

(No Model.)

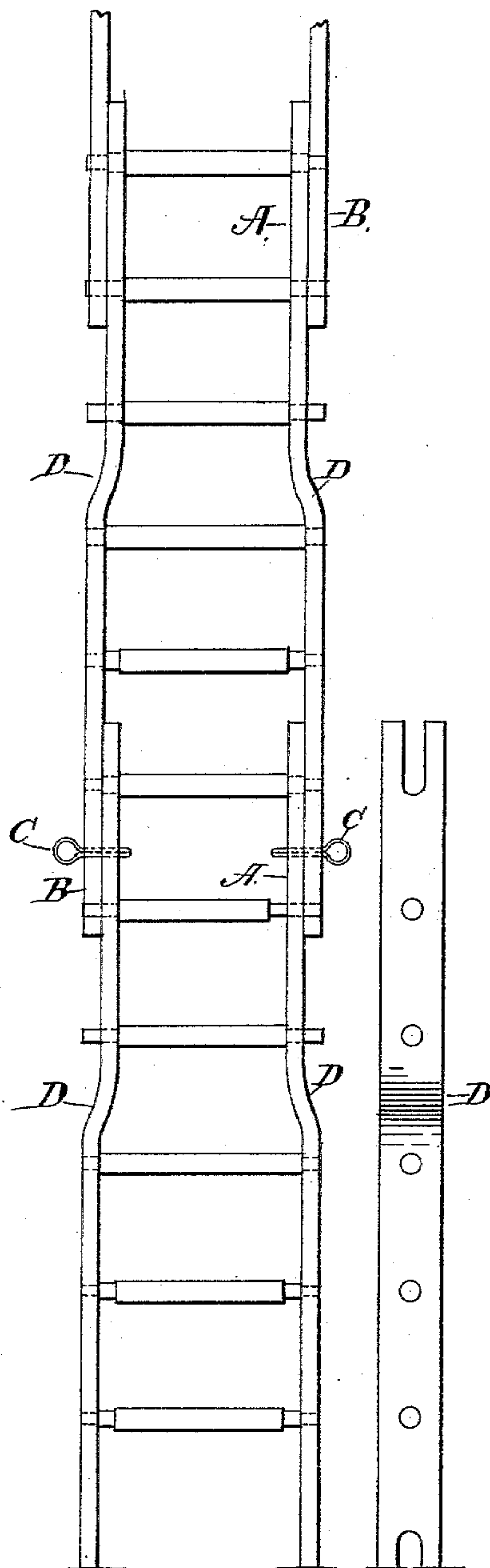
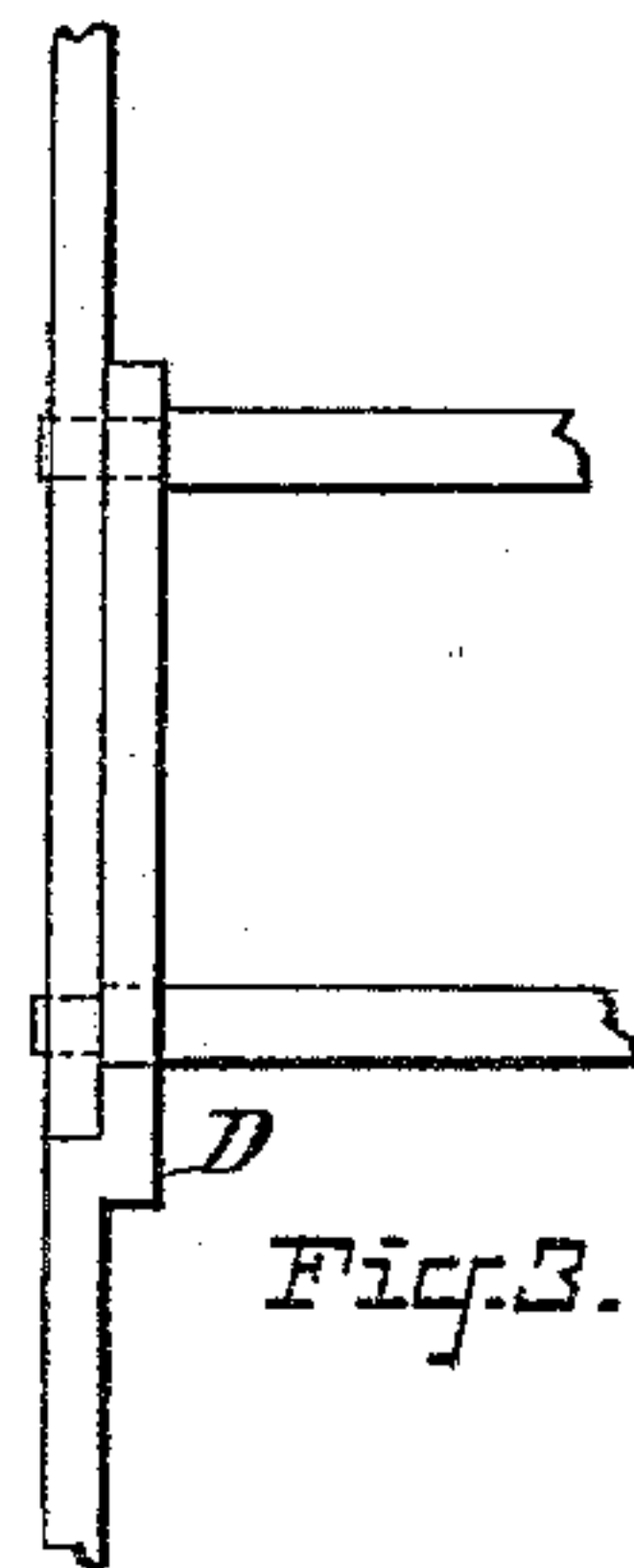
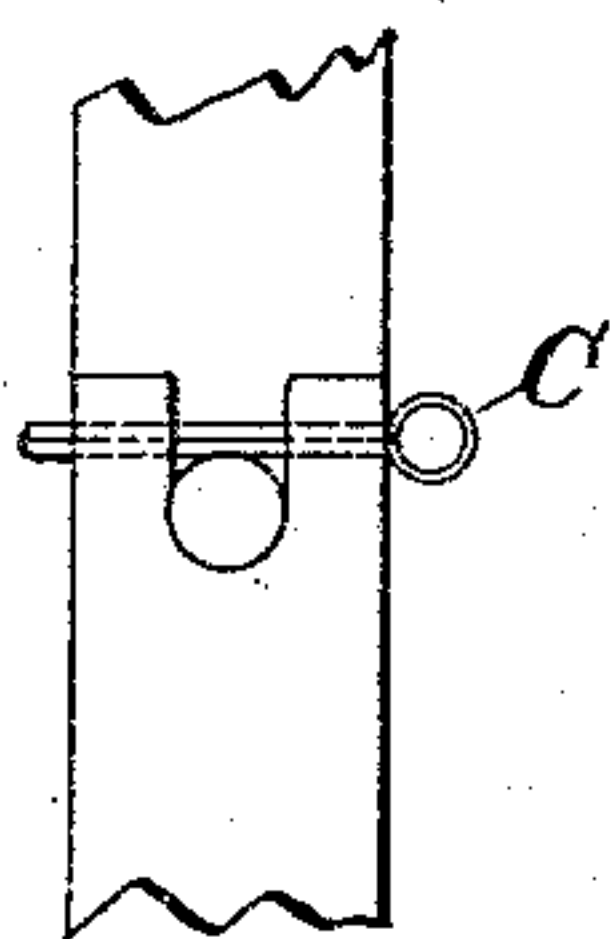
F. W. GATES.
SECTIONAL LADDER.

No. 331,876.

Patented Dec. 8, 1885.

Fig. 1.

Fig. 2.



ATTEST:

J. A. Hurdle
Edward P. Thompson

INVENTOR:
Frank W. Gates

by his Attorney

W. D. Johnston

UNITED STATES PATENT OFFICE.

FRANK W. GATES, OF NEW YORK, N. Y.

SECTIONAL LADDER.

SPECIFICATION forming part of Letters Patent No. 331,876, dated December 8, 1885.

Application filed October 16, 1885. Serial No. 180,063. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. GATES, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in a Sectional Ladder, of which the following is a specification.

The present invention includes valuable and patentable features having reference to certain important improvements in the form, combination, and disposition of the several elements embodied in the construction and necessary to the operation of the class of the devices named in the title of this invention.

My invention relates more particularly to the form of the sections of sectional ladders.

By a general but critical examination of the state of the art as disclosed by standard periodicals, books, and the more important patents, it is evident that there is plenty of room for improvements in the class of invention now under consideration. One device is simple, but ineffectual; another is complicated, and therefore expensive; another is, from the very nature of its construction, unattractive in appearance and inconvenient of operation, while others, for various objections, are practically worthless. By a diligent and systematic and analytical study of the principles of the science of invention, by evolving improvements out of improvements, and by questioning the efficiency of each element and of all elements combined two by two, three by three, and so forth, I have finally succeeded in effecting such a result that the device is certainly adapted to meet the wants of all concerned in a very effectual and superior manner, which is the main object sought to be accomplished.

The fundamental idea underlying my invention is to provide a ladder having such a form of sections that said sections may be duplicates of one another, so that fireman, or painter, or other workman who has occasion to use such ladders may not be confused or delayed by being obliged to pick out those sections which match, as it is necessary for him to do in the case of the ordinary form of ladder.

The invention consists, generally, of certain elements organized, essentially, as described, in conformity to the accompanying drawings, adapted to operate as hereinafter explained, and for the purpose of accomplishing the above-

named object, including all modifications as to their form, combination, and disposition covered by the claims hereinafter annexed, applicable to any purpose mentioned or not mentioned, but intended to be devoted to the uses herein alluded to, and different in form, combination, and disposition of parts from any device known, as far as the records are able to prove.

My invention consists, specifically, of a ladder made up of sections, each of which is a duplicate of the other, and which are adapted to be fastened together by any of the well-known fastening devices.

In order to illustrate the practical manner of carrying out the invention, and to enable others skilled in the art to which the invention appertains to make and use the same, drawings are hereunto annexed and described, in which similar letters represent corresponding elements, and in which each part referred to is designated by a single character.

Those parts not mentioned are not claimed in this present application.

The materials of construction employed and the proportional dimensions are not alluded to in every instance, as they are best determined upon by engineers in the art.

Figure 1 is a general front and side view of the ladder built up of sections. Fig. 2 shows a suitable fastening device for the sections, and Fig. 3 shows a modification.

The ladder in general consists of the combination of two or more sections, each of which is made up of the narrow portion A, having parallel side rails, and a wider portion, B, also having parallel side rails, and a fastening device—such as a pin, C—located as shown in Fig 2 or as in Fig. 1.

The details of fastening the sections together are alluded to as little as possible, both because the fastening devices therefor are well known in the art, and because they do not exhibit my invention.

My invention is limited to a section having a narrow portion, A, and a wide portion, B, and each portion being provided with parallel side rails.

The *modus operandi* of my ladder may be explained briefly by remarking that any two sections are put end to end so that the narrow portion of one fits into the broad portion

of another. A pin, as shown, is then inserted in holes suitably located in the side rails in the ordinary manner.

Those who use the ladder discover that the sections may be put together not only as shown in the drawings, but that they may form step-ladders, scaffolding, fire-escapes, &c., (not shown in the drawings,) for my invention consists alone in the form of each section of the ladder, and not in all its applications and uses.

The invention is not limited to the precise construction hereinbefore described, as it is evident that many modifications may be made therein without departing from the spirit of the invention. For instance, instead of a double curve, D, between the narrow and wide portions of each section, of the shape shown, and which is the preferable shape when the ladder is constructed of wood, said curve may be modified, as shown in Fig. 3. The latter form is preferred in case iron is employed as the material.

In this application I describe no invention in reference to the fastening device, and it may be thought that I intend making use of one already covered by patents to others; but this is not so, for I have invented such a fastener that, by the mere pressing of the sections together in proper position, an automatic fastening of the sections is effected. This I intend to form the subject-matter of an application to be filed before the issue of the application of which this paragraph is a part.

Having now stated the title, object, and relation of the said invention, having described its practical realization by reference to the accompanying drawings, having par-

ticularly ascertained the manner in which the same operates to accomplish the said object, and, further, stating that it is not necessary to state all the uses to which the invention may be applied, what I consider to be novel and original, and therefore claim as my invention secured to me by the hereinbefore-in-part-re-cited Letters Patent of the United States, is—

1. In sectional ladders, the combination of two or more sections, each of which sections consists of a narrower and wider portion, and each portion having side rails parallel to each other.

2. In sectional ladders, the combination of two or more sections, a fastening device for said sections, and narrower and wider portions to each of said sections, the side rails of each of said portions being parallel to each other.

3. In sectional ladders, a section in which the side rails at and near both ends of said section are parallel and at any intermediate point are not parallel.

4. In sectional ladders, a section in which the side rails are parallel at and near both ends of said section, and in which the said side rails are at unequal distances at and near their ends, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 10th day of October, 1885.

FRANK W. GATES.

Witnesses:

M. H. TOPPING,
EDWARD P. THOMPSON.