Table "C."

WEST WORKS (CRUSHING)

FOR SIX MONTHS ENDING NOVEMBER 30TH, 1897.

	£ s. d.	£ s. d.		Tons.	s.	d.
STONE BREAKER.			-			7
GENERAL—			Ore Crushed	28,387		
Wages Stores	$\begin{array}{cccccccccccccccccccccccccccccccccccc$			20,00,		. 2°,*
Stores		470 0 7	Cost per ton		. 0	3.97
MAINTENANCE—	. 1					
Wages Stores Mechanics' Work	$\begin{array}{cccccccccccccccccccccccccccccccccccc$				-	,
Modified Work		125 3 3	Cost per Ton		0	1.05
	Total	£595 3 10	Total Cost per ton		0	5.03
DRIER.		7, 7 %			. N. W. M. Co. Married Street, Co.	. d
GENERAL—						
Wages	$\begin{array}{cccc} 432 & 19 & 10 \\ 148 & 15 & 10 \end{array}$		Ore Dried	28,387		
Tons. Stores 1026 @ 13/6 Billet Wood Incd. Tramway	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	E I	SHEE			
Cartage	0 17 6	1338 14 6	Cost per ton		0 *	11.32

-

Table "C" continued.

MAINTENANCE—	Jan grad	i i i i i i i i i i i i i i i i i i i	1 1 1 1	as this.	asset pringing	is also make	antida X	HALL TO
Wages	. 46 115	$\begin{array}{ccc} 2 & 1 \\ 6 & 0 \end{array}$			Ore Dried	28,387		
Stores	0.1	$\begin{array}{cccccccccccccccccccccccccccccccccccc$				5 426		
Cartage	- 0		253 7	6	Cost per ton		0	2.14
		Total	£1592 2	0	Total Cost per ton	4.3 %	1	1.46
	U.			## / · []	Tadi.	5000	E 26-18	9.30
BALL MILLS.								
GENERAL—	1	18		12 protesta	Ore Crushed	28,387	18.9	
Wasses	070	10 1					116	1.03
$egin{array}{lll} \mathbf{Wages} & \dots & \dots & \dots \\ \mathbf{Stores} & \dots & \dots & \dots \\ \end{array}$. 64	6 5			(-44) ; ; ;	end.		
Cartage	1	1 0	417 19	6	Cost per ton		0	3.53
MAINTENANCE—	1			40	1.8	i in coci	3.	5.34
Wages		19 11						i i
Mechanics' Work Stores	950	$15 \stackrel{0}{} 0$ $1 \stackrel{4}{}$						
Cartage	. 0	9 6			a 9	Cope II		roup.
Electric Light			510 5	9	Cost per ton		0	4.31
		Total	£928 5	3	Total Cost per ton		0	7.84
1.019 a 1.						Total	2	2.34

Table "D."

Form of Crusher.			When West	Number of		Size of	Total.		
		Where Working. Machines.		Class of Ore.	Screen.	H.P. Required.	Tons per Month.	Cost per ton.	
Krupp Ball Mills			West Works	16 No. 5	Low Grade Oxidised	400	192	10,000	s. d. 2 2.34
Krupp Ball Mills			Top Works	4 No. 4	Mundie	1200	40	1400	
Krom Rolls			Top Works	6 pairs $30''\ge 16''$	Oxidised	400	60	3530	
Krom Rolls	•••		Lower Works	4 pairs 30" x 16"	Oxidised	400	40	2600	
Otis Ball Mill			Lower Works	1 No. 6	Mundie	1200	12	650	

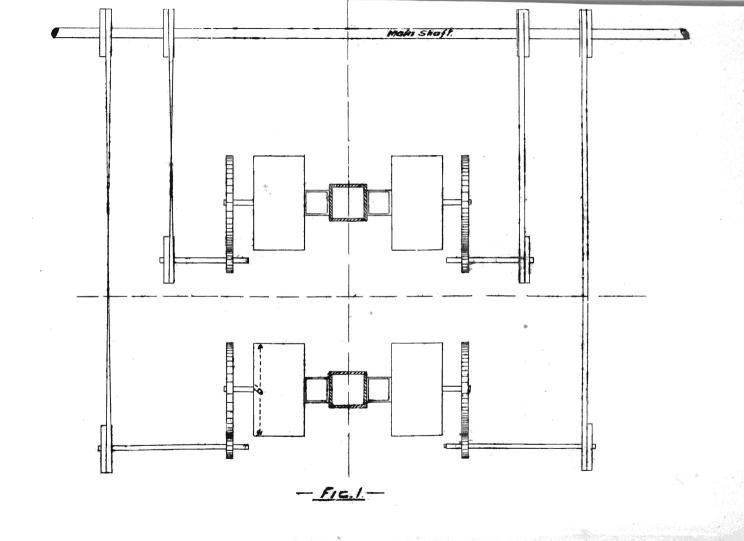
Note.—The Total Cost per ton includes Rough Crushing, Drying, Fine Crushing, Maintenance, Lighting and Water Supply, taken over a period of 6 months.

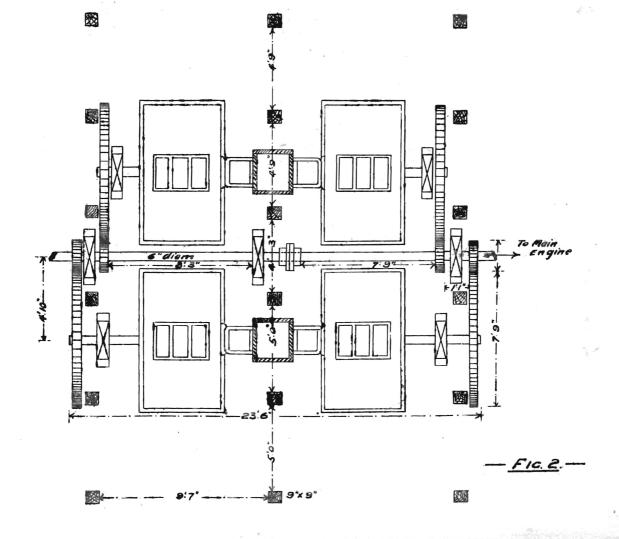
The figures given in the tables are sufficient to show the advantage of Ball Mills over Rolls in regard to cost per ton; their first cost, including engine power, erection, buildings, etc., is also lower than Rolls of the same capacity. Another advantage is that each mill is a complete machine, doing all the operations of crushing, elevating, and screening at the same time, so that unless the plant, when running full time, is only just equal to its work, one machine can always be repaired, and set going again, without interfering with the rest of the plant.

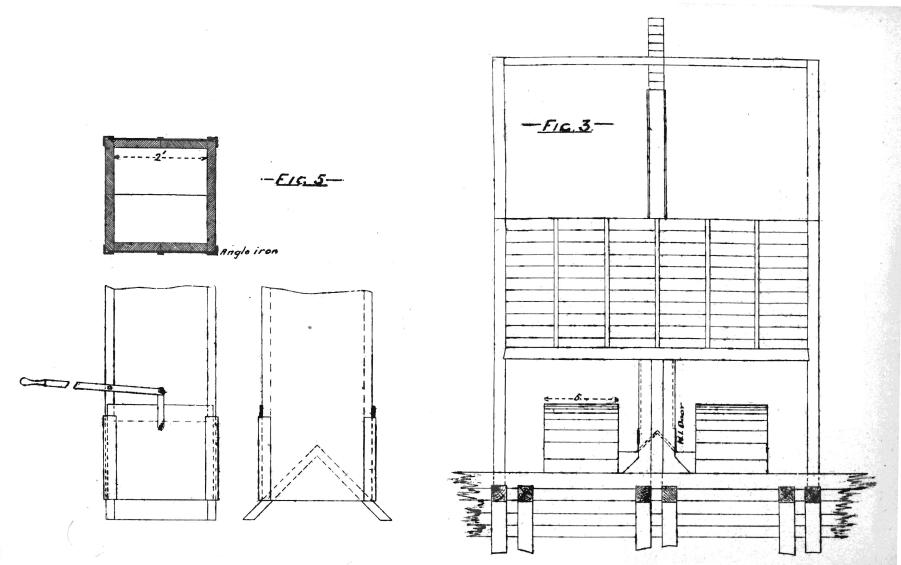
In conclusion, this paper only deals with Ball Mills as dry crushers, but the author is of opinion that, with slight modifications, they would be equally successful as wet crushers, and he would like to hear of some experiments being made in that direction.

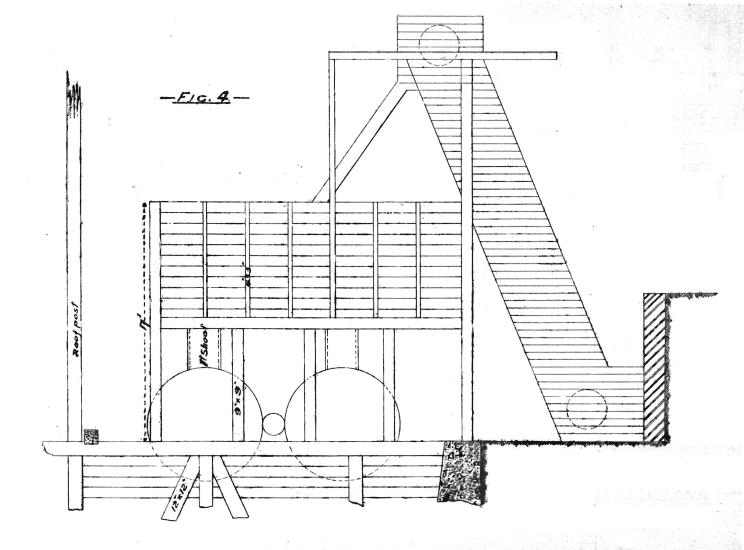
APPENDIX.

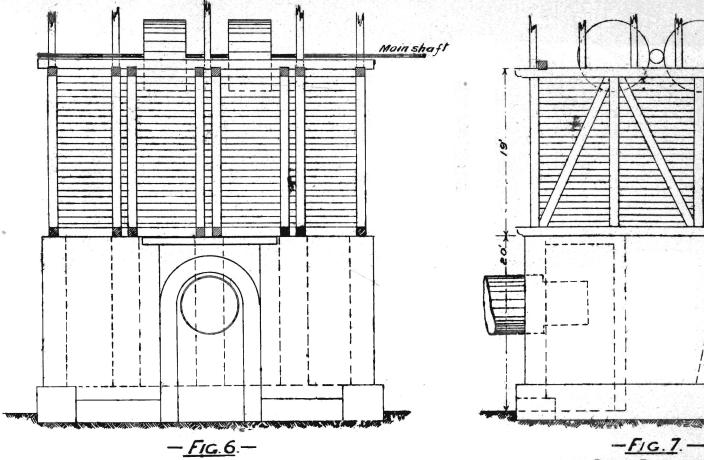
The Cost of a No. 4 Mill con	plete	with	one set			
of balls $f.o.b. = \dots$			•••		£350 0	0
Cost of Spare Parts No. 4 Mill-						
1 Set of Balls	•••				21 - 0	0
 24 Buckle Plates 					27 - 9	9
6 Middle Plates					14 8	0
6 Scoop Plates	•••		• • •		14 8	0
6 Fore Sieves					4 15	0
12 Chilled C.I. Side Plates					13 18	- 6
38 Side Plate Bolts					1 12	6
24 "D," 24 "E," 18 "F,"	' 18 '	'G"B	olts		3 - 9	1
The Cost of a No. 5 Mill comple	te f.o.	b. is			424 - 0	0
The cost of Spare Parts is—					Per o	wt.
Spare Balls					£1 10	0
Grinding Plates					2 0	Ũ
Scoop and Middle Plates					$2 \ 15$	0
Wear of Parts—	,					
Plain Elevator Plates			last	3 n	nonths.	
Perforated Screen Plates			,,	3	,,	
Side Cheek Plates			,, 8	to 9	"	
Grinding Plates			,,	8	,,	
Perforated Elevator Plates				to 3	"	
Fine Screens			,,	6	,,	











- FRONT ELEVATION

–<u>Fig.7</u>.– – <u>Side Elevation</u> –