

**ANOTHER AWFUL CALAMITY—TEN PERSONS BURNED TO DEATH!**

Never since the settlement of the city has there been such a succession of tragedies as have marked the last few months; besides the murder of the crews of two sloops, and some two or three fatal steam boiler explosions, we have had two of the most fatal fires recorded in our annals.

At half-past one o'clock on Wednesday morning (March 28th) a fire broke out in a row of four tenement houses situated in 45th-street a little west of Sixth-avenue. The houses were of wood, four stories high, and 25 feet deep, and were filled with families, mostly Irish. Two of these families—that of Thomas Bennett, and that of Andrew Wheeler—each consisting of a mother and four children, were burnt to death; the husbands of the women being absent at the time, engaged in their usual night-work at the stables of the Sixth-avenue Railroad. The fire took in No. 90, the westernmost part of the row, on or near the staircase of the lower story; thus cutting-off the escape of people from this house. Several, however, leaped from the windows, some without serious injury, though the bruises of one woman who jumped from a window in the fourth story will probably prove fatal. Hook and Ladder Company, No. 8, arrived early on the ground, and with alacrity, even for New York firemen, reared a ladder against the building, and crowded up to the rescue of the imprisoned women and children. But their very eagerness defeated its object; for so many got upon the ladder that it gave way! The shrieks of the doomed victims, when they thus saw their last hope of rescue destroyed, are described as heart-rending in the extreme.

The hundreds who witnessed this terrible fire unite in praising the effectiveness of the steam fire-engine, No. 46. This is the identical engine of which we give an illustrated description on the first page of this present number. We are confident that we express the universal opinion of our community in bearing testimony to the remarkable performance and great utility of these engines as exhibited at the numerous and severe fires which have visited us in the past season.

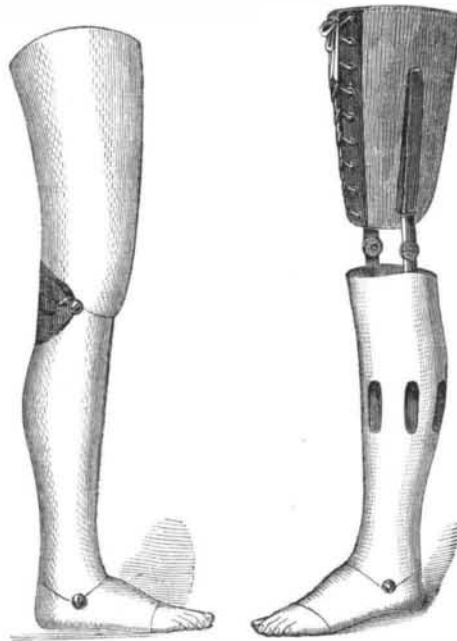
**FIRE-ESCAPES—ENGLISH AND AMERICAN.**

For several years past we have been publishing descriptions of improvements in fire-escapes, and commending them to the notice of our city authorities. But it has required the occurrence of two most sickening calamities to arouse their attention to the subject. Having decided on action, we are informed by the daily papers that it is the intention of the city government to send to London for a complete set of the fire-escape apparatus which has been found efficient in that city. Before this expensive step is taken, we would respectfully suggest that there is a far more economical and common-sense mode of proceeding. We shall next week give a clear and full description of the fire-escapes used in London, amply illustrated, so as to be intelligible to every mechanic, accompanied by a historical sketch (drawn from the files of the SCIENTIFIC AMERICAN) of the several improvements which have been made in it by our inventors. We would gently hint to our foreign Common Council that American mechanics are amply competent to construct an apparatus exactly after the model of that used in London, if it is decided to employ that; but we venture the opinion that a fair comparison of all the inventions will result in the selection of one of those which have originated in this country, many of which, in our opinion, are far preferable. The thing that we do need to adopt from London is the organization of the Fire-escape Brigade, and its thorough and efficient administration, which must, sooner or later, be adopted; and we would suggest that, while steam engines are taking the place of the cumbrous hand machines in all large cities, the firemen be employed in the Fire-escape Brigade.

VERY extensive ruins of an ancient city have been discovered in New Mexico, ninety miles northeast of Fort Stanton. They are said to rival, in magnitude and architectural decoration, the ruins of Thebes.

**IMPROVED ARTIFICIAL LEG.**

We have heard it frequently remarked in conversation that one patent right for artificial legs was sold for the territory of New England alone for \$75,000. Though we have never taken the trouble to verify this statement by application to the inventor, who is often in our office, we have no doubt of the general truth which it is cited to prove, that is, that the number of persons in



secured together by the bolt, *d*. In order to prevent the leg from bending backward, the shoulder, *f*, is formed in the tenon, and a stop, *c*, is secured across the mortise, the shoulder being cushioned with india-rubber to prevent any shock when these parts are brought together by the straightening of the leg. To close the opening in the front side of the mortise when the knee is bent, the steel spring, *e*, of suitable width, is attached to the tenon, *a*, so that the mortise will roll along it. The opening in the backside of the wooden joint is closed by a leather covering, as clearly shown in Fig. 1.

For the ankle joint the tenon is formed on the foot, and the mortise on the leg piece, *B*; this mortise not extending through the ankle, but a portion of solid wood being left both in front and rear. A groove is cut in the tenon for the passage of the cord, *k*, which is attached at one end to the hook, *p*, and at the other to the spring, *D*, which is thus made to raise the toe in walking. The cord, *r*, attached to the heel prevents the toe from being lifted too high. The spiral spring, *D*, which acts at one end upon the cord, *k*, has the cord, *m*, attached to its opposite end to draw down the toe, *n*, after it has been turned upward by the step.

So few are the parts, and so simple are the arrangements of an artificial leg! But it is only through a long course of study and experiment, and an almost endless variety of complex contrivances that this simplicity has been reached.

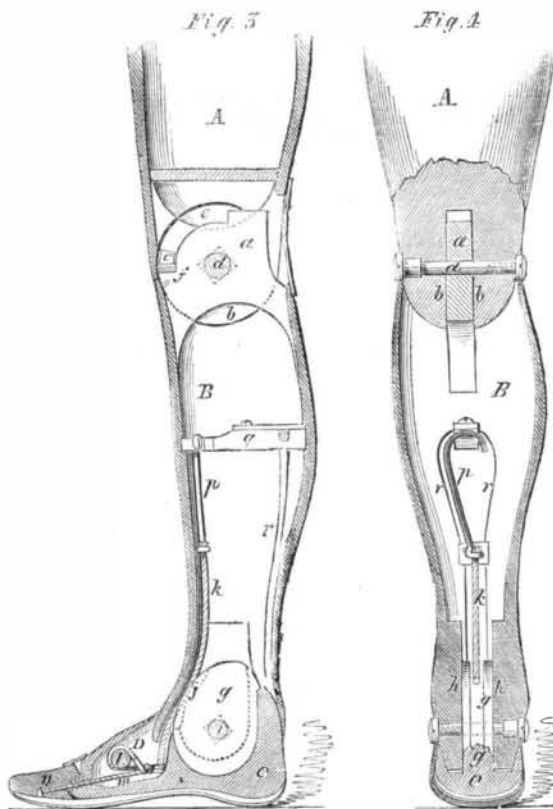
The advantages claimed for this leg are the avoidance of all improper pressure on the stump, perfect ventilation, great elasticity in the step, the absence of all noise or rubbing, and general ease of motion, and comfort to the wearer.

The patent for this invention was obtained through the Scientific American Patent Agency, January 10, 1860, and persons desiring further information in relation to it will please address the inventor, D. DeForrest Douglass, M.D., at Springfield, Mass.

the community who have lost a limb would surprise any one not familiar with the statistics. The aggregate amount of almost any article in use in a great nation is immensely larger than would be anticipated.

If any of our readers would like to obtain a clear idea of the objects sought to be accomplished in the construc-

**AGRICULTURAL SOCIETIES.**—According to the records of the Patent Office, there are now in this country not far from 1,000 boards and societies connected wholly or in part with agriculture. In the State of New York there are 97; in Illinois, 94; Indiana, 77; Pennsylvania, Ohio and Iowa each have about 70.



**DOUGLASS'S ARTIFICIAL LEG.**

tion of artificial legs, they could not have a better opportunity than is afforded by the illustrations of this invention, for while it takes cognizance of all these objects, it proceeds to their attainment by the very simplest means. It affords, indeed, a remarkable instance of the general tendency in the improvement of inventions, to lay aside the more complicated contrivances at first adopted, and to substitute those which are more simple. Both the knee and ankle joints of this leg are simple mortise and tenon joints, the material being willow wood. In the knee the mortise is formed in the thigh piece, *A*, and the tenon, *a*, on the leg piece, *B*, the two parts being

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MUNN & CO.  
Publishers, No. 37 Park-row, New York,