Sept. 13, 1932. E. P. HAMILTON 1,876,922

TABLE

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Fig. 1.

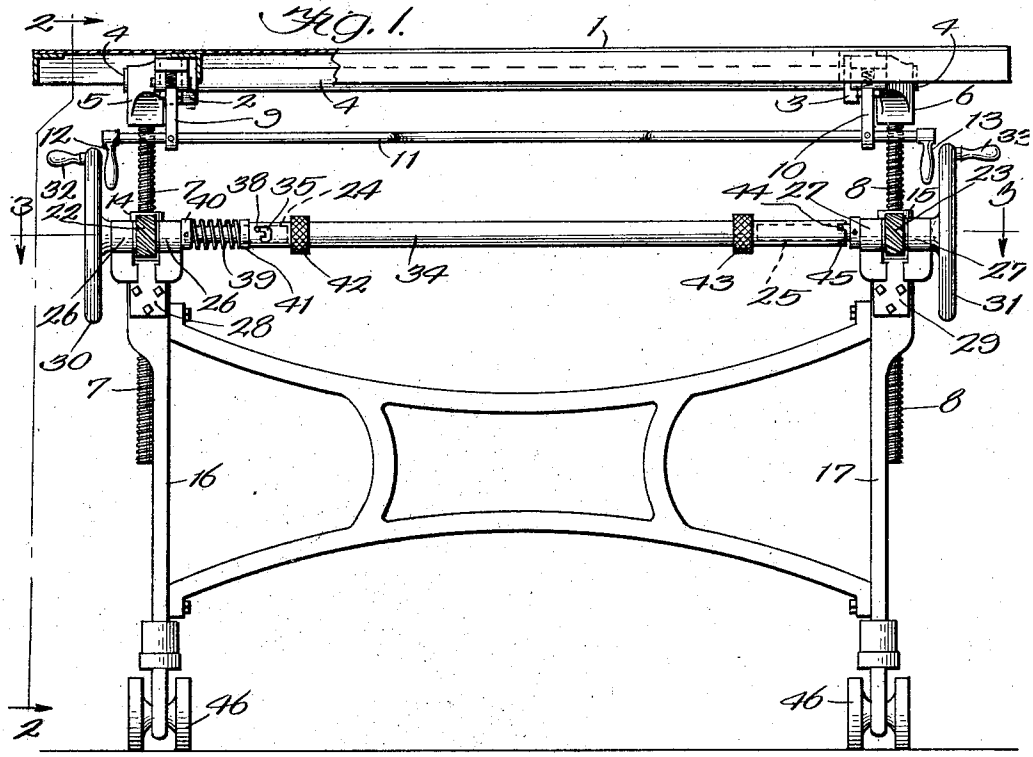
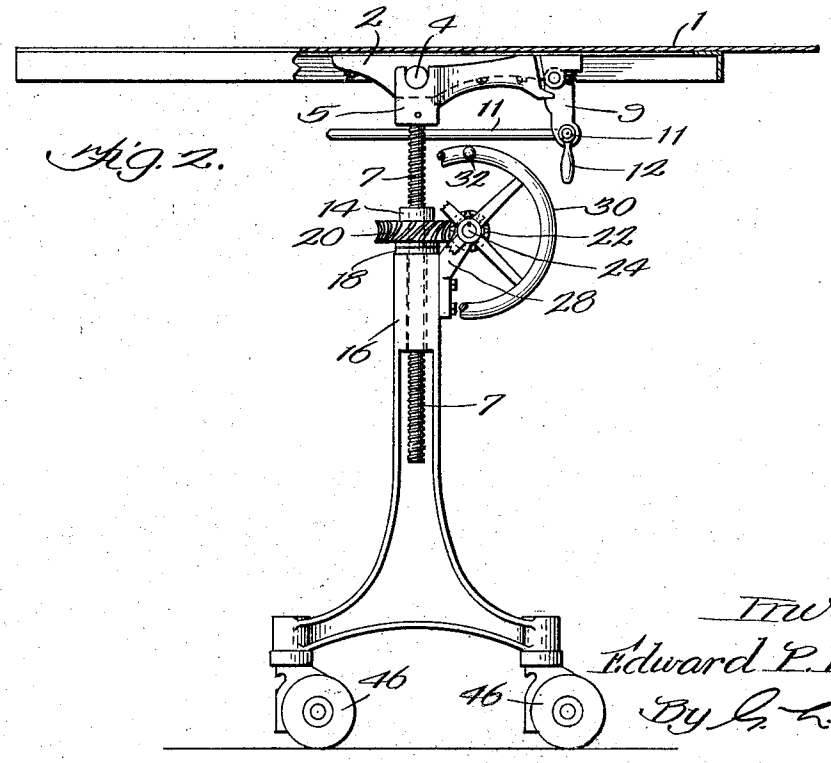


Fig. 2.



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TABLE

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Fig. 3.

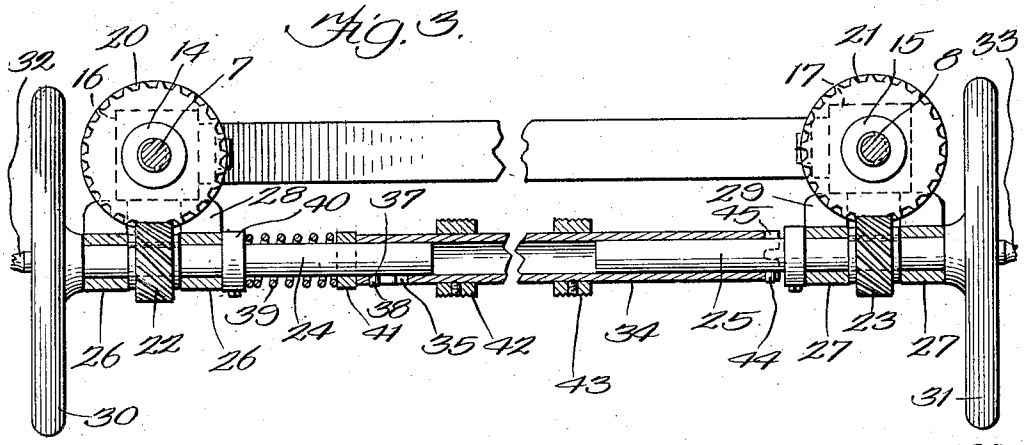


Fig. 4.

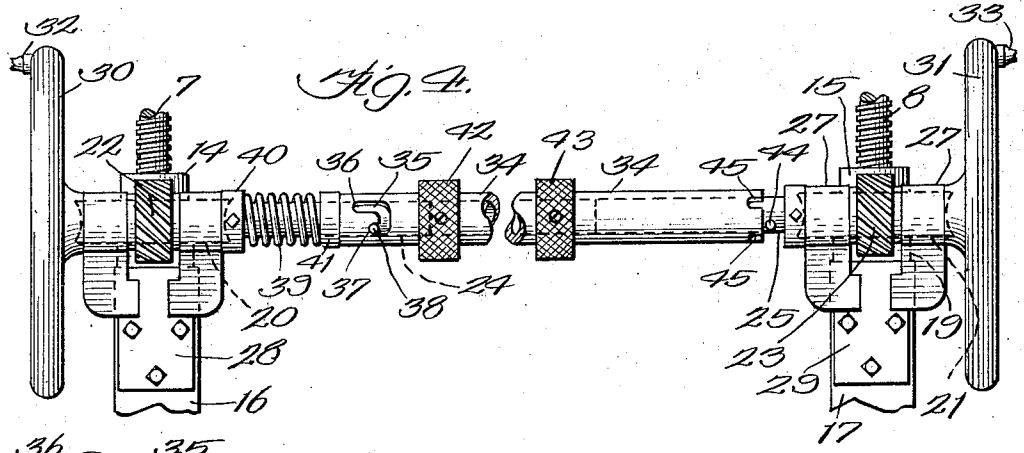
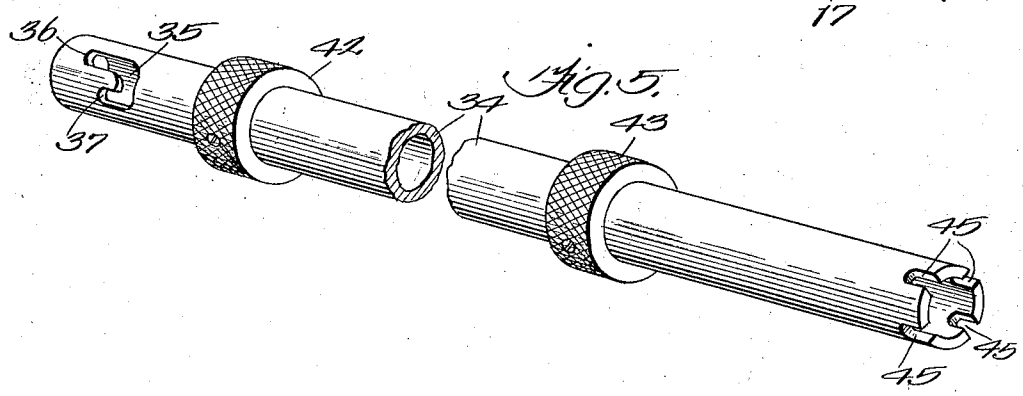


Fig. 5.



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Patented Sept. 13, 1932 1,876,922

UNITED STATES PATENT OFFICE

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TABLE

Application filed February 8, 1930. Serial No. 426,851.

My invention relates to tables whose tops are provided with means for adjusting their levels. The table of my invention is of particular service when it is provided with supporting wheels to constitute it a truck. Such a truck is useful in the transfer of forms between printing presses and stationary form supporting benches or tables.

Patent No. 912,589, dated February 16, 1909, discloses a truck for supporting printer's forms that is inclusive of a substantially flat frame portion arranged in a vertical plane and mounted upon rollers, a table top trunnioned on said frame and adapted to swing down against one side thereof when not in use, an arm for supporting the table top when in horizontal position, and means for adjusting the table top vertically.

In the device of the aforesaid patent two adjusting devices are provided, one at each of two opposite sides of the table. Either adjusting device is alone operated to secure swinging adjustment of the table top thereat and both adjusting devices must be operated to secure the adjustment of the level of the table top throughout. It is the object of my invention to provide means for bodily moving the table top to adjust its level throughout or to swing the table top to accurately bring it to horizontal or other selected position and actuating means for effecting either of these adjustments of the table top, as desired. It is preferable to provide one such actuating means at each of two opposite sides of the table so that the operator need not pass from one side of the table to the other to effect the desired adjustment. In carrying out the invention in the preferred way, I provide two gear elements one at each of two opposite sides of the table and in supporting relation to the table top, other gear elements complemental to the foregoing gear elements and in actuating relation thereto, actuating means for said complemental gear elements and coupling means adjustable from either of the aforesaid two opposite sides of the table, whereby the complemental gear elements may be connected when it is desired to effect bodily movement of the table top and permitting said complemental gear elements to be separated when it is desired to effect swinging adjustment of the table top.

I will explain my invention more fully by reference to the accompanying drawings in which Fig. 1 is an end view illustrating the preferred embodiment of the invention, parts being shown in section; Fig. 2 is a sectional view on line 2—2 of Fig. 1; Fig. 3 is a sectional view on line 3—3 of Fig. 1, but on a larger scale, and with parts broken away; Fig. 4 is a view in elevation of the structure as illustrated in Fig. 3; and Fig. 5 is a perspective view of a coupling member which enters into the construction.

The table illustrated is inclusive of a table top 1, preferably made of sheet steel, and two mounting blocks 2 and 3 at opposite sides of the table and secured to and beneath the table top. A shaft 4 passes through these mounting blocks and is journaled in open bearings 5, 6. These bearings are respectively carried upon two gear elements 7 and 8 that are illustrated in the form of upright threaded rods. These bearings are at the upper ends of these rods and are fixed thereto so that the rods are prevented from having rotation. The table top is normally maintained in fixed position with respect to the bearings by means of latches 9 and 10 which are provided upon a common rod 11 having handles 12 and 13 at their ends. When either handle is turned in a suitable direction both latches are removed from holding engagement with said bearings to permit the table top to be swung to an oblique position. Normally, however, the latches serve to hold the table top in its generally horizontal position.

Nuts 14 and 15 are screwed upon the threaded rods and are supported by the legs or standards 16 and 17 and thus indirectly support the threaded rods and the table top that is fixed upon these rods through the intermediation of the mounting blocks 2 and 3. These nuts are mounted on step ball bearings 18 and 19 which are carried upon the upper ends of the standards or legs 16 and 17. Said nuts constitute the hubs of worm wheels 20 and 21 which are in mesh with worm wheels 22 and 23, respectively.

These worm wheels are fixed upon coaxial stub shafts 24 and 25 which are journaled within bearings 26 and 27. There is a pair of journals 26 and a pair of journals 27, the corresponding worm wheels 22, 23 being interposed between the journals of each pair. Brackets 28 and 29 are carried by the standards or legs 16 and 17 and carry said bearings 26, 27. Operating levers are provided upon said stub shafts, these levers being preferably in the form of wheels 30 and 31 that carry handles 32 and 33 upon their peripheries. When either wheel is turned the portion of the table top contiguous thereto is raised or lowered according to the direction in which such wheel is moved. The gear wheels 22 and 23 constitute gear elements that are complemental to and in mesh with the gear wheels 20 and 21 and, through the intermediation of the latter two gear wheels, are complemental to the upright threaded rods 7 and 8. Whenever either wheel is turned, the gear element 22 or 23, permanently coupled therewith, is also turned whereby the nut 14 or 15 is caused to rise or lower along the corresponding supporting table top supporting rod 7 or 8. I provide a coupling device whereby the gear elements 22 and 23 may be united to be turned when either wheel 30 or 31 is turned. This coupling device is preferably in the form of a sleeve 34 which receives the inner ends of the stub shafts 24 and 25 and may be adjusted into one position to couple said stub shafts and the gear elements 22 and 23 provided thereon or into another position in which said shafts are uncoupled. In the preferred embodiment of the invention I provide a bayonet slot 35 at one end of the sleeve 34, this bayonet slot having two seats 36 and 37 which are separated longitudinally of said sleeve as well as transversely. A bayonet pin 38 is carried by the stub shaft 24 and is engageable with either of the aforesaid bayonet seats. A coiled spring 39 surrounds the shaft 24 and is compressed between a collar 40 fixed upon this stub shaft and a collar 41 which is loose upon the stub shaft. The latter collar presses against the left hand end of the sleeve 34 to press the bayonet seat 36 or the bayonet seat 37 into engagement with the bayonet pin 38 according to the position in which the sleeve 34 is rotatively adjusted as by means of one of the knurled collars 42, 43 which are fixed upon the sleeve and either of which may be turned to turn the sleeve to the extent desired to bring the bayonet pin into alignment with the selected bayonet seat. The collar 42 is adjacent the wheel 30 and the collar 43 is adjacent the wheel 31, so that when the operator is at either wheel he may adjust the coupling sleeve. When the seat 37 upon the coupling sleeve receives the bayonet pin 38 the sleeve 34 is held in its left hand position in which the right hand end of the sleeve is withdrawn from engaging relation with the pin 44 that is provided upon the stub shaft 25. When the bayonet seat 36 is brought into alignment with the bayonet pin 38, the spring 39 will move the sleeve 34 to the right to bring one of the notches 45 in the right hand end of the sleeve into position to receive the pin 44, when this pin is turned into register with such notch. When this adjustment has been effected, both of the stub shafts may be operated from either wheel to effect the bodily upright movement of the table top. When this upright movement has been effected to the desired extent, either side of the table top may be given a swinging movement by the operation of the hand wheel 30 thereat but following movement of the sleeve 34 to the left to separate the gear elements 22 and 23. The standards or legs 16 and 17 may be provided with casters 46, whereby the table is constituted a truck, though the invention is not to be limited to such an embodiment.

Changes may be made without departing from the invention.

Having thus described my invention, I claim:

1. The combination with a table inclusive of a table top and supporting legs for such top; of upright gear elements carried by said legs and carrying the table top; gear elements complemental to the aforesaid gear elements and in operating relation thereto; a lever at one side of the table and in actuating relation with one of said complemental gear elements; and spring pressed means for separably coupling said complemental gear elements whereby both of said complemental gear elements may be operated together to effect upright movement of the gear elements pertaining thereto and the bodily upright movement of the table top, this coupling member being adjustable to an uncoupling position to permit upright movement of one of the upright gear elements alone and the corresponding swinging adjustment of the table top.

2. The combination with a table inclusive of a table top and supporting legs for such top; of upright gear elements carried by said legs and carrying the table top; gear elements complemental to the aforesaid gear elements and in operating relation thereto; two levers, one at each of two opposite sides of the table and individual to and in actuating relation with one of said complemental gear elements; and unitary means for separably coupling said complemental gear elements whereby both of said complemental gear elements may be operated together to effect upright movement of the gear elements pertaining thereto and the bodily upright movement of the table top, this coupling member being adjustable to an uncoupling

position to permit upright movement of one of the upright gear elements alone and the corresponding swinging adjustment of the table top.

3. The combination with a table inclusive of a table top and supporting legs for such top; of upright gear elements carried by said legs and carrying the table top; gear elements complemental to the aforesaid gear elements and in operating relation thereto; a lever at one side of the table and in actuating relation with one of said complemental gear elements; and means for separably coupling said complemental gear elements, wherein the upright gear elements are in the form of threaded rods which are in normally fixed relation with the table top and wherein nuts are threaded upon said rods and are mounted to turn upon the table legs and also carry worm wheels which are in mesh with other worm wheels that constitute the gear elements that are complemental to the threaded rods and which the coupling member may separably connect.

4. The combination with a table inclusive of a table top and supporting legs for such top; of upright gear elements carried by said legs and carrying the table top; gear elements complemental to the aforesaid gear elements and in operating relation thereto; a lever at one side of the table and in actuating relation with one of said complemental gear elements; and means for separably coupling said complemental gear elements, wherein the upright gear elements are in the form of threaded rods which are in normally fixed relation with the table top and wherein nuts are threaded upon said rods and are mounted to turn upon the table legs and also carry worm wheels which are in mesh with other worm wheels that constitute the gear elements that are complemental to the threaded rods and which the coupling member may separately connect and wherein the coupling member is in the form of a sleeve which receives the ends of stub shafts that are provided for the second mentioned worm wheels and which sleeve is constructed to have engagement with one stub shaft at two places spaced apart longitudinally of this shaft and is engageable with the other stub shaft in one of these positions and is free of engagement with this stub shaft in the other of these positions.

5. The combination with a table inclusive of a table top and supporting legs for such top; of upright gear elements carried by said legs and carrying the table top; gear elements complemental to the aforesaid gear elements and in operating relation thereto; two levers, one at each of two opposite sides of the table and individual to and in actuating relation with one of said complemental gear elements; and means for separably coupling said complemental gear elements, wherein the upright gear elements are in the form of threaded rods which are in normally fixed relation with the table top and wherein nuts are threaded upon said rods and are mounted to turn upon the table legs and also carry worm wheels which are in mesh with other worm wheels that constitute the gear elements that are complemental to the threaded rods and which the coupling member may separably connect.

6. The combination with a table inclusive of a table top and supporting legs for such top; of upright gear elements carried by said legs and carrying the table top; gear elements complemental to the aforesaid gear elements and in operating relation thereto; two levers, one at each of two opposite sides of the table and individual to and in actuating relation with one of said complemental gear elements; and means for separably coupling said complemental gear elements, wherein the upright gear elements are in the form of threaded rods which are in normally fixed relation with the table top and wherein nuts are threaded upon said rods and are mounted to turn upon the table legs and also carry worm wheels which are in mesh with other worm wheels that constitute the gear elements that are complemental to the threaded rods and which the coupling member may separably connect and wherein the coupling member is in the form of a sleeve which receives the ends of stub shafts that are provided for the second mentioned worm wheels and which sleeve is constructed to have engagement with one stub shaft at two places spaced apart longitudinally of this shaft and is engageable with the other stub shaft in one of these positions and is free of engagement with this stub shaft in the other of these positions.

7. A printer's form truck comprising, in combination, supporting legs; a table top trunnioned upon said legs; means at each side of the truck for raising or lowering the sides of the table top simultaneously; and adjustable means for coupling said first mentioned means, said adjustable means comprising a member having a portion accessible from each side of the truck adjacent each of said first mentioned means, whereby each of said first mentioned means may be used selectively to adjust the level of both sides of the table top or of its adjacent side.

8. A printer's form truck comprising, in combination, supporting legs; a table top trunnioned upon said legs; means at each side of the truck for raising or lowering the sides of the table top simultaneously; and spring pressed adjustable means for coupling said first mentioned means, said adjustable means comprising a member having a portion

accessible from each side of the truck adjacent each of said first mentioned means, whereby each of said first mentioned means may be used selectively to adjust the level of both sides of the table top or of its adjacent side.

In witness whereof, I hereunto subscribe my name.

EDWARD P. HAMILTON.