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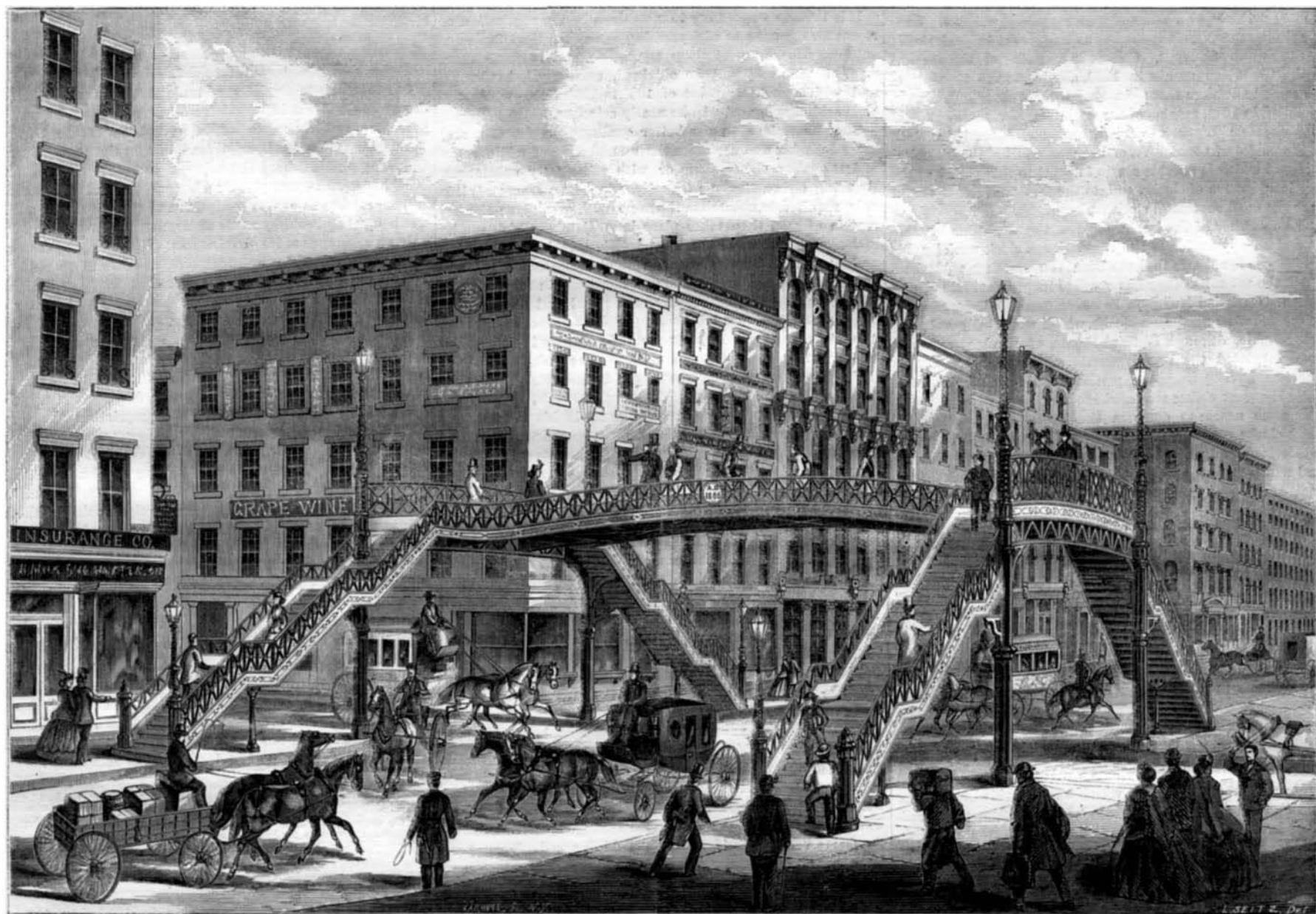
## Foot Bridge across Broadway.

Not only the inhabitants of the metropolis but the people of the country—the thousands of strangers who daily crowd our streets—will rejoice at any attempt to relieve the jam which appears to be now the normal condition of some of our streets, especially Broadway. It is no uncommon thing that pedestrians, desiring to cross Broadway in the vicinity of Fulton street, are compelled to go down below Trinity Church before they can get an opportunity to do so. The corps of po-

will rest on rollers to provide for contraction and expansion. The steps of the stairs will be of oak, as well as the deck of the bridge, which will be calked to make it water tight.

Ritch & Griffiths, Architects, 153 Broadway, are the designers and contractors. The contract price was \$15,000, but the builders state the actual cost at \$22,000. When located, which is expected by the 1st of March, it will be an ornament to the street as well as a convenience to the people. The work of laying the foundations of the end columns is

ing Palliser shot are also in course of manufacture at the above works, to the orders of the British Government. They are made of soft gray cast-iron and have a pair of trunnions cast on them, so that they have the appearance of small mortars. The trunnions are carefully turned, and then made use of for fixing the chill to the face-plate of the lathe in temporary bearings for boring. The pointed bottom of the bore, corresponding to the nose of the Palliser shot, is finished with a tool carefully ground to a template from a flat piece of steel, this



THE BROADWAY BRIDGE FOR PEDESTRIANS.

licemen, always ready to assist the young, old, and the weak-er sex, are insufficient to reduce the annoyance to a minimum.

We present, herewith, a fine engraving of the proposed bridge across Broadway, from Fulton street east, to Fulton street west. The view is taken from the corner of Fulton, at St. Paul's Church, looking down Broadway. The artist has introduced a large number of figures to suggest the crowded state of the street, but the engraving does not do justice to the vehicular and pedestrian crowd which, day after day from early morning to night fall, surge and push through the main thoroughfare.

The bridge is of iron—wrought and cast—elevated 17 feet 8 inches over Broadway. The length of the bridge is 57 feet at Knox's corner, and 54 feet at the other; the width is 14 feet. The bridge has two longitudinal beams, a combination of wrought and cast iron, one a flange and the other a lattice, each calculated for 46 tons breaking weight; but on trial the bridge is found capable of sustaining 101 tons, one-third of which is the permanent weight of the bridge. As set up in the yard, 100 men passed over it at one time producing no perceptible vibration. Loaded with 50 tons, the depression was less than three-eighths of an inch. The bridge is reached by four flights of steps, each 19 feet high, five feet wide, having to each flight three landings, the steps of each numbering 34. Both the lattice work of the stairways and of the bridge proper are lined with sheet iron to a height of three feet; the intersections of the lattices being ornamented with rosettes. Four iron columns 14 inches diameter, with broad bases, sustain the bridge, and shorter columns the stairways. These higher columns will be used as lamp posts. The bridge will be permanently secured at one end and the other

already in progress, a corps of laborers being employed at the corners. The bridge will accommodate those who desire to cross Fulton street on either side of Broadway, as well as those who would cross Broadway itself.

Our reporter feels indebted to Mr. J. M. Duclos for facilities afforded him in procuring the facts in relation to the structure and dimensions of the work.

## Chilled Shot.

Messrs. Hick, Hargreaves & Co. are now making shot and shell of Bessemer steel for rifled cannon of 9-inch bore. The shot are solid cylindrical flat-fronted projectiles, and are slightly tapered at the fore end. They are 14 inches long, and are fitted at the back with a disc of soft brass, (containing a preponderance of copper), which is intended for filling the rifling of the gun by expansion. The brass disc has at its back a projecting rim of about three-sixteenths of an inch thickness, and an equal depth, which forms an expanding cap, the sides of this cap being driven out laterally and forced into the grooves of the gun by the explosion of the powder. The pressure of the gases in the chamber of the gun is also made use of to secure the disc to the shot. The base of the latter is provided with 12 radial grooves, the segments between these forming incline planes. The brass is forced into these grooves by the explosion, and is firmly combined with the shot itself. The shells are of similar shape to the shot, but are but are bored out of solid Bessemer steel cylinders, and fitted with cast-iron hemispherical fronts. The workmanship of these projectiles is very fine; and each of them is carefully packed in a separate wooden case for transport. Their destination is unknown. A considerable number of chills for cast-

tool being inserted in the front of the boring bar, and held fast in its position by a pair of screws. Great numbers of such chills are in request, as they are rapidly destroyed in the casting of chilled shot. There is no doubt but that these carefully-finished chills must considerably enhance the prime cost of chilled shot.

## SOMETHING ABOUT CLOCKS.

Clocks may be considered a modern invention. Even within a few years great improvements have been made in their manufacture by which they may be ranked among the commonest articles of household convenience because of their cheapness, while at the same time their value as accurate time-pieces is not impaired. This result is due to the employment of machinery instead of hand labor in their construction, by which rapidity, exactness, and the reduplication of parts is secured.

The first time-measurements of which we have any historical knowledge were sun-dials, similar probably to those now used merely as curiosities. But before that period, time was undoubtedly measured by the observation of natural objects, particularly the relative length of shadows cast by fixed objects. In the book of Job, one of the oldest of preserved writings, he refers to this mode of measuring time when he says, chap. vii, 2-4:—

As a servant earnestly desireth the shadow and as an hireling looketh for the reward of his work, so am I made to possess months of vanity and wearisome nights are appointed to me. When I lie down I say, When shall I arise and the night be gone. And I am full of tossings to and fro unto the dawning of the day.

This custom has obtained even to our own days. Many now living remember how, in the country, where no more re-