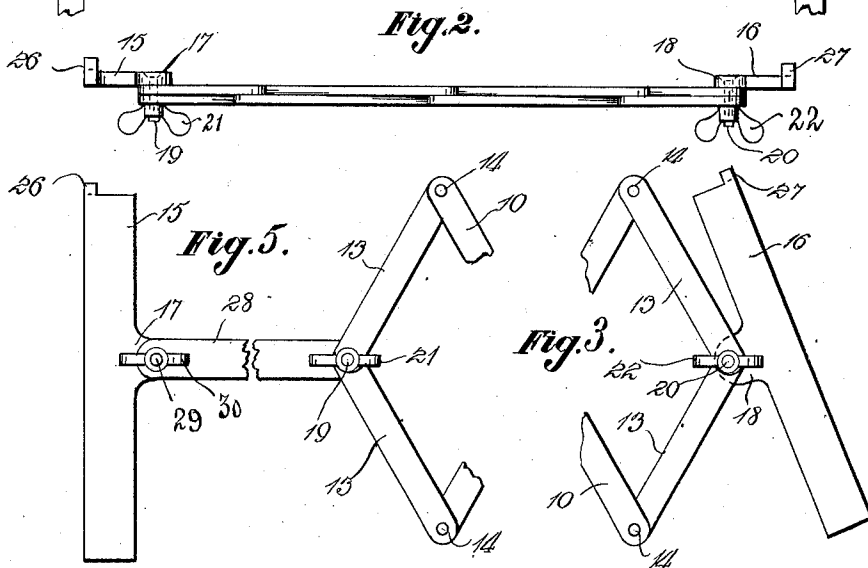
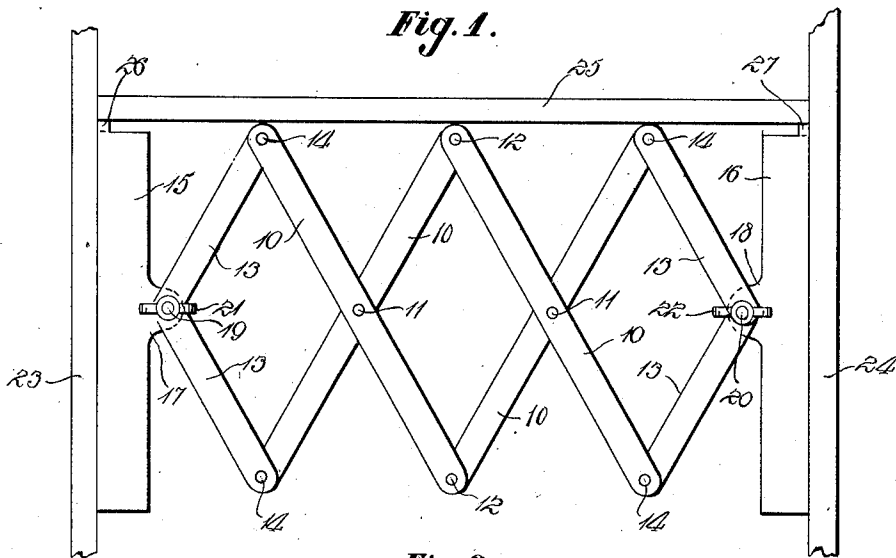


E. S. FISHER.
STAIR BUILDER'S GAGE.
APPLICATION FILED NOV. 24, 1909.

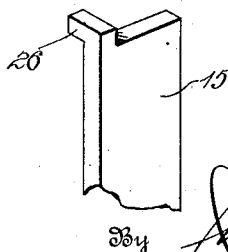
1,043,515.

Patented Nov. 5, 1912.



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UNITED STATES PATENT OFFICE.

EDGAR S. FISHER, OF MINNEAPOLIS, MINNESOTA.

STAIR-BUILDER'S GAGE.

1,043,515.

Specification of Letters Patent.

Patented Nov. 5, 1912.

Application filed November 24, 1909. Serial No. 529,762.

To all whom it may concern:

Be it known that I, EDGAR S. FISHER, a citizen of the United States, residing at Minneapolis, in the county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Stair-Builders' Gages; 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 gages, more particularly to devices of this character employed in accurately measuring the space between two bodies and likewise accurately measuring the relative angles of the bodies, and has for one of its objects to improve the construction and increase the efficiency and utility of devices of this character.

With this and other objects in view, the invention consists in certain novel features of construction as hereinafter shown and described and then specifically pointed out in the claim.

The improved device may be employed for a variety of purposes and for determining the space and the relative angularity between different objects, but is more particularly designed for the use of stair-builders and like mechanics, and for the purpose of illustration is shown thus applied, and in the drawings illustrative of the preferred embodiment of the invention, Figure 1 is a side elevation of the improved device applied between the side members and in engagement with one of the treads of a conventional stairway structure. Fig. 2 is a plan view of the same. Fig. 3 is a detail view illustrating another means of utilizing the improved device. Fig. 4 is a perspective view enlarged, of one end of one of the end members, illustrating its construction. Fig. 5 is a detail view illustrating a modification in the construction.

The improved device comprises a plurality of strips 10, each pair of said strips being united centrally thereof by a rivet 11 and likewise pivotally united at their ends at 12 and with shorter strips 13 at the ends likewise pivotally united to the longer strips 10 at 14. The series of strips 10—13 when united forming a "lazy-tongs" frame, as shown. Located beyond the shorter strips 13 are terminal plates 15—16, the plate 15 being provided with a central inwardly projecting lug 17, while a similar lug 18 projects cen-

trally from the end plate 16. The lugs 17—18 are perforated to receive clamp screws 19—20, the clamp screw likewise extending through the adjacent ends of the shorter bars 13 and provided with wing nuts 21—22. By this means the plates 15—16 and the strips 13 may be firmly clamped together, the object to be hereafter explained. At one end the end plate 15 is provided with a lateral offset 26, while a similar offset extends from one end of the plate 16, the offsets providing for increasing the accuracy of measurements, as hereafter explained.

An implement thus constructed may be folded into a relatively small space by compressing the strips 10—13 until they are in contact along their edges, or the implement may be extended to any required extent within the range of the pivoted plates, as will be understood.

The end plates 15—16 may be set at any desired angle relative to the strips 10—13, or arranged in parallel relations to each other, as may be preferred. It will thus be obvious that an efficient and convenient instrument is produced whereby the space between two objects may be accurately determined, and whereby the relative angularity between two objects may be determined in addition to the space between them.

The implement may be employed for a variety of purposes, but as before stated is more particularly designed for the use of stair-builders to enable them to not only determine the distance between the side members of a stairway, but also to enable them to accurately lay out the treads or risers of a stairway.

In applying the improved implement for determining the lengths and dimensions of the tread portion of a stairway, the strips 10—13 are distended and the plates 15—16 located against the inner faces of the "skirting-boards" 23—24 and with the lateral projections 26—27 bearing against the riser, represented at 25. The strips 10—13 and the plates 15—16 are adjusted until they bear firmly against the three members 23—24—25 as shown in Fig. 1, and the wing nuts 21—22 actuated to clamp the parts of the implement firmly together. The implement is then transferred to the board from which the tread is to be cut and the requisite length of the tread laid out by a suitable scribing implement moved along the outer edges of the plates 15—16, the projections

26—27 being located against one edge of the board, and thus serving as gages to the implement. Thus any slight angularity or irregularity between the members 23—24 may be determined, so that when the tread is cut after the scribing operations, it will fit exactly in its seat between the skirting-boards.

The parts of the implement are of metal, preferably of steel, and may be of any required size to adapt the implement to the work to which it is to be applied.

It will thus be obvious that a simply constructed and convenient implement is produced, which may be folded into small space when not in use for storage in the tool chest or other receptacle.

A link 28 conforming in width to the strips 10—13 and of any required length is furnished with each of the improved devices, and provided with apertures at the ends, and an additional clamp screw 29 and wing nut 30 also provided. By this means when an instrument of greater range is required one of the clamp screws, for instance the clamp screw 21 is detached and the member 15 coupled by the clamp screw 29 to one end of the link 28, and the opposite end of the link coupled by the clamp screw 21 to the members 13, as indicated in Fig. 5. By this simple means it will be obvious that the range of the device is materially increased, and by furnishing a plurality of the links 28 of different lengths, the range and utility of the implement will be still further in-

creased without material increase of expense.

What is claimed is:—

An implement of the class described, comprising a plurality of diagonally arranged intermediate and end strips, the intermediate strips being pivotally united at their ends and centrally thereof and the end strips pivotally united at one end to each other and pivotally united at their other ends to the adjacent intermediate strips, a terminal plate mounted to swing upon the uniting pivot of the terminal strips at one end of the implement, means for clamping said plate against movement in relation to the terminal strips, said means also clamping the strips against relative movement, and a link mounted by one end to swing on the uniting pivot of the terminal strips at the other end of the implement, means for clamping said link against swinging, said means also clamping the strips against movement, a second terminal plate mounted to swing on the free end of said link, means for clamping said second terminal plate against movement, and work engaging means carried by said terminal plates at one end of each thereof.

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

EDGAR S. FISHER.

Witnesses:

W. H. ANDERSON,
JULIA ARNESS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."