PLAINTIFF'S
EXHIBIT
ASI-28

KEWANEE HI-TEST BOILER

CATALOG No. 89

KEWANEE BOILER CORPORATION

[illegible] Standard Sanitary Corporation

KEWANEE, ILLINOIS

Eastern District Office, 40 West 40th St., New York City 18

BRANCHES IN 64 CITIES

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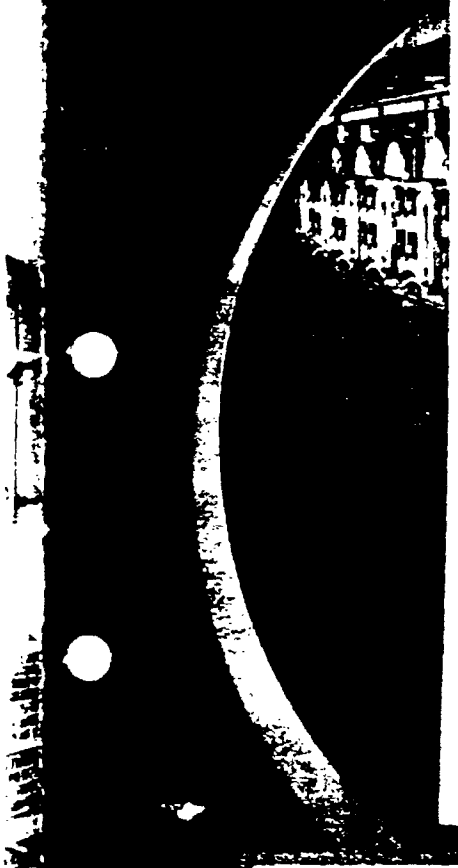
A I A FILE No. 34 B1

KEWANEE

TYPE C STEEL BOILER





Ten Type "C" In a Row

four hundred twenty-five thousand square feet capacity mechanical fired boilers with corrugated crown sheet

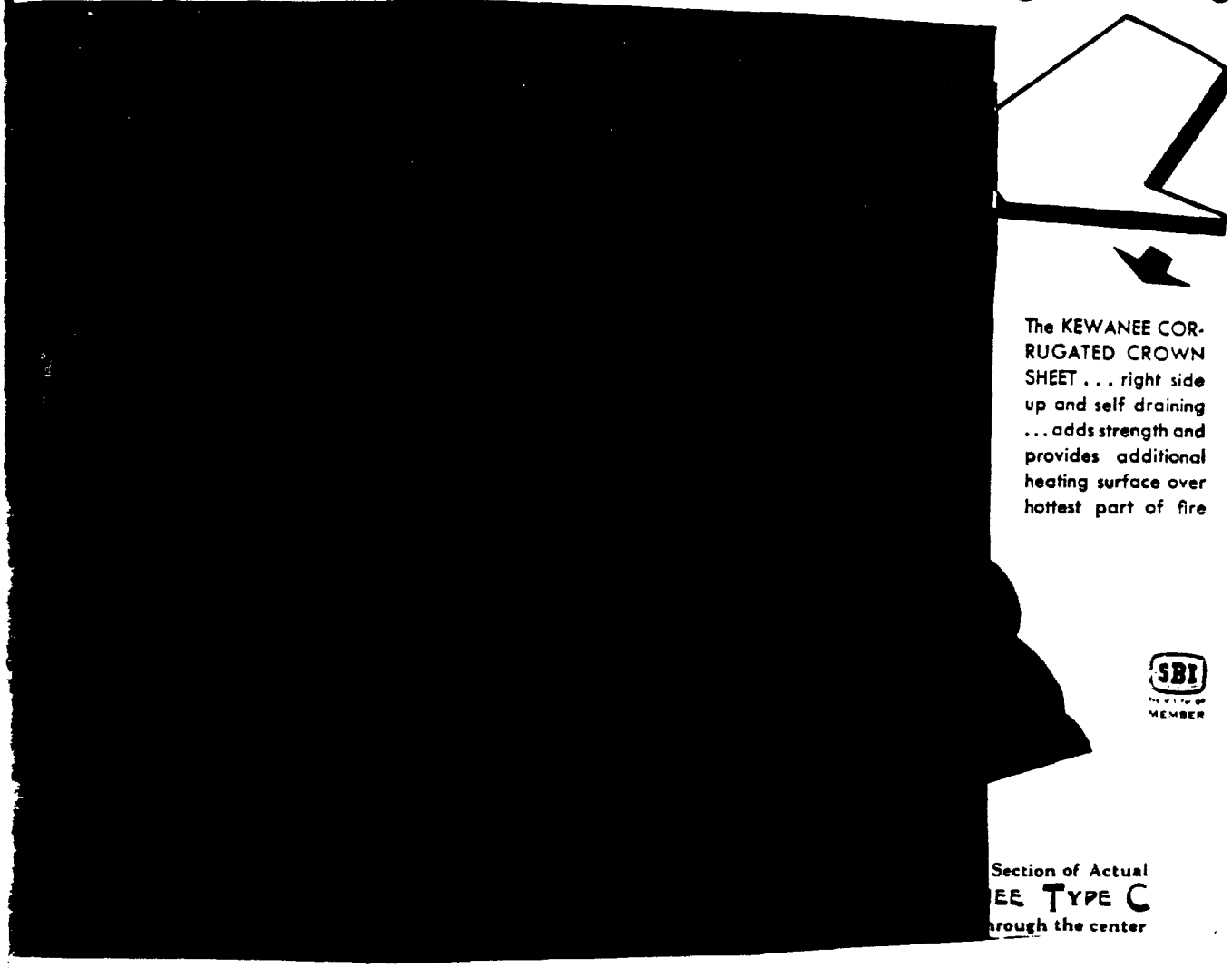


CATALOG 97

A HIGHLY PERFECTED STEEL HEATING BOILER SERIES

KEWANEE
TYPE C STEEL BOILER

Largest Selling Steel Boiler for Heating Big Buildings



The KEWANEE CORRUGATED CROWN SHEET . . . right side up and self draining . . . adds strength and provides additional heating surface over hottest part of fire

SBI MEMBER

Section of Actual
EE TYPE C
rough the center

Ample proportions in the Kewanee Type "C" with everything get-at-able for keeping the boiler at tip top operating efficiency insure life-long economy with every kind of fuel and firing

Corrugated crown sheet has extra strength and heating surface . . . note especially the big high firebox, ideal for complete combustion with either hand or mechanical firing, and it permits converting from one to the other . . . and back again

. . . in the Kewanee Process of Corrugating Type "C" Crown Sheets not even the slightest reduction in metal thickness is discernible by micrometer measurements.

Gas Travel extra length two-pass firetubes gets more heat out of the gases.

Water Content is ample for steady water line and is kept in rapid circulation thru free waterways.

Steam Space is proportioned for plenty of dry steam. The boiler shell construction is sound, and above all the fire-side and water-wetted surfaces are accessible.

And that's why over-all efficiencies of 80% and more . . . not uncommon with this fast steaming boiler are maintained continuously in actual practice.

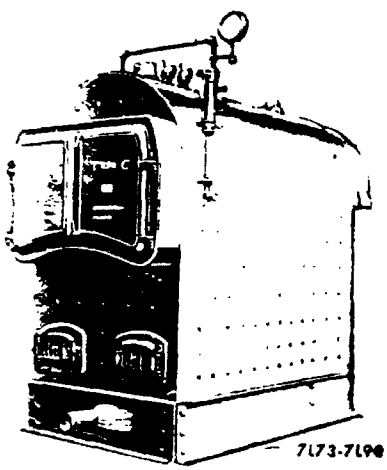
Electric-Weld

For Oil, Gas, Stoker or Hand Fired Coal

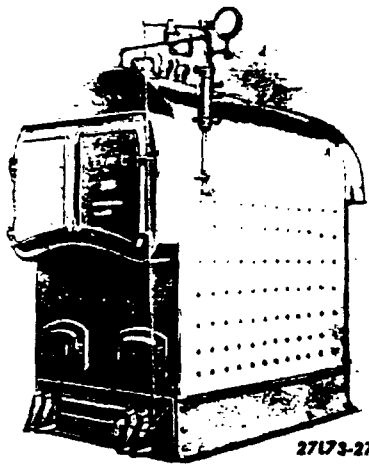
Kewanee Type "C" Welded Boiler was placed on the market in 1928 . . . the first of its kind. No claim to novelty in the compact shape was made at that time since a basic patent covering that general design had been taken out way back in 1873. Early attempts to use welding instead of riveting for this style had not been accorded recognition by Kewanee until improvements engineered and worked out exclusively at the Kewanee plant qualified Type "C" to fill the definite demand for a dependable heating boiler adapted to restricted space.

Backed by eighty years of boiler building experience Type "C" has won and kept first place in the industry as a compact boiler requiring less floor space yet maintaining unrestricted efficiency. It is a real boiler . . . a scientifically designed and skillfully manufactured steam generator built to the ASME code for low pressure heating boilers and conforming with the ratings of the SBI code.

This Type "C" welded model has become the accepted boiler for every operation served by steam of 15 lbs. pressure or less.



7L73-7L90



27L73-27L90

7L70 Series Hi-Firebox for Oil, Gas or Stoker

Specification Table and Plan page 4

The Kewanee Hi-Firebox Type "C" is built exactly right for oil, gas or stokers. The long water legs in this 7L70 provide essential height in the firebox to comply with S B I code furnace height requirements for mechanical firing.

Equipment: Steel base assembled with four cast iron corner posts, heavy steel flanged panels have $8\frac{1}{2}$x$11\frac{1}{2}$" front cleanout opening, also rear except 36" boilers; insulated flue door; and flue cleaner with handle.

Trimmings for Steam only: Safety valve, steam gauge with syphon and cock; water column with water gauge, glass and cocks. All front smokeboxes have double doors.

Note 1. Manhole furnished on boilers 7L82, 27L82 and larger.

Note 2. Bridgewall omitted on boilers 27L73, 27L74 and 27L75.

27L70 Series with Grates for Hand Fired Coal

Specification Table and Plan page 5

Kewanee 27L70 series is rated for hand-fired coal and built with grates in the Hi-Firebox which has the required length of water legs to provide S B I code furnace heights for change-over to oil, gas or stokers using mechanical fired ratings.

Equipment: Steel base fully assembled with heavy rocking or dumping grates and cast iron ash pit front, four cast iron corner posts, heavy steel flanged panels have $8\frac{1}{2}$x$11\frac{1}{2}$" rear cleanout opening, except 36" boilers, refractory bridgewall, insulated flue doors, firedoor with liner, smokebox soot cleanout doors.

Trimmings for Steam only: Safety valve, steam gauge with syphon and cock; draft regulator; water column with water gauge, glass and cocks.

Firing Tools: Hoe, poker, slice bar and flue cleaner with handle.

FOOTNOTES

For overall clearance add $1\frac{1}{2}$" for heads or $2\frac{1}{2}$" for flange hub to Shell Width A—, pages 4 and 5.

Type "C" welded Hi-Firebox Boilers have three-inch tubes. 7L70 and 27L70 Series conform to ASME boiler construction code for 15 lbs. steam and 30 lbs. water, and for rating with the Industry Standard Practice approved by the Steel Boiler Institute in cooperation with U.S. Department of Commerce Recommendation R157.

Type "C" may be fitted at extra cost at the factory with **Kewanee Indirect Hot Water Heating Coils**
Maximum size and number which can be installed in boilers

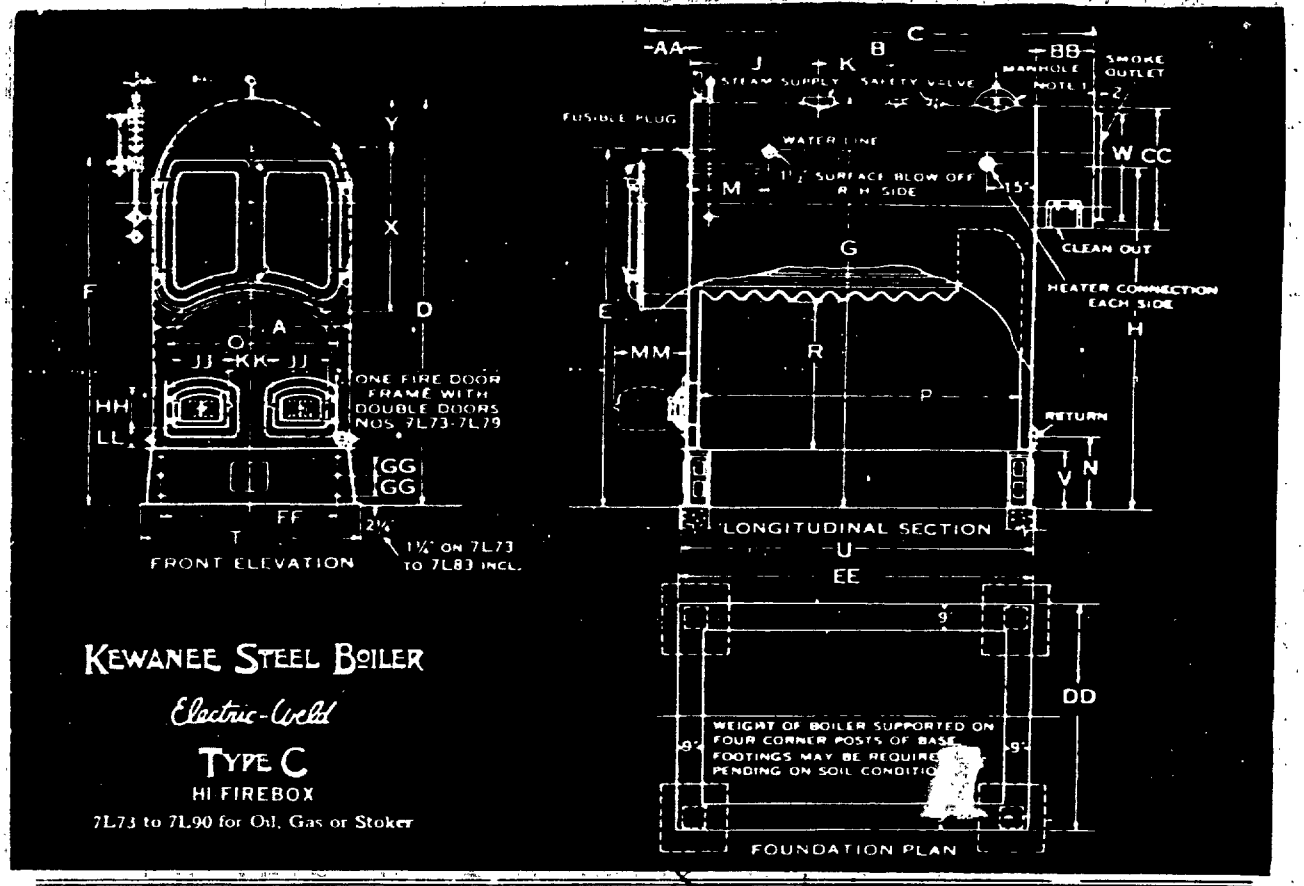
for STORAGE TANK OPERATION CAPACITY of COIL 40°-140° rise—3 hrs.			Gallons with Boiler water	
Boiler		Coil	212°	180°
		SR6-24	90	55
		SR8-24	120	70
		DR6-24	180	110
		DR8-24	240	145
		DR8-30	320	190
		DR8-36	400	240
7L73		DR8-42	480	290
7L74		DR8-48	560	335
7L75		DR8-54	640	385
		DR8-60	720	430
7L76		DR8-66	800	480
7L77	2	DR8-66	1600	960
7L78	2	DR8-72	1760	1060
7L79, 80	2	DR8-78	1920	1150
7L82	2	DR8-84	2080	1250
		DR8-90	1120	670
7L81	2	DR8-96	2400	1440
7L83, 84	2	DR8-102	2560	1540
7L86	3	DR8-102	3840	2310
		DR8-108	1360	815
7L85	2	DR8-114	2880	1730
7L87, 88	3	DR8-120	4560	2730
7L89, 90	3	DR8-120	4560	2730

for INSTANTANEOUS FLOW COIL CAPACITY with 180° Boiler water			40°-140° rise Gallons in	
Boiler		Coil	1 Hr	1 Min.
		QON-1	280	4 7
		QON-2	350	5 8
		QON-3	420	7 0
7L73, 74		QON-4	490	8 2
7L75		QON-7	600	10 0
7L76		QON-8	700	11 7
7L77-85	two	QON-8	1400	23 4
7L86-90	three	QON-8	2100	35 1

27L70 series boilers take same coil sizes as shown for 7L70 series

Any coils shorter than maximum lengths listed may be substituted in same boiler for smaller hot water needs.

Hot water coil Inlet and Outlet same size iron pipe tap. $1\frac{1}{4}$" on tankless QON coils, $1\frac{1}{4}$" on storage DR coils, and 1" on SR coils.



KEWANEE STEEL BOILER

Electric-Weld

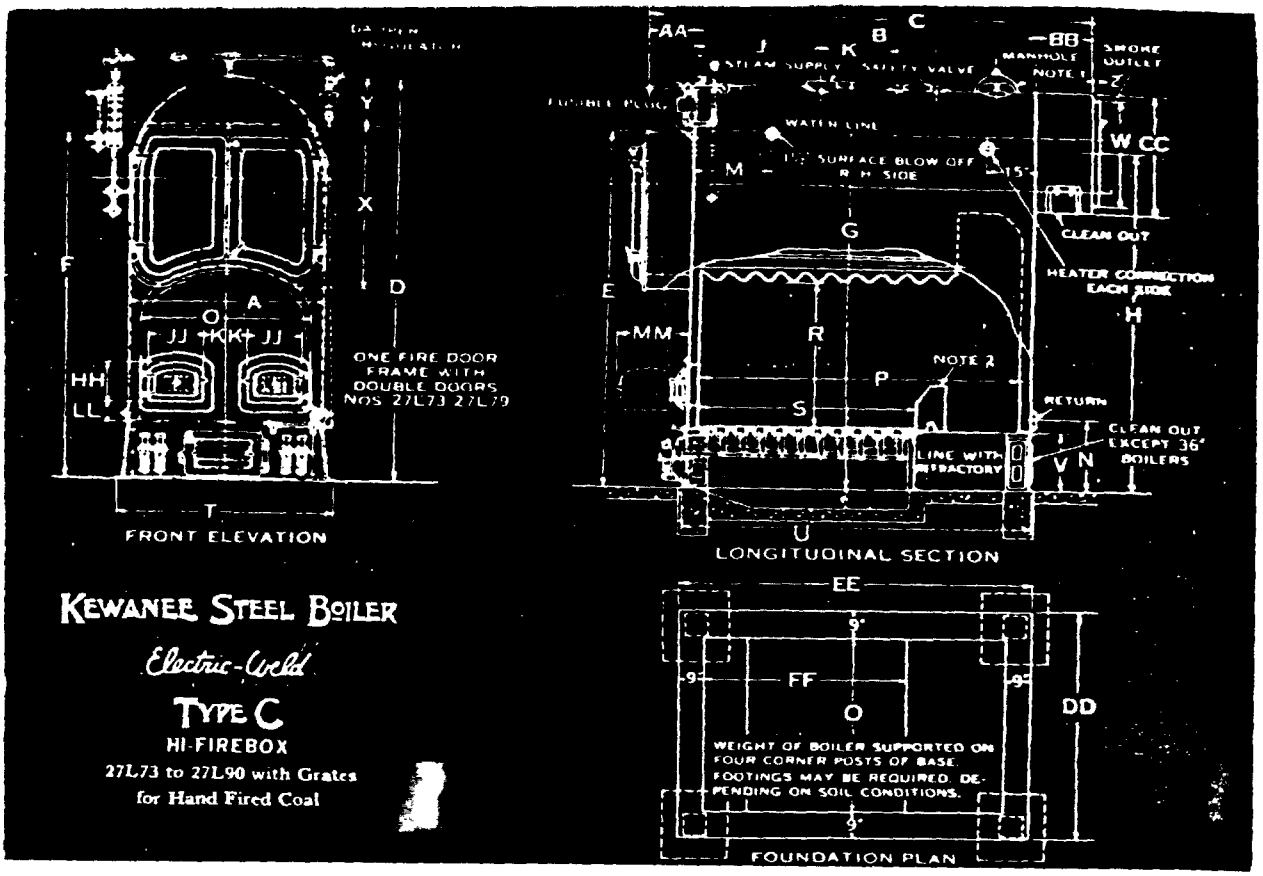
TYPE C

HI FIREBOX

7L73 to 7L90 for Oil, Gas or Stoker

Boiler Number		7L73	7L74	7L75	7L76	7L77	7L78	7L79	7L80	7L81	7L82	7L83	7L84	7L85	7L86	7L87	7L88	7L89	7L90
SBI Rating—Steam Radiation	Sq Ft	2680	3160	3650	4250	4860	5470	6080	7290	8500	10330	12450	15180	18220	21250	24290	30360	36430	42500
Water Radiation	Sq Ft	4280	5050	5840	6800	7770	8750	9720	11660	13600	16520	19440	24280	29150	34000	38860	48570	58280	68000
Btu. per Hour	1000's	643	758	876	1020	1166	1313	1459	1750	2040	2479	2916	3643	4373	5100	5830	7286	8743	10200
SBI Net Rating—Steam	Sq Ft	2200	2600	3000	3500	4000	4500	5000	6000	7000	8500	10000	12500	15000	17500	20000	25000	30000	35000
Water	Sq Ft	3520	4160	4800	5600	6400	7200	8000	9600	11200	13600	16000	20000	24000	28000	32000	40000	48000	56000
Btu. per Hour	1000's	528	624	720	840	960	1080	1200	1440	1680	2040	2400	3000	3600	4200	4800	6000	7200	8400
Heating Surface SBI min.	Sq Ft	158	186	215	250	286	322	358	429	500	608	715	893	1072	1250	1429	1786	2143	2500
Furnace Volume SBI min.	Cu Ft	19 2	22 6	26 1	30 4	34 8	39 1	43 5	52 1	60 8	73 8	86 8	108 5	130 2	151 8	173 5	216 9	260 3	303 6
Furnace Height SBI min.	In	28	29¼	29½	30	30½	31½	31½	32¾	34	35½	37½	40¼	43	46	48¾	54½	60½	66
Fireoox Volume above Mud Ring	Cu Ft	25 5	28 2	31 0	35 9	44 0	48 7	53 1	67 4	77 8	90 5	104 4	129 4	168 4	193 7	218 3	302 2	177 4	433 1
Safety Valve Capacity Lb. Steam per Hour		790	930	1075	1250	1430	1610	1790	2145	2500	3040	3575	4465	5360	6250	7145	8930	10715	12500
Breeching Diameter	In	19	19	19	19	22	22	22	24	24	28	28	30	31	35	35	39	41	43
Stack Diameter	In.	15	16	16	17	18	19	20	21	23	24	26	28	29	31	33	36	38	40
Stack Height	Ft	35	35	40	45	40	45	50	50	60	55	65	65	70	65	75	90	80	100
Breeching Diameter, Two Boilers	In	23	24	24	25	26	27	28	30	31	34	36	40	41	44	47	50	54	56
Stack Diameter, Two Boilers	In.	21	22	22	23	24	25	26	28	29	32	34	37	38	41	44	47	50	52
Stack Height, Two Boilers	Ft	45	45	50	55	50	55	60	60	70	65	75	75	80	75	85	100	90	110
Steam Supply Size	In	6	6	6	6	6	6	6	8	8	8	8	8	8	8	8	10	10	10
Return Size	In	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	6	6	6
Water Heater Connection Size	In	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Shipping Weight	Lb	3100	3500	3900	4400	4900	5400	5800	6700	7600	8800	10000	11800	13600	15300	17000	20100	23200	26100
A—Boiler Width	In.	36	36	36	36	42	42	42	48	48	54	54	60	66	72	72	78	84	84
B—Boiler Length	Ft In.	4-2	4-8	5-2	6-0½	5-10½	6-6½	7-2	7-2½	8-5	7-8	8-11½	9-2½	9-11½	9-3½	10-6½	11-11½	11-4½	13-1½
C—Boiler Length Overall	Ft In.	5-10½	6-4½	6-10½	7-4	7-10½	8-6½	9-2	9-4½	10-7	9-11½	11-2½	11-6½	12-3½	12-11½	13-4½	14-9½	14-2½	15-11½
D—Boiler Height Overall	In.	84	84	84	84	88½	88½	88½	92½	92½	105½	105½	115½	120½	130½	130½	138	162½	162½
E—Water Line Height	In.	75	75	75	75	76½	76½	76½	79½	79½	90	90	100½	103	113	113	119	141½	141½
F—Water Column Height	In.	71½	71½	71½	71½	73	73	73	76	76	86½	86½	97	99½	109½	109½	115½	138	138
G—Steam Supply Height	In.	85	85	85	85	89½	89½	89½	94	94	106½	106½	117	121½	131½	131½	139½	164	164
H—Smoke Outlet Height above Floor	In.	70½	70½	70½	70½	73½	73½	73½	76½	76½	87½	87½	96½	99½	108½	108½	115½	137½	137½
J—Steam Supply Location	In.	10½	14	14	16	14	16	18	18	18	18	21	21	21	21	21	21	21	24
K—First Safety Valve Location	In.	10	10	10	10	12	12	12	14	14	14	14	14	14	16	16	16	16	16
M—Surface Blow-Off Location	In.	12	12	12	12	12	12	12	12	12	18	24	24	24	24	24	24	24	24
N—Return Height	In.	18	18	18	18	18	18	18	18	18	18	18	21	21	21	21	22	26	26
O—Firebox Width	In.	30	30	30	30	36	36	36	42	42	47½	47½	53½	58½	65	65	70	76	76
P—Firebox Length	In.	43½	49½	55½	66	64	72	79½	80	94½	85½	101	103	112	104	119	136	128½	149½
R—Firebox Height	In.	30	30	30	30	31½	31½	31½	34	34	37½	37½	40½	43	46½	46½	54½	66	66
T—Base Width	In.	41½	41½	41½	41½	47½	47½	47½	53½	53½	59½	59½	66	72	78	78	84	90½	90½
U—Base Length	In.	52	58	64	74½	72½	80½	88	88½	103	94	109½	113	122	114	129	146	139	160
V—Base Height	In.	14	14	14	14	14	14	14	14	14	14	14	17	17	17	17	17	21	21
W—Smoke Outlet Diameter	In.	19	19	19	19	22	22	22	24	24	28	28	30	31	35	35	39	41	43
X—Front Smokebox Height	In.	34	34	34	34	34	34	34	35	35	42	42	48	48	51	51	52	61	61
Y—Front Smokebox Top to Boiler Top	In.	10	10	10	10	13	13	13	14	14	16	16	16	18	17	17	19	21	21
AA—Front Smokebox Depth	In.	9	9	9	9	10	10	10	11	11	12	12	12	12	14	14	14	14	14
BB—Rear Smokebox Depth	In.	11½	11½	11½	11½	14	14	14	15	15	15	15	16	16	20	20	20	20	20
CC—Rear Smokebox Height	In.	26	26	26	26	29	29	29	31½	31½	35	35	36	39	43	43	45½	49½	49½
DD—Foundation Width	In.	48	48	48	48	54	54	54	60	60	65½	65½	70½	76½	83	83	88	94	94
EE—Foundation Length	In.	53½	59½	65½	76	74	82	90	90	104½	96	111	114½	123½	115½	130½	147½	140½	161½
FF—Bolt Centers in Front Plate	In.	31½	31½	31½	31½	37½	37½	37½	43½	43½	49½	49½	55½	61½	67½	67½	73½	79½	79½
GG—Bolt Centers in Front Plate	In.	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	4¾	5¾	5¾	5¾	5¾	5¾	7¾	7¾
HH—Firedoor Height	In.	13½	13½	13½	13½	13½	13½	13½	11	11	11	11	12	12	12	12	15	15	15
JJ—Firedoor Width	In.	27½	27½	27½	27½	27½	27½	27½	16	16	16	16	20	20	20	20	23	23	23
KK—Space Between Firedoors	In.								7	7	12	9	15	20	20	20	20	26	26
LL—Height Doors from Bottom Boiler	In.	9½	9½	9½	9½	8½	8½	8½	8	8	8	8	8	8	8	8	10	10	10
MM—Opened Firedoor to Boiler	In.	20	20	20	20	20	20	20	22½	22½	22½	22½	26½	26½	26½	26½	29½	29½	29½
*Outside Surface to Cover	Sq Ft	81	87	95	106	116	125	134	149	166	187	209	233	269	291	316	379	432	468

*Front smokebox and front head below smokebox IS included.



KEWANEE STEEL BOILER

Electric-Weld

TYPE C

HI-FIREBOX

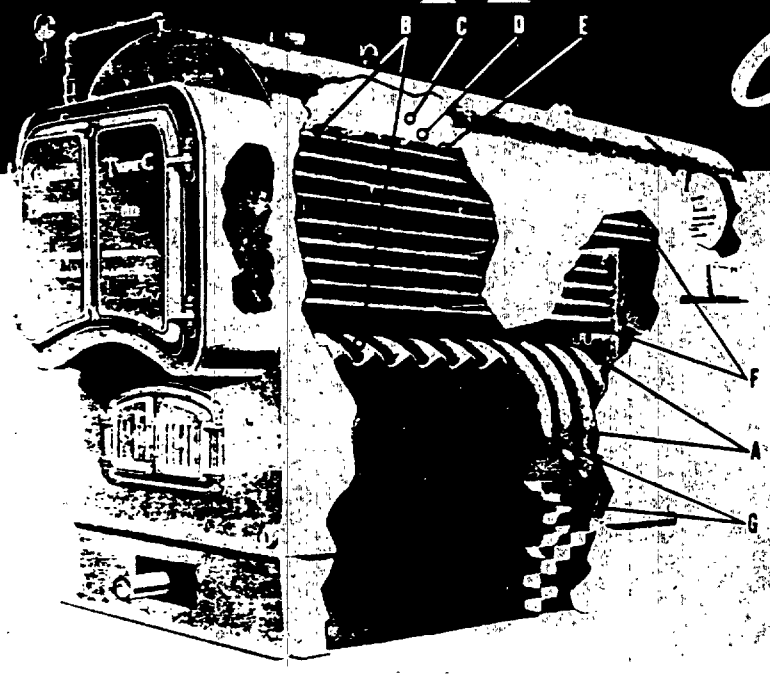
27L73 to 27L90 with Grates for Hand Fired Coal

Boiler Number		27L73	27L74	27L75	27L76	27L77	27L78	27L79	27L80	27L81	27L82	27L83	27L84	27L85	27L86	27L87	27L88	27L89	27L90
SBI Rating—Steam Radiation	Sq Ft	2200	2600	3000	3500	4000	4500	5000	6000	7000	8500	10000	12500	15000	17500	20000	25000	30000	35000
Water Radiation	Sq Ft	3520	4160	4800	5600	6400	7200	8000	9600	11200	13600	16000	20000	24000	28000	32000	40000	48000	56000
Btu. per Hour	1000's	528	624	720	840	960	1080	1200	1440	1680	2040	2400	3000	3600	4200	4800	6000	7200	8400
SBI Net Rating—Steam	Sq Ft	1930	2170	2500	2920	3330	3750	4170	5000	5830	7080	8330	10420	12500	14580	16670	20830	25000	29170
Water	Sq Ft	2930	3470	4000	4670	5330	6000	6670	8000	9330	11330	13330	16700	20000	23330	26670	33330	40000	46670
Btu. per Hour	1000's	439	521	600	700	800	900	1000	1200	1400	1700	2000	2500	3000	3500	4000	5000	6000	7000
Heating Surface SBI min	Sq Ft	134	186	215	250	286	322	358	429	500	608	715	893	1072	1250	1429	1786	2143	2500
Grate Area SBI min	Sq Ft	8.9	9.7	10.5	11.4	12.2	13.4	14.5	16.4	18.1	20.5	22.5	25.6	28.4	30.9	33.2	37.4	41.2	44.7
Safety Valve Capacity Lb. Steam per Hour		790	930	1075	1250	1430	1610	1790	2145	2500	3040	3575	4465	5360	6250	7145	8930	10715	12500
Breeching Diameter	In.	19	19	19	19	22	22	22	24	24	28	28	30	31	35	35	39	41	43
Stack Diameter	In	15	16	16	17	18	19	20	21	22	24	26	28	29	31	33	36	38	40
Stack Height	Ft	45	50	50	55	55	55	60	60	65	65	70	70	75	75	80	95	95	110
Breeching Diameter, Two Boilers	In.	23	24	24	25	26	27	28	30	31	34	36	40	41	44	47	50	54	56
Stack Diameter, Two Boilers	In	21	22	22	23	24	25	26	28	29	32	34	37	38	41	44	47	50	52
Stack Height, Two Boilers	Ft	55	60	60	65	65	65	70	70	75	75	80	80	85	85	90	105	105	120
Steam Supply Size	In	6	6	6	6	6	6	6	8	8	8	8	8	8	8	8	10	10	10
Return Size	In	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	6	6	6
Water Heater Connection Size	In	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Shipping weight	Lbs	1600	4000	4500	5100	5600	6200	6700	7800	8800	10200	11500	13600	15700	17600	19500	23200	26700	30200
A—Boiler Width	In.	36	36	36	36	42	42	42	48	48	54	54	60	66	72	72	78	84	84
B—Boiler Length	Ft In	4-2	4-8	5-2	5-8½	6-10¼	6-6½	7-2	7-2½	8-5	7-8	8-11	9-2½	9-11	9-3½	10-6½	11-11	11-4½	13-1½
C—Boiler Length Overall	Ft In.	5-10½	6-4½	6-10¾	7-9	7-10¾	8-6½	9-2	9-4½	10-7	9-11	11-2½	11-6½	12-3½	12-11	13-4½	14-9½	14-2½	15-11½
D—Boiler Height Overall	In.	84	84	84	84	88½	88½	88½	92½	92½	105½	105½	115½	120½	130½	130½	138	162½	162½
E—Water Line Height	In.	75	75	75	75	76½	76½	76½	79½	79½	90	90	100½	103	113	113	119	141½	141½
F—Water Column Height	In.	71½	71½	71½	71½	73	73	73	76	76	86½	86½	97	99½	109½	109½	115½	138	138
G—Steam Supply Height	In.	83	83	83	83	89½	89½	89½	94	94	106½	106½	117	121½	131½	131½	139½	164	164
H—Smoke Outlet Height above Floor	In.	70½	70½	70½	70½	73½	73½	73½	76½	76½	87½	87½	96½	99½	108½	108½	115½	137½	137½
J—Steam Supply Location	In.	10½	14	14	16	14	16	18	18	18	18	21	21	21	21	21	21	21	24
K—First Safety Valve Location	In.	10	10	10	10	12	12	12	14	14	14	14	14	14	16	16	16	16	16
M—Surface Blow-Off Location	In.	12	12	12	12	12	12	12	12	12	18	24	24	24	24	24	24	24	24
N—Return Height	In.	18	18	18	18	18	18	18	18	18	18	18	21	21	21	21	22	26	26
O—Firebox and Ash Pit Width	In.	30	30	30	30	36	36	36	42	42	47½	47½	52½	58½	65	65	70	76	76
P—Firebox Length	In.	43½	49½	55½	66	64	72	79½	80	94½	85½	101	103	112	104	119	136	128½	149½
R—Firebox Height	In.	30	30	30	30	31½	31½	31½	34	34	37½	37½	40½	43	48½	48½	54½	66	66
S—Grate Length	In.	43	49	55	55	50	56	62	62	68	68	74	74	74	74	80	80	80	86
T—Base Width	In.	41½	41½	41½	41½	47½	47½	47½	53½	53½	59½	59½	66	72	78	78	84	90½	90½
U—Base Length	In.	52	58	64	74½	72½	80½	88	88½	103	94	109½	113	122	114	129	146	139	160
V—Base Height	In.	14	14	14	14	14	14	14	14	14	14	14	17	17	17	17	17	21	21
W—Smoke Outlet Diameter	In.	19	19	19	19	22	22	22	24	24	28	28	30	31	35	35	39	41	43
X—Front Smokebox Height	In.	34	34	34	34	34	34	34	35	35	42	42	48	48	51	51	52	61	61
Y—Front Smokebox Top to Boiler Top	In.	10	10	10	10	13	13	13	14	14	16	16	16	18	17	17	19	21	21
AA—Front Smokebox Depth	In.	9	9	9	9	10	10	10	11	11	12	12	12	12	14	14	14	14	14
BB—Rear Smokebox Depth	In.	11½	11½	11½	11½	14	14	14	15	15	15	15	16	16	20	20	20	20	20
CC—Rear Smokebox Height	In.	26	26	26	26	29	29	29	31½	31½	35	35	36	39	43	43	45½	49½	49½
DD—Foundation Width	In.	48	48	48	48	54	54	54	60	60	65½	65½	70½	76½	83	83	88	94	94
EE—Foundation Length	In.	53½	59½	65½	76	74	82	90	90	104½	96	111	114½	123½	115½	130½	147½	140½	161½
FF—Length of Ash Pit	In.	35½	41½	47	51	45	51	57	57	63	63	69	70	70	70	76½	76½	76½	82½
HH—Firedoor Height	In.	13½	13½	13½	13½	13½	13½	13½	11	11	11	11	12	12	12	12	15	15	15
JJ—Firedoor Width	In.	27½	27½	27½	27½	27½	27½	27½	16	16	16	16	20	20	20	20	23	23	23
KK—Space Between Firedoors	In.								7	7	12	12	9	15	20	20	20	26	26
LL—Height Doors from Bottom of Boiler	In.	9½	9½	9½	9½	8½	8½	8½	8	8	8	8	8	8	8	8	10	10	10
MM—Open Firedoor to Boiler	In.	20	20	20	20	20	20	20	22½	22½	22½	22½	26½	26½	26½	26½	9½	29½	29½
*Outside Surface to Cover	Sq Ft	81	87	95	106	116	125	134	149	166	187	209	255	269	291	316	379	432	468

*Front smokebox and front head below smokebox IS included.

KEWANEE TYPE C

Characteristics



Design: Note in the cutaway section how the most effective heating surfaces are nearer the hottest fire zones, insuring quick transfer of more heat to the water.

A. Ample water volume in active circulation over all the hottest parts sweeps bubbles from the heating surfaces as fast as they are formed.

B. The Circulation, though rapid, is so orderly that the water level remains steady even under fluctuating loads and no slugs of water are carried into the steam mains.

C. High, wide steam space provides plenty of room for a large reserve supply of dry quality steam.

D. The Steam Disengaging area at the surface of the water is unbroken and extensive enough to prevent priming.

E. All the flues, including the top rows, are under the water line so as to be in effective use making steam.

F. The Flues are so grouped in Banks to permit free circulation of the water all around the wetted surface. This helps prevent sediment from lodging on the tubes. The double pass of gases through the entire length inside the tubes extracts all the usable heat.

G. There is extra width and height in both Furnace and rear Combustion chamber, providing plenty of space and time for the hot gases to mix with air — an essential for completely burning the fuel.

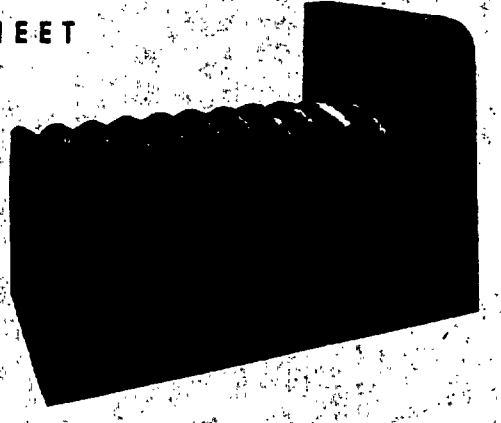
Material: Full thickness flange steel plate with tensile strength 55,000 to 65,000 pounds per square inch. This steel plate comes from the mill tested for physical strength and homogeneous quality with high ductility, after analysis checks for chemical composition and low carbon content as required for sound fusion arc welds.

Construction: Carefully built in strict accordance with the low pressure boiler code requirements of American Society of Mechanical Engineers, the highest authority.

Quality materials plus skilled workmanship backed by nearly 80 years experience qualify this boiler for the name "Kewanee."

Performance: Extensive operational tests made on Type "C" under practical work-a-day conditions prove the unusually hi efficiency in generating heat at low costs is maintained year-in year-out.

CORRUGATED CROWN SHEET



● The corrugated Crown Sheet . . . a distinguishing feature of all Kewanee Boilers in the Type "C" class . . . has definite advantages over the conventional type construction:—

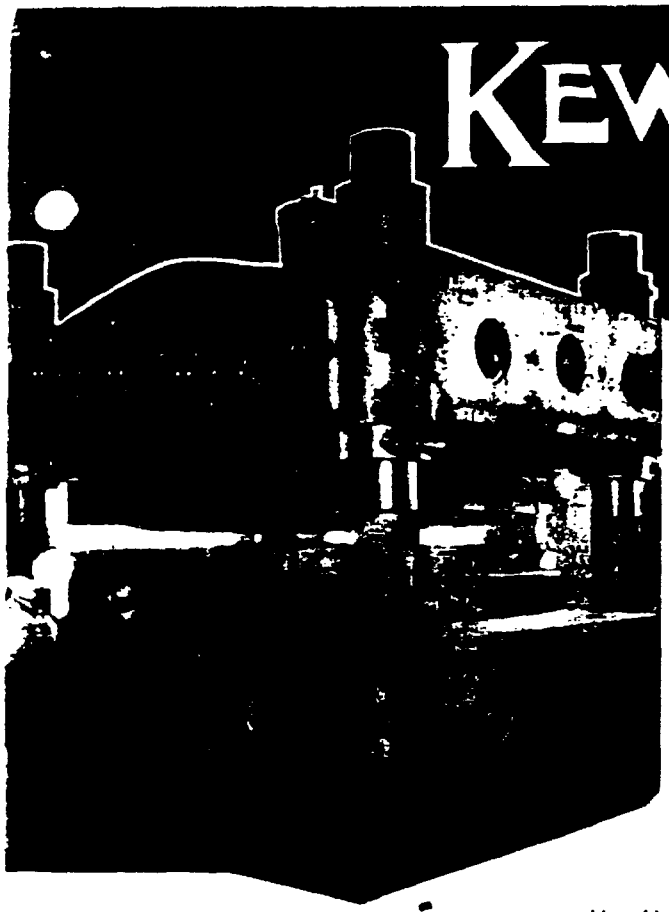
CORRUGATING Adds Strength: A plain arch of steel has considerable strength but add corrugations and that strength is multiplied many times. By forming these corrugations one-at-a-time, under tremendous hydraulic pressure, in the flat plate the same thickness of metal is maintained over the entire crown sheet without the slightest impairment of original strength.

Adds Effective Heating Surface: The massive ridges of the corrugations 2 to 3 inches deep, practically double the heating surface which is directly facing the hottest part of the fire. This is one of the reasons why Type "C" is such a quick steamer, and why . . . though a compact boiler . . . it provides an unusual amount of heat with "top" efficiency.

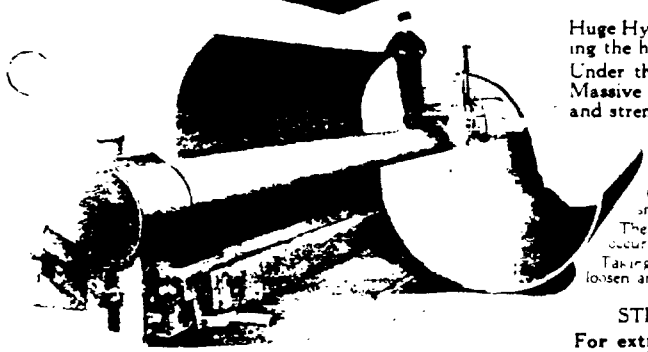
Right-Side-Up . . . Self Cleaning: Being right-side-up there are no pockets inviting sediment to lodge and scale to form. The action of the water circulating over the crown sheet tends to make it self cleaning.

Rear Combustion Chamber: Streamline shape means fewer parts and shorter seams while the additional height makes for more perfect combustion. The waterways are tapered wide and free to provide easy access of more water to the hotter surfaces.

KEWANEE TYPE C
In the Shop







Huge Hydraulic Forming Press exerts pressures up to 3,000 tons for flanging, shaping or blanking the heaviest steel boiler plate.

Under these Corrugating dies pre-heated steel plates are kneaded into crown sheet blanks. Massive corrugations are formed *one-at-a-time from center out* so undiminished plate thickness and strength are maintained.

Big Pinch Roll — Shapes Type "C" wagon-top all in one piece

This roll can round 20-foot steel plate one and a half inch thick to a small circle in one pass.

The flat corrugated plate is arched in special die blocks to make the one piece crown sheet.

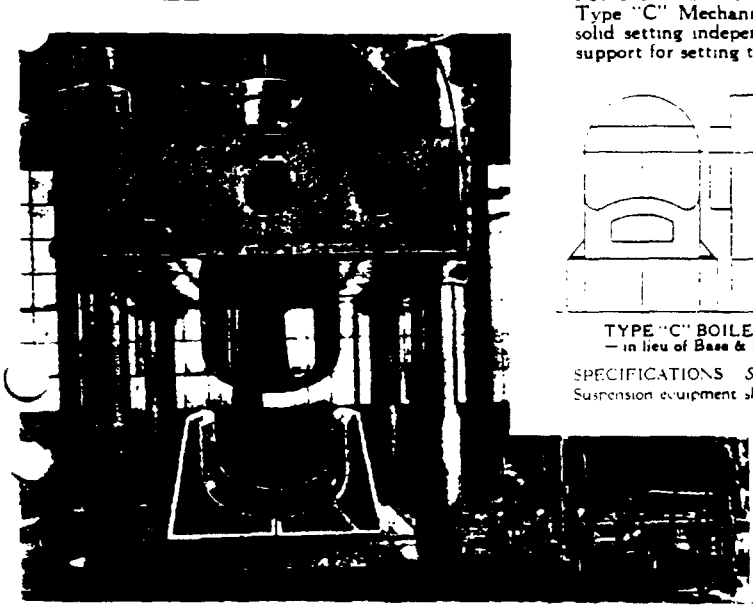
Corrugations do not extend down to the bottom edges but taper off so firebox plate and boiler wrapper sheet form a straight line joint with same linear expansion.

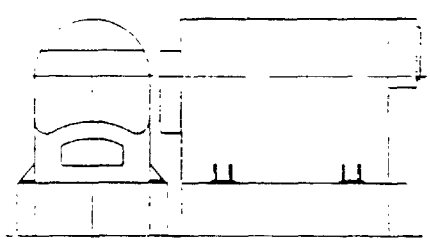
The corrugations take care of any unbalanced stresses so no unrelated movement of the tube plate can occur.

Taking up the expansion and contraction keeps the tubes from loosening in the end plate but tends to loosen any scale lodging on the solutions of the crown sheet.

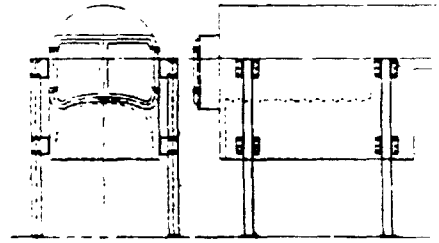
STRUCTURAL STEEL SUSPENSION and BOILER SUPPORT BRACKETS

For extra furnace height beyond the code standard as found within the Hi-Firebox of Type "C" Mechanically-Fired Boiler, our Kewanee structural steel suspension provides a solid setting independent of furnace brickwork. The gusset bearing plate brackets provide support for setting the boiler on a separate masonry base.





TYPE "C" BOILER Bearing Plate Brakets
— in lieu of Base & Front without extra charge



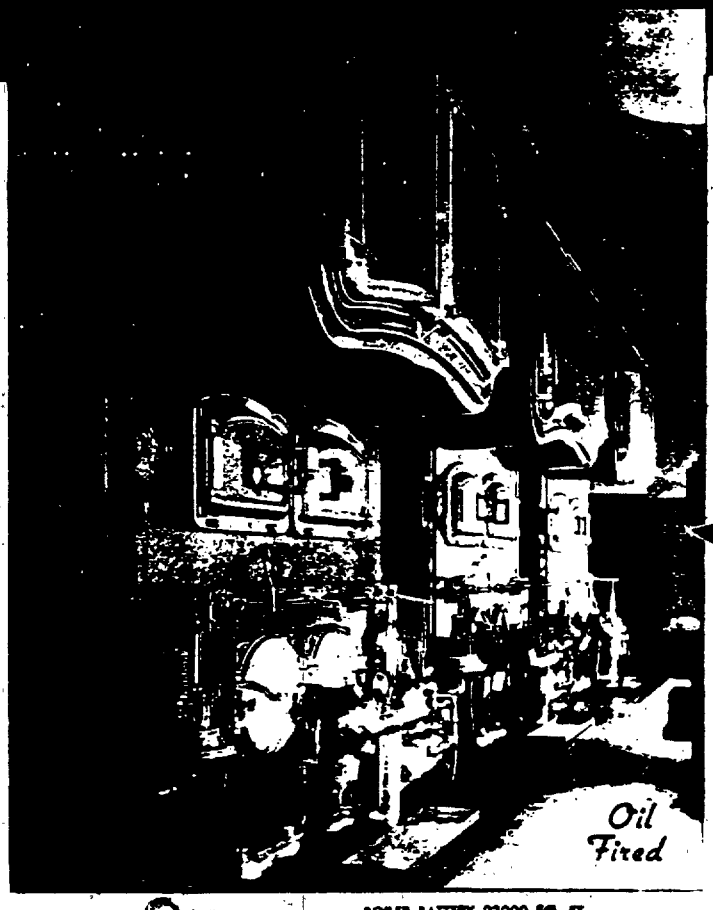
Steel Suspension for TYPE "C" BOILERS
— there is an extra charge for this

SPECIFICATIONS *Structural Steel Suspension* for Setting Boiler Independent of Furnace Brickwork

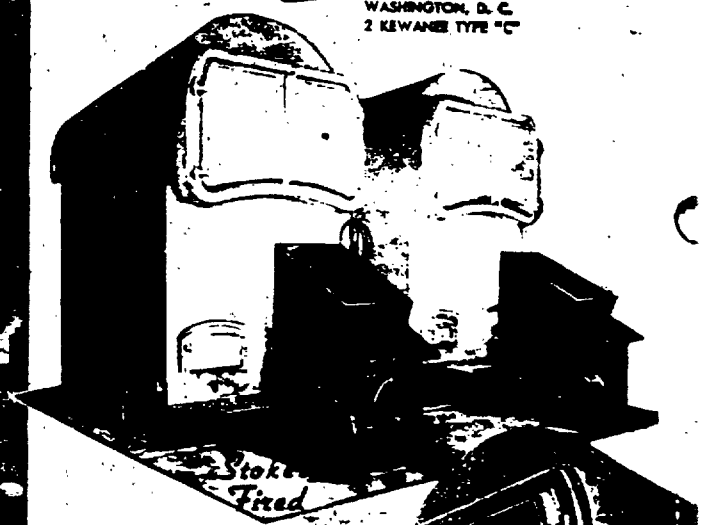
Suspension equipment shall consist of: four steel H-columns with bearing plates, one pair each side of boiler and eight pairs of steel forged brackets fastened to boiler shell by steel studs to safely carry the weight of boiler and to provide lateral stability, according to ASME boiler construction code. Each H-column shall be securely bolted to two pair of the boiler brackets and have bolt holes in foot plate for anchoring to foundation. Anchor bolts not furnished by KBCI.

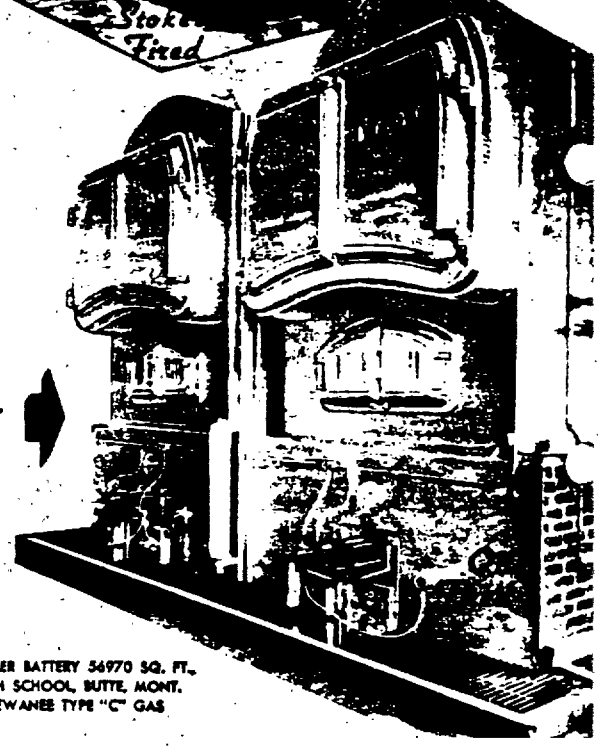
SPECIFICATIONS *Gusset Bearing Plate Brackets* for supporting boiler on Masonry Base. Support brackets shall consist of two pairs of steel bearing plates each with two gussets welded to the boiler at bottom of waterleg. Each gusset to have $\frac{1}{2}$" hole for wiring insulation to the boiler.

KEWANEE TYPE C *Typical Installations*



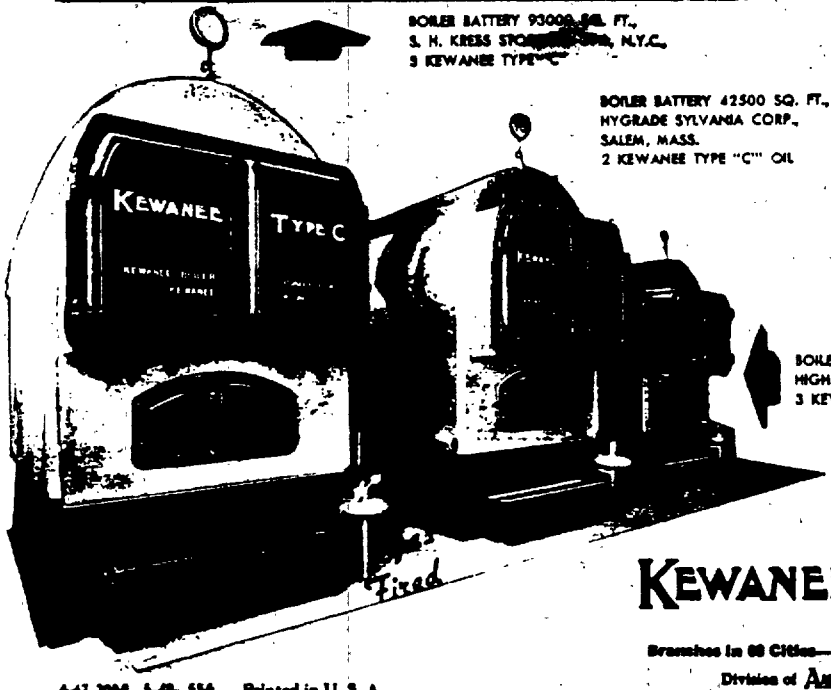
BOILER BATTERY 48580 SQ. FT.
INVESTMENT BLDG. 15th "K" NW.
WASHINGTON, D. C.
2 KEWANEE TYPE "C"





BOILER BATTERY 93000 SQ. FT.,
S. H. KRESS STO[illegible], N.Y.C.,
3 KEWANEE TYPE "C"

BOILER BATTERY 42500 SQ. FT.,
HYGRADE SYLVANIA CORP.,
SALEM, MASS.
2 KEWANEE TYPE "C" OIL



BOILER BATTERY 56970 SQ. FT.,
HIGH SCHOOL, BUTTE, MONT.
3 KEWANEE TYPE "C" GAS

KEWANEE BOILER CORPORATION

KEWANEE, ILLINOIS

Branches in 60 Cities—Eastern District Office: 40 West 40th Street, New York City 18

Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

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