

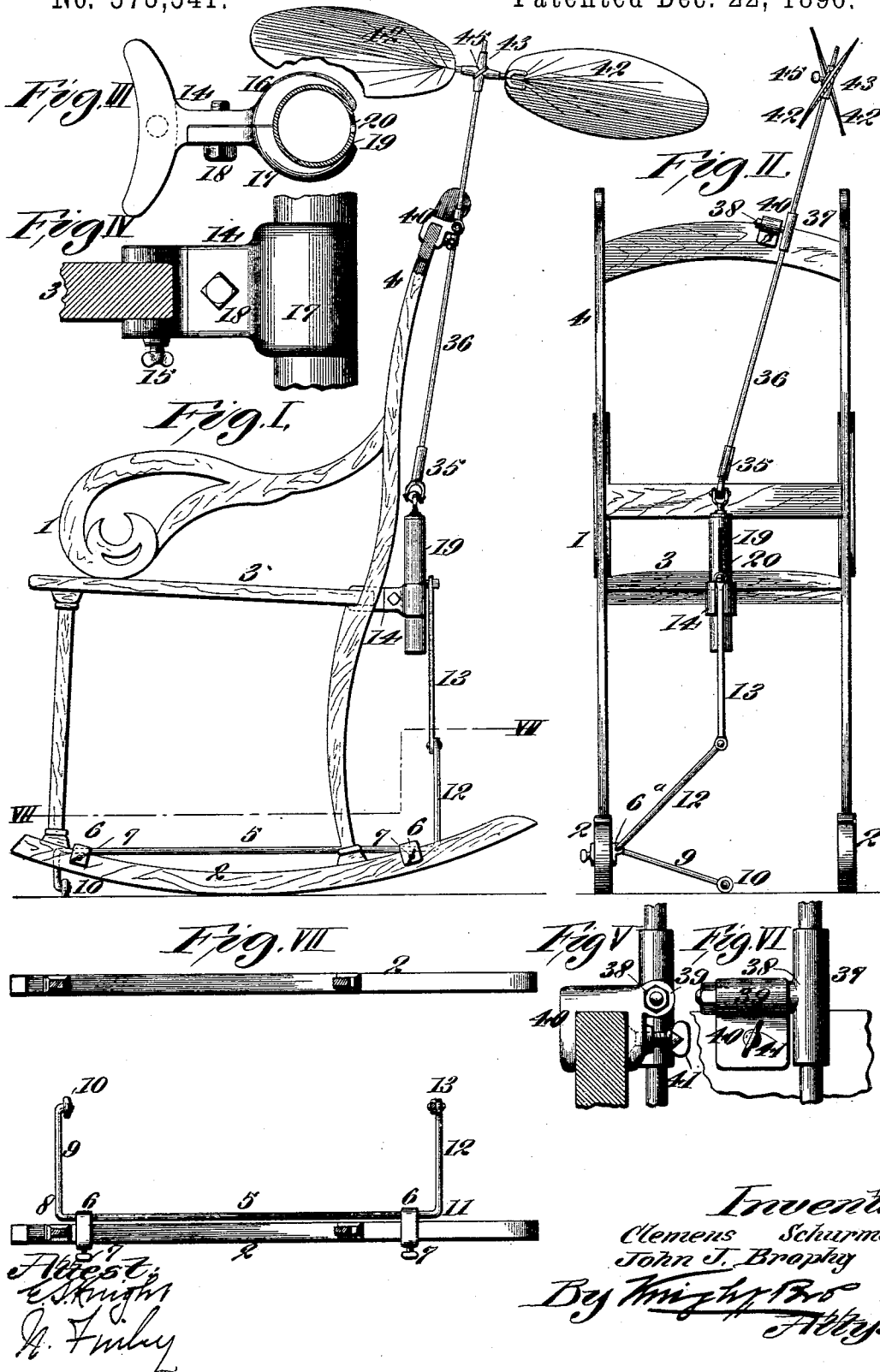
(No Model.)

3 Sheets—Sheet 1.

C. SCHURMAN & J. J. BROPHY.
FAN ATTACHMENT FOR ROCKING CHAIRS, &c.

No. 573,541.

Patented Dec. 22, 1896.



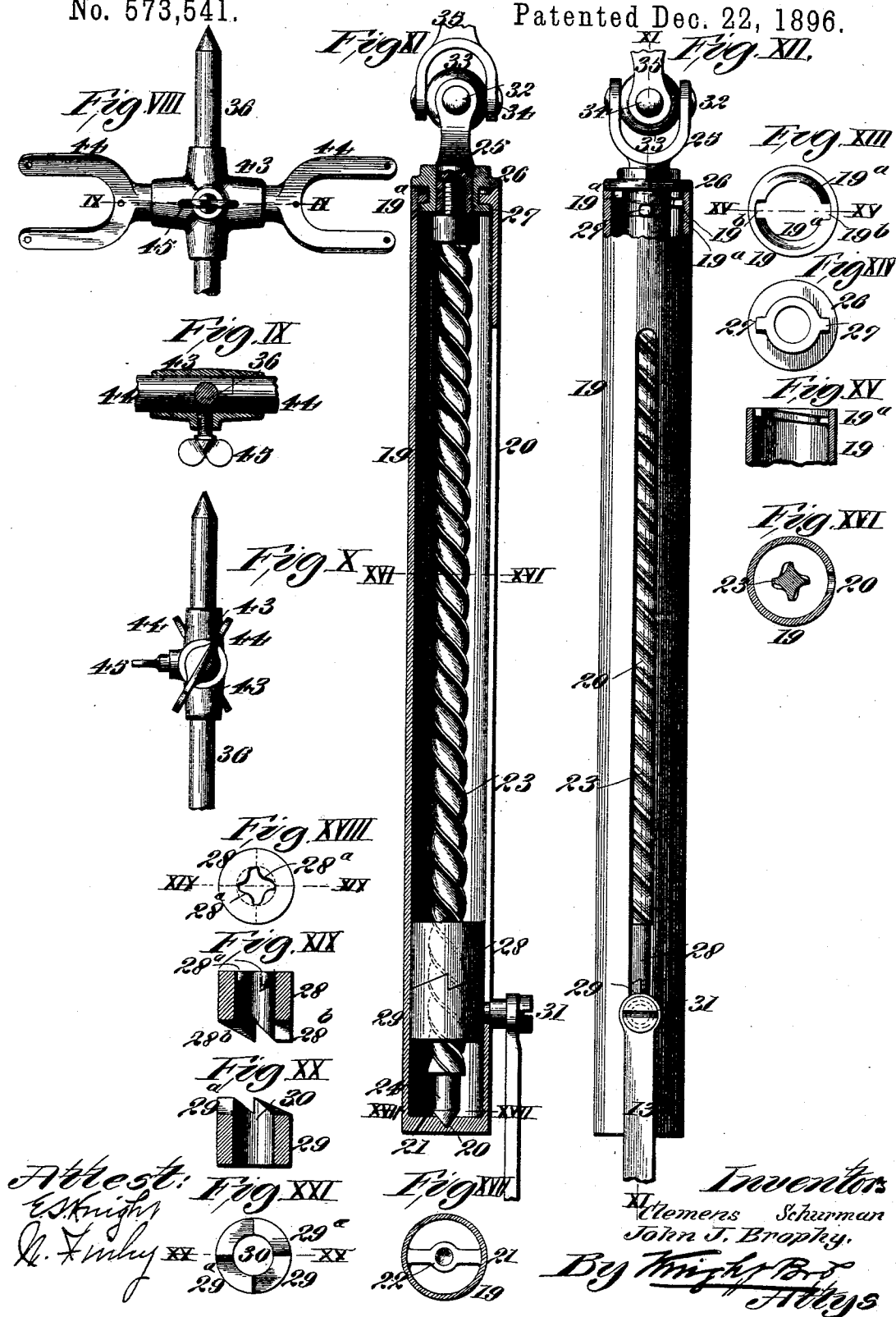
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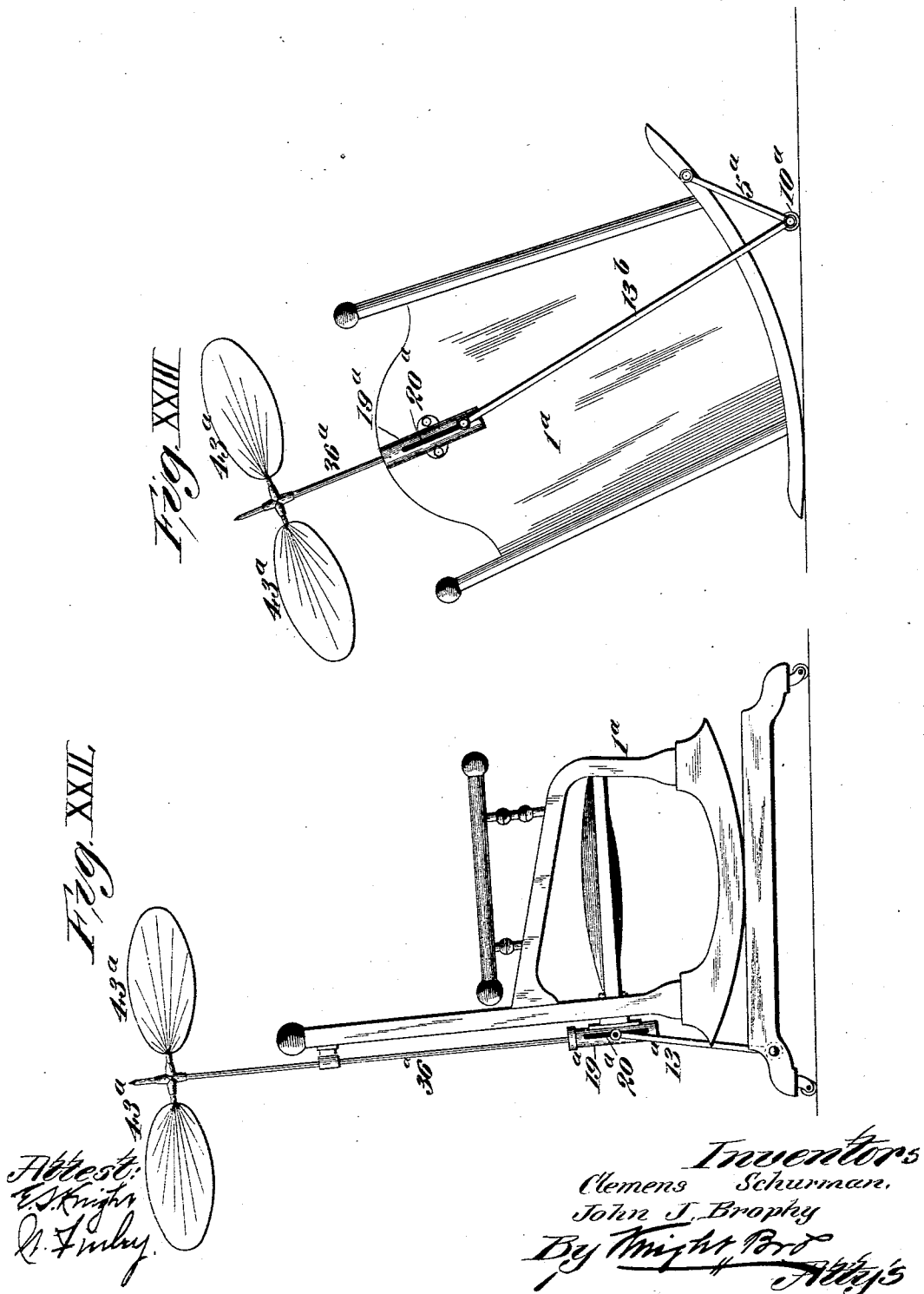
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UNITED STATES PATENT OFFICE,

CLEMENS SCHURMANN AND JOHN J. BROPHY, OF ST. LOUIS, MISSOURI.

FAN ATTACHMENT FOR ROCKING-CHAIRS, &c.

SPECIFICATION forming part of Letters Patent No. 573,541, dated December 22, 1896.

Application filed December 7, 1895. Serial No. 571,359. (No model.)

To all whom it may concern:

Be it known that we, CLEMENS SCHURMANN and JOHN J. BROPHY, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Fan Attachments for Rocking-Chairs, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

Our invention relates to that class of fans which are automatically operated by the motion of a moving body, and are especially adapted for connection to a rocking-chair, but which may be used in connection with other moving bodies, such, for instance, as cribs or cradles and the like.

Our invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, Figure I illustrates a side elevation of a common rocking-chair with our fan applied thereto. Fig. II illustrates a rear elevation of chair and fan as shown in Fig. I. Fig. III is an enlarged detail top or bottom view of the clamp by which the screw-rod barrel is attached to the seat of the chair, the screw-rod barrel being shown in cross-section in the clamp. Fig. IV is a side elevation of the clamp shown in Fig. III. Fig. V is an enlarged detail side view of the clamp by which the fan-shaft is secured to the back of the chair. Fig. VI is an enlarged detail view of the rear of the clamp shown in Fig. V. Fig. VII is a detail top view of the chair-rockers and the fan-operating rock-shaft attached to the rockers, a section being taken through the chair-legs on the line VII VII, Fig. I. Fig. VIII is an enlarged detail side elevation of the fan-carrying arms and their operating-shaft. Fig. IX illustrates a section taken on line IX IX, Fig. VIII, through the coupling connecting the fan-arms. Fig. X is an enlarged detail side elevation of the fan-arms, coupling, and operating-shaft, the arms being turned one-fourth of a revolution from the position shown in Fig. VIII. Fig. XI is a vertical section taken through the screw-rod barrel on line XI XI, Fig. XII, and shows the screw-rod and its connections in elevation. Fig. XII is a rear elevation of the

screw-rod, its barrel, and connections. Fig. XIII is a detail top view of the screw-rod barrel. Fig. XIV is a detail view of the under side of the cap that surrounds the upper end of the screw-rod and fits in the upper end of the screw-rod barrel. Fig. XV is a vertical section of the upper end of the screw-rod barrel, the section being taken on line XV XV, Fig. XIII. Fig. XVI is a cross-section taken on line XVI XVI, Fig. XI, through the screw-rod and its barrel. Fig. XVII is a detail view illustrating the lower end of the screw-rod barrel, a section being taken through the barrel on the line XVII XVII, Fig. XI. Fig. XVIII is a detail top view of the upper member of the clutch that works on the screw-rod. Fig. XIX illustrates a section taken on line XIX XIX, Fig. XVIII. Fig. XX illustrates a section taken on line XX XX, Fig. XXI. Fig. XXI is a detail top view of the lower member of the screw-rod clutch. Fig. XXII illustrates a side elevation of a platform-rocker with our fan applied thereto. Fig. XXIII illustrates an end view of a cradle or crib with our fan applied thereto.

In the drawings, 1 designates a rocking-chair of any common form, said chair being provided with rockers 2.

3 is the chair-seat, and 4 the chair-back.

5 designates a rock-shaft, which is secured by clamps 6, provided with set-screws 7, to the inner side of one of the rockers 2, the shaft being arranged to turn in bores 8 in the clamps. This shaft is bent at its forward end at 8 to form an arm 9, on which is a roller 10, adapted to bear against the floor in the operation of the fan. At the rear end the rock-shaft is bent at 11 to form an arm 12, to which is pivoted a link 13, that has connection, described hereinafter, with the screw-rod clutch, through the medium of which the fan is operated. There exists a material reason for locating the rock-shaft between the rockers of the chair, as by such arrangement the chair is not caused to travel over the floor on the operation of the rock-shaft, as would be the result if the rock-shaft had its floor-bearing outside the rockers.

14 designates a clamp provided with a set-screw 15, through means of which it is attached to the seat 3 of the chair. This clamp

14 is composed of two members 16 and 17, connected by a screw 18, which members embrace and hold a barrel 19, provided with a slot 20. At the lower end of the barrel 19 is a cross-bar 21, provided with a recess 22.

23 designates a screw-rod, the lower conical end 24 of which seats in the recess 22 of the cross-bar 21. The upper end of the screw-rod 23 is joined by a screw connection to a yoke 25, the lower end of which is surrounded by a cap 26, fitted to the upper end of the barrel 19 by means of lugs 27 on the under side of the cap that engage the cams 19^a on the interior of the upper end of the barrel 19, said lugs being admitted through the cams 19^a through slots 19^b in the cams.

28 designates the upper member and 29 the lower member of a clutch that operates upon screw-rod 23 to impart motion to the screw-rod, from which the motion is transmitted to the fan in a manner hereinafter explained. The upper member 28 of the clutch is provided with interior lugs 28^a, which travel through the grooves of the spiral 23 in the upward movement of the clutch. The lower end of the member 28 is provided with teeth 28^b, that engage with similarly-formed teeth 29^a on the upper end of the member 29 of the clutch. The member 29 is provided with a smooth bore 30 throughout its length.

31 designates a screw or similar pintle, through means of which the upper end of the link 13 is connected to the lower member 29 of the clutch, said screw or pintle being designed to travel in the slot 20 of the barrel 19 and in such travel to carry the member 29 of the clutch with it. This arrangement is such on account of the peculiar construction of the two members of the clutch, as will presently appear. The upper member 28 is the only one that has engagement in the spiral groove of the screw-rod, and thus it will be seen that it is only when the member 28 is driven by the member 29 that the screw-rod is caused by the clutch to turn. The object of so constructing the clutch is to provide a clutch that operates the screw-rod 23 when moving in an upward direction, and by returning without operating does not impede the motion of the screw-rod or cause it to turn in the opposite direction.

To illustrate the clutch action more clearly, we will presume the fan to be at rest and the clutch at the lower end of the barrel 19, as illustrated in Figs. XI and XII. Motion now being imparted to the rock-shaft 5 on the movement of the chair and conveyed to the link 13 causes the screw or pintle 31 to travel upward in the slot 20, in which travel the member 29 of the clutch is carried upward, and through means of the engaging teeth on the opposing ends of the clutch members the member 28 of the clutch is carried with the member 29, and its lugs 28^a, moving in the spiral grooves of the screw-rod, cause the screw-rod to rotate and motion is imparted to the fan. When the clutch has reached the

extent of its upward travel and the chair rocks to its former position, the rock-shaft will draw downward upon the link 13 and the member 29 of the clutch will travel with the link 13, but by reason of its smooth bore it will not interfere with the continued rotation of the screw-rod. The teeth of the member 28 are disengaged from the teeth of the member 29, and the member 28 falls from its elevated position, its lugs 28^a following the spiral groove of the screw-rod until the said member again reaches the lower member of the clutch, when the teeth of the two members again engage, and the upward travel of the clutch takes place as before. By means of this construction of clutch, whereby the screw-rod is only operated in one direction of travel of the clutch, there is obtained not only the advantageous feature, above explained, of lack of impediment to the continued rotation of the screw-rod, but in addition there is the advantageous feature of a construction whereby we are enabled to operate the fan without any extra exertion on the part of the operator, which lies in the fact that it permits that during the backward movement of the chair, when it is propelled by the exertion of the occupant, the parts are so placed that the clutch is traveling down the screw-rod and is therefore not in operation, while on the chair being returned to its upright position by the weight of the occupant the clutch is operating the screw-rod and consequently the fan, and it is therefore wholly through the weight of the occupant that the fan is operated, and, as we have said, there is for this reason no extra exertion required on the part of the occupant of the chair to operate the fan. The exertion is only that required to rock the chair in the absence of the fan.

Pivoted in the yoke 25 by means of a pin 32 is a ball 33, and pivoted to the ball by a pin 34 is a yoke 35, connected to the fan-operating shaft 36. The shaft 36 has bearing in a sleeve 37, provided with a pin 38, that is fitted in a boss 39 on a clamp 40. The clamp 40 is designed to be secured to a cross-bar of the back of a chair by means of thumb-screws 41, such attachment being clearly illustrated in Figs. I, II, V, and VI, and by this arrangement the fan may be placed in varying positions by simply loosening the clamp 40 and sliding it along the back of the chair.

Secured to the upper end of the fan-operating shaft 36 are fans 42, connected to the operating-shaft by means of a cross-coupling 43. The fans are mounted upon arms 44. The cylindrical ends of the arms 44 enter the cross-coupling 43 from opposite sides of the coupling and overlap each other to form a joint, and are provided with an opening, one-half in each arm, through which the operating-shaft 36 passes and engages each arm to hold them firmly in position, as clearly illustrated in Fig. IX.

45 is a set-screw inserted in a cross-coupling

43 for the purpose of binding the ends of the fan-arms against the operating-shaft to retain the arms at any desired location on the shaft.

In Fig. XXII we have shown our fan applied to a platform-rocker, in which application the link 13^a is pivoted to the platform of the chair and such platform takes the place of the shaft 5.

In Fig. XXIII our fan is shown applied to a crib or cradle, in which application the link 13^b is connected to a link 5^a, pivoted to the crib or its rocker and provided with a roller 10^a, located at the pivot of the links 13^b and 5^a.

15 We claim as our invention—

1. In a fan attachment for rocking-chairs &c., the combination of a fan, a fan-carrying shaft, a screw-rod connected to said fan-carrying shaft, a slotted barrel in which said screw-rod is supported, a support for said barrel adapted to be attached to a chair or similar object, a two-part clutch arranged to traverse said screw-rod, the upper member of said clutch being provided with means of engagement in the spiral of said screw-rod, and the lower member being arranged to travel on said screw-rod without engagement

in its spiral, a rock-shaft arranged longitudinally of the rockers adapted to be clamped to the rockers of a chair, a link connected at one end to said rock-shaft, a pintle connecting the opposite end of said link to the lower member of said clutch, said pintle being arranged to travel in the slot in said screw-rod barrel and an arm 9 connected with the rock-shaft and projecting into the space between the rockers, substantially as and for the purpose set forth.

2. In a fan attachment for rocking-chairs &c., the combination of a fan-carrying shaft, a coupling fitting on said shaft and provided with diverging arms provided with a central bore extending therethrough, fan-carrying arms arranged to be inserted in said bore and have their inner ends meet in an overlapping joint, said fan-carrying shaft passing through said arms at their jointure, and a set-screw in said coupling, substantially as and for the purpose set forth.

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JOHN J. BROPHY.

In presence of—
E. S. KNIGHT,
W. FINLEY.