

With one man turning the winch the machine will raise,—

10 feet high—	90 bricks	per minute	=	5400 bricks	per hour.
20	„	45	„	= 2700	„
30	„	30	„	= 1800	„
40	„	22	„	= 1350	„
50	„	18	„	= 1080	„
60	„	15	„	= 900	„

Of course if steam power, or several men, were employed at the winch, a greater quantity of materials would be raised in the same time.

At a small elevation, only a few hods are upon the chain together, but as the height increases, the upper frame is carried up with the scaffolding, the chain is lengthened, and more hods can be placed upon it.

It is stated, that by this machine, the men are relieved from the labour of climbing up the ladders; there is a corresponding diminution of risk from accidents; building operations can be carried on with greater expedition, and with a diminution in their cost.

The machine has been chiefly used by Messrs. Grissell and Peto, at the new Houses of Parliament; and by Mr. T. Cubitt, at the houses at the Albert Gate, Hyde-park, and it is much approved.

The paper is illustrated by two drawings, (Nos. 3622 and 3623,) showing the details of the scaffolding and of the brick-raising machine.*

Mr. T.
Grissell.

Mr Grissell approved of the machine, and had found it very serviceable at the Houses of Parliament. He intended to use it for erecting the Victoria Tower, and should there apply steam power to it, when he believed, that the economy of labour and time would be much greater than at present; but even now, it was a much cheaper and a better mode of conveying materials to considerable heights, than by employing a large number of men, in the severe labour of carrying heavy hods up ladders. Another great advantage of the machine, was, its doing away with much of the danger, not only of the men mounting the ladders, but also from encumbering the scaffolding with a weight of materials.

The Pre-
sident.

The President expressed to M. Journet, how much the members of the Institution appreciated every ingenious invention or useful application of machines, for economizing labour and reducing the cost of works, which were brought before the meetings by foreign engineers, or those who were connected with the execution of constructions. In

* Vide 'The Builder,' No. 29 (August 26, 1843), page 347.

the Institution, such communications would always be examined with impartiality, and with a desire to bring forward every really useful machine.

April 30, 1844.

The PRESIDENT in the Chair.

No. 577. "Description of the method employed for repairing a chimney 120 feet high, at the Cotton Mill of Messrs. Couper, Glasgow." By Joseph Colthurst, Grad. Inst. C. E.

The way in which the tops of high chimneys have hitherto been repaired has been, either by erecting an outside scaffolding to the full height, or by incurring the, generally speaking, greater expense of stopping the works, and allowing the chimney to cool, and then sending a man up the inside, who, by fixing spars across, is able to ascend to the top. Repairing
aChimney.

To avoid the expense and inconvenience attendant on both these methods of proceeding, the author determined to adopt the following means:—

The man engaged to ascend was furnished with a broad leather belt, to which was attached a strong spring hook; ladder irons were next provided, of the form shown in the sketch A, Fig. 1, and the man then proceeded to drive them into the joints of the brickwork, at intervals of about 15 inches; then standing on one, and being hooked to that which was immediately opposite to his waist, he ascended, driving the ladder-irons in, one above the other, until he reached the top, from whence he removed some ornamental plates of iron which had been loosened by a storm, and which it was expected would be blown down on the buildings beneath, by the next gale of wind. The ladder-irons were taken out as the man descended.

The whole operation was performed in two days and a half, and would have occupied less time, if the smiths could have furnished the ladder-irons, as quickly as they were required.

To ensure the safety of the man employed, a rope was passed up withinside all the ladder-irons, and was fastened to the belt round his waist and to a pin driven into the base of the chimney; this rope was, of course, payed out to him at each step as he ascended. It was also intended, in order to prevent the possibility of accident, that a cord should be fastened to the belt and then passed round the chimney, but the ladder-irons, when driven about six inches into the brick-