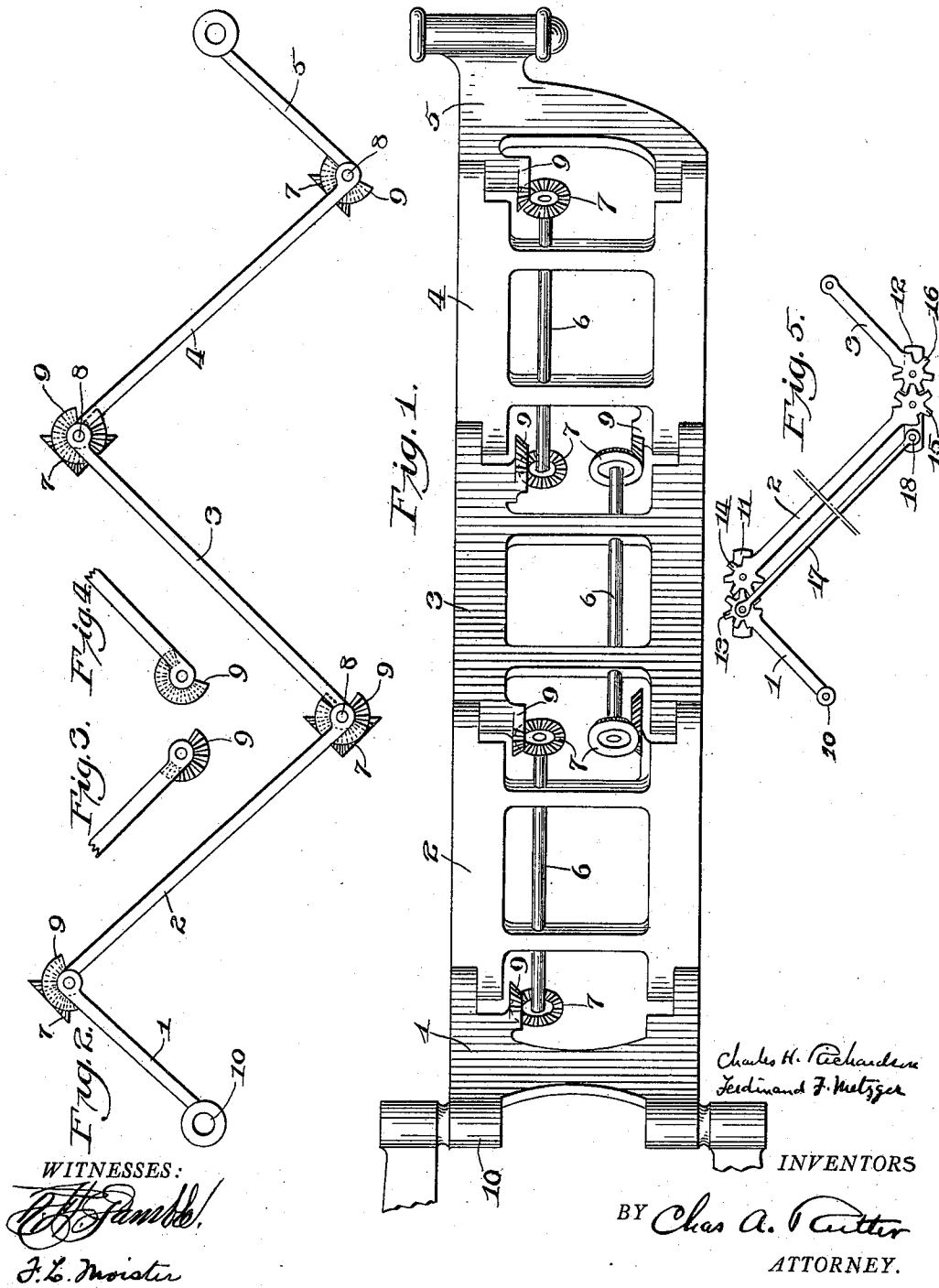


C. H. RICHARDSON & F. F. METZGER.
FOLDING BRACKET.

APPLICATION FILED APR. 1, 1910.

975,070.

Patented Nov. 8, 1910.



UNITED STATES PATENT OFFICE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, CHARLES H. RICHARDSON and FERDINAND F. METZGER, citizens of the United States, and residents of the city and county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Folding Brackets, of which the following is a specification.

Our invention relates to improvements in extensible brackets such, for instance, as are employed to carry a dental engine, a table, a telephone, or other object; our aim being to furnish such a bracket which will be simple in construction, rigid and efficient in action, which will have a long reach when open, occupy very little space when closed, and which will preserve the position of the object or objects supported in a thoroughly satisfactory manner.

In the accompanying drawings forming part of this specification, and in which similar letters of reference indicate similar parts throughout the several views:—Figure 1, is a side elevation of a bracket embodying our improvements; Fig. 2, a plan of Fig. 1; Fig. 3, a top plan of the end of one of the main arms of the bracket showing the toothed wheel or segment carried by or secured to said end; Fig. 4, a similar view of the adjoining end of the next arm showing the toothed wheel or segment carried thereby or secured thereto. Fig. 5, a plan of modified form of our bracket.

Our bracket consists of three or more main arms hinged or pivoted one to the other end to end. One end of the bracket is adapted to be secured in any suitable manner to some convenient support, a wall for instance, and the other, or outer end, or a point or points between these ends, can support the object or objects which the bracket carries.

To produce a satisfactory bracket as above it is advisable that some means be furnished which will transmit an opening or closing movement imparted to any one of the arms simultaneously and in the same degree to all the other arms. Various means for accomplishing this may be employed but this application will be confined to gear operated means for securing this end.

Referring now to Figs. 1 and 2 of the drawings: 1, 2, 3, 4, 5 are main arms of a bracket, the ends of which are secured one to another by pivots 8. The drawings show

the bracket extended approximately one-half of its complete throw and it will be observed that the angles included between arms 1—2; 2—3; 3—4, &c., are equal. As the arms are moved to open or to close the bracket these angles will, of course, change but they should remain always equal to one another no matter which arm is actuated to open or close the device. Carried in any suitable manner by the arms intermediate of the end arms 1 and 5 are shafts 6 which carry at or near their ends gear wheels 7. The shafts carried by adjoining arms are placed in different planes one above the other—alternate shafts may be in the same plane or not as found expedient and the gear wheels carried by each shaft gear into wheels or segments 9 which are carried by or form part of the casting or forging of the main arm next adjoining opposite ends of the arm which carries the shaft 6 which carries the gear wheels. For instance the gear wheels on the shaft 6, carried by main arm 2, gear into segments carried by arms 1 and 3; gear wheels carried by shaft 6, carried by main arm 3, gear into segments carried by arms 2 and 4, and so on.

It will be seen that if any of the main arms be drawn out from or pushed in toward the support 10, to which the inner end of arm 1 is pivoted, the gears or segments 9 on this arm will cause the gear wheel 7 meshing therewith to be rotated, this rotation will be transmitted to the carrying shaft of this wheel and to the gear wheel upon the opposite end of this shaft and by this gear a movement will be given to the gear or segment carried by the arm next but one to the arm first moved. The movement of this arm will, of course, move the gears or segments carried by it and they in turn will rotate the gears meshing with them, which, through the shafts and gearing shown will cause all of the other arms to move. As all of the gears or segments correspond in pitch and diameter a movement given to any one arm will be simultaneously transmitted in like degree to all of the other arms.

In Fig. 5 adjoining ends of adjoining arms are formed as spur gears which mesh as shown. The adjoining gear carrying ends 13—14 of arms 1, 2 are pivotally secured to a link 11 and the adjoining gear carrying ends 15—16 on arms 2 and 3 are pivotally secured to a link 12. An arm 17 is pivotally carried by the pivot of the

geared end 13 of arm 1, the opposite end of this arm being pivoted to link 12 at 18 in line with the pivots of the ends 15—16 of arms 2, 3. The points at which the ends of arm 17 are pivoted to link 11 and link 12 are immaterial so long as their arrangement is such that the arm 17 will be parallel to arm 2. Any movement in or out of any one of the arms 1, 2, 3 will be, through the geared ends of these arms, the rod 9 and the links 11, 12, transmitted in like degree to the others. Fig. 5 shows a bracket with but three main arms, it will be understood, of course, that the number of arms may be increased, all arms intermediate of the ends being duplicates of arm 2.

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

20 1. In an extensible bracket, in combination, three or more arms pivoted one to the other and gear operated means connecting alternate arms for causing a movement imparted to any one arm to move all of the other arms inwardly or outwardly simultaneously.

2. In an extensible bracket, in combination, three or more arms pivoted one to the other end to end, gears or segments carried

by or forming part of said arms, shafts 30 carried by said arms, and gear wheels carried by said shafts at or near their ends, said gear wheels upon said shafts meshing, the one, with the gear or segment carried by the arm pivoted to one end of the shaft carrying arm, the other with the gear or segment carried by the arm pivoted to the other end of this shaft carrying arm.

3. In an extensible bracket, in combination, three or more arms pivoted one to the other end to end, gears or segments carried by or forming part of said arms, shafts carried by the arms intermediate of the end arms, the shaft carried by any one arm being in a different plane from the shafts carried by adjoining arms, and gears carried upon each shaft near its ends, said gears meshing, the one, with the gear or segment carried by the arms pivoted to one end of the shaft carrying arm, the other with the gear or segment carried by the arm pivoted to the other end of this shaft carrying arm.

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