

Operating Manual

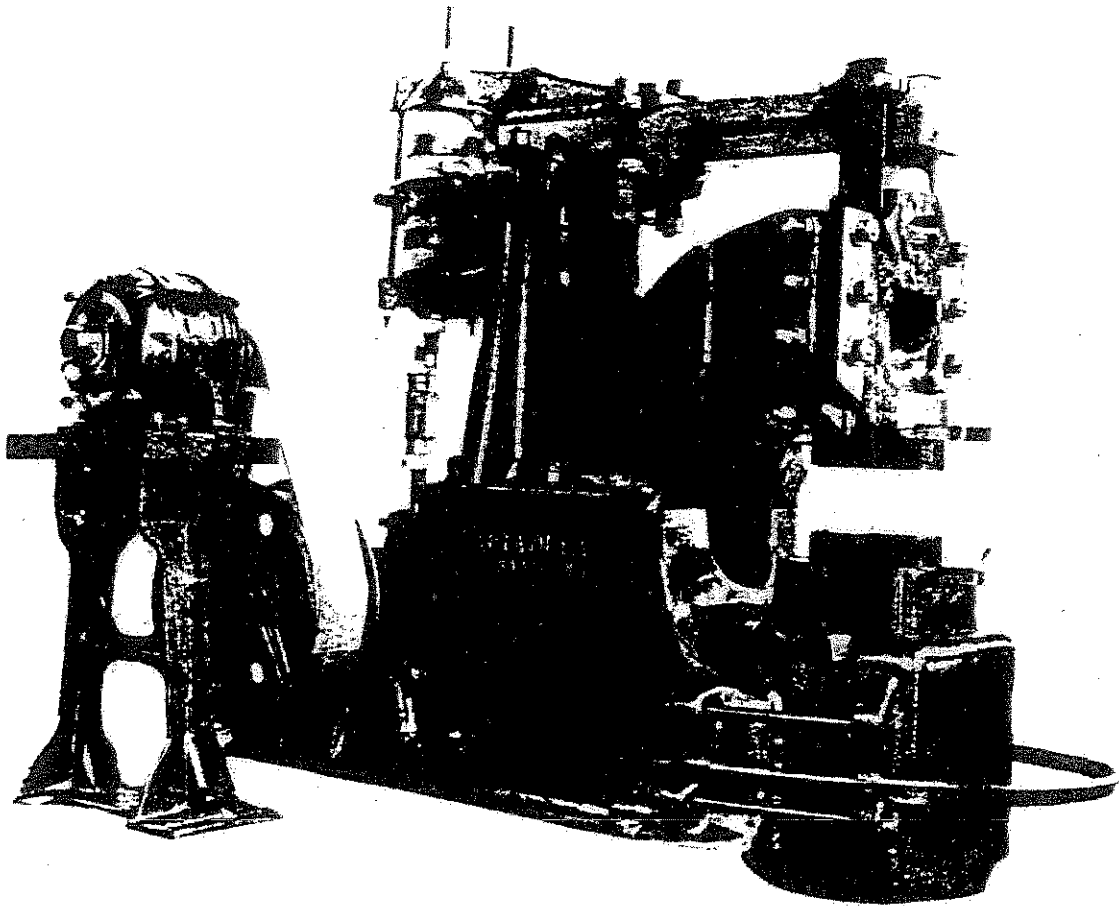
Parts List

Foundation Plan

The Bradley
Upright Hammer

C. C. BRADLEY & SON, INC.
SYRACUSE, N. Y.

Bradley Upright Helve Hammer



500 LB. UNIT

Diagrams, Outlines and Operating Instructions refer directly to Upright Helve Hammer; They apply equally as well to Upright Strap Hammer

BRADLEY UPRIGHT POWER HAMMER

As the name implies, power developed in the Hammer is responsible for the active forging force delivered by the Hammer die; that is, the motive power delivered by motor or line shafting is transmitted from the Hammer drive shaft through Eccentric to Oscillator, amplified in the Cushion assembly and ultimately delivered to the Ram through the Helve and its Head Lifter Bar.

STROKE: The length of stroke is to be defined as the maximum distance between dies during one complete revolution of the drive shaft. Stroke is fundamentally determined by the natural throw of the Eccentric. Change of stroke is accomplished by rotating Eccentric Shell, part #103 (see parts list page 8) on Eccentric Hub, part #104. Adjustment is accomplished by loosening the two nuts on the Eccentric face bolts and turning drive shaft until graduation on Hub is in line with the desired mark on Shell. Eccentric graduations indicate a normal travel of one inch.

POINT OF IMPACT is that point in stroke travel at which Hammer has developed its maximum forging energy. This energy point is adjusted or located by the amount of insertion of the Slip Sleeve Stem, part #82, within the Slip Sleeve, part #44. This operation is accomplished by first blocking open the dies to approximately 1" to 3", depending upon the progressive size of the Hammer, dies and stock to be forged. The opening in Slip Sleeve is increased by then loosening Stud, part #134, and removing from its operating position Lever, part #129. The Hammer Drive Pulley and Shaft are then rotated until the Hammer reaches its maximum upward throw permitting open Slip Sleeve to enclose additional portion of Stem. The Slip Sleeve is then tightened by turning Lever until the Stem is securely gripped by the Sleeve itself.

The proper setting of stroke and point of impact are of greatest importance to derive the maximum forging efficiency and Hammer blow during the operation of the Hammer. In view of the natural resiliency of the Hammer carriage mounted in its Rubber Cushions the maximum forging utility is at the peak of the throw of this carriage and is, of course, the impact point as mentioned above. In view of the fact that the impact is lower on stroke cycle when Hammer operates at full speed than during its idling position definite allowance must be made for this characteristic in setting up Hammer or changing to new dies. Incorrect setting of impact point is evidenced by a jerky, uncertain delivery of Hammer blow together with seeming secondary oscillation of Ram. This indicates that impact point is low on stroke cycle. On the other hand, high impact point prevents die faces closing at end of stroke, lessening effective Hammer blow and failing to size forging.

CUSHIONS: The Cushion adjustment is one that is of primary importance in the Hammer since it controls the stroke characteristics as mentioned above and provides the elasticity of blow that is desired in power Hammer equipment. It is essential that the Cushions be seated in their retaining rings, part #65, at all times. However, definite caution must be exercised to prevent their overtightening, this adjustment being accomplished through part #120 Tension Screw, since under no condition should there be a degree of compression or upsetting present in the Cushions. This so-called upsetting or depression of the cushions removes the elasticity upon which the Hammer depends for its great force of blow.

GUIDES: The Ram or Head of the Hammer is mounted in two insert Guides, part #76, having either male or female faces, depending upon the size of Hammer. Guide members are mounted in machined recesses of Arch Arms, part #140. A three-point adjustment is provided within each Guide to compensate for the natural wear of the Guide faces. Three bolts are located on the external surface of each Arch Arm, the upper and lower bolts controlling the inward movement of the Guides, whereas the center bolt functions in the movement outward from the Ram. Bolts operate in conjunction one with the other such that in causing outward movement of the members upper and lower bolts are drawn back before the center bolt is turned to draw the Guides outward, the reverse being true when desired adjustment is inward. Each Guide may also be adjusted independent of the other. However, Guide faces at all times must be parallel.

The proper method of Guide adjustment either in a new Hammer or upon replacement of a Guide is as follows:

1. Set one Guide firmly in its receptacle.
2. Temporarily set other Guide with loose running fit.
3. Depress Hammer Treadle to such degree that Head will then travel slowly between Guide faces.
4. Close loose adjustment on Guide gradually while Hammer is running idle; this closing adjustment being progressive until a true running fit is obtained between the Guide members and Ram, making positive however of free oscillation of Ram with a true running bearing fit throughout length of Head.
5. Tighten all lock nuts securely. Lock bolts and nuts are provided on the face of the Guide so that the proper adjustment thus obtained will be set up permanently.

ANVIL BLOCK: Anvil Block, part #85, (containing Anvil or Lower Die Holder) is separated from the Bed, part #80, by a wood packing. Four Block Bolts, part #137, two on either side, offer additional adjustment for alignment of dies. By alternate tightening or loosening the Block Bolts the Die and Anvil Block may be brought into position, these bolts operating in conjunction with one another such that the upper or lower bolt is tightened or loosened as its mate is turned in the opposite position. The Anvil Block face, front to back and left to right, must

be perpendicular to Guide faces and parallel at all times to the lower face of the Ram. In making any adjustment of the Block or inserting new Block or packing, it is suggested that to provide perfect alignment the Ram, part #75, and Guides be removed from the Hammer. By then placing a square on Block surface alignment is made with the machined recesses on the inner side of each Arm. The Ram and Guides are then placed in the Hammer and adjusted in the usual manner.

HAMMER STRAP: Ram or Head is affixed to Helve, part #69, by Hammer Strap, part #79, which extends through slot at the top of Ram; Strap ends being held to Helve by Head Lifter Bar Assembly, parts 70, 71 and 72. It is essential that this Strap be kept taut at all times since a loose Strap will cause excessive wear and ultimate deterioration of unit as well as excessive wear on the Head Cushion, part #78. A new Hammer or a new Strap will require inspection from time to time to insure its tautness. When tightening Strap or making replacement it is suggested that the Strap be mounted in the Hammer in the usual manner, tightening down securely the Head Lifter Grip Plate, part #71, on one side, the remaining Grip Plate on the opposite side being left loose. Suitable belt clamp is then affixed to loose strap end and, using this Grip Plate as a fulcrum and clamp as a lever, desired tension is applied. Holding this tension, Grip Plate is then tightened in position.

BEARINGS: All bearings on the Hammer with the exception of the Eccentric and main Hammer bearings are of trunion type and have ball or conical male and female hardened surfaces. These surfaces will show wear from use or lack of lubrication and will require adjustment to retain the accuracy of the Hammer. This adjustment is accomplished by additional insertion of the screw center. However, this tension on the center must not restrict free movement of the part. The adjustable centers are parts 73, 83 and 92. It is suggested with particular reference to adjustment of the Oscillator Center, part #73, that this set-up be made while the Hammer is operating at an idling speed. This method makes it absolutely certain that the unit is drawn in to a proper true running fit but at the same time prohibits the possibility of over-tightening which may be readily discernible to the Hammer operator in that it will restrict the free movement of the Oscillator carriage.

BOLT TENSION: Due to the repeated blows of the Hammer, vibrations set up tend to loosen and maladjust threaded adjustments. To offset this condition, which is present particularly on a new Hammer or installation of new member, all bolts, screws, studs and centers are provided with jam nuts. A routine inspection should be made of these items.

LUBRICATION: Scheduled lubrication of a Hammer is essential. A standard good grade of machine oil is recommended for the main bearings, eccentric and trunions. A medium heavy pressure lubricant is recommended for the guides.

DIES: A standard pair of half round - half flat drawing dies accompanies each Hammer. The rating of the Hammer indicates the combined weight of the upper die and ram. A specialized die or finished forging die may be used as requirements arise. The Upper Die may be safely used with a 35% increased net weight over and above that of the standard die.

MOTOR: An individual drive motorized Hammer is recommended wherever possible. For motorized units we have developed a motor stand particularly styled for each size Hammer and adapted to utilize efficiently the short drive inherent to the BRADLEY Hammer. This stand is mounted on its own foundation and practically isolates the motor from any hammer vibrations. A standard squirrel cage induction motor, normal starting torque or its direct current equivalent, is recommended for this Hammer.

FOOT TREADLE: A treadle extending around the front and sides of the Hammer offers an operator control of his unit at almost any point suited to his forging requirements. A Brake acting on the Balance Wheel connected with the Foot Treadle provides braking of the Hammer. A Brake Shoe mounted in Brake Arm, part #100, may show wear from use and will require replacing. The operating point of the Treadle may be changed if desired for individual requirements by re-locating the treadle ends in the slots provided in Brake Shoe and Idler Hub, part #101.

ARCH: In order to diminish the possibility of extended crystallization and provide a more accurate adjustment of Arch this unit, part #140, on all 300# and 500# Hammers is designed in two sections, known as Front Half and Back Half of Arch.

LIST OF PARTS

...OF...

THE BRADLEY Upright Hammers

Bradley Upright Hammers are made in UPRIGHT STRAP and UPRIGHT HELVE styles.

Many parts are common to both while others are used in one style only. To distinguish these parts we have followed their names with STRAP, HELVE, or BOTH in the following list of parts.

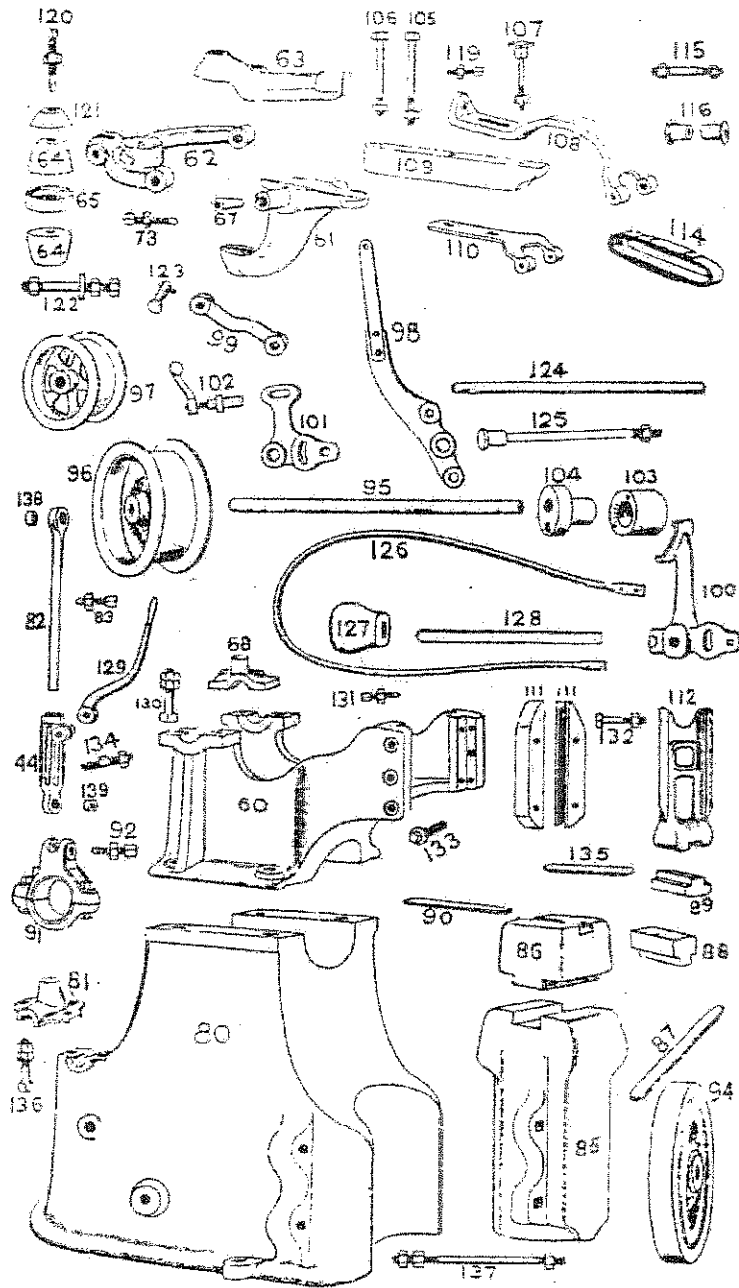
When ordering parts be sure to give the STYLE and SIZE of HAMMER and its SHOP No.

44	Slip Sleeve (pinch part).....	Both
	A slip Sleeve complete consists of Nos. 44, 82, 129, 134, 138, 139.	
60	Arch	Strap
61	Lower Husk for Helve Nos. 69 and 109	Both
	Two styles of Upright Strap Hammers have been made; at first Nos. 108 and 110, with the wood piece No. 109 between them, carried the built up leather strap No. 114, and Nos. 61 and 63 held No. 109. Commencing with Shop No. 600 the parts Nos. 141, 142 and 143 have been used, while the Strap No. 144 is a piece of leather belting.	
62	Oscillator	"
63	Upper Husk for Helve Nos. 69 and 109	"
	See remarks under No. 61.	
64	Rear Rubber Cushion, 1/2	"
	A set of rubber cushions for Hammers up to and including 300 lbs., comprises 4 pieces No. 64, and for the 300 lb. and 500 lb. Hammers 8 pieces No. 64. For other Rubber Cushions see Nos. 78 and 147.	
65	Rear Rubber Cushion Plate	"
67	Female Center for Lower Husk	"
68	Arch Box Cap	"
73	Oscillator Screw and Center, Male	"
80	Main Bed	"
81	Main Shaft Box Cap	"
82	Slip Sleeve Stem or Pitman (includes No. 138)	"
	See remarks under No. 44.	
83	Pitman Screw and Center, Male	"
85	Anvil Block	"
	No. 85 is regularly made of a special grade of cast iron, but the work is so severe in some lines of business that it occasionally breaks out from a corner of the groove or slot. To make this of cast steel costs somewhat more than of cast iron, but we have furnished many of cast steel and not one has given out. About a month is required to get them out.	
86	Anvil	"
	Remarks under No. 85 apply equally to No. 86.	
87	Anvil Block Key	"
88	Lower or Anvil Die	"
89	Upper or Head Die	"
90	Anvil Key	"

THE BRADLEY UPRIGHT HAMMER.

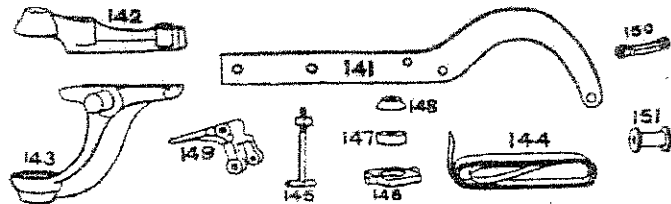
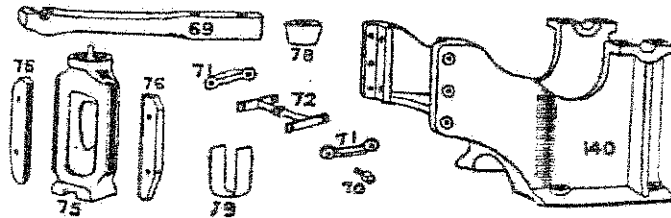
91	Eccentric Strap Complete (includes bolts)	Both
	As the two parts of No. 91 are drilled and bored together it must be sent out complete, but if one-half is sent us we can make the other half to match it, or we can furnish either half in the rough. When ordering give us the diameter of Shell No. 103.	
92	Eccentric Strap Screw and Center, Male	"
94	Balance Wheel	"
95	Main or Drive Shaft	"
96	Belt or Drive Pulley	"
97	Idler Pulley	"
98	Idler Arm	"
99	Idler Arm Link	"
100	Brake Shoe	"
101	Idler Hub	"
102	Idler Arm Adjusting Nut	"
103	Eccentric Shell	"
104	Eccentric Hub	"
105	Bolt for Husk, Nos. 61 and 63, rear, long	"
106	Bolt for Husk, Nos. 61 and 63, front, short	"
107	Bolt for Slot in Steel Helve, No. 108	Strap
108	Helve, Steel, Top part, old style	"
	See remarks under No. 61.	
109	Helve, Wood	"
	See remarks under No. 61.	
110	Helve, Steel, Bottom part	"
	See remarks under No. 61.	
111	Guide for Head (Right or Left when facing Hammer)	"
	These guides are regularly made of cast iron, but we can furnish them of forged steel if so desired, at an advanced price. We are inclined to think that guides break more on account of too much play between them and the Head No. 112 than from any other cause. The guides are adjustable.	
112	Head or Ram	"
	See remarks under No. 111. There must be some play between Head and Guides to allow for expansion from heat, but too much play may hasten crystallization and breakage.	
114	Leather Strap or Head Lifter for No. 108, old style	"
	See remarks under No. 61. This strap is of built up leather belting, but we can send anyone a sketch showing how a piece of regular belting may be substituted. More of these straps give out because they are allowed to run loose than for all other reasons. Keep them stretched up tight between the spools all the time. No. 144 is present pattern.	
115	Bolt for Spool for Strap No. 114	"
116	Spool for Strap No. 114, two parts	"
119	Tension Screw for Strap No. 114	"
120	Tension Screw for Rubber Cushion	Both
121	Tension Cup for Rubber Cushion	"
122	Idler Pulley Stud or Axle	"
123	Idler Arm Link Pin	"
124	Idler Arm Shaft	"
125	Idler Arm Stud Bolt	"
126	Foot Treadle	"
127	Brake Weight	"
128	Brake Weight Lever	"
129	Slip Sleeve Lever	"
	See remarks under No. 44.	
130	Arch Box Cap Bolt	"
131	Guide Bolt, Side	"
132	Guide Bolt, Front	"
133	Guide Adjusting Screw	"
134	Slip Sleeve Stud, R. & L. Thread	"
	See remarks under No. 44.	
135	Upper or Head Die Key	"
136	Main Shaft Box Cap Bolt	"
137	Bolt, Anvil Block to Frame	"
138	Pitman Center, Female	"
139	Slip Sleeve Center, Female	"
	For additional parts see page 5.	

THE BRADLEY UPRIGHT HAMMER.



THE BRADLEY UPRIGHT HAMMER.

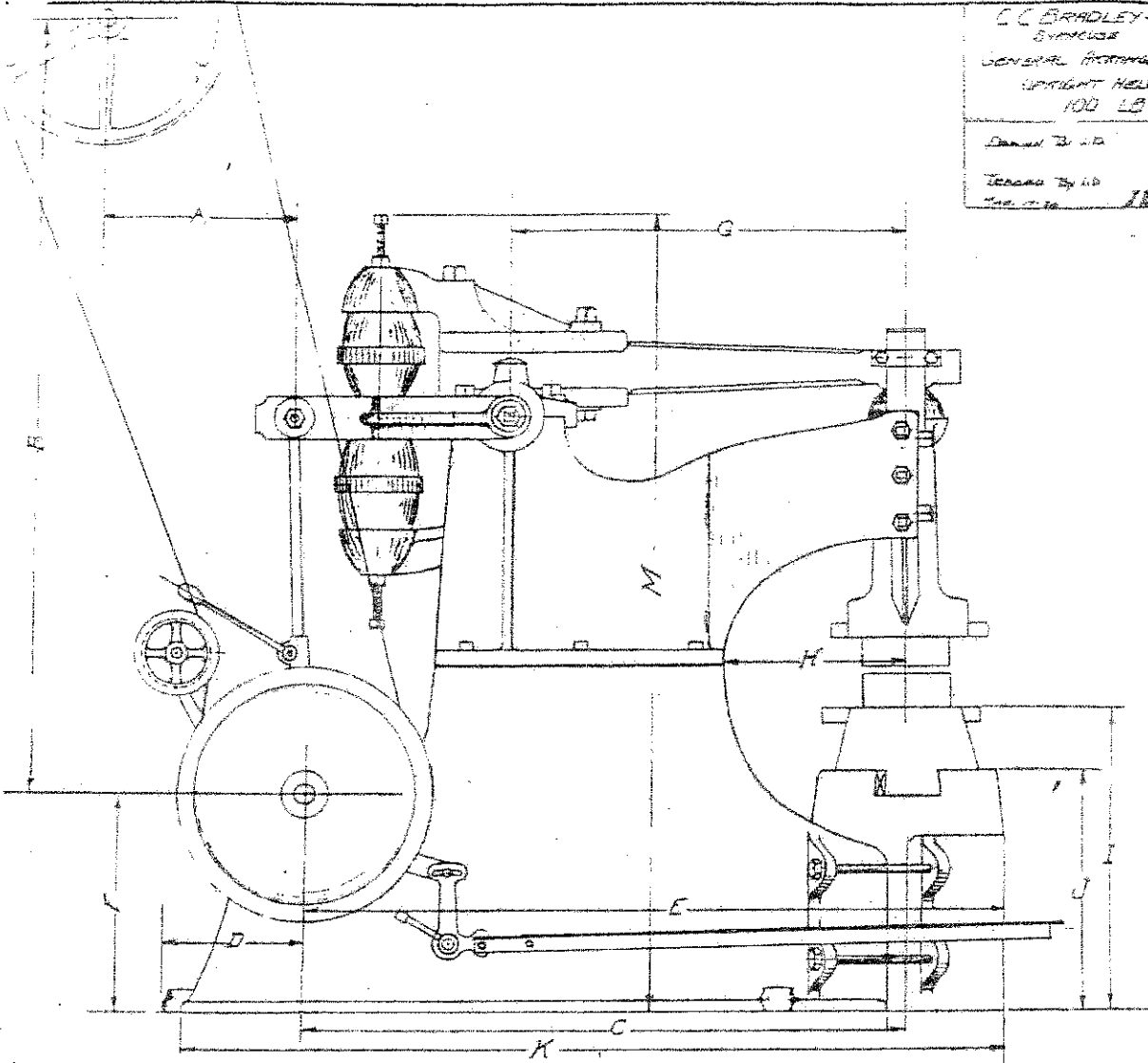
69	Helve (Wood)	Helve
70	Head Lifter Bar Set Screw	"
71	Head Lifter Grip Plate (2 parts, top and bottom)	"
72	Head Lifter Bar	"
75	Head or Ram	"
	See remarks under No. 112.	
76	Guide for Head	"
	See remarks under No. 111.	
78	Head Cushion, rubber	"
79	Head Lifter, leather	"
140	Arch	"
141	Helve, Steel, 1/2 (2 parts to this Helve)	Strap
	See remarks under No. 61. This is the present pattern.	
142	Upper Husk for Helve No. 141	"
	See remarks under No. 61. This is the present pattern.	
143	Lower Husk for Helve No. 141	"
	See remarks under No. 61. This is the present pattern.	
144	Strap, Continuous Belt, for Helve No. 141	"
	See remarks under No. 61. This is the present pattern. To renew this strap use best quality, light-double, short lap leather belt for Hammers 50 lb. and up. Single belt for 15 and 30 lb. Keep this strap strained up tight all the time. For other straps see Nos. 79 and 114.	
145	Strap Tension T Bolt	"
146	Strap Tension Plate	"
147	Strap Tension Spring, Rubber	"
148	Strap Tension Spring Cup	"
149	Strap Tension Crank	"
150	Strap Grip Plate	"
151	Strap Spool, Solid	"



GENERAL ARRANGEMENT FOR BRADLEY UPRIGHT HAMMER

	30#	50#	75#	100#	125#	150#	200#	300#	500#
Speed Blows per minute	375	315	315	300	300	275	225	190	175
Drive Pulley	12"	14"	14"	18"	18"	18"	22"	26"	26"
Drive Belt	3"	4"	4"	6"	6"	6"	6"	8"	8"
Power - approximate	2	3	3	5	5	7 $\frac{1}{2}$	7 $\frac{1}{2}$	10	10
Drive Pulley Counter Shaft	18"	20"	20"	24"	24"	24"	28"	32"	32"
Eccentric Throw general	2"	3"	3"	4"	4"	4"	5 $\frac{1}{2}$ "	5"	5"
Extreme Stroke Adjustment	3 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	5"	5"	5"	5 $\frac{1}{2}$ "	6"	6"
P.M. Main Shaft	375	315	315	300	300	275	225	190	175
A	6"	6"	6"	7"	7"	8"	9"	10"	10"
B	7' 0"	7' 0"	8' 0"	9' 0"	9' 0"	9' 0"	10' 0"	11' 0"	12' 0"
C	2' 5"	3' 0"	3' 0"	3' 0"	3' 4 $\frac{1}{2}$ "	4' 0"	4' 7"	5' 1-1/8"	5' 5"
D	10"	11"	11"	11"	11"	11 $\frac{1}{2}$ "	14"	14-3/8"	15"
E	2' 11 $\frac{1}{2}$ "	3' 7"	3' 7"	4' 0 $\frac{1}{2}$ "	4' 0 $\frac{1}{2}$ "	4' 9 $\frac{1}{2}$ "	5' 4"	6' 0"	6' 6"
F	21 $\frac{1}{2}$ "	21"	21"	19 $\frac{1}{2}$ "	19 $\frac{1}{2}$ "	20 $\frac{1}{2}$ "	20 $\frac{1}{2}$ "	20 $\frac{1}{2}$ "	20 $\frac{1}{2}$ "
G	18 $\frac{1}{2}$ "	23"	23"	2' 3"	2' 3"	2' 6 $\frac{1}{2}$ "	2' 11"	3' 3-5/8"	3' 7"
H	9 $\frac{1}{2}$ "	11 $\frac{1}{2}$ "	11 $\frac{1}{2}$ "	12 $\frac{1}{2}$ "	12 $\frac{1}{2}$ "	14"	14"	18"	18 $\frac{1}{2}$ "
I	2' 7 $\frac{1}{2}$ "	2' 7"	2' 7"	2' 6 $\frac{1}{2}$ "	2' 6 $\frac{1}{2}$ "	2' 6 $\frac{1}{2}$ "	2' 5 $\frac{1}{2}$ "	2' 5"	2' 8 $\frac{1}{2}$ "
J	2' 5"	2' 0 $\frac{1}{2}$ "	2' 0 $\frac{1}{2}$ "	2' 1"	2' 0"	2' 0 $\frac{1}{2}$ "	23"	22"	25"
K	3' 6 $\frac{1}{2}$ "	4' 7"	4' 6"	4' 11 $\frac{1}{2}$ "	4' 11 $\frac{1}{2}$ "	5' 9"	6' 6"	7' 2 $\frac{3}{8}$ "	7' 3"
L	14 $\frac{1}{2}$ "	2' 0 $\frac{1}{2}$ "	2' 0 $\frac{1}{2}$ "	2' 5"	2' 5"	2' 6 $\frac{1}{2}$ "	2' 7 $\frac{1}{2}$ "	2' 11 $\frac{1}{2}$ "	3' 3"
M	4' 8"	5' 1"	5' 1"	5' 8"	5' 8"	5' 11 $\frac{1}{2}$ "	6' 3"	7' 5"	7' 5"
N	8 $\frac{1}{2}$ "	14 $\frac{1}{2}$ "	14 $\frac{1}{2}$ "	18 $\frac{1}{2}$ "	18 $\frac{1}{2}$ "	19"	19"	24 $\frac{1}{2}$ "	2' 0"

C. C. BRADLEY-SON INC.
 SYRACUSE, N. Y.
 GENERAL ARRANGEMENT
 UPRIGHT HELVE HAMMER
 100 LB.
 DRAWN BY J. D. ...
 CHECKED BY J. D. ...
 1887



L - WIDTH OF BED
 N - CENTER OF HAMMER TO
 CENTER OF BELT

FOUNDATION PLAN FOR BRADLEY UPRIGHT HAMMER

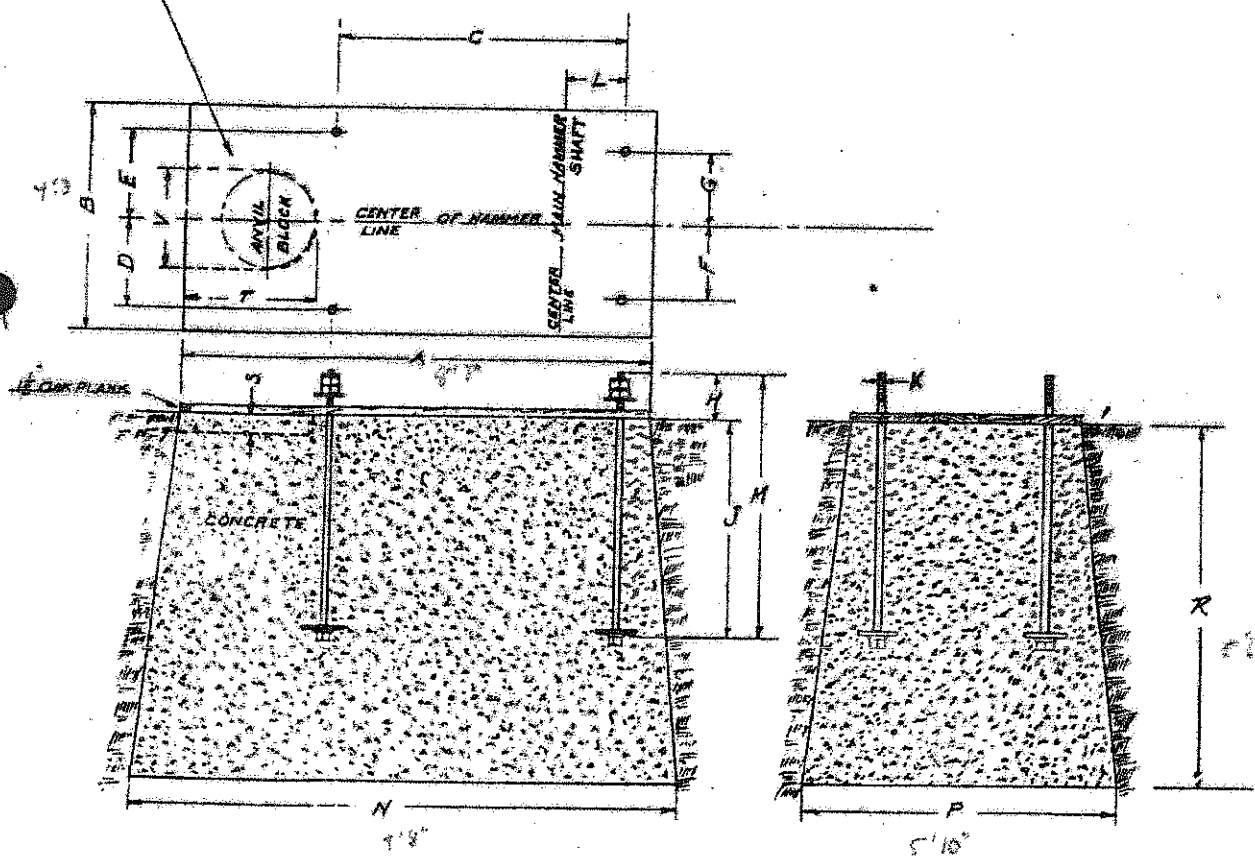
		30#	50#	75#	100#	125#
Length at top	A	4' 9"	6' 0"	6' 0"	6' 0"	5' 9"
Width at top	B	2' 10"	3' 6"	3' 6"	3' 7"	3' 7"
Rear to center	C	2' 1-1/8"	2' 6-5/8"	2' 6-5/8"	3' 1-1/8"	3' 1-1/8"
Bolts to center	D	10-5/16"	11-11/16"	11-11/16"	13-1/4"	13-1/4"
Bolts to center	E	10-5/16"	11-11/16"	11-11/16"	13-1/4"	13-1/4"
Bolts to center	F	6"	7-1/8"	7-1/8"	9"	9"
Bolts to center	G	6"	7-1/8"	7-1/8"	9"	9"
Bolts extend above concrete	H	5-1/16"	5-1/16"	5-1/16"	5-7/8"	5-7/8"
Bolt in concrete	J	10"	13"	13"	15"	15"
Size of bolts	K	0-7/8"	0-7/8"	0-7/8"	1"	1"
Drive Shaft to bolt hole	L	7-1/2"	9-1/2"	9-1/2"	10"	10"
Length foundation bolts	M	15-1/16"	18-1/16"	18-1/16"	20-7/8"	20-7/8"
Length at bottom	N	5' 9"	7' 0"	7' 0"	7' 0"	7' 9"
Width at bottom	P	3' 6"	4' 6"	4' 6"	4' 6"	4' 7"
Depth, minimum	R	3' 0"	3' 6"	4' 0"	4' 0"	4' 3"
Depth of Recess	S	-	-	-	-	-
Length of Recess	T	-	-	-	-	-
Dia. Recess	V	-	-	-	-	-

		150#	200#	300#	500#
Length at top	A	6' 9"	7' 7"	8' 3"	8' 11"
Width at top	B	3' 7"	3' 7"	4' 3"	4' 3"
Rear to center	C	3' 8"	4' 2-5/8"	4' 11-3/8"	5' 2-3/8"
Bolts to center	D	14-1/16"	14-3/4"	16-11/16"	18-3/16"
Bolts to center	E	14-1/16"	14-3/4"	16-11/16"	18-3/16"
Bolts to center	F	9-7/8"	10-7/8"	11-11/16"	12-1/16"
Bolts to center	G	9-7/8"	10-7/8"	11-11/16"	12-1/16"
Bolts extend above concrete	H	5-7/8"	6-1/8"	6-9/16"	7"
Bolt in concrete	J	18"	18"	24"	30"
Size of bolts	K	1"	1"	1-1/8"	1-1/4"
Drive Shaft to Bolt hole	L	11"	12"	11-1/2"	13-1/4"
Length foundation bolts	M	23-7/8"	24-1/8"	30-9/16"	37"
Length at bottom	N	7' 9"	8' 7"	9' 8"	10' 3"
Width at bottom	P	4' 7"	4' 7"	5' 10"	5' 10"
Depth, minimum	R	4' 6"	5' 0"	5' 6"	6' 0"
Depth of Recess	S	-	-	-	4"
Length of Recess	T	-	-	-	30-7/8"
Dia. Recess	V	-	-	-	25-5/8"

NOTE: Dimensions S, T and V apply to 500# Hammer only.
 Extended Anvil Block requires Recess in Foundation face.

NOTE - DIMENSIONS P, Q, R
REFER 500# HAMMER ONLY

C. C. BRADLEY & SON, INC.	
STROUSS, N.Y.	
FOUNDATION PLAN UPLIFT, 100 LB HAMMER	
100 LB	
DESIGNED BY	C. C. BRADLEY
TRACED BY	SCHEIDT
DATE	12-6



19140

716780
194135

Makers of

The Bradley Cushioned Helve Hammer

The Bradley Upright Strap Hammer

The Bradley Upright Helve Hammer

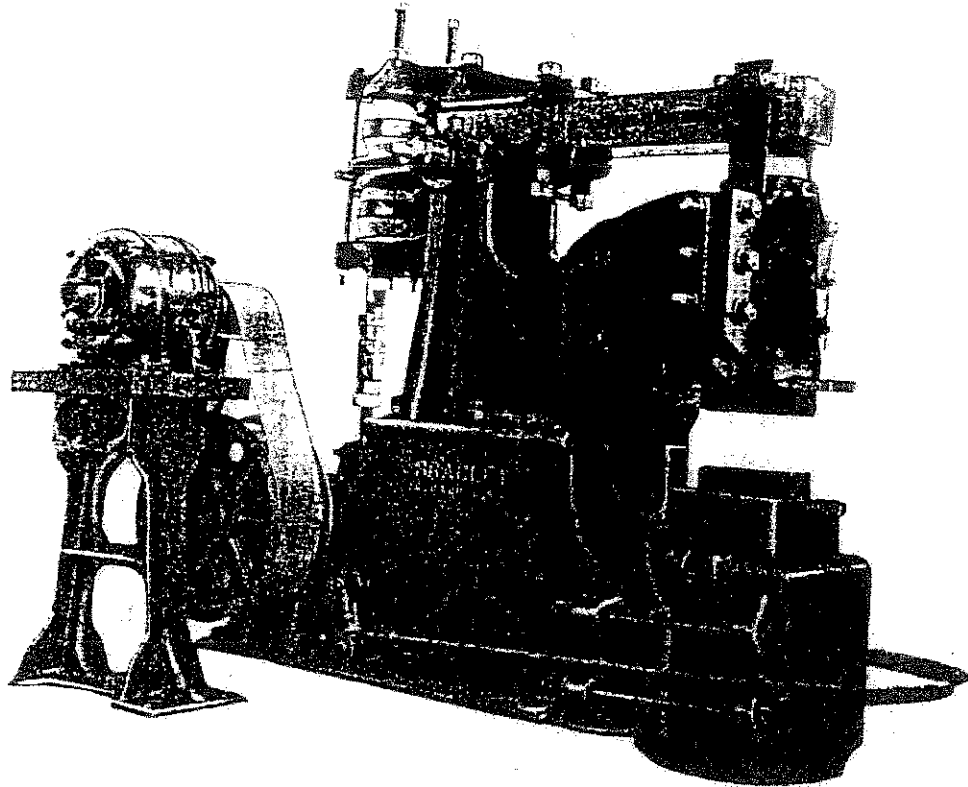
The Bradley Compact Hammer

Heating Forges for Hard Coal or Coke

The Bradley Upright Helve Hammer

Built to meet the Demands of Modern Production

Arranged for either Belt or Motor Drive



Bradley Upright Helve Hammers readily adapt themselves to an electric motor drive. The advantages of a motor driven hammer are many, but those which appeal more generally to the purchaser are that the hammer may be located in the most convenient place for use, irrespective of main line shaft, and also when not in use, no power is consumed.

Important Note: Table gives the average size of steel that can be efficiently worked on a Production Basis. It does not limit the capacity of the hammer as Bradley Hammers can work effectively steel of 50% greater cross section than shown in the table.

SPECIFICATIONS

Size	Diameter of Hammer Pulley	Width of Drive Belt	Horse Power of Motor	Speed of Motor No Load	Degree Beams of Rating	Diameter of Motor Pulley	Speed of Hammer	Average Size of Work	Floor Space Over All (Approximate)	Weight (Approximate) Pounds
30-lb.	12 in.	3 in.	2	900	40	5 in.	350 to 375	1 in.	28 in. x 45 in.	2350
50-lb.	14 in.	4 in.	3	900	40	5 in.	300 to 315	1½ in.	32 in. x 51 in.	3200
75-lb.	14 in.	4 in.	3	900	40	5 in.	300 to 315	1½ in.	32 in. x 51 in.	3300
100-lb.	18 in.	6 in.	5	900	40	6 in.	275 to 300	1½ in.	39 in. x 60 in.	4700
125-lb.	18 in.	6 in.	5	900	40	6 in.	275 to 300	2 in.	39 in. x 60 in.	4750
150-lb.	18 in.	6 in.	7½	900	40	6 in.	250 to 275	2½ in.	41 in. x 78 in.	6700
200-lb.	22 in.	6 in.	7½	900	40	6 in.	200 to 225	3 in.	42 in. x 78 in.	7800
300-lb.	26 in.	8 in.	10	900	40	6 in.	175 to 190	3½ to 4 in.	52 in. x 96 in.	12000
500-lb.	26 in.	8 in.	15	900	40	5 in.	150 to 175	4 to 5 in.	52 in. x 96 in.	15400

THE BRADLEY UPRIGHT HELVE HAMMER has a helve of wood and the head or ram is carried by a strip of leather belting, with a buffer or cushion of rubber between the ram and the helve to provide the snap and elasticity to the hammer blow which is a quality of the Bradley Hammer above. In other respects the Bradley Upright Hammer is practically identical with the Bradley Upright Strap Hammer.

The 300 pound size and the 500 pound size have eight rubber cushions at the rear of the helve, the smaller sizes have four.

The two sizes—the 300 lb. and 500 lb.—are made in the Upright Helve style only. The other sizes—except 15 lb., which is made in Upright Strap only—may be had in either Upright Strap or Upright Helve.

We recommend the Upright Helve Hammer when the work is severe and continuous.

The 15 lb. size is furnished in Upright Strap style only.

The 30 lb. to 200 lb. sizes are furnished in either Upright Strap or Upright Helve style as required.

The 300 lb. and 500 lb. sizes are furnished in Upright Helve style only.

Below we submit a table giving the price of each size of

BRADLEY CUSHIONED UPRIGHT HELVE HAMMER

BRADLEY UPRIGHT HELVE HAMMERS

Size	Domestic Net Prices		Export Net Prices	
	Belt Driven	Motor Driven	Belt Driven	Motor Driven
30 lb.	\$635	\$660	\$690	\$725
50 lb.	825	850	895	950
75 lb.	865	915	955	1010
100 lb.	1080	1105	1140	1200
125 lb.	1140	1170	1205	1260
150 lb.	1300	1355	1365	1420
200 lb.	1455	1510	1520	1575
300 lb.	2185	2240	2310	2400
500 lb.	2440	2495	2565	2650

Domestic prices include Hammer skidded for rail or truck transportation, delivered f.o.b. Syracuse, N. Y.

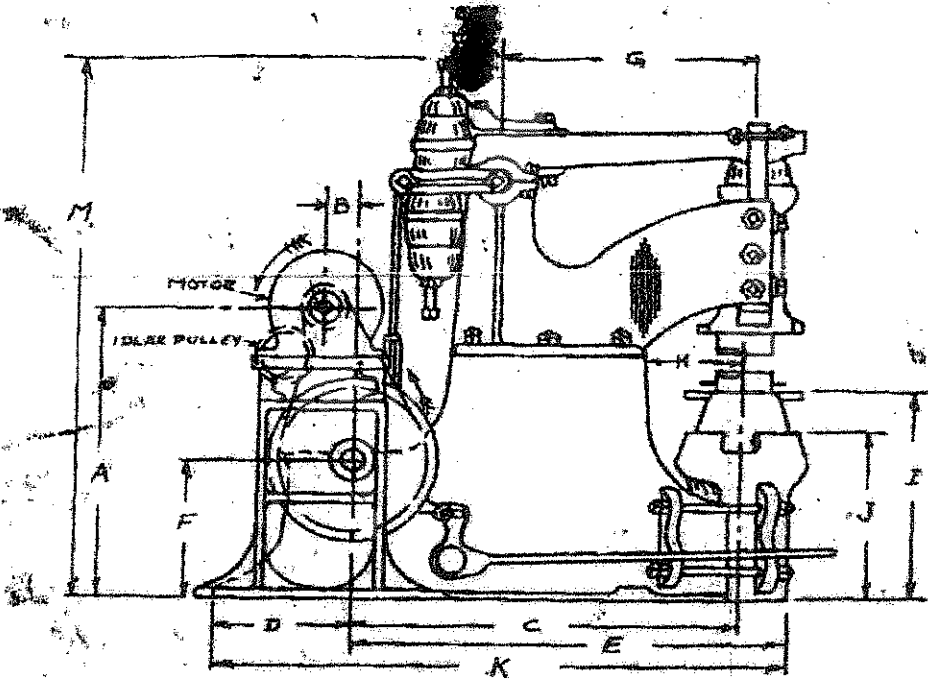
The Motor Driven Hammer Prices cover the Hammer arranged for Motor Drive including Motor Stand but do not cover Motor, Motor Pulley or Belting.

We solicit your inquiries for complete motorized units with drive and motor control accessories in accordance with accepted Underwriters Standards, wiring excluded.

Export prices include Hammer boxed for ocean transportation, delivered f.o.b. New York City.

November 1, 1939

This price list supersedes all previous issues.



L = WIDTH OF BED

F = 24 1/2

GENERAL ARRANGEMENT FOR BRADLEY UPRIGHT HELVE HAMMER

	K-300	L-500	M-1000	N-1200	R-2000	S-3000	T-5000
Speed, blows per minute	375	315	300	275	235	190	175
Diameter Drive Pulley	12	14	18	18	22	26	26
Width Drive Belt	3	4	6	6	6	6	6
Horse Power—Approximate	2	3	5	7 1/2	7 1/2	10	10
Diameter Pulley on Motor	5	5	6	6	6	6	6
Eccentric Throw, general	2	3	4	4	5 1/2	6	6
Extreme Stroke Adjustment	3 1/2	4 1/2	5	5	5 1/2	6	6
R.P.M. Main Shaft	375	315	300	275	235	190	175
A	41	43	44	44	45	45 1/2	45 1/2
B	3	3	3	3	3	3	3
C	2 1/2	3 0	3 1/2	4 0	4 7	5 1 1/2	5 1 1/2
D	10	11	11	11 1/2	14	14	14
E	2'11 3/4"	3'7"	4'0 1/4"	4'9 1/4"	5'4"	6'0"	6'0"
F	21 3/4"	21	19 1/4"	20 1/4"	20 1/4"	20 1/4"	20 1/4"
G	18 1/4"	23	23	2'6 1/4"	2'11	3'0 1/4"	3'0 1/4"
H	9 1/4"	11 1/2"	12 1/4"	14	14	14	14
I	2'7 1/2"	2'7	2'6 3/4"	2'6 3/4"	2'6 3/4"	2'6 3/4"	2'6 3/4"
J	2'5	2'0 3/4"	2'1	2'0 1/4"	2'0 1/4"	2'0 1/4"	2'0 1/4"
K	3'6 1/4"	4'7"	4'11 1/2"	5'9"	5'9"	5'9"	5'9"
L	14 1/4"	2'0 3/4"	2'5	2'6 1/4"	2'6 1/4"	2'11 1/4"	2'11 1/4"
M	4'6"	5'1"	5'8"	5'11 1/4"	6'3"	6'3"	6'3"