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NEW SERIES.

A NEW BRICK AND MORTAR ELEVATOR.

There is no operation in all the arts in which the waste of labor is more palpable than that of carrying up brick and mortar in erecting buildings. In order to raise 40 or 50 pounds, the hod carrier is required to exert muscular effort to raise his own weight (some 150 pounds) in addition, thus involving a waste of about three-fourths of the power expended. Several plans have been devised to economise the power required in this operation, and the one which we here illustrate is now in practical use in this city. It is so plainly shown by the engraving as hardly to require description.

An endless chain, formed of iron links, passes around two pulleys, one, A, at the ground, and the other, B, at the top of the wall. The pulleys have spurs which take into holes in the belt to prevent slipping, and the upper pulley is furnished with a crank for turning it. Hoppers are secured upon the upper side of the belt for receiving the brick, and as the wall rises, the belt is lengthened by the insertion of additional links, which are furnished with hooks so that this may be readily done.

The patent for this invention has been granted to the inventor, Thomas F. Christman, of Wilson, N. C., and further information in relation to it may be obtained by addressing James M. Edney, at No. 147 Chambers-street, this city.

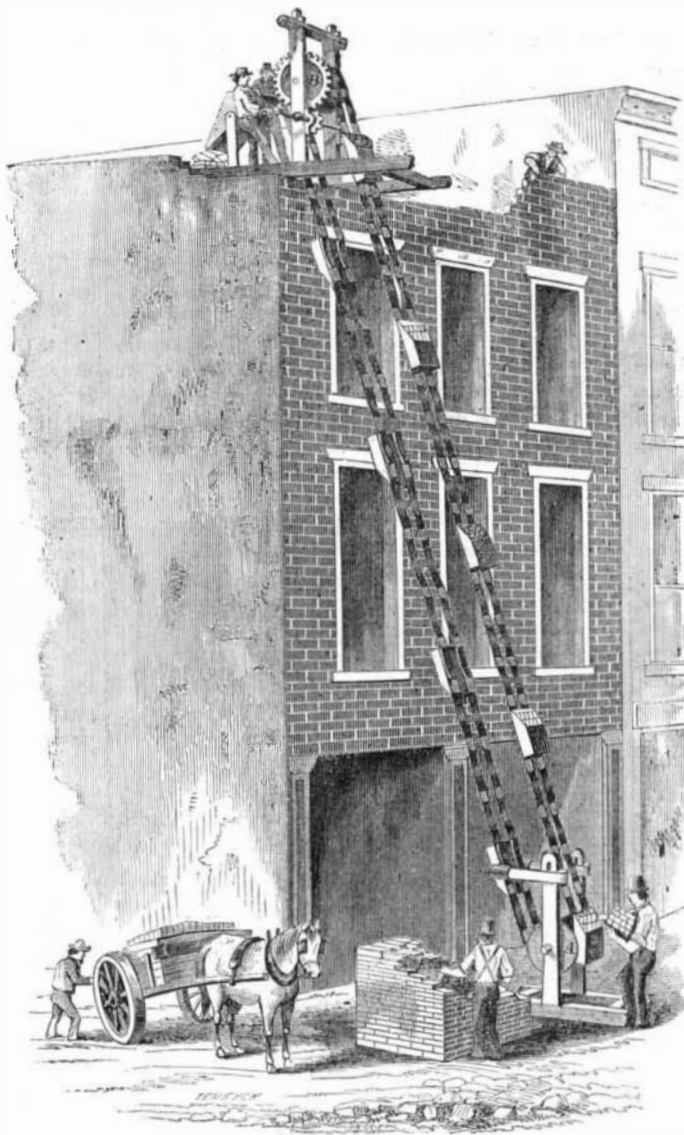
SINGULAR PROPERTIES OF WAY'S ELECTRIC LIGHT.

The following facts in regard to Way's electric light, which is now attracting so much attention, we find in the *London Photographic News*:—

A brief account of Professor Way's electric light was given in a recent number of the *Photographic News* (No. 106, page 230), and from the interest which was created by our notes on the subject we think our readers will be pleased to know the results of some investigations on the subject of the mercury light in its relation to color and photographic effect, which Mr. Crookes has recently made known. The light which is obtained from the fluid mercury poles in Professor Way's arrangement is of a very peculiar character, unlike the ordinary electric light, which, as our readers are aware, is produced between two carbon poles, and contains at least as many different colored rays as sunlight itself, the mercurial light consists of only six definite homogeneous colors, each occupying a particular space in the solar spectrum, and having wide black intervals between them. The carbon electric light will thus illuminate any object with the exact color which it is best able to reflect; but with the mercury light it is Hobson's choice, the object must either reflect one of the six colors evolved by the light, or it must remain in darkness. The colors are as follows:—First, at the lowest end of the spectrum comes a brick red tint, next to this is a strong yellowish orange, then two emerald green colors nearly touching; after these, and at some distance off, is a rich ultramarine blue, and lastly a violet. So far relates to color, but the rays evolved from the luminous mercury do not end here. Beyond the violet is another intensely energetic ray, but which, to be rendered apparent to the limited range of the eye, must be received upon

some fluorescent screen, such as a piece of paper washed over with a solution of sulphate of quinine, or allowed to fall on a sensitive collodion plate. This latter surface makes known to us some other interesting properties of this light. Not only will this invisible ray impress itself strongly upon the plate, but the last two visible colors, viz., the rich ultramarine blue and the violet are also seen to rival it in photographic action. If (as has been done by Mr. Crookes) a more complicated

available for photographers. The reasons which will prevent it coming at present into general use are obvious from the above. Let any one imagine an assembly being illuminated with a light which is deficient in 94 per cent of those colored rays which are usually met with in sunlight. Only those colors would be visible which were capable of reflecting the identical ray of the spectrum contained in the mercury light, and everything else, of whatever color it might be by daylight, would be totally black. Instead of having a thousand varied hues and tints to rest the eye upon, we should be limited to the six colors named above, and their combinations; and any one who has considered for a moment how intimately any system of internal illumination depends for its success upon the facility of reflecting and showing up varieties of colors and tints, will at once see that a source of light, however brilliant and valuable, could scarcely meet with private or public approbation if it were so signally deficient in discrimination as to transform the warm glow of health on a fair girl's cheek, to the ghastly and cadaverous hue of death. Whilst raising these objections against the mercurial light for private or domestic purposes of illumination, we cannot but think that for photographic purposes it would be invaluable. Containing as it does so many and intense photographic rays, and having such advantages over the ordinary form of electric lamp, we wait with impatience the further developments and improvements which will be necessary before it can be brought before the public



CHRISTMAN'S IMPROVED BRICK ELEVATOR.

arrangement be employed, and the light be decomposed and refracted into its component parts and thrown upon the collodion plate without having passed through glass at all, as may be effected by having the prisms and lenses cut from pure rock crystal, further remarkable results are obtained. Beyond this one invisible chemical ray are seen others equally energetic in their actinic power, and mounting higher and higher into the almost unknown regions of this invisible and mysterious part of the spectrum. The mercurial electric light thus appears to be almost unique in its properties, unlike other artificial lights it is pre-eminently distinguished by the intensity and number of its photographic rays, and although in its present state it will scarcely do for private or general purposes of house illumination, there is no reason why it may not become at once

SMOKE FROM GAS LIGHTS.—We take the following truthful remarks from our excellent cotemporary, the *Philadelphia Ledger*:—It is pretty generally supposed that the smoking of ceilings is occasioned by impurity in the gas; whereas, in this case, there is no connection between the deposition of soot and the quality of the gas. The evil arises either from the flame being raised so high that some of its forked points give out smoke, or more frequently from a careless mode of lighting. If, when lighting the lamps, the stopcock be opened suddenly, and a burst of gas be permitted to escape before the match be applied to light it, then a strong puff follows the lighting of each burner, and a cloud of smoke rises to the ceiling. This, in many houses and shops, is repeated daily, and the inevitable consequence is a blackened ceiling.

In some houses the glasses are taken off and wiped every day, and before they are put on again, the match is applied to the tip of the burner, and the stopcock cautiously opened, so that no more gas escapes than is sufficient to make a ring of blue flame; the glasses being then put on quite straight, the stopcocks are gently turned until the flames stand out at three inches high. When this mode of management is pursued, few chimney glasses will be broken, and the ceilings will not be blackened for years.

THERE is to be a grand trial of steam fire engines at the celebrated tall pole, West Broadway, this city, on Thanksgiving Day, the 29th inst. It is stated that six different engine companies have already agreed to take part in the squirting tournament.