

(No Model.)

A. D. WEBSTER.
EXTENSION LADDER.

No. 504,008.

Patented Aug. 29, 1893.

Fig. 1.

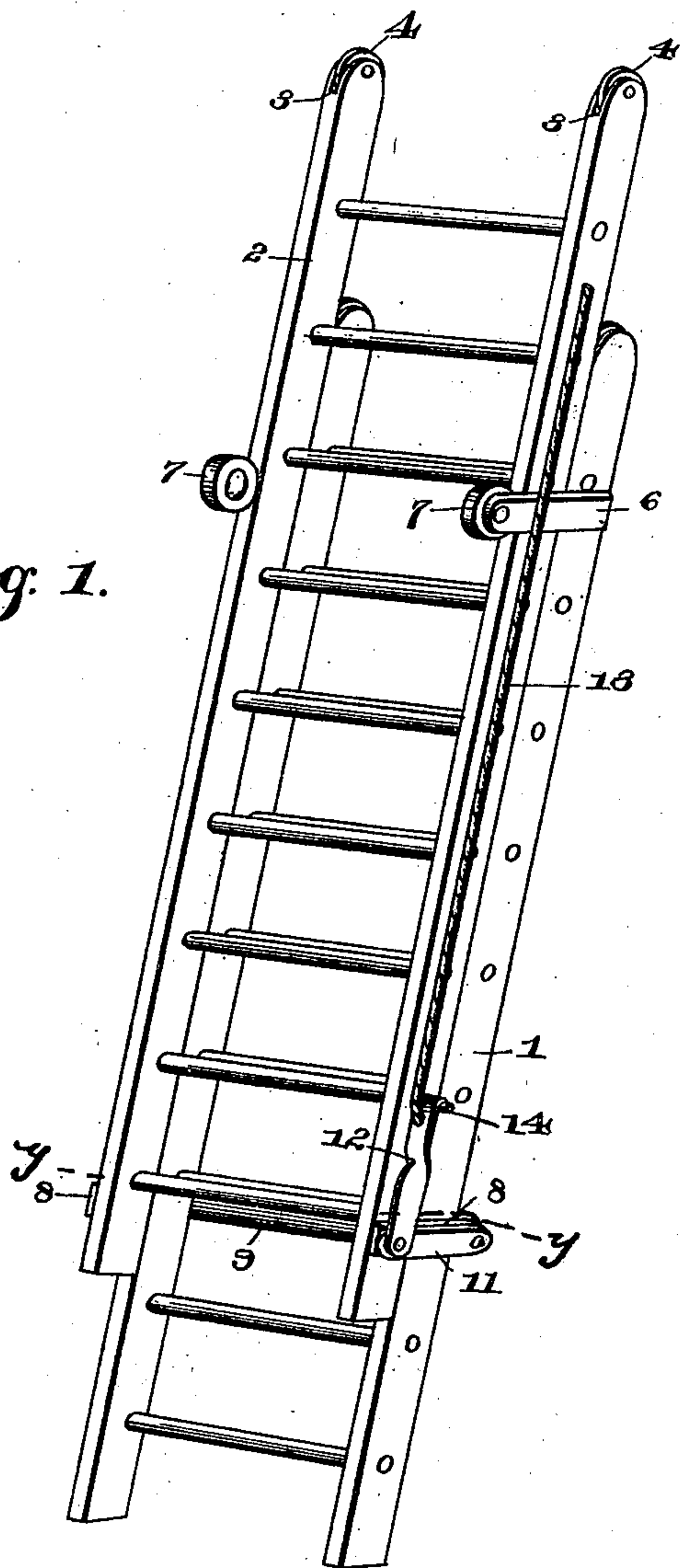


Fig. 2.

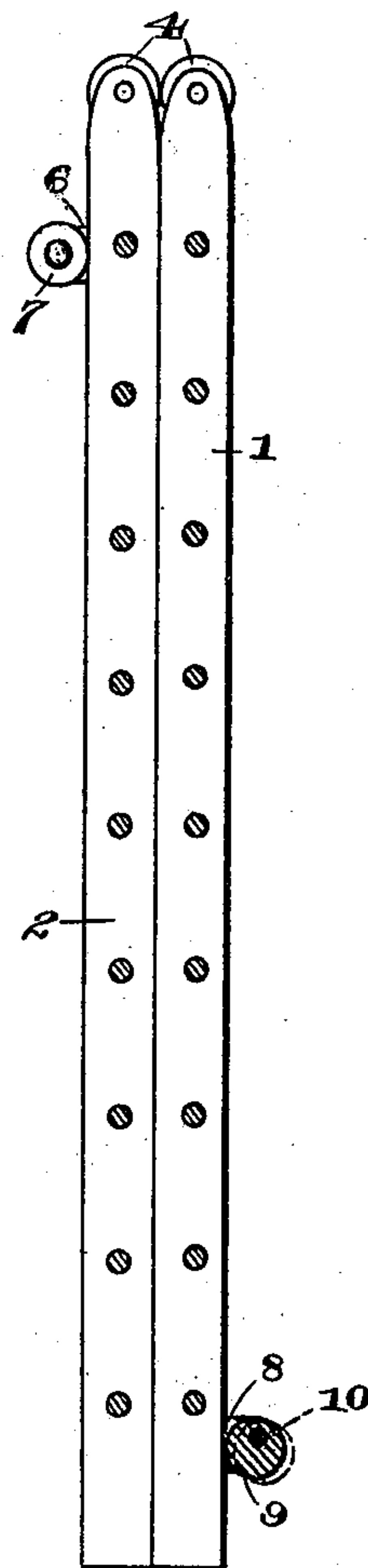
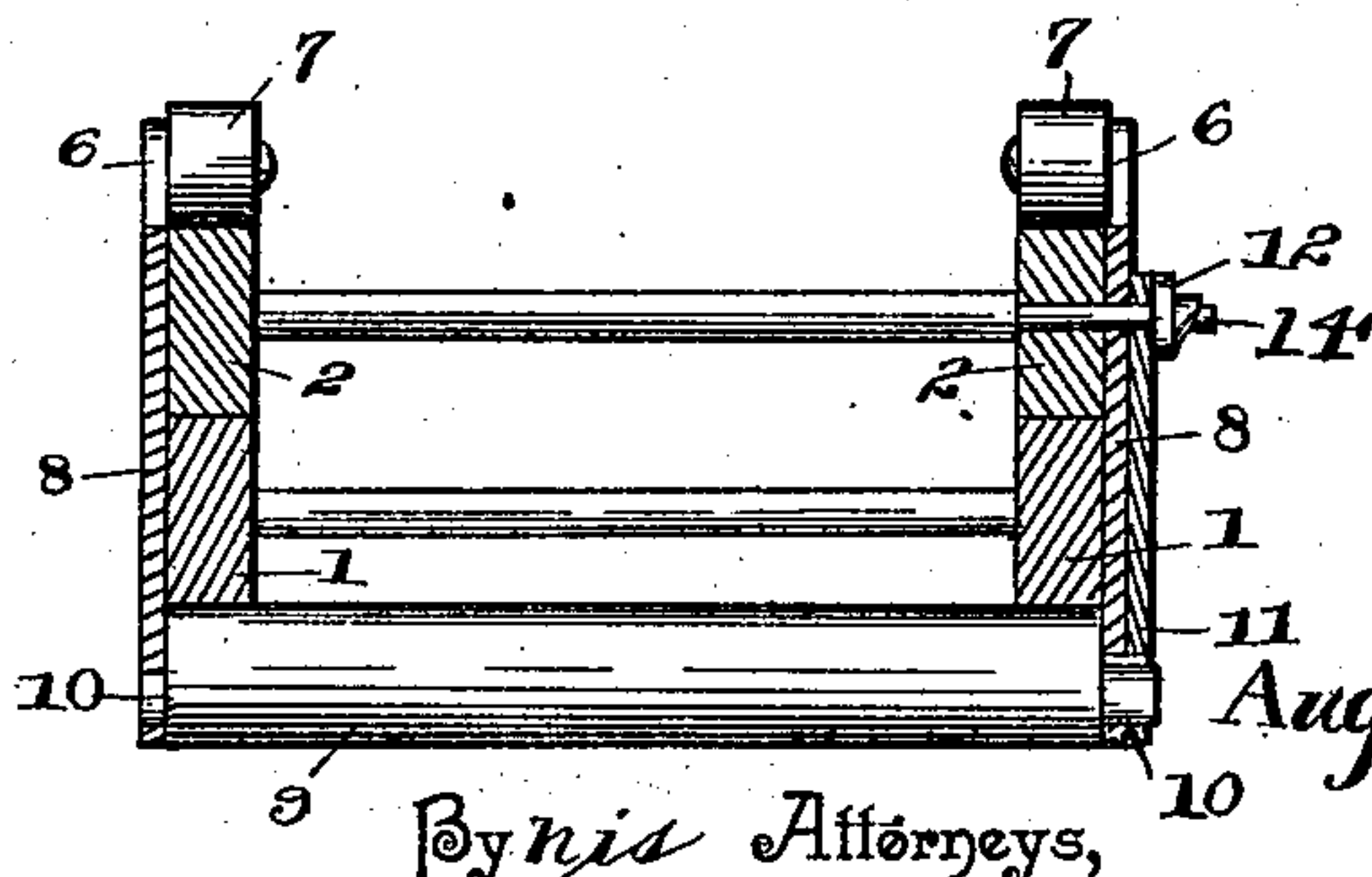


Fig. 3.



Witnesses

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Chas. S. Hoyer.

Inventor

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By his Attorneys,

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UNITED STATES PATENT OFFICE.

AUGUSTUS D. WEBSTER, OF SPRINGFIELD, ILLINOIS, ASSIGNOR OF ONE-THIRD TO J. S. CONDELL, JR., OF SAME PLACE.

EXTENSION-LADDER.

SPECIFICATION forming part of Letters Patent No. 504,008, dated August 29, 1893.

Application filed April 24, 1893. Serial No. 471,627. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS D. WEBSTER, a citizen of the United States, residing at Springfield, in the county of Sangamon, and State of Illinois, have invented a new and useful Extension-Ladder, of which the following is a specification.

This invention relates to improvements in extension ladders, and has for its object to provide a device or attachment for lowering the upper sections of extension ladders to enable a person to lower himself any distance required gradually without leaving the ladder, and securing himself by locking the same at any point that may suit his convenience.

With this and other objects in view the invention consists of the construction and arrangement of the parts as will be hereinafter more fully described and claimed.

In the drawings—Figure 1 is a perspective view of a ladder embodying the invention. Fig. 2 is a longitudinal vertical section of the ladder sections. Fig. 3 is a transverse section on the line $y-y$ of Fig. 1.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

Referring to the drawings, the numeral 1 designates an outer ladder section as shown, and 2 an inner section to which the same is applied. The upper end of each section is tapered slightly and slotted as at 3 to receive rollers 4, by which means the end of the ladder section that may be resting against a building or elevation, can be conveniently lowered without scraping or defacing the wall or surface against which the end of the ladder may be resting, and also to permit a free movement of one section on the other when the sections have been released to produce an adjustment or movement of the same. On one section is secured a pair of arms 6 that stand outwardly therefrom, and have anti-frictional rollers 7 journaled in the free ends of the same, that are arranged to bear upon the edges of the side rails of another section of ladder which moves over the said section carrying the arms and rollers, and which is designated by the numeral 1. To the opposite ladder-section 2 is secured another pair of arms 8, having journaled in the ends

thereof a brake-roller 9, provided with cranks or eccentric spindles 10, which are mounted in bearings in the arms 8, and to one of said cranks or eccentric spindles is rigidly secured an operating-arm 11, having a hook or catch 12, pivotally connected to the free end thereof. This hook or catch consists of a flat bar having a quarter-twist, and connected thereto is an operating-cord 13. The broadened upper end of the hook or catch is adapted to engage a pin or stud 14, which is arranged perpendicular to one side of the section which carries the arms 8, to thereby lock the parts in position to cause the brake-roller to hold the sections in fixed relative positions. The eccentric mounting of the roller 9 provides for a frictional contact thereof upon the adjacent ladder-section to clamp the same rigidly against the under ladder-section when the operating-cord is taut, or when the catch or hook is engaged with the said pin or stud. When the ladder-sections are extended and it is desired to lower the upper section, the cord 13 is pulled sufficiently to release the catch from the pin or stud 14, after which it is slackened sufficiently to relieve the pressure of the eccentric roller upon the lower section. This pressure may be relieved more or less by the manipulation of the cord to allow the upper section to descend as slowly as may be desired, and dependent, of course, upon the weight sustained by the ladder. When the upper section reaches the desired point the cord is again tightened to lock the sections together, and the catch is engaged with the stud or pin 14 to hold the roller in the locking position.

It will be understood that the major radius of the eccentric is longer than the distance between the bearings in the arms 8 and the rear side of the lower section, whereby the eccentric can never become cramped, and hence when the operating-cord is released the pressure of the eccentric is relieved. The said longer radius of the eccentric is below the pivotal point of the eccentric, as will be obvious from the above description.

It will be seen that the device is operated to unlock or lock the same by the same rope or cord with perfect ease and safety, and that weights resting upon the movable ladder sec-

tion can also be lowered at the same time without removing the same from the ladder. The attachment can be applied to either small or large ladder sections, and to the old style of ladders already in use without changing the construction of the same or incurring material expense. The advantages of the improved arrangement are manifold, and in addition to those stated others will appear from time to time to those using the improved construction.

Changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having described the invention, what is claimed as new is—

1. The combination of ladder sections adj-
justably mounted in connection with each
other, one of which is arranged to freely move
over the other, an eccentrically mounted brake
roller carried by one of said ladder sections
and arranged to engage the other to lock it
in adjusted position, said roller extending
entirely across the said ladder section, and
means to operate said roller substantially as
described.

2. The combination of ladder sections ad-
justably mounted on each other, a pair of
arms carried by one of said sections and sup-
porting anti-frictional rollers, an eccentrical-
ly-mounted brake roller carried by the other
section and arranged to be operated to clamp
the one section against the other, and means
to operate the said roller substantially as de-
scribed.

3. The combination of ladder sections ad-
justably mounted upon each other, a pair of
arms secured to one of said sections and form-
ing bearings for an eccentrically mounted

brake roller, a crank arm fixed to said roller
at one end, a catch and a cord having its one
end secured to said catch, substantially as de-
scribed.

4. The combination with slidably-connected
ladder-sections, of an eccentric brake roller
mounted upon one of the sections to engage
another section, a crank-arm fixed to said
roller, an operating-cord connected to said
crank-arm, and a catch to lock the crank-arm
in an adjusted position, substantially as speci-
fied.

5. The combination of slidably-connected
ladder-sections, of parallel arms carried by
one section to engage the adjacent section, an
eccentric-brake roller mounted in bearings in
said arms to engage said adjacent section, a
crank-arm connected to said roller, and an
operating-cord connected to said crank-arm
and fixed at the opposite end to the roller-
carrying section, substantially as specified.

6. In an extension ladder, the combination
of ladder sections movably mounted on each
other and having tapered ends with slots
therein, rollers mounted in said slots, a pair
of arms secured to one of said ladder sections
supporting anti-frictional rollers, a pair of
arms carried by the opposite ladder section,
an eccentric brake roller mounted in the arms,
a crank arm attached to one end of said roll-
er, a catch connected to said crank arm, a
cord connected to said catch, and an adja-
cently situated pin or stud with which the
said catch engages, substantially as described.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in
the presence of two witnesses.

AUGUSTUS D. WEBSTER.

Witnesses:

J. S. CONDELL, Jr.,

JOHN S. PENNINGTON.