

by Mildred Cookson, The Mills Archive, UK



As a former "millstone miller" I am always attracted to the detailed descriptions of the large millstone mills frequently featured in the early years of The Miller. The September 2, 1878 issue described Mr Hadley's City of London Flour Mills in loving detail. By then The Miller was reporting the sharper competition with other

countries that was rapidly developing, along with the greater varieties of wheat available. This was necessitating modifications in machinery and systems of manufacture. The formation of a National Association of millers had taken place, and local associations were springing up all over the country proving beneficial to all millers.

Mills were up to this time secretive places not allowing anyone inside to avoid their new installations being shown to competitors. Gradually this changed and some mills started to show how they were fitted out, allowing publication of some excellent engravings of both exterior and interior arrangements. City Flour Mills was one such, which was only too happy to let other millers know of its innovations in the hope that it would encourage others to follow suit.

Building of the mill was started in 1849 on an old rubbish site on the Thames, alongside Puddle Dock, near Blackfriars Bridge. This involved the expensive and laborious construction of a coffer dam to enable the foundations to be laid, requiring them to go down to the London clay level, a depth of 15ft. Two large steam engines were used day and night for pumping out the water. The completed mill opened in October 1852.

The full millstone storey (2nd floor)

Then, on the Sunday morning of November 10, 1872, a fire occurred. Despite the Lambeth fire brigade turning out 200 men with 30 engines, five of the upper floors gave way, destroying much machinery and stock. Sadly, one of the firemen was killed when an iron beam fell on him. After the fire the mill was reconstructed, and the rebuilt mills became the largest and most substantially built in the Metropolis.

The external length of the building was 227ft 10in and it was 60ft wide. The external walls in the basement were 4ft 8in in the basement above the footings and a more substantial 6ft 9in on the river front on a bottom course that was 10ft thick. The mill was seven storeys high and had rolled wrought iron joists 6in deep supported by sockets in cast iron girders which in turn were supported by hollow cast iron girders. There were 61 columns on the ground floor, 56 on the second, 61 on the third, fourth fifth sixth and seventh floors, making a total of 427 in all. The floors were of Rock Hill stone laid on wrought iron joists.

The mill was originally built and designed for 64 pairs of stones, reduced to 63 as a girder intruded on one space. As shown in the illustration of the millstone floor the stones were arranged in groups of eight. Note that to give an uninterrupted view of the driving and millstone floors the centre supporting columns only are







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shown, leaving out the side columns which were placed 15ft. apart on the respective floors.

The bed stones were supported in iron pans attached to the main girders of the building and were regulated by the usual adjustable screws. With one or two exceptions the stones were 4ft diameter. The spindles toes were carried on independent cast iron columns, screwed to cross girders in the floor. Each of these columns carried a find threaded screw and hand wheel for the purpose of tentering the stones (raising or lowering of them).

The millstone cases were made of Memel staves with brass hoops, and with Bovill's patent combined blast and exhaust applied to each stone. The hopper was made of thin cast brass, octagonal in plan and circular in elevation, fitted with a hinged pane for examining the feed. The wheat was conveyed from the foot of the iron bins above by means of a brass tube. The feed was of the 'silent' design worked by a level and screw from below the hopper. The millstone cases along with the exhaust trunks survived the fire of 1872. The diameter of the driving pulley was 6ft and that of the millstone pulley 4ft, the same as the millstone itself. The driving pulley rotated at 80rpm and the millstones 120rpm. At the time this mill was built very few silk dressing machines were in use in England. Originally at City Mills each four pair set of millstones was connected by their meal elevators to a silk dressing machine 34 ft long, arranged longitudinally with the mill on the fifth floor. This total of eight silk reels was subsequently increased by another eight reels of 24 ft. All the reels had hollow perforated shafts for ventilation. The offals from the silk reels passed to a wire dressing machine with a revolving cylinder, one of these being placed at each end of the mill. The offals, after being separated from their finer particles and dust, passed into sifters and were separated into pollards and bran. There were 32 elevators which raised the meal from the millstones to the silk machines which reach to the under side of the top floor. The meal from here was then split into two silk reels contained in one case on the fifth floor. On the floor below these double reels



there are single silk reels connected with the double ones, so that the produce of four pairs of stones passes through three separate reels, allowing the offals to be treated as described above. The motive power for the mill was originally a Maudsley & Field marine type engine installed in the centre of the building on the ground floor. After the fire, a new set of engines was installed by the Canal Basin Foundry Company of Glasgow. These were compound horizontal condensing engines capable of working up to 500hp. The holdings at the Mills Archive mean that I can only provide geographical and historical snapshots. if you would like to know more please email me at mills@millsarchive.org.



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