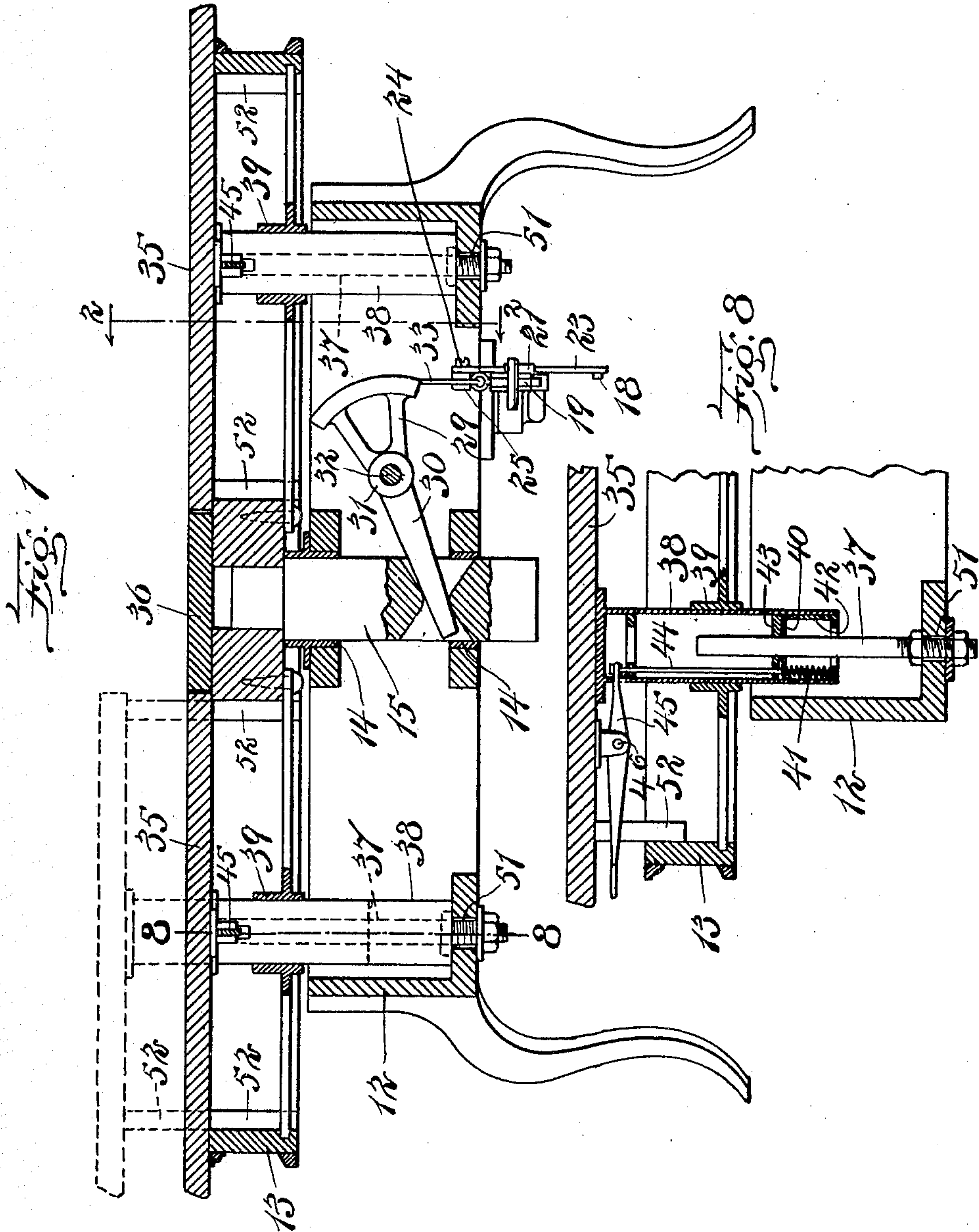


No. 860,531.

PATENTED JULY 16, 1907.

F. W. COY.
ADJUSTABLE STRUCTURE.
APPLICATION FILED MAY 6, 1906.

2 SHEETS—SHEET 1.



Witnesses:
Fred D. Sweet.
E. Baehner

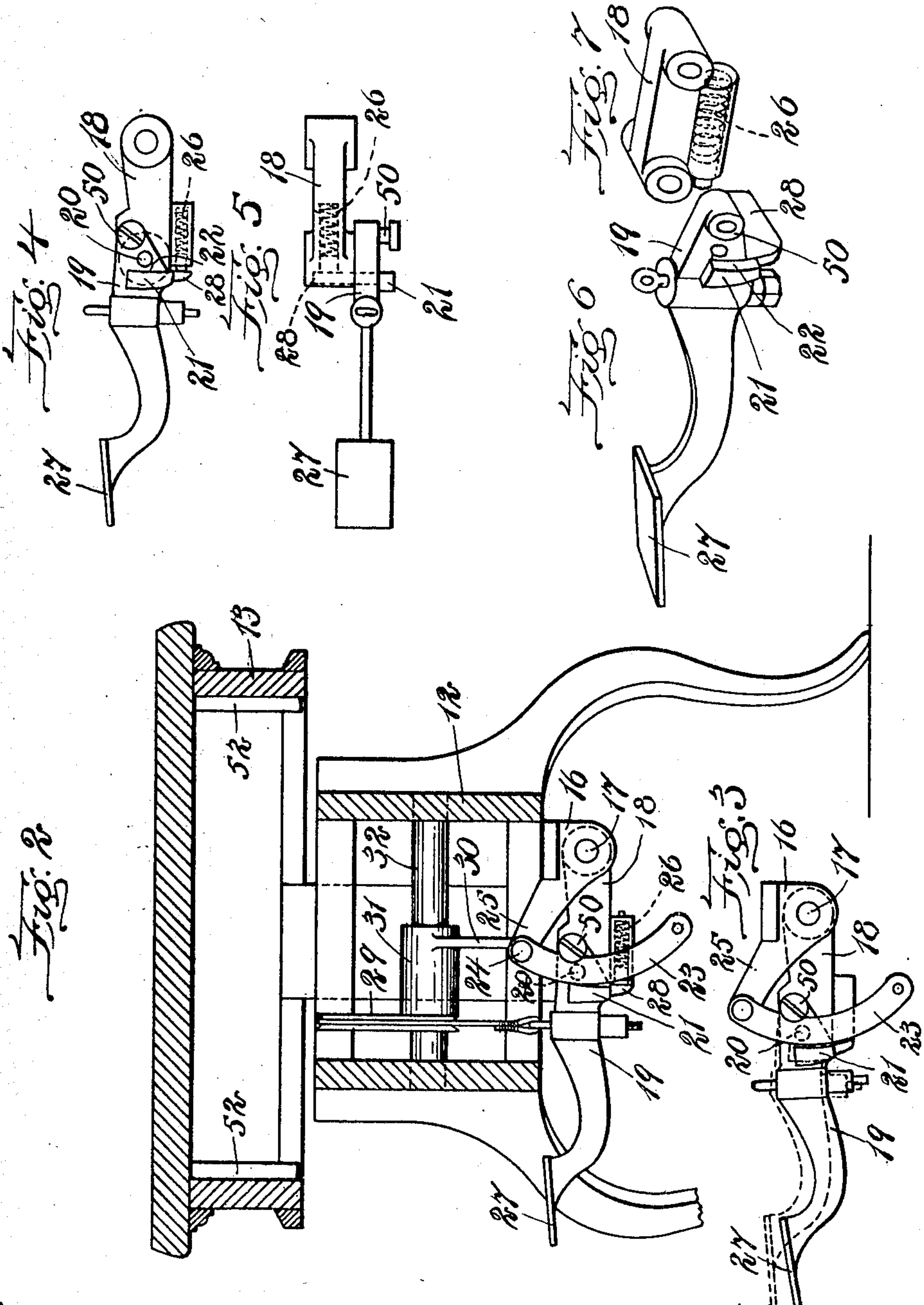
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UNITED STATES PATENT OFFICE.

FREDERICK W. COY, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO CHARLES F. BROWN,
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ADJUSTABLE STRUCTURE.

No. 860,531.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed May 5, 1906. Serial No. 315,403.

To all whom it may concern:

Be it known that I, FREDERICK W. COY, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Adjustable Structures, of which the following is a specification.

This invention relates to a two-part structure comprising a base section and an adjustable section movable vertically relatively to the base section, and may be embodied in a seat or bench for musical instruments, as well as in other structures.

The invention has for its object to enable the adjustable part of a structure of the character stated to be moved vertically to any extent desired by the depression of a lever, and to be supported at any point where it is left when the movement of the lever ceases.

The invention also has for its object to provide an adjustable seat structure, the seat portion of which is subdivided into independently adjustable sections, each of which constitutes a seat for one person, this part of the invention being embodied in a seat structure having an elongated seat capable of supporting two persons while playing at the same instrument, the part of the seat supporting each person being capable of independent vertical adjustment, so that one player may sit at a different level from the other player, the two seat sections being capable of adjustment to the same level, and the seat as a whole being adjustable vertically by the action of the lever above referred to.

The invention consists in the several improvements which I will now proceed to describe and claim:

Of the accompanying drawings, forming a part of this specification,—Figure 1 represents a longitudinal vertical section of an adjustable structure embodying my invention, formed as a duet bench. Fig. 2 represents a section on line 2—2 of Fig. 1. Fig. 3 represents a view similar to a portion of Fig. 2, showing the operating lever in position to release the adjustable section. Fig. 4 represents a side view of the operating lever detached. Fig. 5 represents a top view of the operating lever. Figs. 6 and 7 represent perspective views of the parts of the operating lever. Fig. 8 represents a section on line 8—8 of Fig. 1.

The same letters of reference indicate the same parts in all the figures.

In the drawings, which show my invention embodied in an adjustable seat or bench, 12 represents the base section, which, as here shown, is provided with legs, and 13 represents the adjustable section, which is movable vertically with relation to the base section. The said sections are provided with complementary guide members, which, as shown in Fig. 1, comprise sockets 14 14 affixed to the base section, and a stud or standard 15 affixed to the adjustable section, and movable in said sockets. To an ear 16 on the base section is pivoted

at 17 a two-part lever, comprising an inner part 18, which engages the pivot 17, and an outer part 19, pivoted at 20 to the inner part. The outer part 19 is provided with a clutch member 21, formed as a projection on one side of the part 19, the said projection having a concave clutch face 22.

23 represents a complementary clutch member, which is of segmental form, and is pivoted at 24 to an ear 25 affixed to the base section 12. The convex edge of the segmental member 23 coöperates with the concave face of the clutch member 21. The outer lever part 19 is normally held by a spring 26 in the position shown in Fig. 2, the concave face of the clutch member 21 being thrown out of parallel with the convex face of the clutch member 23, and caused to bind at one end upon the latter, as shown in Fig. 2, the arrangement being such that the clutch member 23, by its engagement with the clutch member 21, prevents upward movement of the operating lever. The described engagement between the clutch members 21 and 23 does not, however, prevent the downward movement of the operating lever, the clutch member 21 sliding freely downward on the clutch member 23. When, however, the outer lever part 19 is moved to the position shown in Fig. 3, against the pressure of the spring 26, the opposed faces of the clutch members 21 and 23 are brought into parallelism with each other, so that the operating lever may be moved freely in either direction. It will be seen, therefore, that the operating lever may be freely depressed to any point within the limits of its movement, by pressure upon its outer end, which is provided with a pedal 27. It will also be seen that whenever pressure is removed from the operating lever, it is again locked, by the action of the spring 26 and the clutch members, against upward movement. The spring 26 is supported in a casing on the inner lever part 18, and exerts pressure on an arm 28 formed on the outer lever member 19. The operating lever is connected with the adjustable section 13 in such manner that the depression of the lever, as above described, raises the section 13, the latter being supported at any height to which it may thus be raised by the co-action of the clutch members 21 and 23. The said connection, as here shown, comprises a lever composed of two arms 29 and 30, affixed to a hub 31, which is mounted to turn on a stud 32 affixed to the base section 12, the arms 29 and 30 being preferably offset from each other, as shown in Fig. 2. The arm 29 has a segmental outer end, which is curved, and has attached to it a short length of wire rope or other flexible material, which is attached to the outer part 19 of the operating lever. The arm 30 enters a slot in the standard 15 of the adjustable section. It will be seen that when the operating lever is depressed, the arm 29 will be correspondingly depressed through the flexible connection 23, the arm 30,

with the standard 15, and adjustable section 13, being correspondingly raised. As before stated, the release of the operating lever after its depression causes the locking of the adjustable section at any height to which
 5 it may have been raised. When it is desired to release and lower the adjustable section, the operator exerts downward pressure on the latter, and at the same time moves the outer part of the operating lever to the position shown by full lines in Fig. 3. This manipulation
 10 causes the clutch members to assume the relation shown in Fig. 3, and permits the depression of the adjustable section to any desired extent.

The above-described construction may include the entire structure, the section 13 constituting the entire
 15 seat. I have, however, shown a sectional seat, the seat top, supported by the section 13, being subdivided to form two seat sections 35 35, which are vertically adjustable independently of the section 13, and of each other, and an intermediate section 36, which is affixed
 20 to the section 13. The preferred means for permitting the independent adjustment of the seat sections 35 and for supporting each section at any height to which it may be independently adjusted, comprise vertical cylindrical supporting members 37 affixed to the base
 25 section 12.

38 38 represent tubular standards affixed to the seat sections 35 35, and movable in guides 39 39 affixed to the adjustable section 13.

For convenience, I will hereinafter describe the supporting and adjusting mechanism for one of the seat
 30 sections 35, and will refer to the part 37 as the supporting member, and the part 38 as the supported member. Within the supported member 38 is an annular clutch 40, which has a swinging engagement with the supported member, and is adapted to engage the supporting
 35 member 37, the said clutch surrounding the supporting member. The orifice surrounded by the clutch 40 is of such size and form that when the clutch is slightly inclined relatively to the axis of the supporting member 37, the clutch is firmly engaged with or grips the
 40 said member, thus rigidly connecting the supported member 38 with the supporting member 37, and preventing downward movement of the seat section 35. When the clutch 40 is swung downwardly upon a plane
 45 at right angles with the axis of the member 37, the hold of the clutch on the member 37 is released so that the member 38 and the seat section 35 are free to slide downwardly. The clutch is normally held in engagement with the supporting member 37 by means of a spring
 50 41 exerting an upward pressure on the clutch near one edge of the latter. The opposite edge of the clutch is seated on a shoulder 42 within the tubular member 38.

43 represents a stop which limits the upward swinging movement of the clutch 40, and is rigidly affixed to
 55 the tubular member 38. The under side of the stop 43 is inclined so that it confines the corresponding portion of the clutch against vertical movement, the opposite side of the clutch being free to swing vertically. 44 represents a rod which is movable vertically in the
 60 tubular member 38, and bears against the clutch 40.

45 represents a lever pivoted at 46 to the seat section 35, one end of said lever being engaged with collars or flanges affixed to the rod 44, while the other end of the lever has a push piece or head located under the outer
 65 edge of the seat section 35. When the push piece is

pressed upwardly, the rod 44 is pressed downwardly, throwing the clutch out of engagement with the member 37, thus permitting the desired movement of the member 38 and the seat section 35 supported thereby. When pressure is removed from the lever 45, the spring
 70 41 forces the clutch 40 into engagement with the member 37, thus arresting the downward movement of the member 38 and the seat, the latter being supported at any height to which it may have been moved when the pressure on the clutch was released. It will be seen from the
 75 foregoing that when the seat sections 35 are lowered to a bearing on the section 13, the three sections 35, 35 and 36 furnish a continuous seat of uniform height. Either of the sections 35 may be raised to any extent permitted by the described mechanism, so that two players
 80 of different heights may be accommodated by the seat.

The outer lever part 19 is provided with a guide 50, which bears on the back of the clutch member 23, and prevents it from swinging out of engagement with the clutch member 21. The convex face of the clutch
 85 member 23 may be milled or toothed, if desired, to give it a positive engagement with the member 21.

The adjusting and supporting mechanism comprising the two-part operating lever, having a clutch member, and adapted for pivotal connection with a support,
 90 and the clutch member 23 having a holder such as the ear or bracket 25, adapted for attachment to said support, may be employed for adjustably supporting the parts of various adjustable or telescopic structures, and is not limited to use in connection with the seat structure
 95 here shown.

It will be observed that the clutch member 23 constitutes a strut when engaged with the clutch member 21, the said strut being subjected to endwise compressive pressure, and therefore adapted to sustain the
 100 weight of the adjustable section and its attachments.

The supporting and supported parts 37 and 38, and the clutch cooperating therewith, comprise a clutch-controlled standard, which in its general construction is, or may be, substantially as set forth in Letters Patent
 105 of the United States No. 811,278, dated January 30, 1906. It will be seen that in the present invention the two standards employed to adjustably connect the seat sections 35 35 with the adjustable section 13, cooperate with the base section in supporting the end portions of
 110 the adjustable section in any position the latter may assume. As above stated, the supporting parts 37 of said standards are rigidly attached to the base section, while the supported parts 38 are attached to the seat sections 35, and connected through the latter with the
 115 adjustable section 13. When the section 13 is raised, the clutches 40 slip upwardly on the supporting members 37 of the standards, and engage said members to hold the supported members of the standards after each adjustment, hence the adjustable section of the structure
 120 as a whole is supported at three points at any height to which it may be adjusted, viz., at its central portion by means of the operating lever and the clutch members 21 and 23, and at its end portions by means of the adjustable clutch controlled standards. The end supports
 125 thus provided will operate as described, whether the seat be of the described sectional construction or not.

The supporting parts 37 of the clutch controlled standards may be of any desired form in cross section,
 130

and are preferably square or of other polygonal form. The said parts 37 should be loosely engaged with the base section in such manner that while they are prevented from endwise vertical movement, they have some freedom of lateral horizontal movement, this being permitted by enlarged apertures 51 in the portions of the base section through which the supporting members 37 pass, as shown in Fig 1. This freedom of lateral movement of the members 37 prevents sticking or binding of the parts of the adjustable standards, and is essential to the free up and down movements of the adjustable section.

To prevent the supporting member 37 and the seat section 35 supported thereby from turning horizontally when the seat section is raised, I provide the seat section with means for engaging the adjustable section 13, the means here shown being arms 52 affixed to corner portions of the seat sections, and in sliding contact with corner portions of the section 13.

I claim:—

1. An adjustable structure comprising a base section, an adjustable section guided by the base section, a two-part operating lever fulcrumed on the base section, one of the parts of said lever having a clutch member, a complementary clutch member engaged with the base section, said members normally locking the lever against movement in one direction only, and connections between the lever and the adjustable section through which a movement of the lever in the opposite direction raises the adjustable section.
2. An adjustable structure comprising a base section, an adjustable section guided by the base section, an operating lever comprising an inner part pivoted to the base section, and an outer part pivoted to the inner part, and provided with a clutch member, a complementary clutch member engaged with the base section, a spring which holds the clutch members yieldingly engaged, said members normally locking the lever against movement in one direction only, and connections between the lever and the adjustable section through which a movement of the lever in the opposite direction raises the adjustable section.
3. An adjustable structure comprising a base section, an adjustable section guided by the base section, a two-part operating lever fulcrumed on the base section, one of the parts of said lever having a clutch member, a complementary clutch member engaged with the base section, said members normally locking the lever against movement in one direction only, a lever fulcrumed on the base section, and having two arms, one of which is engaged with the adjustable section, and a connection between the other arm of said lever and the outer part of the operating lever.

4. An adjustable structure comprising a base section, an adjustable top section guided by the base section and sub-divided into independently adjustable seat sections, means for bodily raising the adjustable top section, said means having provisions for supporting said section against downward movement in any position to which it may be adjusted, and means for independently supporting the adjustable seat sections on the base section.

5. An adjusting and supporting mechanism comprising a two-part lever having an inner part adapted for pivotal engagement with a support, and an outer part pivoted to the swinging end of the inner part, and provided with a clutch member, and a complementary clutch member pivoted to a holder which is adapted for attachment to said support, said lever having a spring which holds the clutch members in yielding engagement with each other, and a guide for the back of the pivoted clutch member.

6. An adjustable structure comprising a base section, a clutch member formed as a strut supported by the base section, an operating lever fulcrumed on the base section, and having a clutch member and provisions for yieldingly engaging the latter with said strut, the said clutch member and strut normally locking the lever against movement in one direction only, an adjustable section guided by the base section, and connections between the lever and the adjustable section through which a movement of the lever in the opposite direction raises the adjustable section.

7. An adjustable structure comprising a base section, an elongated adjustable section, guide members connecting the central portions of said sections, means supported by the base section for raising the adjustable section, and holding it at any point to which it may be raised, and adjustable clutch controlled means supported by the base section for supporting the end portions of the adjustable section, whereby the elongated adjustable section as a whole is supported at three points by the base section.

8. An adjustable structure comprising a base section, an elongated adjustable section, guide members connecting the central portions of said sections, means supported by the base section for raising the adjustable section, and holding it at any point to which it may be raised, supporting members affixed to the end portions of the base section, supported members affixed to the adjustable section, and inclosing the supporting members, and swinging clutches carried by the supported members, and normally engaging the supporting members, whereby the elongated adjustable section as a whole is supported at three points by the base section.

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

FREDERICK W. COY.

Witnesses:

C. F. BROWN,
L. TILLINGHAST.