(No Model.) 3 Sheets—Sheet 1.

J. J. WOOD.

ADJUSTABLE MACHINE BASE.

No. 526,066. Patented Sept. 18, 1894.

FIG. 1.

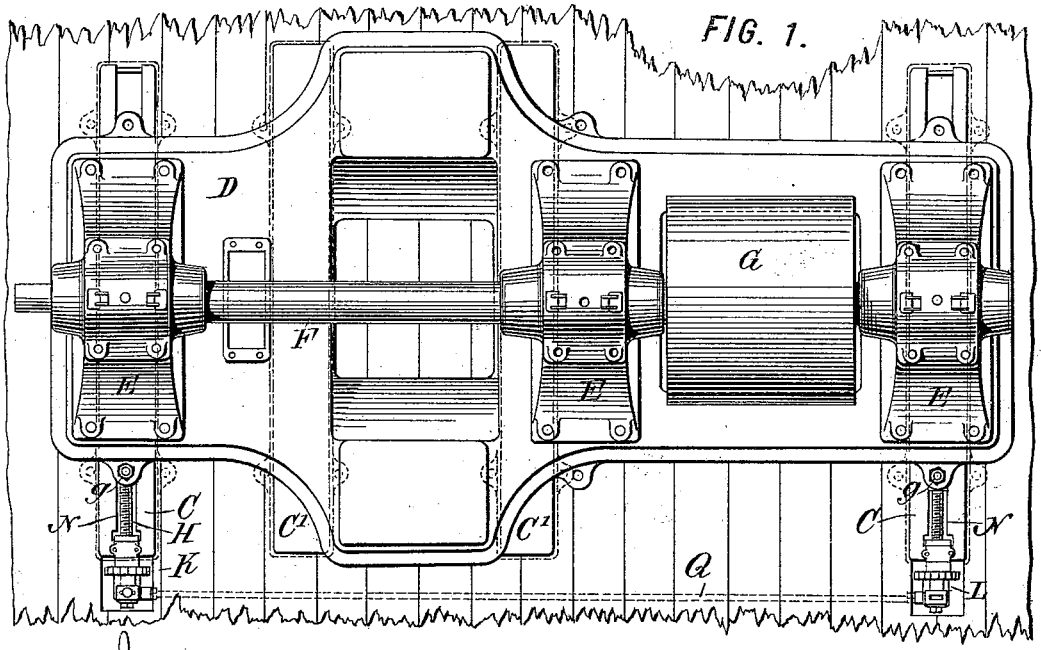


FIG. 2.

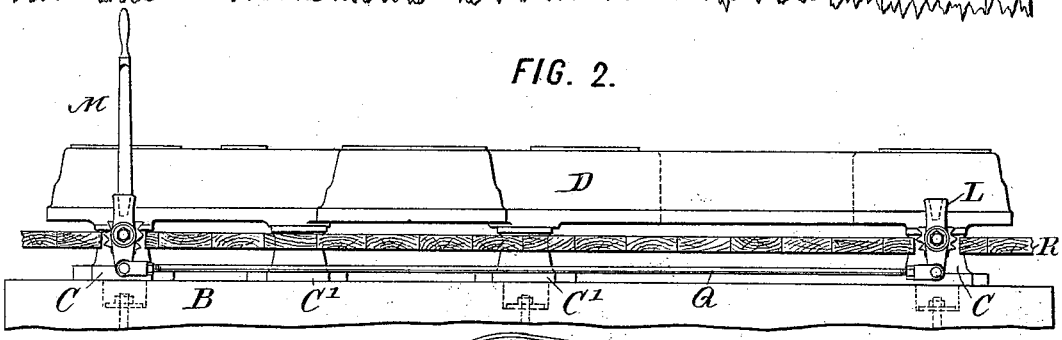
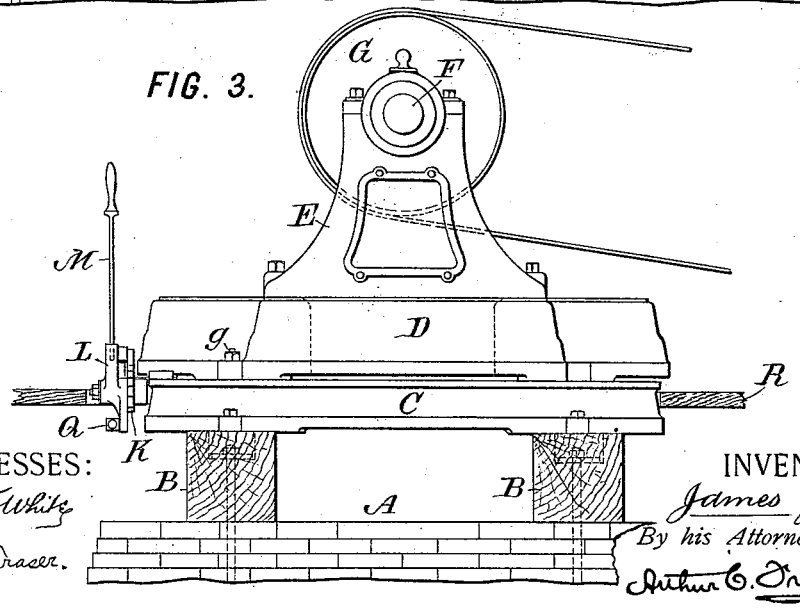


FIG. 3.



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By his Attorneys,
Arthur C. Fraser & Co

(No Model.) 3 Sheets—Sheet 2.

J. J. WOOD.

ADJUSTABLE MACHINE BASE.

No. 526,066. Patented Sept. 18, 1894.

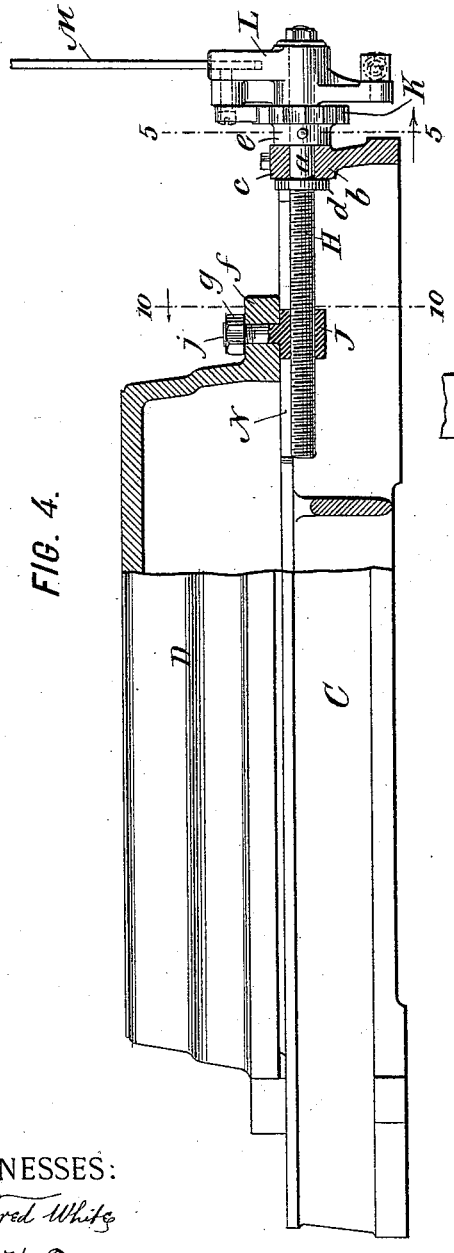


FIG. 4.

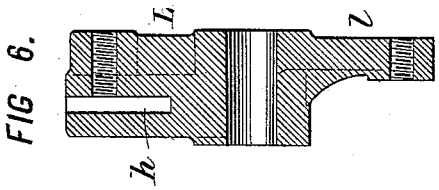


FIG 6.

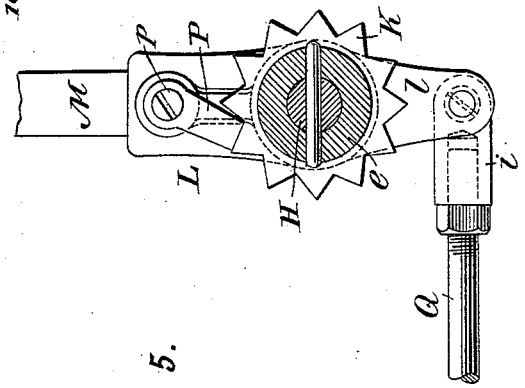
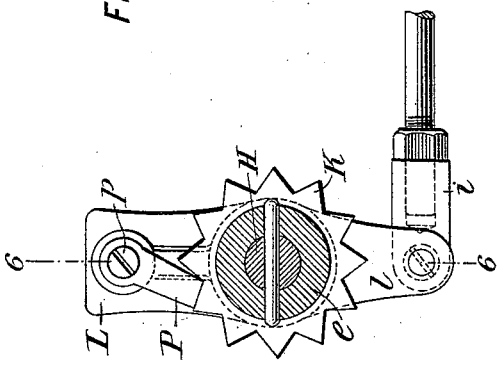


FIG. 5.



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(No Model.) 3 Sheets—Sheet 3.

J. J. WOOD.

ADJUSTABLE MACHINE BASE.

No. 526,066. Patented Sept. 18, 1894.

FIG. 7.

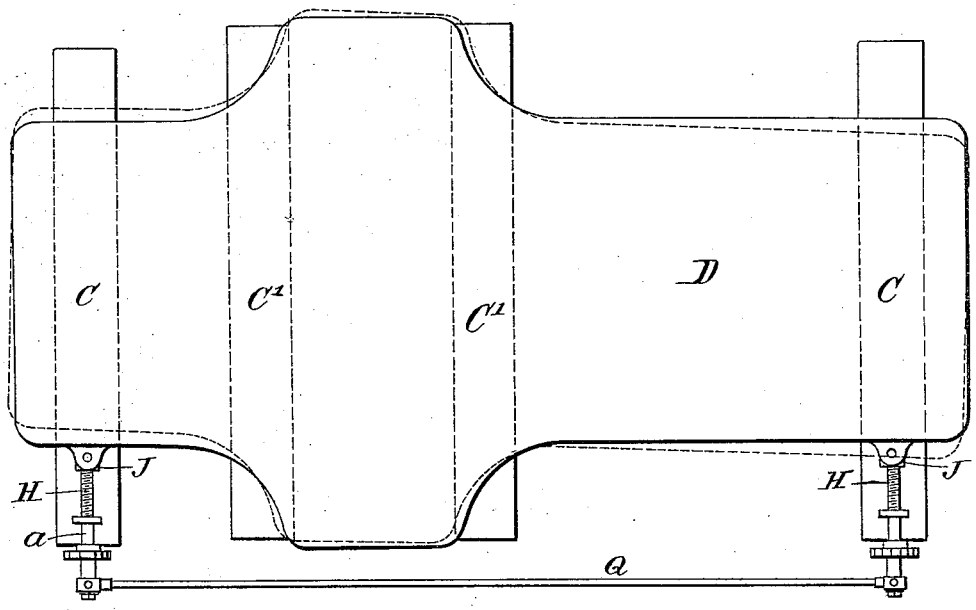


FIG. 9.

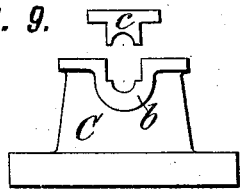


FIG. 10.

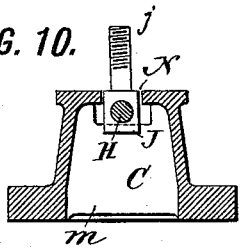


FIG. 8.

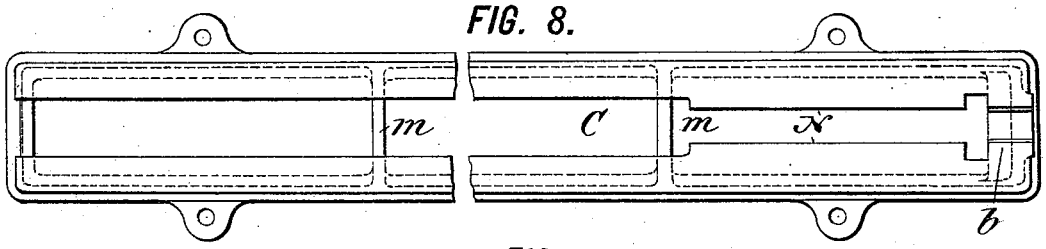
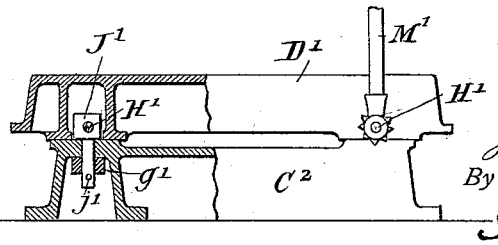


FIG. 11.



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INVENTOR:
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UNITED STATES PATENT OFFICE.

JAMES J. WOOD, OF FORT WAYNE, INDIANA.

ADJUSTABLE MACHINE-BASE.

SPECIFICATION forming part of Letters Patent No. 526,066, dated September 18, 1894.

Application filed March 17, 1894. Serial No. 503,968. (No model.)

To all whom it may concern:

Be it known that I, JAMES J. WOOD, a citizen of the United States, residing in Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Adjustable Machine-Bases, of which the following is a specification.

This invention relates to the construction of machine bases for machines driven by belts, designed to facilitate the adjustment of the machine, to regulate the tension of the belt, and to determine the proper running of the belt on the pulley.

My invention improves and cheapens the construction of adjustable machine bases, and imparts to them new capabilities.

My invention is especially designed and adapted for the support of large and heavy dynamo electric machines.

Figure 1 of the accompanying drawings is a plan of the machine base with its rotary shaft, embodying my invention. Fig. 2 is a side elevation of the base. Fig. 3 is an end elevation of the machine and base shown in Fig. 1. Fig. 4 is an elevation of the opposite end on a larger scale and partly in vertical section. Fig. 5 is a detail view of the ratchet operating device in section on the lines 5—5 in Fig. 4, and on a larger scale. Fig. 6 is a mid-section of one of the rockers cut on the line 6—6 in Fig. 5. Fig. 7 is a diagrammatic plan illustrating the adjustability of the machine base. Fig. 8 is a plan of one of the sub-bases on the same scale as Fig. 4. Fig. 9 is an end elevation thereof; and Fig. 10 is a transverse section cut on the line 10—10 in Fig. 4. Fig. 11 is a side elevation partly in section of a modified construction.

Referring to the drawings, I will proceed to describe the identical construction shown which constitutes one example or embodiment of my invention.

Let A (Fig. 3) designate a foundation of masonry of suitable depth or solidity, and B B two heavy beams laid lengthwise across the top thereof, and bolted down to the masonry. Laid across these beams at suitable intervals are four transverse iron girders or sub-bases lettered respectively C C, C′ C′. These are all planed flat and smooth on their upper surfaces, which are leveled to coincide in the same horizontal plane. Laid on these sub-bases is the main base D of the machine, which on its under surface is formed with seats or rests where it lies over the sub-bases, these seats being planed off to a true horizontal plane, so that the weight of the base is distributed with approximate equality over the four sub-bases.

The base D is shown in the form of a large plate, made hollow as shown in Fig. 4, and having suitable holes or openings through it as the requirements of the particular machine may determine. The particular base D shown is that for an alternating current dynamo of my invention, being the one illustrated in my Patent No. 512,424, dated January 9, 1894. Of this dynamo I have shown only the base, the three pedestals E E E mounted thereon, and the armature shaft F carried in bearings on these pedestals, and the belt pulley G on this shaft. The other parts of the dynamo may be found if desired in my said patent. The main base D of the machine being placed upon the transverse sub-bases C C′, may be freely slid around on these sub-bases to different positions.

Fig. 7 shows diagrammatically one position of the base in full lines and another position thereof in dotted lines, the base having been slid or swung on the supporting sub-bases so that it is somewhat skewed. This capability of sliding the base to various positions on the sub-bases is due to the absence of slideways or guides of any sort such as are ordinarily provided in machinery for insuring a parallel motion. The capacity for universal motion thus acquired is practically of great advantage, as I will proceed to explain.

It frequently happens in a machine driven by a belt, that the belt will stretch unevenly and will consequently tend to run off one end of the pulley. The usual remedy for this is to apply a layer of leather or other fabric to the face of the pulley near one end thereof so as to enlarge the diameter of this end of the pulley sufficiently to correct this tendency. This method, however, is troublesome and unworkmanlike, and involves stopping the machine for a considerable time, which in the case of dynamo electric machines is often attended with serious disadvantage. By my invention this difficulty is remedied by swinging either end of the main base D

sidewise so as to throw the shaft axis into a position sufficiently oblique to the longitudinal direction of the belt to counteract the abnormal tendency of the belt to run to one side. This movement can be effected without stopping the machine or interfering in the least with its running. My invention also provides improved means for adjusting the base in parallel direction so as merely to tighten or loosen the belt. The particular means which I have devised for accomplishing these adjustments I will now describe. At or near each end of the main base D, it is engaged by an adjusting screw H extending longitudinally of one of the sub-bases C, and held in a journal bearing, so as to be restrained from longitudinal movement, as best shown in Fig. 4, where *a* is the journal of the screw held in a bearing *b* formed in the end of the cast metal sub-base C, and confined in place by a removable bearing cap *c*, this being best shown in Fig. 9. The bearing *b* enters between a collar *d* formed on the screw on one side of the journal and the hub *e* of a ratchet wheel fixed on the screw on the opposite side. The threads of the screw engage female threads in a block or nut J, which is formed with a screwthreaded neck or stem *j* extending upwardly from it and passing freely through a hole in an ear *f* formed on the main base D, a nut *g* being screwed on the threaded stem to lock the nut to the base. By simultaneously revolving the two screws H H in either direction, the two nuts J J are propelled simultaneously and at equal speed, and consequently the entire base D is slid over the sub-bases laterally to itself, so as to either stretch or slacken the driving belt. For conveniently effecting this simultaneous movement of the two screws, they are connected together in the following described manner.

To each screw is attached a ratchet-wheel K, preferably by driving a transverse pin or key through the hub *e* of this ratchet wheel and the screw, as shown in Fig. 5. The outer end of the neck or journal of the screw projects beyond this ratchet wheel, and on it is freely or loosely mounted a rocker L consisting of a suitable casting shown detached in Fig. 6. Each of these rockers has a socket *h*, into either of which may be thrust the end of an operating lever M. A pawl or dog P is freely pivoted on a pin or stud *p* so that its end may drop into engagement with a tooth of the ratchet K. The ratchet and pawl are double acting, so that when the pawl stands at the left as shown in Fig. 5 it acts in one direction, but by throwing it over the top until it drops at the other side, it will equally engage the ratchet teeth to turn the screw in the opposite direction. Each rocker L has a downwardly projecting arm *l*, and these two arms are connected together by a connecting bar Q, which is adjustable in length by means of screw-threaded ends screwing into socket pieces *i i*, and locked therein by lock nuts.

To tighten or loosen the belt the operating lever M is dropped into the socket *h* in either of the rockers L, and the two pawls P P being first both thrown to the side to which it is desired to turn the screws, the operating lever is then pumped or rocked from side to side, the motion being communicated from one rocker L through the rod Q to the other, so that both pawls work simultaneously against the ratchets to turn the screws intermittently and to like extent in the same direction. The base D is thus moved bodily with a parallel motion. The base is guided in this movement solely by the nuts or blocks J J, which slide loosely in open slots or guideways N, best shown in Fig. 8, formed in the respective sub-bases C C. The opposite sides of the nut J being flat, enter between the opposite faces of this guideway in the manner shown in Fig. 10. There is thus no necessity for planing or finishing any guiding surfaces except the opposite side walls of the guideways N N in the two sub-bases C C, and the two opposite sides of the nuts or blocks J J.

In case it is desired to swing the machine to an oblique position in order to counteract the running off of the belt, it is only necessary to throw one of the pawls P entirely out of action and turn the other screw alone in the proper direction by means of the other pawl, whereupon the base D will swing around the nut J of the screw which is not driven, and which nut consequently remains a fixed point serving as a pivot; or one pawl may be thrown to one side and the other pawl to the opposite side, so that the two screws may be driven intermittently in opposite directions, thereby drawing one end of the base forward and pushing the other end back, in the manner shown by the dotted lines in Fig. 7. In case any but a very slight obliquity is to be thus imparted to the base, it is necessary first to loosen the nuts *g g* which clamp the nuts J J to the base, and after the proper adjustment has been made, these nuts should be again tightened. This adjustment like the other can be made without stopping the machine, and indeed is best made while the machine is running, in order that the behavior of the belt may be noted as the adjustment is made.

The end sub-bases C C are the only ones provided with the adjusting devices, the intermediate bases C′ C′ being designed solely as additional supports for the weight of the main base. The number of such supports will vary according to the size and weight of the machine. For small machines the intermediate sub-bases C′ may be wholly omitted, the entire weight in such case being borne by the two end sub-bases C C. These of course may be mounted at varying distances apart. The preferred construction of the sub-bases is that shown in Figs. 8, 9, and 10, they being castings with an outer shell of cross-section shown in Fig. 10, a flat bearing face on top, and a flat base flanged and strengthened by

transverse walls at the opposite ends, and by occasional transverse partitions *m m*. It is an important advantage of my invention that the sub-bases C C′ may be laid without any exact alignment, the only important point being to bring their top surfaces to a true level.

Another feature of my invention is the arrangement of the sub-bases to extend beneath or through the floor, the position of the latter being indicated best in Figs. 2 and 3, at R. The floor is laid after the sub-bases are mounted in position, and is fitted around them so that they project up very slightly above the floor, holes being left in the floor for the rockers L L to work through. The floor thus comes up to just below the bottom of the main base D, so that the attendant can easily get at the machine without stumbling over the sub-bases which necessarily project beyond the width of the main base. The connecting bar Q extends thus beneath the floor where it is entirely out of the way, which is also a new feature.

It will be understood that the several sub-bases C C, &c., constitute essentially parts of one single sub-base, which might be continuous, but which for convenience of practical construction is divided into sections or transverse girders. In Fig. 11 I have shown the sub-base constructed as one undivided or integral casting C^2 formed with seats or rests on its upper side at suitable intervals for supporting the main base D′. This construction is well adapted to smaller machines than that illustrated in the preceding figures. In this figure I have also shown a further modification consisting in the reversal of position of the adjusting screws and nuts, the screws H′ being mounted in bearings in the main base D′, which base is also formed with longitudinal slots or guideways corresponding to the guideways N in the preceding figures. The screws engage nuts, one of which is shown at J′, each of which is formed with a shank *j′* passing down through a hole in the sub-base, and having a nut or head *g′* fixed on it beneath to prevent its lifting out of place. The main base is guided by the sides of the nut or block J′ engaging loosely between the side faces of the slot or guideway, the construction being essentially the reverse of that previously described.

My invention may be otherwise modified in unessential details without departing from its essentially novel features. For example instead of adjusting the main base by means of screws, other adjusting devices known in the mechanic arts as equivalents thereof may be substituted; also, instead of connecting the screws or adjusting devices for simultaneous operation by means of ratchets, pawls and a connecting bar Q, any other connecting device known in the art may be used. In the claims I shall refer to the sub-base sections C C, &c., as constituting together essentially a single sub-base.

I claim as my invention the following-defined novel features, substantially as hereinbefore specified, namely:

1. The combination, with the main-base of a machine having a rotary shaft and belt pulley, of a sub-base on which the main base rests, both being finished in a horizontal plane on their meeting faces, whereby the main base may be slid or swung to oblique positions on the sub-base, in order to counteract any tendency of the belt to run off the pulley, and means for adjusting the main-base and holding it in any desired position.

2. The combination with the main-base of a machine having a rotary shaft and belt pulley, of a sub-base on which the main-base rests, both being finished in a horizontal plane on their meeting faces, whereby the main base may be slid or swung to oblique positions on the sub-base, in order to counteract any tendency of the belt to run off the pulley, and independent adjusting devices applied to opposite ends of the main base whereby they may be moved alike or differently to impart either a parallel or oblique movement to the main base.

3. The combination of main-base and sub-base, finished in a horizontal plane on their meeting faces whereby the main base may be swung to oblique positions, the one formed with a guideway extending transversely of the main base and the other with a swiveled block entering said guideway, and means for adjusting the main base longitudinally of said guideway whereby in such adjustment the block guides the main base, while the latter may be swung around said block as a pivot.

4. The combination of main-base and sub-base, finished in a horizontal plane on their meeting faces, the one formed with parallel guideways extending across opposite ends of the main base and the other with blocks entering said guideways, and independent adjusting devices applied to opposite ends of the main base, whereby when the main base is moved at one end by one of said adjusting devices it may swing around the block at its opposite end as a pivot.

5. The combination of main base and sub-base, finished in a single horizontal plane on their meeting faces, the one formed with guideways extending transversely of the main base, and the other with blocks entering said guideways, said blocks having screwthreaded holes through them, and independently movable adjusting screws passing through said blocks and engaging their threads, whereby either or both ends of the main base may be adjusted on the sub-base by turning said screws.

6. The combination of main-base and sub-base, finished in a single horizontal plane on their meeting faces, the sub-base formed with two guideways extending transversely of the main base, and the latter provided with swiveled blocks entering the respective guideways, said blocks formed with screwthreaded holes through them, and independently mov-

able adjusting screws journaled to the sub-base and having their threaded portions passing through and engaging the threads of said blocks.

7. The combination of main-base and sub-base, finished in a single horizontal plane on their meeting faces, whereby the main base may be slid or swung to oblique positions on the sub-base, and the sub-base subdivided into a plurality of elongated sections or girders extending transversely beneath the main base, and means for adjusting the main-base and holding it in any desired position.

8. The combination of main-base and sub-base, finished in a single horizontal plane on their meeting faces, the sub-base subdivided into a plurality of elongated sections or girders extending transversely beneath the main-base, two of said girders formed each with a longitudinal open slot or guideway, beneath the plane of said meeting faces, independently movable adjusting screws journaled in said girders, and blocks or nuts depending from the main-base into said guideways and engaged by said screws and fastened to the main-base.

9. The combination of main-base and sub-base, with adjusting screws at opposite ends for sliding the main-base over the sub-base, double-acting ratchet wheels fixed to said screws, double-acting pawls engaging them, rockers mounted to oscillate upon the axes of said screws, an operating lever, and a connecting rod for transmitting motion from either rocker to the other.

10. The combination of main-base and sub-base, with adjusting screws at opposite ends for sliding the main-base over the sub-base, ratchet wheels fixed to said screws, pawls engaging them, rockers mounted to oscillate upon the axes of said screws and having arms extending downwardly, a connecting rod jointed to said arms for communicating motion from either rocker to the other, and an operating lever, whereby said connecting rod is brought beneath the floor where it is out of the way.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JAMES J. WOOD.

Witnesses:
JOHN W. HALL,
WILLARD KNIGHT.