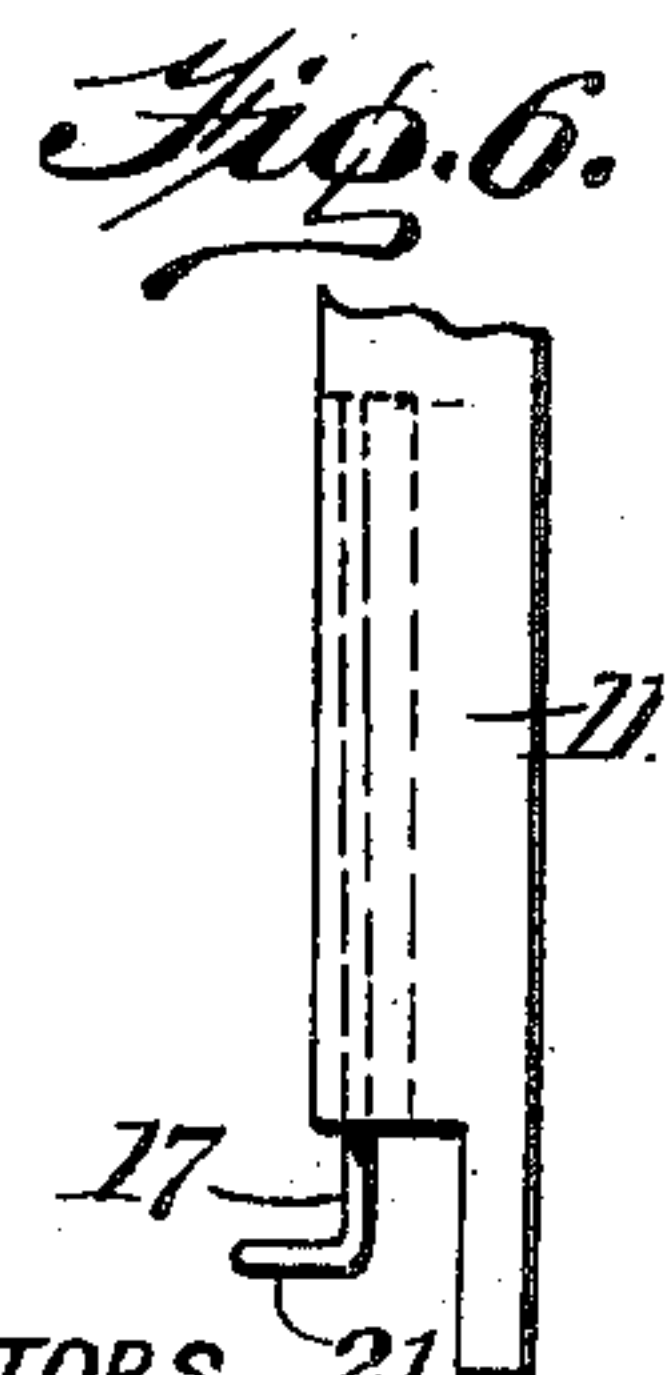
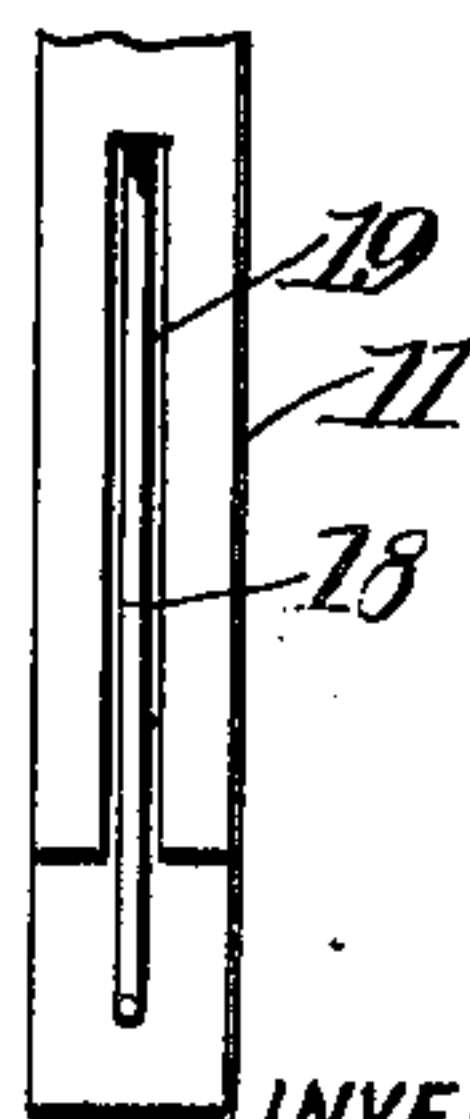
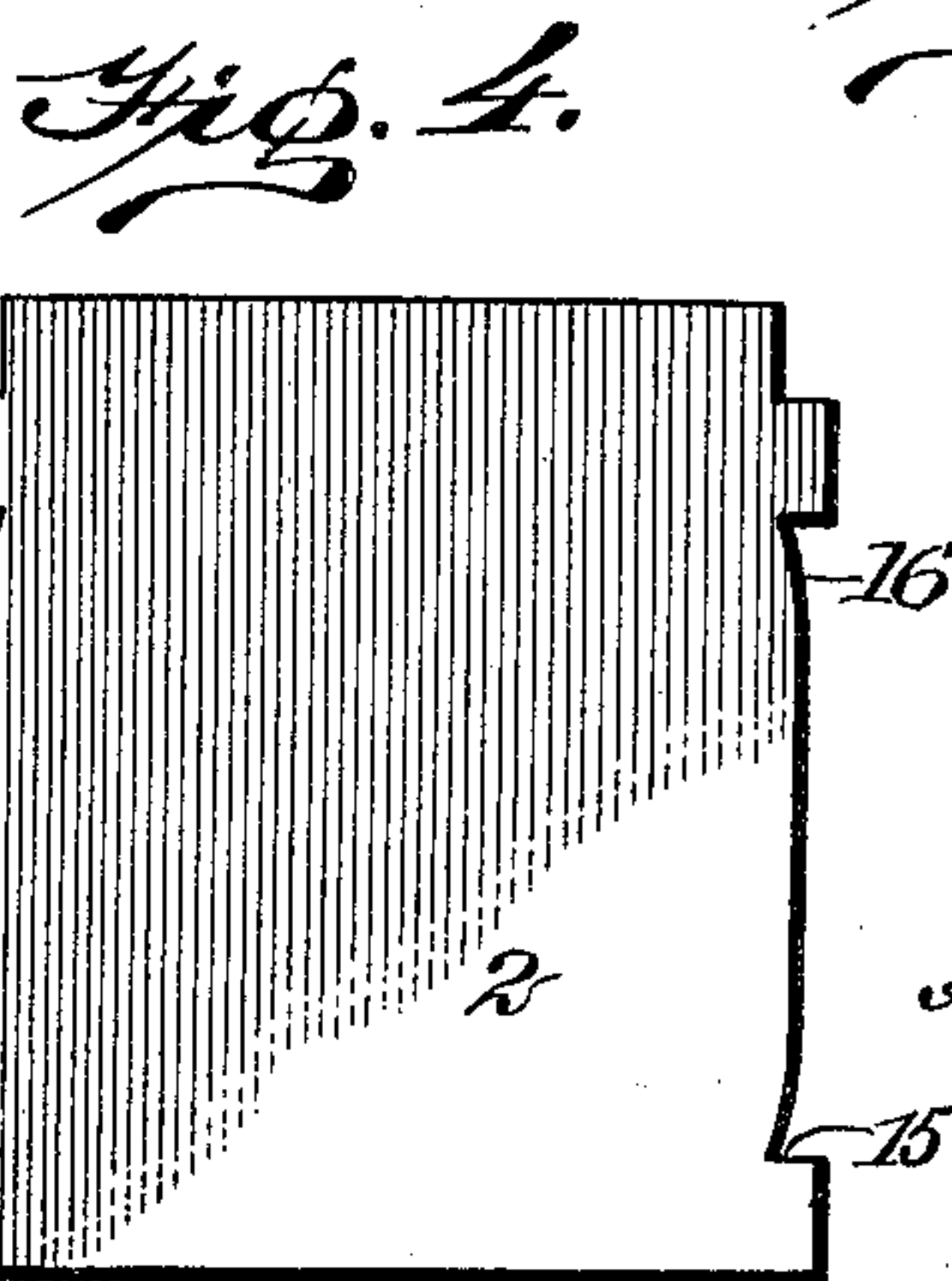
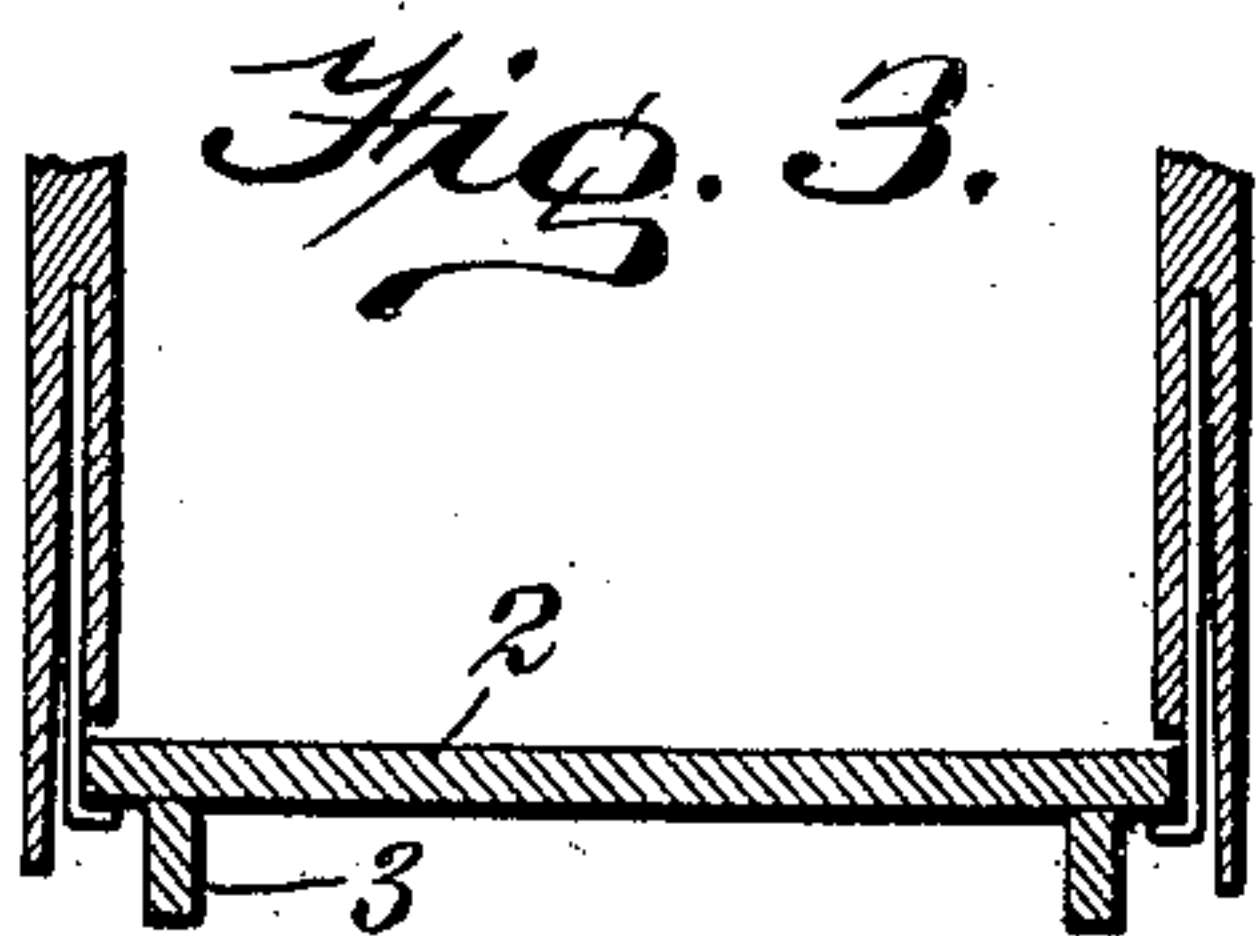
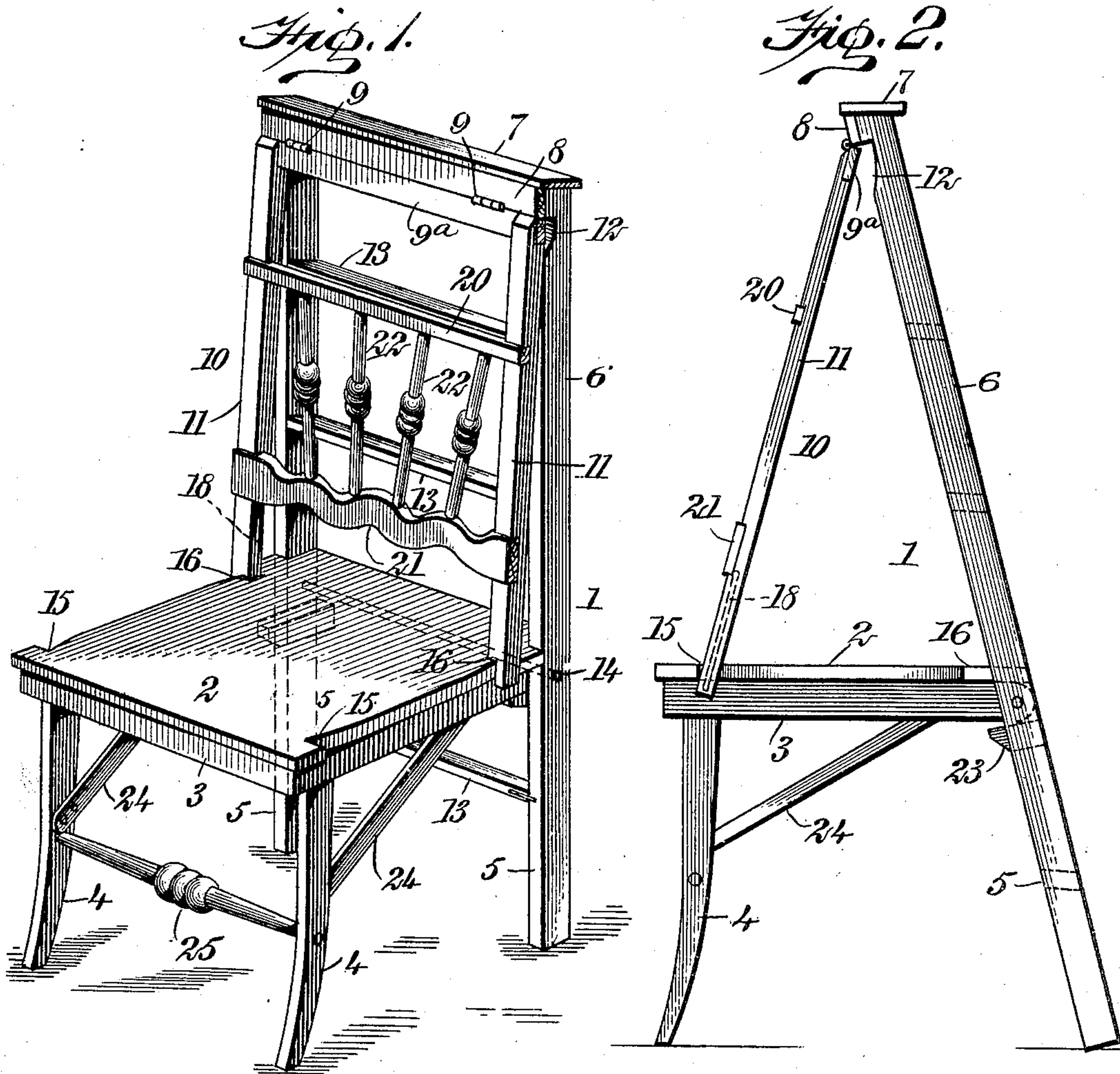


No. 828,696.

PATENTED AUG. 14, 1906.

A. M. & W. H. WHITELEY.
COMBINED CHAIR AND STEP LADDER.
APPLICATION FILED AUG. 3, 1905.



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UNITED STATES PATENT OFFICE.

ALFRED MILNE WHITELEY AND WILLIAM HENRY WHITELEY, OF NEW YORK, N. Y.

COMBINED CHAIR AND STEP-LADDER.

No. 828,696.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed August 3, 1905. Serial No. 272,504.

To all whom it may concern:

Be it known that we, ALFRED MILNE WHITELEY and WILLIAM HENRY WHITELEY, citizens of the United States, and residents of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Combined Chair and Step-Ladder, of which the following is a full, clear, and exact description.

This invention relates to combined chairs and step-ladders; and it consists substantially in the details of construction and combinations of parts hereinafter more particularly described, and pointed out in the claims.

One of the principal objects of the invention is to provide a combined chair and step-ladder of an embodiment overcoming numerous disadvantages and objections encountered in the use of many other structures of the kind hitherto devised.

A further object is to provide a structure of the character referred to which is simple and comparatively inexpensive to manufacture, besides being light in weight, portable, thoroughly effective and reliable for its purposes, and possessing the capacity for long and repeated service.

The above and additional objects are attained by means substantially such as are illustrated in the accompanying drawings.

Figure 1 is a view in perspective of a combined chair and step-ladder embodying our improvements. Fig. 2 is a side view thereof, showing the ladder member and a swinging supporting-frame therefor in position for enabling use to be made of the ladder member as such. Fig. 3 is a sectional view in detail to indicate more clearly the construction and organization of certain parts of the structure. Fig. 4 is a plan view in detail of the bottom of the chair member of the structure, showing the construction thereof more clearly. Fig. 5 is an inner face view of the lower portion of one of the side pieces of the swinging frame, and Fig. 6 is a side view thereof.

Before proceeding with a more detailed description, it may be stated that in the form of our improvements herein shown we employ a chair of special construction having a spe-

cially-constructed back, suspended from which is an outwardly-swinging frame forming a brace for said back in the outward position of the frame, the back and the rear supporting-legs of the chair constituting the ladder member of the structure capable of being tilted or carried to the desired inclination for use as such. The said back and rear legs of the chair are rigid with each other, but pivotally applied to the frame of the bottom of the chair, so that when the swinging frame is carried forwardly of the bottom the ladder member is caused to be tilted at a reverse inclination thereto for the effective coöperation of the two. Special means are employed for securing the swinging frame and ladder member to the bottom of the chair in each position thereof, and when the frame is carried inwardly to substantially vertical position the ladder member is caused to be moved to a corresponding position, the two becoming automatically locked in engagement with the bottom in such a manner as to enable the chair member of the structure to be employed for all of the purposes thereof as such.

Reference being had to the drawings by the designating characters thereon, 1 represents our improved structure in entirety, the same comprising a bottom 2, preferably substantially rectangular in shape and secured in any suitable manner to a supporting-frame 3 therefor mounted at or near the forward corners thereof upon forward supporting-legs 4 for the chair, the rearward supporting-legs of which are indicated at 5 and which are of a height sufficient, as indicated at 6, to constitute the side portions of the back of the chair, which side portions are united at the upper ends thereof by means of a transverse connecting-strip 7, and preferably also by another strip 8, extending across the front of said side portions, with the upper edge thereof directly beneath the forwardly-projecting edge of the said connecting-strip 7. Hinged at 9 or otherwise movably connected to the lower edge of the said strip 8 is practically a corresponding strip 9^a of a swinging frame (indicated in entirety at 10) and the side portions 11 of which are secured at the upper ends in any suitable manner to the said strip

8 at the ends of the ladder, it being noted that the said side portions 6 of the back are each provided near the upper end thereof at its forward edge with a notch 12, by which to partially receive or accommodate the inner surface portion of an end of the strip 9^a when the swinging frame is carried to its innermost position, as indicated at Fig. 1, thus to bring the strips 8 and 9^a as nearly flush with each other as possible. The said rearward supporting-legs 5 and side portions 6 of the back of the chair are rigid with each other, as will be understood; and both the legs 5 and said side portions 6 are connected at suitable intervals by means of rungs 13 therefor, thereby practically completing the ladder member of the structure, which is movably supported at 14 on each side of the frame 3 of the bottom 2 at or near the rearward ends of the frame by means of the projecting ends of a rod (shown by dotted lines in Fig. 1) extending transversely of and beneath the rearward edge of the bottom 2. The bottom is constructed at the opposite edges thereof near its forward and rearward corners, respectively, with notches 15 and 16, in the former of which are received the free portions 17 of click or other suitable springs 18, supported in any suitable manner within grooves 19 therefor, formed in the inner faces of the said side portions 11 of the swinging frame 10 whenever the ladder is carried to the limit of movement thereof forwardly of the bottom 2 of the chair, thus to hold the swinging frame in a substantially inclined position, it being noted in Fig. 2 that whenever the swinging frame is in the position just mentioned the ladder member of the structure is in a reversely-inclined position, having been caused to move thereto on the outward movement imparted to the swinging frame. When the parts of the structure are in these positions, it is apparent that the ladder member of the structure is available for all the purposes thereof as such, it being also apparent that when the swinging frame and ladder member are in the positions indicated in Fig. 1 the structure is available for all the purposes of a chair. The side portions 11 of the swinging frame are preferably connected by strips 20 and 21, either plain or of an ornamental character, and which may or may not be connected by ornamental members 22, as may be desired in practice.

On referring to Figs. 1 and 2 it will be noted that the rearward legs 5 of the bottom 2 of the chair are each provided on the inner face thereof with a block 23, serving as a support for the end of the corresponding side portions of the frame 3 of the bottom when the swinging frame and ladder member of the structure are in the position shown in Fig. 1. The chair member of the structure may be provided with suitable braces 24 at

the sides, while the forward supporting-legs 4 may also be connected by a brace 25, if desired.

From the foregoing it will be seen that our improved structure comprises comparatively few parts, which are associated with each other in a compact manner, also in a manner by which the maximum strength is derived therefrom, either when employed as a chair or as a step-ladder. The lower ends of the springs 18 are engaged in the notches 15 and 16 in the side edges of the bottom 2 and are preferably inturned at 26, so as to ride beneath the projecting side edge of the bottom 2 in the swinging movements imparted to the frame 10 in either direction, thus preventing displacement of said frame relatively to the side portions 6 of the back of the chair.

Having thus described the invention, we claim as new and desire to secure by Letters Patent—

1. A combined chair and step-ladder, comprising a bottom having rigid front legs, and back and rear legs rigid with each other and pivoted to the bottom whereby to swing backward and forward relatively thereto, and a swinging frame on said back and comprising connected side parts notched on their inner face to receive the chair-bottom, and being supported thereby.

2. A combined chair and step-ladder, comprising a bottom having rigid front legs, and back and rear legs rigid with each other and pivoted to the bottom whereby to swing backward and forward relative thereto, and a swinging frame hinged to said back and comprising connected side members notched on their inner faces to receive the chair-bottom and supported thereby, said legs and side portions of the back being connected by a rung.

3. A combined chair and step-ladder, comprising a chair having the rear legs and back thereof rigid with each other to constitute a ladder member, and having pivoted relation to the bottom of the chair adapting the same to be swung forwardly and rearwardly relatively to the bottom of the chair, and a forwardly and rearwardly swinging frame for supporting said ladder member in operative position, said bottom having sets of opposite notches in the side edges thereof near the corners, and said swinging frame having side portions provided with springs at the ends thereof adapted for engagement with the notches of each set in the manner and for the purpose set forth.

4. A combined chair and step-ladder, comprising a chair having a bottom provided at the side edges thereof near the corners with sets of notches, and the rearward supporting-legs of the chair being extended vertically to form side portions of the chair, and thereby

also constituting the ladder member of the structure, and a swinging frame pivoted at its upper end to the upper part of the ladder member and having means at the lower ends
5 of the side portion thereof for engaging in the notches of each of said sets, the said legs and extensions thereof having rungs connecting the same.

In testimony whereof we have signed our names to this specification in the presence of 10 two subscribing witnesses.

ALFRED MILNE WHITELEY.

WILLIAM HENRY WHITELEY.

Witnesses:

CHRISTIAN POCHEN,

LOUIS F. COMELLAS.