

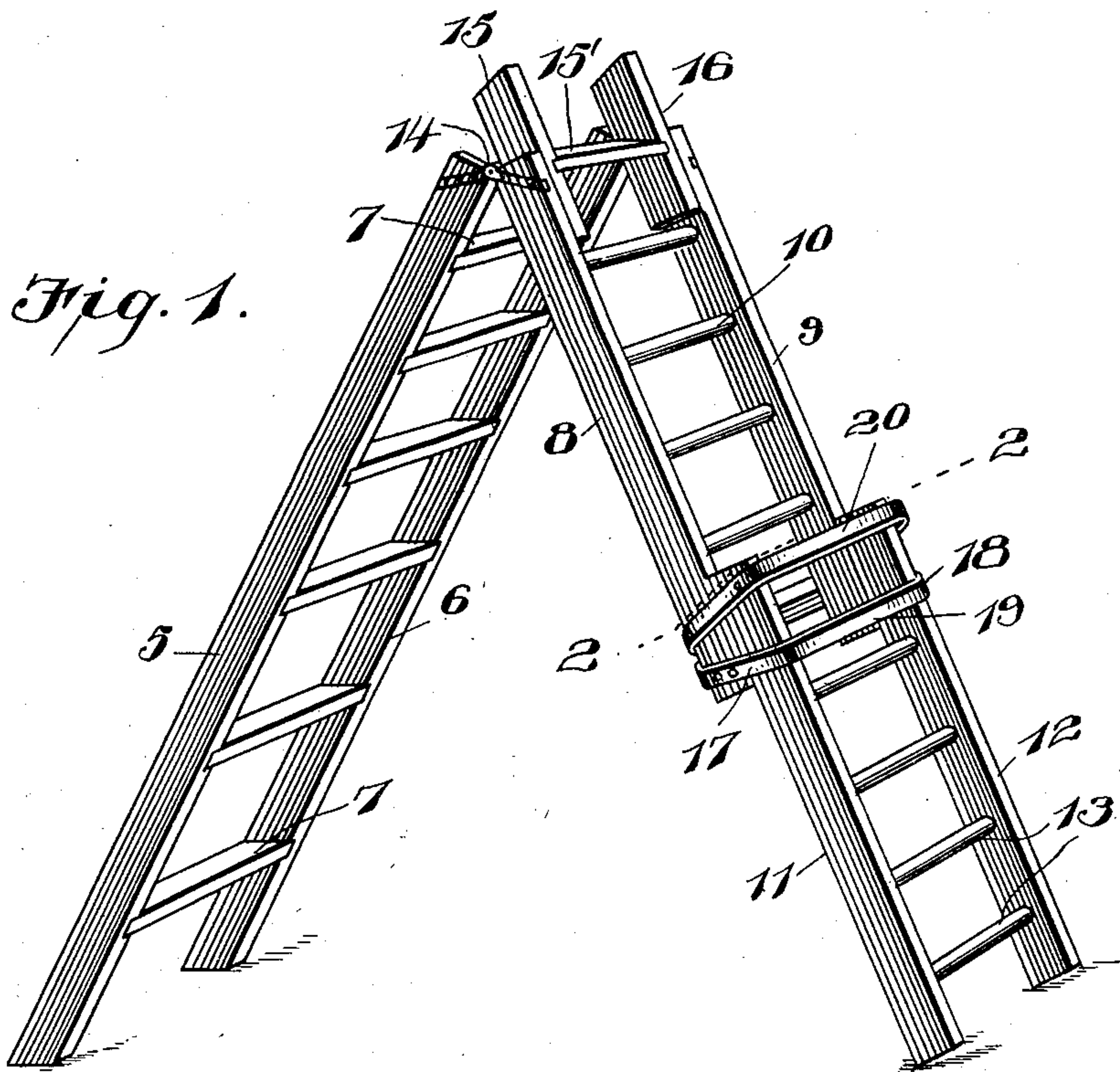
No. 734,147.

PATENTED JULY 21, 1903.

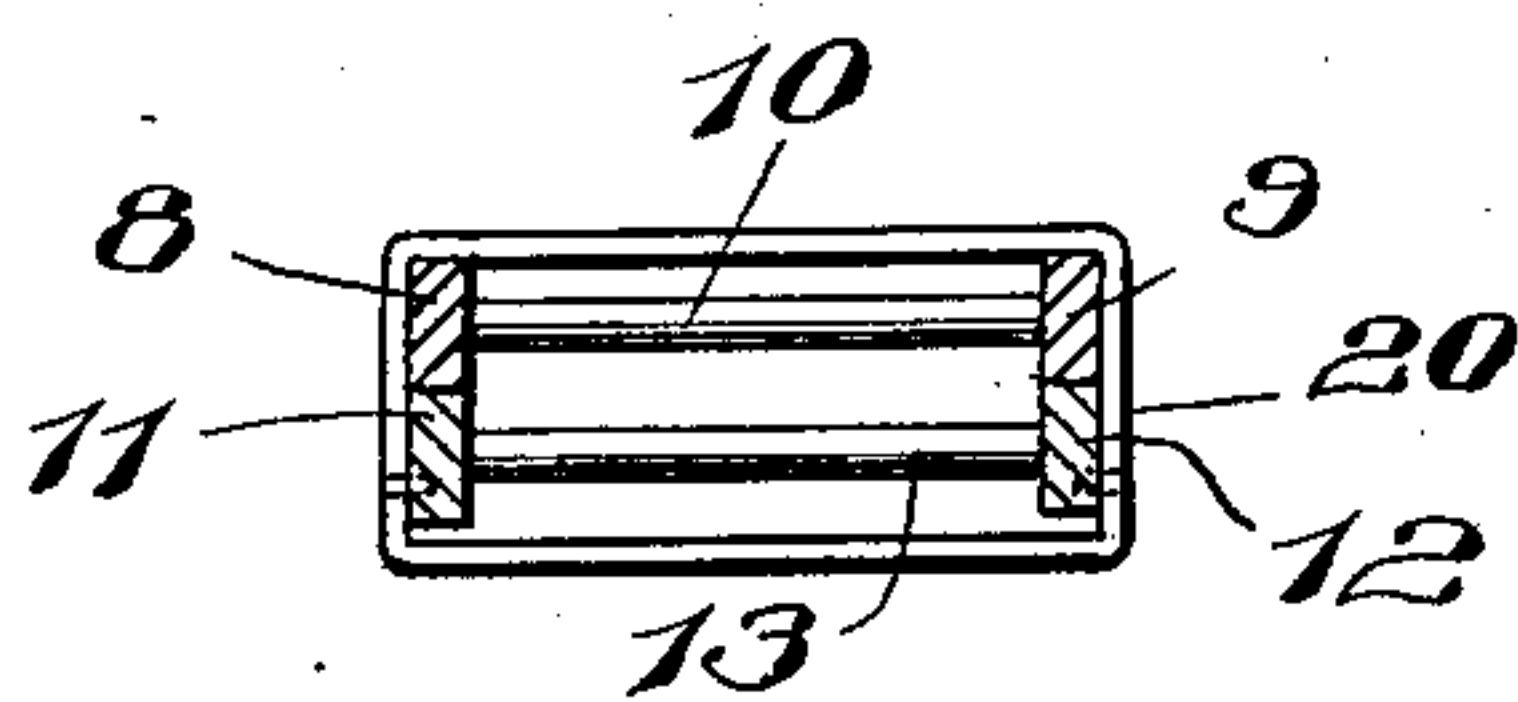
P. F. WAGNER.  
LADDER.

APPLICATION FILED SEPT. 25, 1902.

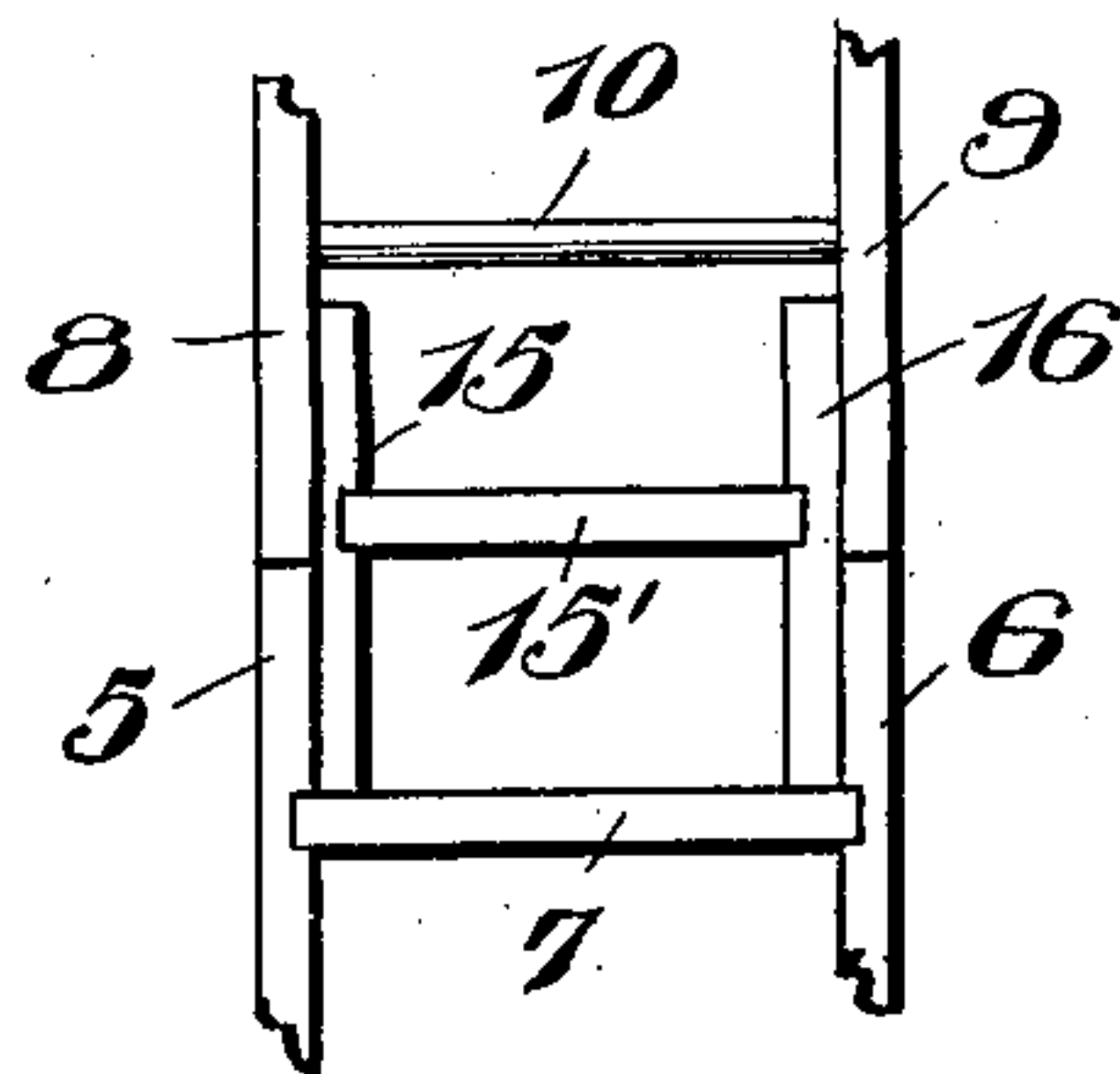
NO MODEL.



*Fig. 2.*



*Fig. 3.*



Inventor

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Witnesses

*T. P. Brett*

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# UNITED STATES PATENT OFFICE.

PETER F. WAGNER, OF GARFIELD, OHIO.

## LADDER.

SPECIFICATION forming part of Letters Patent No. 734,147, dated July 21, 1903.

Application filed September 25, 1902. Serial No. 124,866. (No model.)

*To all whom it may concern:*

Be it known that I, PETER F. WAGNER, a citizen of the United States, residing at Garfield, in the county of Mahoning, State of Ohio, have invented certain new and useful Improvements in Ladders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to ladders in general, and more particularly to the class of extension-ladders; and it has for its object to provide a construction which may be converted from a straight ladder to a step-ladder, and vice versa, a further object of the invention being to provide a construction of adjustable member or extensible member which will permit of ready adjustment of the parts while holding them securely in adjusted positions.

Other objects and advantages of the invention will be understood from the following description and include the provision of a brace for reinforcing the hinge when the members are adjusted to form a straight ladder.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a perspective view showing the ladder adjusted to form what is ordinarily known as a "step-ladder." Fig. 2 is a section on line 2 2 of Fig. 1. Fig. 3 is an elevation showing the hinged portions of adjacent sections of the ladder.

Referring now to the drawings, there is shown a ladder comprising a section including sides 5 and 6, between which are secured steps 7, formed of flat boards fastened by means of nails or in any other suitable manner.

The second section of the ladder comprises two members, one including side pieces 8 and 9, connected by means of rungs 10, and the other including two sides 11 and 12, connected by means of rungs 13. The upper ends of the sides 5 and 6 are connected with the upper end portions of the sides 8 and 9 by means of hinges 14, said sides being spaced apart equally, so that the ends of the sides 8 and 9 will rest upon those of the sides 5 and 6 and will form, in effect, continuations thereof. To take a part of the strain from the

hinges when the two sections are alined, as described, combined braces and stops 15 and 16 are provided, said braces being bolted against the inner faces of the upper end portions of the sides 8 and 9, so that when the two ladder-sections are alined the free ends of the braces, which are cut diagonally, as shown, will rest upon the uppermost step 7.

It will be noted that the hinges employed are strap-hinges, one leaf of each hinge being secured transversely against the outer faces of the sides 5 and 6 with their pintle portions at the upper rear corners of said sides, while the remaining leaves are secured transversely of the sides 8 and 9 at points below the upper ends thereof.

The spacing of the sides 11 and 12 is the same as that of the sides 8 and 9, and the edges of the sides 11 and 12 are disposed against the edges of the sides 8 and 9. To hold the sides 11 and 12 against the sides 8 and 9 and at the same time permit of sliding movement, a U-shaped bar or yoke is provided, the spaced members 17 and 18 thereof being attached against the outer faces of the sides 8 and 9 and projecting beyond the sides 11 and 12, where they are connected by the bight 19. A rectangular loop 20 is passed around the sides 8, 9, 11, and 12 and is pivoted to the sides 11 and 12, one side of the loop resting in contact with the edges of the sides 8 and 9 remote from the sides 11 and 12. When the sides 8 and 9 are slid downwardly, the friction of the sides 8 and 9 against the loop causes the loop to move pivotally and grip the edges of the sides 8 and 9 to more firmly engage them, thus holding the two slidably-connected members against movement. If the upper ladder member be moved upwardly, however, from the position shown in Fig. 1, the loop will tilt and will not retard such movement; also, if it be desired to lower the upper member the front side of the loop may be grasped and moved downwardly, raising that side which engages the sides 8 and 9 to release the latter.

It will be noted that the extensible section of the ladder has rungs instead of steps, so that they will be operable whether said section is in the position shown in Fig. 1 or is inverted.

In practice modifications of the specific con-

struction shown may be made, and any suitable materials and proportions may be used for the various parts without departing from the spirit of the invention.

5 Connected to the braces 15 and 16, adjacent to their free ends and above the hinges, is the cross-piece 15', which forms a shelf to support a bucket or other article when the structure is used as a step-ladder.

10 What is claimed is—

A ladder comprising a section including spaced sides and connected steps, a second section comprising spaced sides and connected rounds, a strap-hinge leaf secured transversely of each side of the first-named section and having its pintle portion at the upper rear corner of the side, a strap-hinge leaf secured transversely against each side of the

second section at a point below the upper end thereof and pivotally connected to the pintle 20 portion of the corresponding leaf of the first ladder-section, the second ladder-section being movable with the hinges to aline with the first section and having the upper ends of its sides beveled to rest upon the uppermost step 25 of the first section when thus alining, and a shelf connected between the sides of the second section between the hinges and the beveled ends.

In testimony whereof I affix my signature 30 in presence of two witnesses.

PETER F. WAGNER.

Witnesses:

A. L. BAKER,  
A. F. WAGNER.