Matl	Labor	I.M.E.	Total
100 tooth gear blank	20-497	.14	.032	.063	.26
Bushing	15-1064	.004	.10	.26	.36
100 tooth gear	71-266	.16		purchased	.16
Assembly	34-358		.16	.42	.58
TOTAL COST for pieces required (1 ea.)					1.36

Proposed Costs

These parts were quoted as follows from a specialty gear vendor:

Ordering Quantities	200	500
Steel	.81	.63
Brass	.835	.65

To tool charge

COMMENTS:

The above costs are for the parts assembled identically as called for on print #34-358.

A standard gear to replace this part would be of spoke construction and have a hole diameter of 5/16" as compared with 3/16", now used.

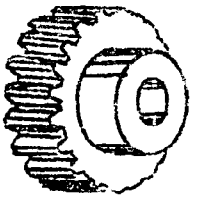
PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

A later quotation received for this part complete from a specialty vendor was as follows:

Ordering quantities of 200 .76 ea.
Ordering quantities of 500 .51 ea.

20 Tooth Gear
71-357



Present Costs

Name of Part	Part #	Mat'l	Labor	I.M.E.	Total
20 tooth gear blank	20-496	.17	.20	.52	.89
20 tooth gear	71-357		Unavailable		

Proposed Cost

This part is the exact same dimensions of specialty gear company's standard:

The cost would be as follows:

	Brass	Steel
Ordering quantities of 200	.40	.252
Ordering quantities of 500	.35	.154

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

MISCELLANEOUS PARTS
and
ASSEMBLIES

MISCELLANEOUS PARTS AND ASSEMBLIES

			200	500
Shafts and Pins				
Shaft for timing gear	9-1786	.09	.05	.03
Gear shaft	9-1789	.12	.051	.043
Pin for Contact Roller	11-1417	.12	.067	.061
Pin for Main Shaft	11-1418	.05	.05	.05
		.38	.218	.184
Washers				
	12-657	.01	.005	
4 required	12-1505	.11	.02	
2 required	12-1506	.07	.015	
1 required	12-1508	.01	.006	
		.20	.046	
Pawl Assembly				
Pawl sub-assembly	37-493	.04	est. .018	.018
Collar for Spring	10-1308	.97	eliminated	
Pin for Pawl	11-1410	.23	eliminated	
Pawl	16-267	2.00	.071	.054
Spring for Pawl	32-367	.03	.03	.03
		3.27	.119	.102
Dial Light				
Lamp Socket	37-500	.05	eliminated	
Lamp Socket	59-179	.12	.054	.054
		.17	.054	.054
Motor Assembly				
Motor assembly	37-498	Unav.	est. .072	.072
Mounting Stud	13-1727	1.14	.072	.054
Motor	94-119	8.53	8.53	8.53
		9.67	8.674	8.656
Miscellaneous				
Terminal Block	8-745	.61	.124	.089
Stud for Spring	13-1726	.09	.045	.025
Spring	32-366	.28	.28	.28
Nameplate	55A065	.07	.07	.07
		1.05	.524	.466

Shafts and Pins
9-1786
9-1789
11-1417
11-1418

Present Costs (of parts listed)

		Mat'l	Labor	I.M.E.	Total
Shaft for timing gear	9-1786	.0015	.023	.06	.085
Gear Shaft	9-1789	.002	.032	.083	.12
Pin for Contact Roller	11-1417	.0013	.032	.083	.12
Pin for Main Shaft	11-1418	.0021	.013	.034	.05

TOTAL COST for pieces required (1 each) .375

Proposed Costs

Screw machine vendors quoted on these parts as follows:

		Ordering Quantities 200	500
Shaft for Timing Gear	9-1786	.035	.039
Gear Shaft	9-1789	.051	.043
Pin for Contact Roller	11-1417	.057	.061
Pin for Main Shaft	11-1418 ea.	.021	.05
TOTAL COST for pieces required (1		2 3	.18

COMMENTS:

Shaft #9-1786 is exactly as per drawing except it is quoted above as made on a screw machine with the center holes omitted as they are not necessary.

The above parts are shafts and pins varying in length from 13/32 inches to 1 3/16 inches and in diameter from .0932 to 3/32 inches.

PURCHASING DEPARTMENT
Value analysis division
April 1, 1949

M/

Washers

Present Cost

Part No.	# per Timer	Labor	L.M.E.	Total
12-657	1	.003	.008	.011
12-1505	4	.030	.08	.11
12-1506	2	.019	.048	.07
12-1508	1	.0006	.0015	.002

TOTAL COST for pieces required (8) .20

Proposed Cost

A specialty vendor throughout the years has accumulated many dies for special washers.

His cost for the identical washer or usable similar one are as follows:

Part #	# Req'd	Cost	Ordering Quantities
12-657	1	.005	1,000
12-1505	4	.02	10,000
12-1506	2	.015	6,000
12-1508	1	.006	5,000

TOTAL COST for pcs req'd .046

COMMENTS:

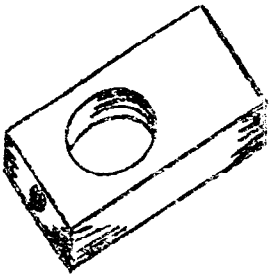
These are special washers currently made in relatively large quantities at the X-Ray plant as they are used in other than the timer application.

The above proposed cost reduction could be realized in other X-Ray equipment.

If a standard washer was used, greater savings would be possible.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

Collar for Spring
10-1303



Present Cost (Complete)

Material	.003
Labor	.27
I. M. E. (260%)	.70
TOTAL COST for pieces required (1)	.97

COMMENTS:

The only function of this part is to hold the spring for the pawl and hold the pawl against the front face.

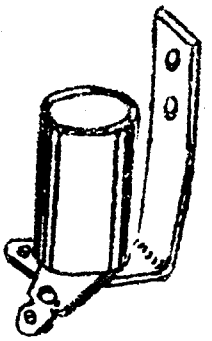
The pawl could be held the proper distance from the Front Disc, part #10-1303, by a step in the supporting rod, part #9-1783.

The straight spring could be inserted in a hole drilled at the proper angle in the supporting rod and held in place by a set screw or peen operation.

PURCHASING DEPARTMENT
Value Analysis Division
April 1,1949

M/

Lamp Socket
37-500



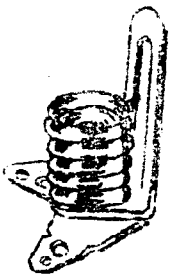
Present Cost

This is a purchased part from a specialty vendor.

	Labor	I.M.E.	
Lamp Socket 59-179			.122
Bending Terminals 37-500	.0149	.039	.054
TOTAL COST for pieces required (1)			.176

Proposed Cost

Lamp Socket	.054
TOTAL COSTS for pieces req'd (1)	.054



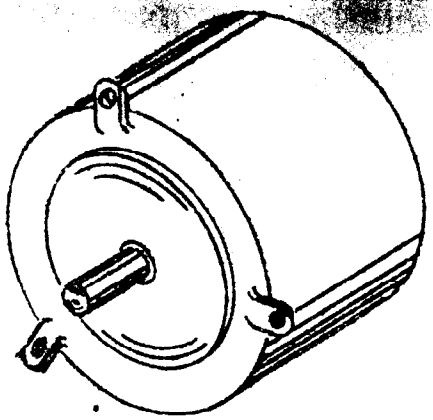
COMMENTS:

The part substituted is also a product of a specialty dial light vendor requiring no bending of terminals. It is also interchangeable with the present lamp socket.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

Motor
94-119



Present Cost

The motor is presently a G. E. Synchroncus Motor with capacitor. Catalog #5SMY20J9, 110 volts, 60 cycles.

Present Cost--$8.53

COMMENTS:

The cost of this motor is a large percentage of the material cost in the timer. Every effort should be made to use a Telechron motor or two Telechron motors in tandem. This proposal would require testing and, therefore, the saving feasible was not incorporated in the cost summary.

If it is found that it is necessary to use a motor with the torque rating of the G. E. 5SMY20J9, this motor should be used in place of the Bodine motor now in use on some models. The Bodine motor is 100 RPM, but it costs $14.17 or $5.64 more than the G. E. motor. This is more than enough to pay for any necessary additional gearing.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

Mounting Stud for Motor
13-1727

Present Costs

Material Brass 5/16" Rd.	.048
Labor Screw machine, finishing	.297
I. M. E. (260%)	.78
TOTAL COST for pieces required (3)	$1.15

Proposed Costs

A screw machine vendor quotes on this part as follows:

Ordering quantities	600	1500
	.024	.018
	x3	x3
TOTAL COST for pieces required (3)	.072	.054

Tool Costs $20.00

COMMENTS:

The quotations for this part were approximately the same for brass or for steel cadmium plated.

Another vendor quoted as follows for steel cadmium plated.

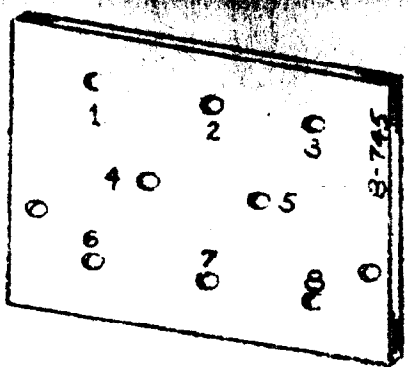
Ordering quantities	600	1500
	.042	.025
	x3	x3
	.126	.075

with no tool cost.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

Terminal Board
8-745
82-116



Present Costs (for 8-745 only)

Material Bakelite Sheet XPNP-33	.30
Labor Cutting to size and piercing	.09
I. M. E. (260%)	.22
TOTAL COST for pieces required (1)	$ .61

Cost of Stencilling

The above cost does not include the cost of silk screen stencilling as per print #82-116. This cost is unavailable.

Proposed Costs

This part was sent to outside vendors for consideration. The following was the best quotation received and includes rubber stamping the numbers as shown on print #82-116.

Ordering quantities of 200	.1240 ea.
Ordering quantities of 500	.0897 ea.
Ordering quantities of 1000 and over	.0855 ea.

COMMENTS:

There is a tool cost of between $14 and $33 depending on the size of the initial order only.

When the orders for this item (regardless of the length of time required) aggregate $350.00, the tool cost is subject to rebate in full.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

Stud for Spring
13-1726

Present Cost (Complete)

Material C. R. Steel, 5/16 Rd.	.0008
Labor Screw machine	.024
I. M. E. (260%)	.062
TOTAL COST for pieces required (1)	.087

Proposed Cost

A specialty vendor quotes on this part as follows:

Ordering quantities of 200	.045 ea.
Ordering quantities of 500	.025 ea.
Tool Cost	$10.00

COMMENTS:

The above quotation is to make the part as shown on the print without change.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/

SUMMARY OF COSTS

Itemized Assemblies	Present Cost	Proposed Cost Ordering Quantities 200	500
FRONT FACE AND SUPPORT ASSEMBLIES	$13.0[illegible]	$ 4.41	$ 3.93
ELECTRICAL CONTACT AND SWITCH ASM			
Contact Switch Assembly	.86	.16	.15
Contact Block Assembly	.89	.40	.32
Break Contact Assembly	4.03	.87	.72
MAIN SHAFT ASSEMBLY			
Main Shaft	1.78	.22	.14
Contact Disc Assembly	2.79	.82	.76
Miscellaneous	5.03	1.40	1.26
SOLENOID AND CLUTCH ASSEMBLY			
Solenoid and Lever Assembly	12.0[illegible]	1.56	1.34
Clutch Assembly	3.55	1.07	.89
GEAR ASSEMBLIES	4.12	2.43	2.00
MISCELLANEOUS			
Shafts and Pins	.38	.2[illegible]	.16
Washers	.20	.0[illegible]	.0[illegible]
Pawl Assembly	3.27	.[illegible]	.[illegible]
Dial Light Assembly	.37	.[illegible]	.[illegible]
Motor Assembly	9.67	3.67	3.[illegible]
Miscellaneous	1.05	.52	.[illegible]
WIRING DIAGRAM	.72	.42	.42
FINAL ASSEMBLY	Unav.	1.44	1.44
PRESENT PARTIAL* COST	$63.60		
PROPOSED TOTAL COST (incl. all assembly operations)		$24.[illegible]	$22.86

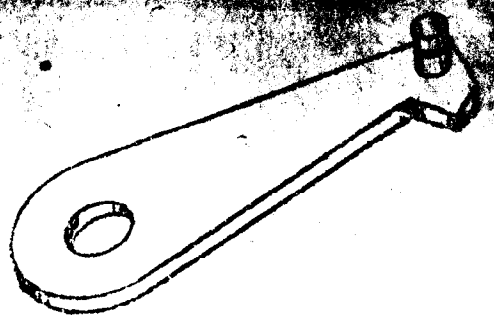
*Cost of many assembly operations unavailable.

In order to achieve the above proposed costs, a tool charge of approximately $1,000 would be necessary. If this were amortized in one year, the above cost would be approximately $1.00 higher.

Return This to Time Report.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

Pawl
16-267



Present Costs

Material		.056
Steel Sheet 3/32"		
Labor		.54
Punch, mill, rivet		
I. M. E. (260%)		1.40
	Total Cost	$2.00

Drg. #16-267 also requires Part #11-1410, "Pin for Pawl", the cost of which is as follows:

Material		.0005
Steel, 5/32 Rd.		
Labor		.06
Screw machine		
I. M. E. (260%)		.16
	Total Cost	.22

TOTAL COST for pieces required (1 each) $2.22

Proposed Costs

Ordering quantities of 200	.071
Ordering quantities of 500	.054

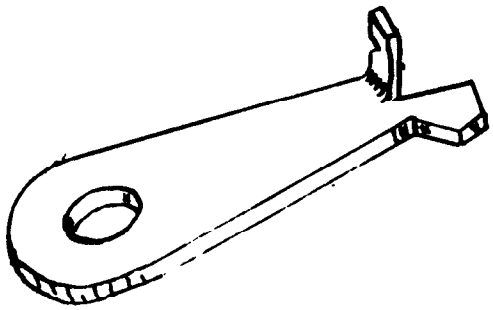
COMMENTS:

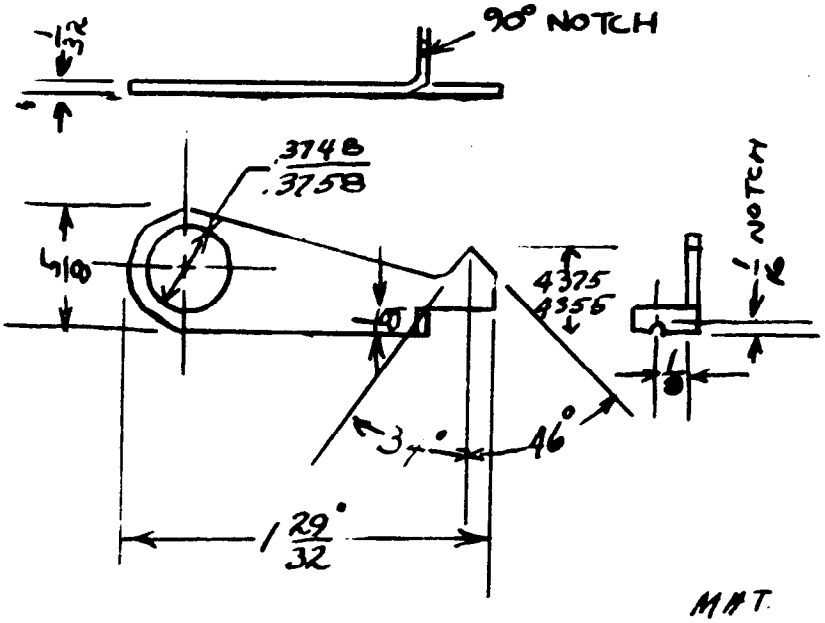
The quotation above was submitted by a specialty vendor. Drawing #16-267 was altered as shown on the following page. It will be noted that the "Pin for Pawl" part #11-1410 was eliminated by bending up the pawl as shown to hold the spring.

There is also a tool charge for the above quotation of $50.

PURCHASING DEPARTMENT
Value Analysis Division
April 1, 1949

M/





FINISH

CADMIUM OR ZINC PLATE (MAX. THK .0001)

MAT. STEEL SHEET C.R. ROCKWELL B-60 APPROX

REVISIONS

GROUP DESCR. G. NO.

PAWL

FIRST MADE FOR

BEGUN BY

FINISHED BY

TRACED BY John Keyl

INSPECTED

GENERAL ELECTRIC WORKS SCHDY

REVISION OF G.E. X-RAY

16-267