H. S. MAYNARD.

COMBINATION BENCH.

APPLICATION FILED JAN. 25, 1907.

922,011.

Patented May 18, 1909.

4 SHEETS—SHEET 1.

Fig. 1.

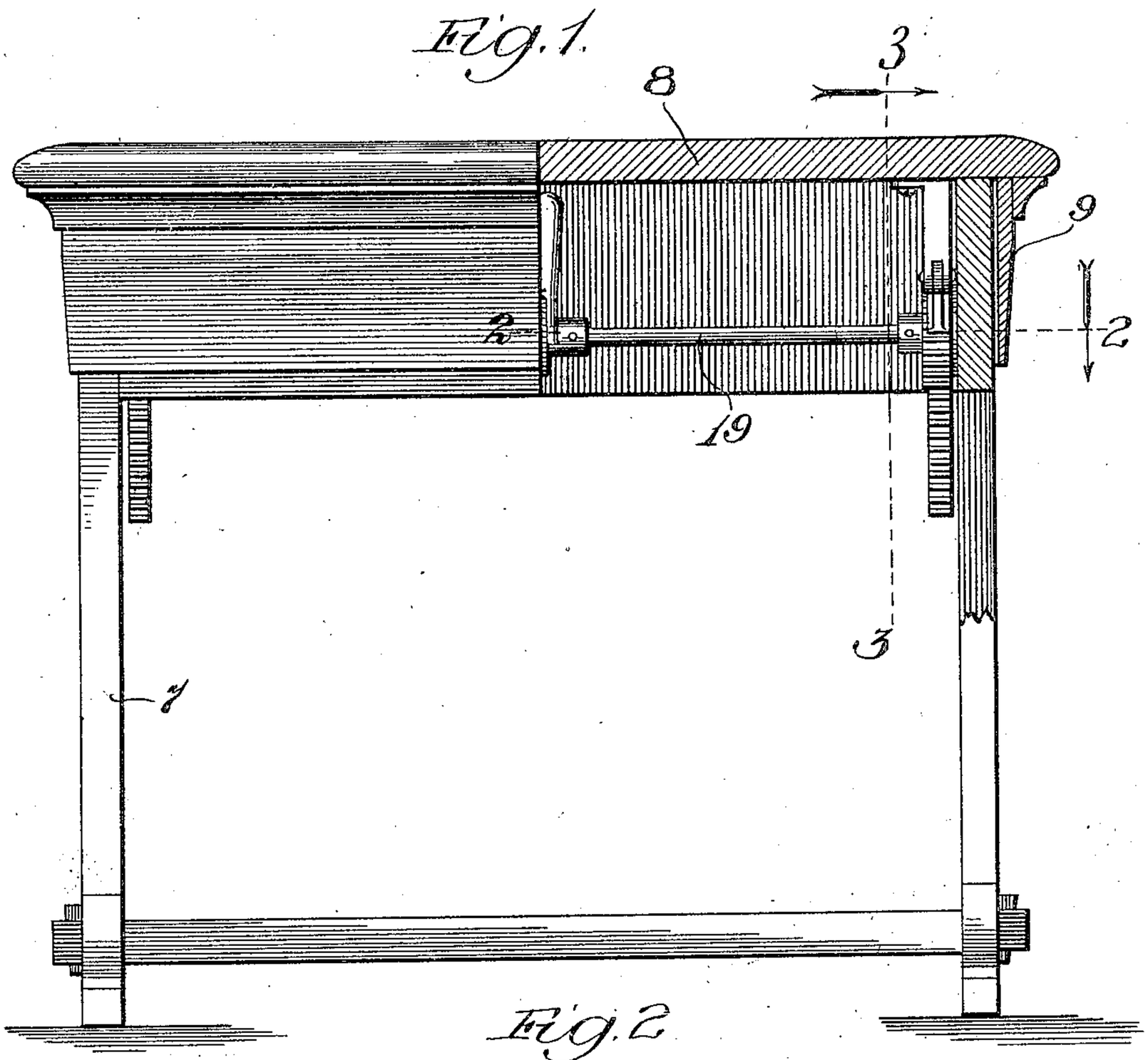
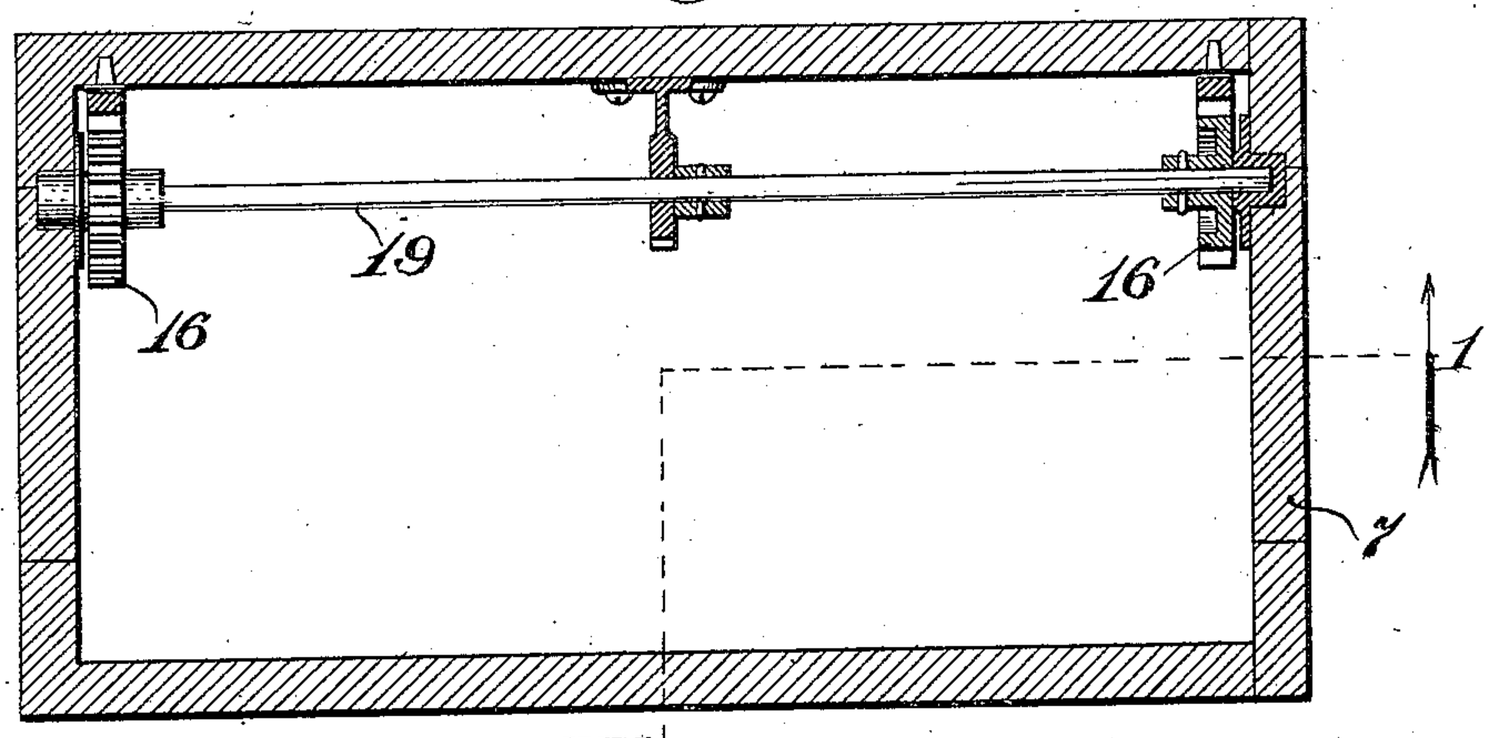


Fig. 2.



Witnesses:

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Inventor:

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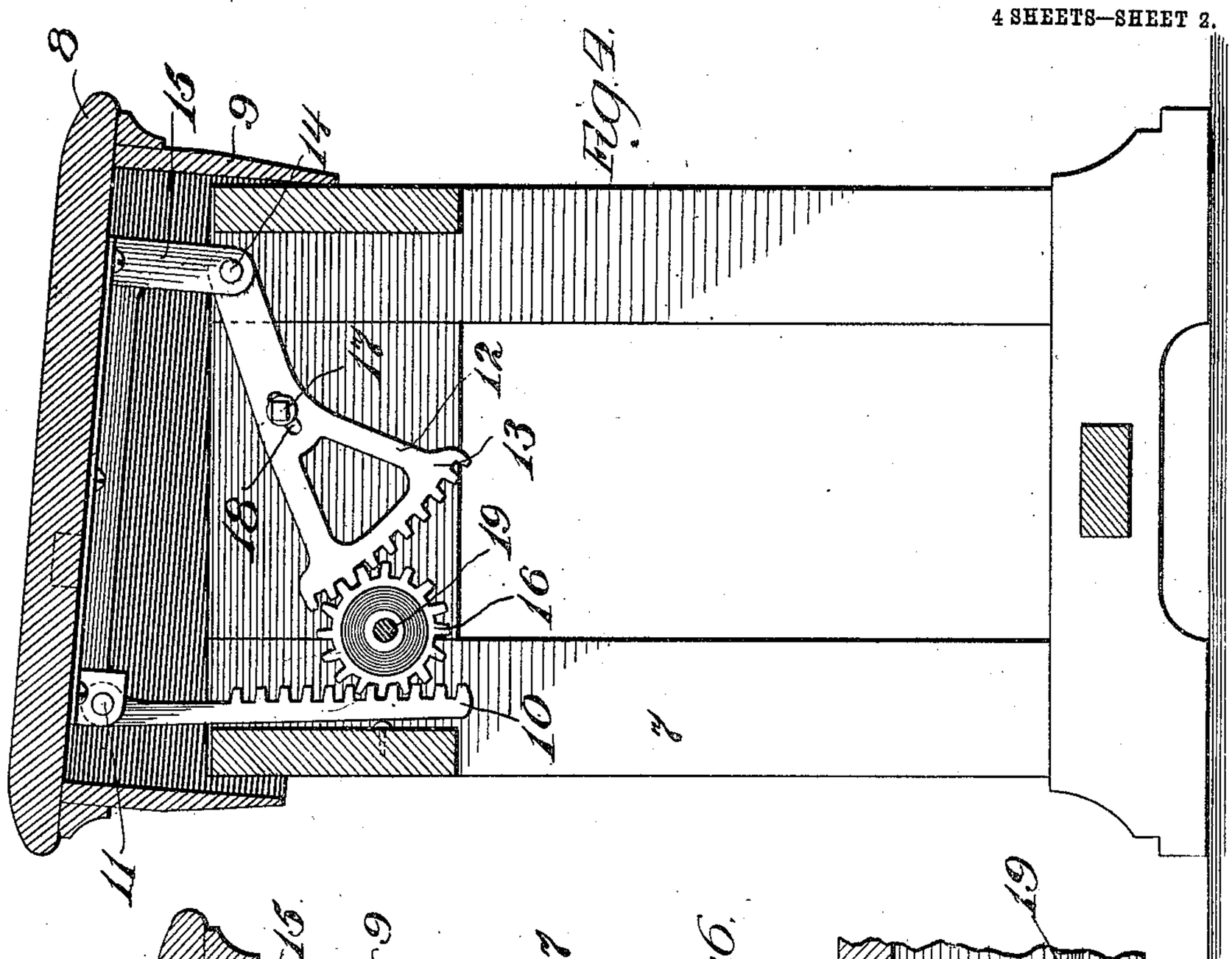

Fig. 4.

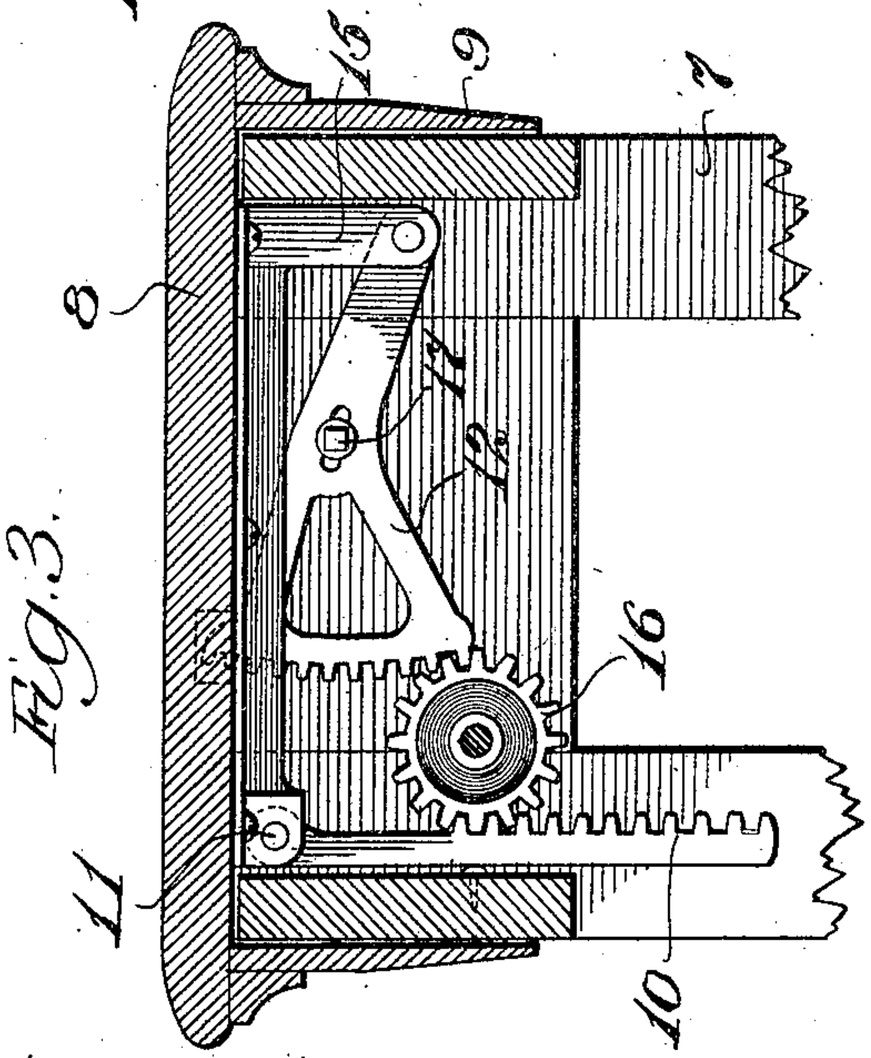

Fig. 3.

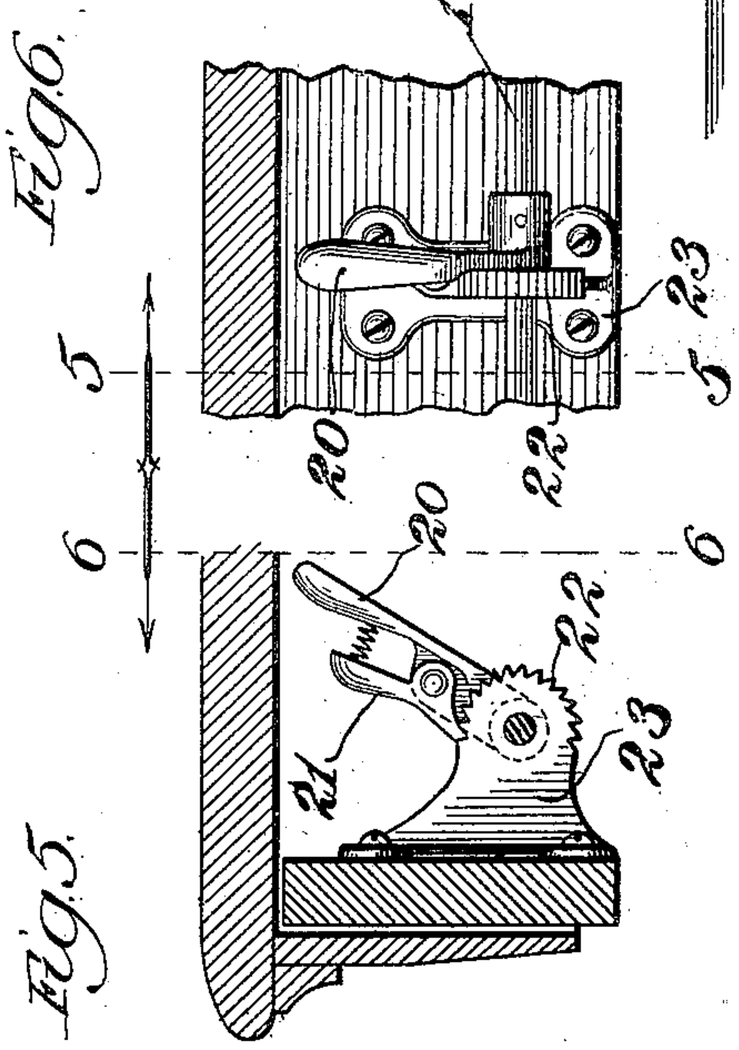

Fig. 6.

Fig. 5.

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4 SHEETS—SHEET 3.

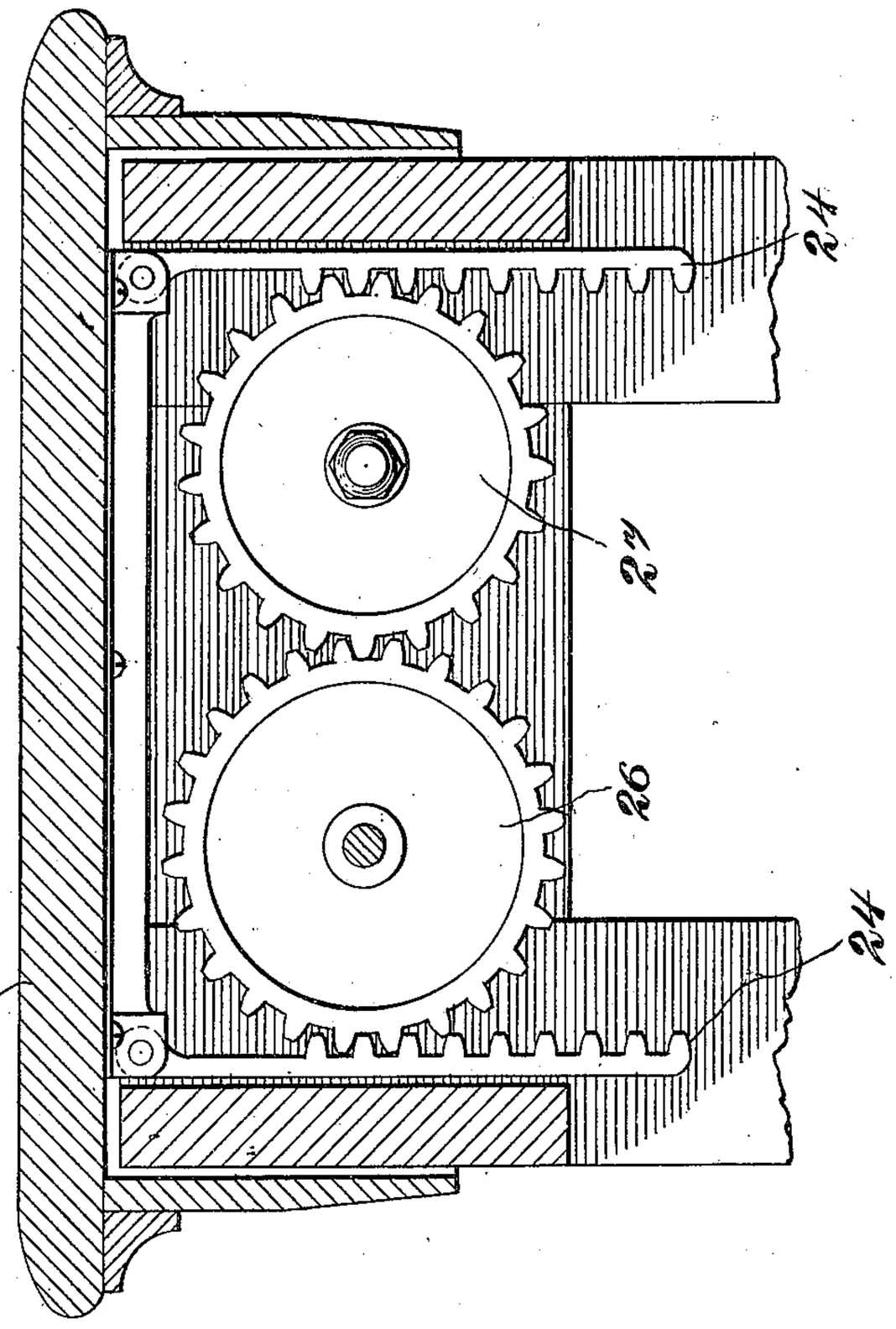

Fig. 2.

WITNESSES

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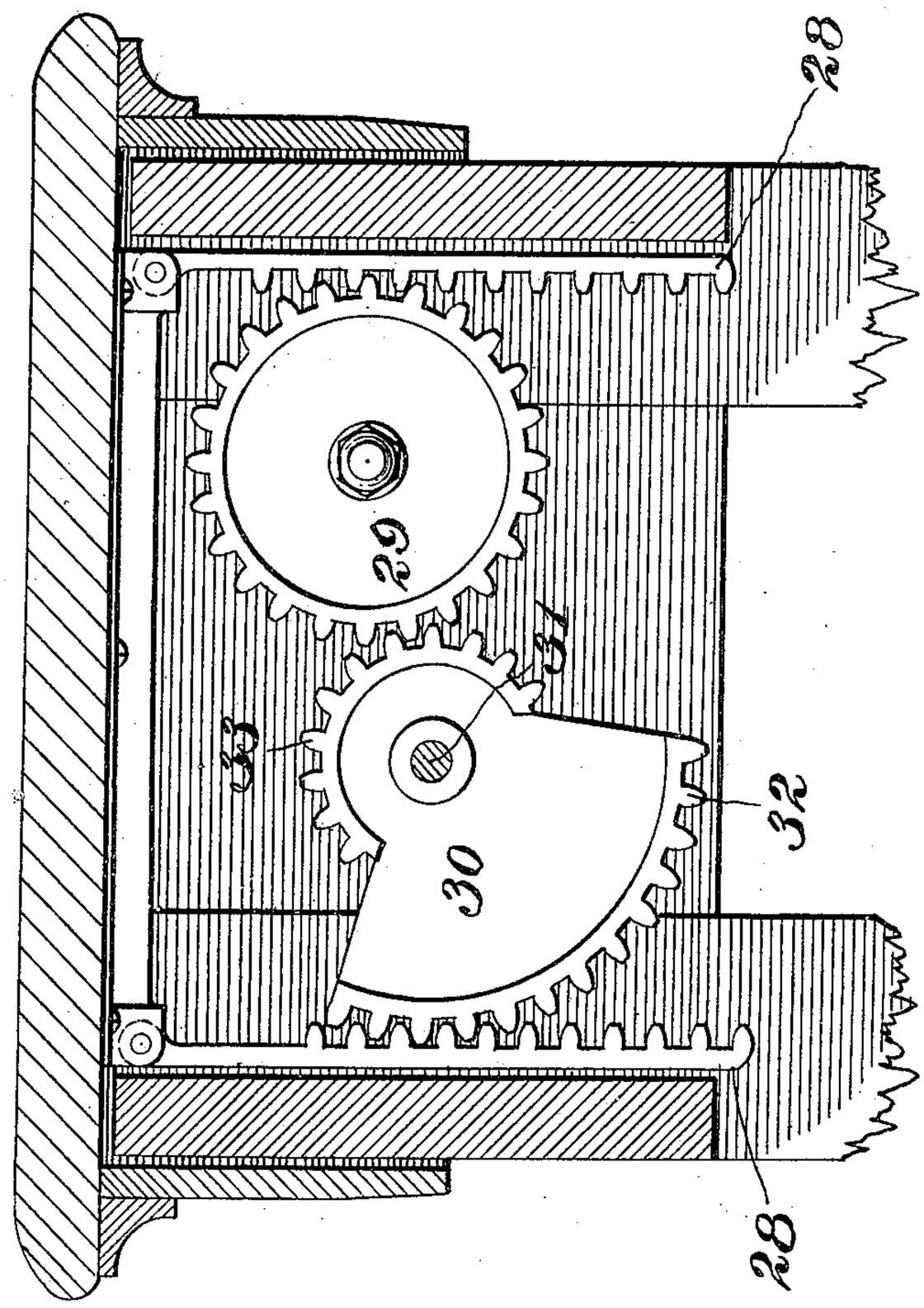
4 SHEETS—SHEET 4.

Fig. 8.



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UNITED STATES PATENT OFFICE.

HENRY S. MAYNARD, OF GLENVIEW, ILLINOIS.

COMBINATION-BENCH.

No. 922,011. Specification of Letters Patent. Patented May 18, 1909.

Application filed January 25, 1907. Serial No. 353,966.

To all whom it may concern:

Be it known that I, HENRY S. MAYNARD, a citizen of the United States, residing at Glenview, in the State of Illinois, have invented certain new and useful Improvements in Combination-Benches, of which the following is a specification.

My invention relates to combination seats, and particularly to seats adapted to be used either as piano seats or pianola seats; and the invention has for its objects: to provide a seat which may be easily changed for use either with a piano or pianola and which after changing may be securely held in adjusted position; to provide a seat which may be moved vertically and tilted by a single operating means; to provide a seat in which the inclination is automatically fixed; and finally to provide a seat with a simple, inexpensive, and reliable operating means. These objects and others which will be apparent to those skilled in the art are accomplished by my invention, one form of which is illustrated in the accompanying drawing in which

Figure 1 is a partial rear elevation and partial section on the line I—I of Figure 2,

Figure 2 is a transverse section on the line 2—2 of Figure 1,

Figure 3 is a partial transverse section taken on the line 3—3 of Figure 1, the bench being shown for use with a piano.

Figure 4 is a section similar to that of Figure 3 but showing the seat of the bench elevated for use in connection with a pianola,

Figure 5 is a detail section showing the ratchet holding means, which section is taken on the line 5—5 of Figure 6,

Figure 6 is a section at right angles to that of Figure 5 and is taken on the line 6—6 of Figure 5,

Figure 7 is a section through a modified form of seat, and

Figure 8 is a section through still another modified form of seat.

Benches for use with pianos and pianolas are quite similar, but differ slightly in that the piano bench is level, while the pianola seat is slightly higher and is tilted, which difference is well recognized by those familiar with the art. My invention is designed to provide a bench which may be used either with a piano or a pianola, and to this end is provided with a vertically movable seat portion, which is not only capable of being elevated for use with a pianola, but is also capable of being tilted to the proper position, in raising.

Referring to the drawing, 7 is the body portion which may be of any improved type, and 8 is the seat which is movable vertically with respect to the body portion and is provided with an overhanging portion 9 adapted to conceal the raising mechanism. The raising mechanism consists of the rack bar 10 pivoted to the under side of the seat at 11, the link 12 provided at one end with the rack 13, and at the other end pivoted at 14 to the downwardly projecting member 15 secured to the under side of the seat, together with the operating means for the rack bar 10 and the link 12, which is the pinion 16 engaging such rack bar on one side and rack 13 on the other side. The link 12 is pivotally supported upon the pivot 17, which pivot 17 engages a slot 18 in the link 12 thus providing for a slight motion longitudinally of such link, which longitudinal motion is necessitated by the fact that the lower end of the member 15 moves in a right line and not in the arc of a circle. Each end of the seat is provided with a lifting mechanism similar to that shown in Figures 3 and 4 and the two ends are connected by means of the operating rod 19 (see Fig. 1) upon which the pinions are keyed. The operating rod 19 is adapted to be rotated and held in position by means of the ratchet mechanism shown in Figures 5 and 6. As here shown the operating handle 20 is secured rigidly to the rod 19 and carries the pawl 21 adapted to engage the teeth 22 on the bracket 23, which bracket is rigidly secured to the body portion of the seat. The handle 20 is preferably located opposite the back of the seat as indicated in Figure 1, and by it the two pinions 16 may be turned to any desired position and held securely in such position. In order that the rear side of the seat may be elevated more rapidly than the front side when it is desired to use the seat with a pianola, the pivot 17 for the link 12 is placed nearer to the pivot 14 than to the rack 13 so that on the revolution of the operating pinions 16 the rack bars 10 will be raised a greater distance than the members 15 which are operated by the short end of the link 12. The placing of the lever 12 and its gear 13 at the angle indicated in Figure 4 also increases the tilting, as a part of the movement of the gear 13 and the opposite end of the lever is lateral, thus reducing the vertical movement. The length of the

two lever arms on the link 12 are so proportioned that exactly the right tilt is secured when the seat is raised to the position of Figure 4. The seat is lowered by simply pressing in the pawl 21 and allowing the parts to move down by gravity, and in raising the seat it will be seen that it is not necessary to use the handle 20, as the top of the seat may be grasped and lifted to its desired position, the end of the pawl sliding over the teeth 22 until the seat reaches its proper height.

It will be seen from the foregoing that the tilt of the seat is automatically provided for, and that one adjusting means accomplishes the double function of elevating the seat and tilting it to the desired angle. It will also be apparent that this operating means is of a very simple and inexpensive kind and one which will be very effective for the purpose intended. Various modifications, which will be apparent to those skilled in the art, might be made without departing from the spirit of the invention as defined in the appended claims, which invention requires only that a single operating means be employed for raising and tilting the seat simultaneously. It will also be apparent that the extent of tilting of the seat is dependent upon the relative distances between the pivot 17 and the pivot 14 and rack 13, and that these distances may be varied as desired, to modify the amount of tilting.

In Figure 7 a modified form of seat elevating mechanism is shown. In this device a second spur gear and rack are substituted for the links 12 and 15 of the device shown in Figures 3 and 4. Referring to the drawing, 24, 24 are rack bars which are secured to the bottom of the seat 25, 26 and 27 are spur gears, which gears mesh with each other and the rack 24 as shown, the operating mechanism for turning the gear 26 and holding the seat in adjusted position being the same as in the first form of device shown.

In Figure 8 is shown still another form of seat elevating mechanism. The seat is provided with two racks 28, 28 with which the gears 29 and 30 mesh, the gear 30 being mounted on a transverse operating shaft 31 whose turning and holding means are the same as that for the operating shaft 19 in the first form of device shown. The gear 30 is provided with two sets of gear teeth 32 and 33 respectively, the first set 32 engaging the rack 28, and the second set 33 engaging the gear 29. As the radius of the gear 33 is less than that of the gear 32, it will be seen that on the rotation of the shaft 31 the left hand side of the seat will rise more rapidly than the right hand side.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent, is the following:

1. A combination bench, comprising a body portion, a relatively movable seat, independent operating links connected to the opposite sides of the bench, operating means engaging the links and adapted to simultaneously raise the links at different speeds whereby the seat is raised and tilted, and means for locking the seat in raised position.

2. A combination bench, comprising a body portion, a relatively movable seat, an operating gear mounted on the body portion, a rack secured to one side of the seat and engaging the gear, a link pivotally connected to the other side of the seat at one end and provided with a rack at the other end engaging the gear, a pivotal support for the link located nearer one end thereof than the other, and means for holding the seat in adjusted position.

3. A combination bench, comprising a body portion, a relatively movable seat, an operating pinion mounted on the body portion, means for rotating the pinion and holding it in adjusted position, a rack secured at its upper end to one side of the seat and engaging the pinion, a link connected pivotally at one end to the other side of the seat and provided at the end with a rack engaging the pinion, a pivotal support for the link located intermediate the ends thereof and means for rotating the pinion and holding it in adjusted position.

4. A combination bench, comprising a body portion, a relatively movable seat, an operating gear mounted on the body portion, a rack secured to one side of the seat and engaging the gear, a link pivotally connected to the other side of the seat at one end and provided with a rack at the other end engaging the gear, a pivotal support for the link intermediate the ends thereof, and means for holding the seat in adjusted position.

In testimony whereof I have hereunto signed my name in the presence of the two subscribed witnesses.

HENRY S. MAYNARD.

Witnesses:
PAUL CARPENTER,
JAY HARRISON BROWN.