

TABLE 1.—RAILWAYS REPORTING HAVING STOKERS IN OPERATION, TYPES OF STOKERS AND ENGINES TO WHICH THEY WERE APPLIED.

RAILWAY	STOKERS		PRINCIPAL DIMENSIONS OF ENGINES TO WHICH APPLIED								EXPECT TO APPLY	
	Number	Type	Type	Weight		Steam Cylinders Inches	Diam. Drivers Inches	Heating Surface	Grate Area	Tractive Power		
				Total	On Drivers							
Queen & Crescent.....	1	Hanna....	Mallet.....								Re-designed Hanna.	
Carolina, Clinchfield & Ohio.....	1	Hanna....	Mallet.....	342,650	299,250	23 35 x 32	57	5,607	78	70,640	One improved Hanna.	
New York Central.....	1	Street.....	Mallet.....									
Buffalo, Rochester & Pittsburg.....	1	Street.....	2-8-2.....	275,000	217,000	26½x30	63	3,625	56.4	51,160	Dependent on the market for nut and slack coal.	
Vandalia.....	4	Crawford..	2-8-0.....	240,945	216,450	24x28	62	3,839	54.9	45,327	None.	
Norfolk & Western.....	41	40	Street.....	2-6-6-2....	405,000	337,300	22 35 x 32	56	5,006	72.2	73,000	50 Street and 1 Crawford.
		1	Street.....	4-8-0.....	262,000	222,000	24 x 30	56	4,460	45.0	52,457	
			Street.....	4-8-2.....	331,000	241,100	29 x 28	62	4,129	66.7	58,100	
Chesapeake & Ohio.....	54		Street.....	2-8-2.....	315,000	243,000	29 x 28	56	4,052	66.7	60,800	No decision.
			Street.....	2-6-6-2....	400,000	337,500	22 35 x 32	56	5,041	72.2	82,000	
			Street.....	2-8-2.....	282,200	223,600	26 x 32	64	3,968	70	54,587	
Baltimore & Ohio.....	13		Street.....	0-8-8-0....	461,000	Fr 232,700	26 x 32	56	5,578	100	105,000	To 127 engines.
		1	Street.....	2-8-0.....	220,370	Rr 2 8,300	41					
			Crawford..	2-8-0.....	198,650		22 x 30	60	2,876	57.05	42,168	
Pennsylvania	155	98	Crawford..	2-8-0.....	250,500	226,000	24 x 28	62	4,201	55.13	45,400	To probably large power built in fu- ture 140 on order.
		35	Crawford..	4-6-2.....	293,250	189,525	24 x 26	80	5,098	55.4	32,600	
		18	Crawford..	2-8-0.....	202,000	179,000	22 x 28	56	2,843	49.04	42,000	
		2	Crawford..	0-6-0.....	135,000	135,000	19 x 26	51	1,755	31.54	28,200	
		2	Crawford..	Not given								
St. Louis & San Francisco.....	1	Street.....	2-8-8-2....	418,000	360,000	24½x30 39	57	5,230	75	83,500	None.	

plied to engines on 16 different roads, but on April 1, 1913, none were still in service, so far as known. This design of stoker interferes with the operation of the fire door when it becomes necessary to resort to hand firing. It is one where all of the coal must be shoveled from the tank into a hopper.

**BARNUM STOKER.**—Seven Barnum or C.B. & Q. stokers have been built to date by the Burlington; 1 being applied to a switch engine, 1 to a Prairie type road engine, 5 to Santa Fe decapod engines. All of the latter stokers, we are advised, have been taken out of service on account of difficulties experienced in connection with the driving mechanism used with the taper screws in the stoker trough, also on account of the unsatisfactory distribution of fuel where the lower grades of coal were handled.

**HAYDEN, HAYDEN MODIFIED, BREWSTER, HARVEY, DICKINSON and Erie Stokers.**—Nothing has been done during the past year with the above stokers. That is to say, none of them have passed from the experimental to the commercial stage. The experimental machines which were applied did not wholly meet the requirements of a stoker as viewed by your committee, in that several materially obstructed the fire door, which would interfere with hand firing should such a course become necessary, and the others have not been sufficiently developed.

**HANNA STOKER.**—Eighteen or twenty stokers were applied to Mallet, consolidation and Pacific type locomotives on the Queen & Crescent Rd., but it is our information they have all been taken out of service, in addition to the single stokers which were put on several different roads. The exception to the above is the one machine on the Carolina, Clinchfield & Ohio Rd., which is still in service. The one on the latter road, we understand, continues to do good work, and the manufacturers promise to bring out another within a very short time possessing still further improvements.

**THE GEE STOKER** is being developed on the Pennsylvania Rd. Only one of this design has been built to date. It is in service on one of their H-6 consolidation locomotives, and is reported as giving very good results.

**CRAWFORD STOKER.**—There have been 153 locomotives on the Pennsylvania Lines West equipped with the Crawford double underfeed stoker. There are 140 locomotives on order which will be equipped with this stoker. The report is that it is probable that larger power built in future will be equipped with this type of stoker. The Vandalia Rd. reports 4 Crawford stokers in operation, and the Pennsylvania Rd. also has 2 in service, making a total of 159 Crawford stokers in service and 140 on order, grand total of 299.

**STREET STOKER.**—In May, 1909, a locomotive on the L.S. & M.S. Ry. was equipped with the first experimental stoker of the Street design. In 1910 five more stokers were put in service, 3 of which were placed on the L.S. & M.S., where the first experimental stoker was operated. In the year 1911 seven locomotives on four different railways were equipped. All of the last seven, with but one exception, were provided with coal crushers carried on the tank, and handled run of mine coal. All of the machines, we are told, are still in regular service.

In the year 1912 165 machines of the screw-conveyor type were placed in service—70 on one railway, 50 on another, 40 on another, and 5 on another. Since Jan., 1913, seven additional machines were put in service, besides orders were placed for