W. A. LAWRENCE.

MOTORCYCLE BACKREST.

APPLICATION FILED SEPT. 13, 1919.

1,367,981. Patented Feb. 8, 1921.

Fig. 1.

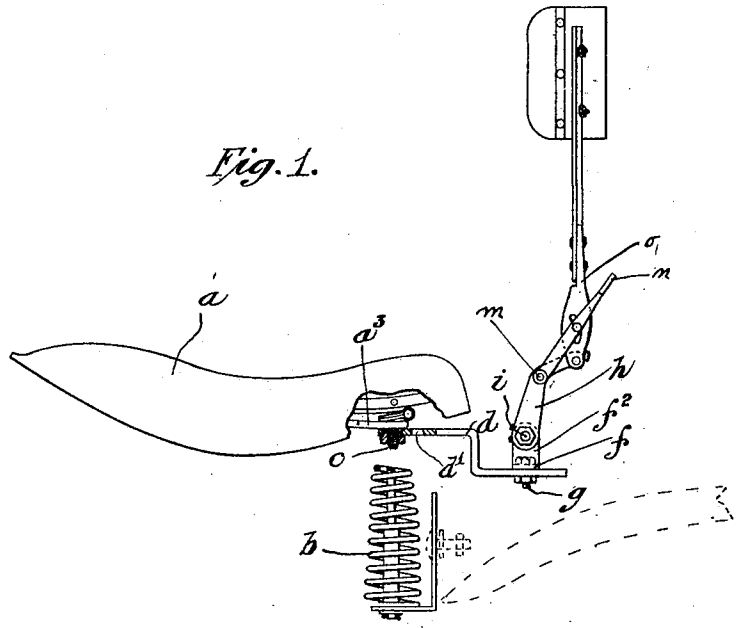


Fig. 2.

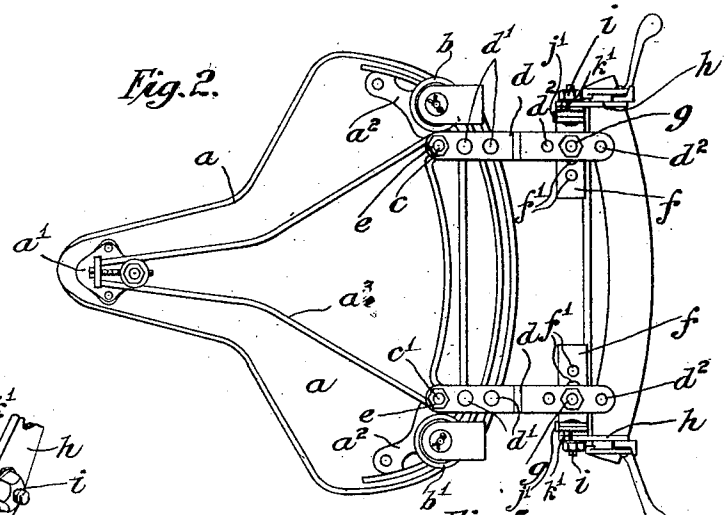


Fig. 3.

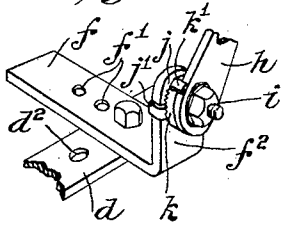


Fig. 4.

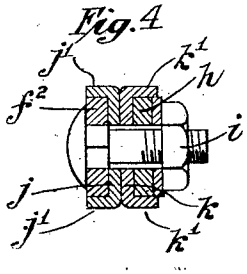
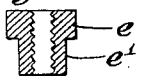


Fig. 5.



William A. Lawrence, INVENTOR

BY Frank P. Wentworth

his ATTORNEY.

UNITED STATES PATENT OFFICE.

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MOTORCYCLE-BACKREST.

1,367,981. Specification of Letters Patent. Patented Feb. 8, 1921.

Application filed September 13, 1919. Serial No. 323,643.

To all whom it may concern:

Be it known that I, WILLIAM A. LAWRENCE, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Motorcycle-Backrests, of which the following is a specification, reference being had therein to the accompanying drawings, which form a part thereof.

My invention relates to motorcycle backrests, and more particularly to a type thereof which is detachably connected with the saddle of the motorcycle, the construction of the rest being such that it may be adjusted to accord with the desires of any rider.

It has been a common practice heretofore to produce backrests for motorcycles which are sold as an article of manufacture independently of the saddle structure, the backrest being applied to the motorcycle by the user thereof. Different types of saddles, however, are used upon motorcycles, and in the manufacture of backrests therefor, it has heretofore been necessary to produce a different backrest for each type of saddle, or to provide special attachments so that certain portions of the backrest may be standardized and said attachments may be used to fit the standardized mechanisms to differently formed saddles or saddles of different sizes. This has led to very unsatisfactory conditions, since the users of motorcycles are not familiar with different types and sizes of saddles, thus leading to great confusion in the ordering of backrests and a resultant dissatisfaction both as to the manufacturer and as to the consumer.

To obviate this condition, I provide a backrest which may be made to one standard size, this backrest being capable of such adjustment as to not only be capable of application to any style of saddle used, but may also be adjusted so as to promote the comfort of the user.

This adjustment in addition to its capability of varying the vertical angle of the rest, permits the adjustment of the rest in its entirety toward and from the back of the saddle. Both adjustments are secured by means of simple mechanisms which will insure the desired rigidity in the assembled structure, and will avoid likelihood of loss of adjustment as a result of the vibration to which the rest is subject in use.

The backrest does not in any way interfere with the normal functionings of the saddle, and like other structures of the same character, may be dropped with relation to the saddle, to facilitate the mounting and dismounting of the rider.

To facilitate the mounting of the rest upon the saddle, I provide a special form of clamp nut which will compensate for variances in the length of screw bolts embodied in the structures of saddles of different styles, and insure the desired permanency in the connection of the backrest to the saddle by means of said bolts.

The invention consists primarily in a motorcycle backrest embodying therein bars adapted to be mounted upon the screw bolts on opposite sides of the back frame of the saddle, means whereby said bars may be adjusted longitudinally or laterally of the saddle, angle brackets carried by said bars, plates adjustably mounted upon said angle brackets, clutch mechanisms whereby said plates may be pivotally adjusted with relation to said brackets, and a backrest frame pivotally mounted upon said supports; and in such other novel features of construction and combination of parts as are hereinafter set forth and described, and more particularly pointed out in the claims hereto appended.

Referring to the drawings,

Figure 1 is a side elevation of a backrest embodying my invention, one of the saddle springs, and a portion of the saddle being broken away to disclose the manner of mounting the backrest with relation to the saddle;

Fig. 2 is a bottom plan view thereof;

Fig. 3 is a perspective view of a portion of one of the bars, one of the angle brackets, a portion of one of the plates, and the clutch mechanism, permitting and maintaining the angular relation of the backrest;

Fig. 4 is a detail view of the clutch mechanism; and

Fig. 5 is a detail sectional view of the clamp nut for attaching the plates to the back frame of the saddle.

Like letters refer to like parts throughout the several views.

In the embodiment of my invention shown in the drawings, the backrest is applied to an old and well known type of saddle embodying therein a leather seat a having a pommel fitting a', a back frame a^2, and a looped spring underframe a^3. The saddle is provided with the usual cushion springs b—b' attached to the back frame a^2 and underframe a^3.

The underframe a^3 is connected with the back frame a^2 by means of screw bolts c—c' carried by said frame and passing within loops formed in said spring as shown.

This construction is old and well known in this art, and a further and more detailed description of this structure and of its action is, therefore, unnecessary. It is also old in the art to mount a backrest in relation to said saddle by means of said bolts c—c', which backrest is so constructed that it may be folded downwardly away from the saddle to facilitate the mounting or dismounting of the rider.

My present invention relates more particularly to a backrest structure embodying the characteristics of this old type, wherein the structure in its entirety may be mounted upon any saddle, irrespective of variance in the position of the bolts c—c', and in addition thereto, may be adjusted toward or from the back frame, and may have the backrest proper adjusted and maintained at any desired angle with relation to the saddle.

In securing the desired result, I employ the supporting bars d, the opposite ends of which are stepped with relation to each other as shown, to bring one end thereof in the proper relation to the back frame a^2 and the other end thereof well below the overhang of the leather seat a. Since the construction of the supports for the backrest at each side thereof is identical with that of the other side, a detailed description of but one side will be given, similar reference letters being used to indicate corresponding parts upon the other side.

Each end of each bar d has a sequence of spaced openings therethrough, the openings at the end toward the saddle being indicated at d' and those at the other end, at d^2. The diameter of the several openings d' is considerably larger than that of the bolts c or c' over which they are adapted to pass, so as to leave clearance about each bolt sufficient to receive a shouldered nut e, the reduced portion e' of which has a loose fit within said openings d' so as to permit the threads of the bolts to be readily picked up, and thus compensate for variances in the lengths of bolts c—c'.

Carried by each bar d is an angle bracket f having a sequence of openings f' therethrough, said bracket being secured to its bar by means of an ordinary screw bolt as g which may be passed through any of the openings f' and d^2 and thus permit adjustment of the bar d laterally of the saddle, or of the bracket f toward or away from, or longitudinally of, said saddle. Such longitudinal adjustability supplements that afforded by the sequence of openings d' cooperating with the bolts c—c', and such lateral adjustment supplements that lateral adjustment which may be secured by a pivotal movement of the bar d about the bolt g.

One arm f^2 of the bracket f supports a plate h secured thereto by means of a stove bolt i passing through a squared opening in said arm or said plate, as desired, thus permitting a pivotal adjustment of said plate to vary the angular relation of the back support to the saddle seat.

To afford the desired rigidity of said support in any adjusted position and avoid likelihood of a loss of this adjustment as a result of slight loosening of the bolt i, I provide a simple clutch mechanism, the cooperating members of which are respectively held firmly in relation to the bracket f and to the plate h so as to be incapable of movement in relation to each other, or to said bracket or plate, except when the nut of the bolt g is loosened to permit adjustment of the said plate. While this result may be secured by brazing or welding the clutch members to said bracket and to said plate, I preferably employ two corrugated washers j—k, having a loose fit upon the bolt i, said washers each having an ear or ears j'—k' thereon bent to overlap and engage the edges of said bracket and said plate respectively, and thus hold said parts against rotation except when said washers are disengaged one from the other.

The plates h upon opposite sides of the backrest structure are connected by a tie rod m, which in addition to imparting rigidity to the structure, causes both plates to move in unison and forms bearings for the levers n by means of which the frame o and the padded support p carried thereby, may be lowered when the rider desires to dismount.

The frame o is pivotally mounted upon the outer ends of the plates h which ends are formed as shown, to properly offset the support p with relation to the back of the saddle a.

The detailed construction of the frame o and the levers n is immaterial to my present invention, such being old and well known in the art.

While I have shown two angle brackets f arranged at opposite sides of the structure, it will readily be understood that said brackets might be formed integrally, if desired, although if so made, the portion thereof intermediate the bars d might impact with the mud guard of the motorcycle, in the event of a heavy jolt due to an ob-

struction in the road, which in addition to the discomfort caused, might mar the guard.

One great advantage secured in a backrest structure made in accordance with my invention, in addition to those above referred to, is that the bars *d*, the brackets *f*, the plates *h* and washers *j*—*k*, may all be punched from flat metal stock and suitably pierced, thus not only permitting an economical production of the structure, but securing great uniformity as to strength. If desired, however, these parts may be cast. Another advantage is that corresponding parts are interchangeable, there being no distinctly right and left parts. The various parts may also be quickly assembled.

In mounting the backrest upon a saddle, the nuts ordinarily securing the underframe a^3 to the back frame a^2 are removed, the forward end of the bars *d* being mounted upon the bolts *c*—*c'* either below said underframe, or between it and the said back frame, as desired, or as may be necessary. The shouldered nuts *e* are then mounted upon said bolts, the reduced portion *e'* thereof passing through the opening *d'* in the bar *d* or through the loop in the underframe, thus insuring the engagement of a sufficient number of threads to secure the desired permanent clamping action by said nuts.

If it be found that the bars *d* are not properly positioned with relation to said bolts, the bolt *g* may be loosened, thus permitting pivotal movement of said bars, so as to bring them into the proper position. If the range of pivotal movement is not sufficiently great, the brackets *f* may be removed from said bars, and after the bars have been secured upon said bolts, replaced, using the proper openings *f'*, to secure the desired projection of the bars *d*. It will be noted that the pivotal relation of the bars *d* and brackets *f*, and their capability of rectilineal adjustment, together, will obviate the necessity for precision in the positioning of the openings *f'*, to compensate for slight variances in the distance between bolts *c*—*c'* upon different saddles.

Different openings *d'*—d^2 may be selected to give the desired longitudinal position of the backrest in relation to the saddle.

When the backrest has been positioned as desired, as to the saddle, the bolt *i* may be loosened to an extent to permit the separation of the corrugated washers *j*—*k*, and the desired rotative movement of the plate *h* to secure the desired angular set of the back support. In moving the plate *h*, the washers *k* will, by reason of the ears *k'*, turn therewith the ears *j'*, holding the washers *j* stationary. After securing the desired angular adjustment, the bolt *i* is tightened, interlocking the corrugations upon the washers *j*—*k*, and thus holding the adjustment. Since the washer *j* is immovable in relation to the bracket *f*, and the washer *k* can have movement only with the plate *h*, it is apparent there can be no slippage between said clutch members and said bracket and said plate.

The operation of the frame *o* and its co-operating parts is old and well known and a detailed description thereof, therefore, unnecessary.

By the construction herein described, I am enabled to attach a standardized backrest structure to any saddle, and to vary the longitudinal and angular relation of the back support and the saddle, without the aid of special fittings.

It is not my intention to limit the invention to the precise details of construction shown in the drawings, it being apparent that such may be varied without departing from the spirit and scope of the invention.

Having described the invention, what I claim as new and desire to have protected by Letters Patent, is:—

1. A motorcycle backrest embodying therein bars having a sequence of openings therein adapted to be selectively used to mount said bars upon vertically extending screw bolts upon opposite sides of the back frame of the saddle, whereby said bars may be adjusted longitudinally or laterally of the saddle, means whereby said bars may be set in any adjusted position, angle brackets carried by said bars, plates adjustably mounted upon said angle brackets, clutch mechanisms whereby said plates may be pivotally adjusted with relation to said brackets, and a backrest frame pivotally mounted upon said plates.

2. A motorcycle backrest embodying therein bars each having an opening therethrough adjacent one end thereof whereby they may be mounted upon the screw bolts on opposite sides of the back frame of a saddle, and an opening through the other end thereof, angle brackets each having a sequence of openings through one arm thereof, screw bolts adapted to pass through said last named openings in said bars and through any opening in said brackets, whereby said bars may be pivotally or rectilineally adjusted with relation to the saddle, plates adjustably mounted upon said angle brackets, clutch mechanisms whereby said plates may be pivotally adjusted with relation to said brackets, and a backrest frame pivotally mounted upon said plates.

3. A motorcycle backrest embodying therein bars each having a sequence of openings therethrough adjacent one end thereof, whereby they may be adjustably mounted upon the screw bolts on opposite sides of the back frame of a saddle, and a sequence of openings through the other end thereof, angle brackets each having an opening through one arm thereof, screw bolts adapted to pass through said openings in said

brackets and any openings of said last named sequence of openings in said bars, whereby said brackets may be adjusted longitudinally of said bars, plates adjustably mounted upon said angle brackets, clutch mechanisms whereby said plates may be pivotally adjusted with relation to said brackets, and a backrest frame pivotally mounted upon said plates.

4. A motorcycle backrest embodying therein bars, one end of which respectively is adapted to be mounted upon the screw bolts on opposite sides of the back frame of a saddle, and having a sequence of openings through the other end thereof, angle brackets each having an opening through one arm thereof, screw bolts adapted to pass through said openings in said brackets and any opening of said last named sequence of openings in said bars, whereby said brackets may be adjusted longitudinally of said bars, plates adjustably mounted upon said angle brackets, clutch mechanisms whereby said plates may be pivotally adjusted with relation to said brackets, and a backrest frame pivotally mounted upon said plates.

5. A motorcycle backrest embodying therein bars each having a sequence of openings therethrough adjacent one end thereof, whereby they may be adjustably mounted upon the screw bolts on opposite sides of the back frame of a saddle, and a sequence of openings through the other end thereof, angle brackets each having a sequence of openings through one arm thereof, screw bolts adapted to pass through any of the sequence of openings in said brackets, and through any of the openings of said last named sequence of openings in said bars, whereby said bars may have pivotal or rectilineal adjustment laterally of the saddle, said brackets may be adjusted longitudinally of said bars, and said bars may be adjusted toward and from the saddle, plates adjustably mounted upon said angle brackets, clutch mechanisms whereby said plates may be pivotally adjusted with relation to said brackets, and a backrest frame pivotally mounted upon said plates.

6. A motorcycle backrest embodying therein bars adapted to be mounted upon the screw bolts on opposite sides of the back frame of a saddle, said bars each having an opening of larger diameter than said bolts, shouldered clamp nuts, the reduced portion of each having a smooth exterior adapted to pass through said openings, said nuts having a screw-threaded opening extending axially therethrough, whereby said bars may be secured to said screw bolts irrespective of the length of the latter, a backrest frame, and means whereby said last named frame is supported from said bars.

7. A motorcycle backrest embodying therein bars having a sequence of openings therein adapted to be selectively mounted upon vertically extending screw bolts on opposite sides of the back frame of a saddle, angle brackets, one arm of each of which is connected with one of said bars, plates, a stove bolt pivotally connecting said plates with the other arm of said brackets respectively, two corrugated washers positioned on each of said bolts between said bracket and said plate, means whereby one of said washers is maintained in a fixed relation to said bracket and to said plate respectively, and a backrest frame pivotally mounted upon said plates.

8. A motorcycle backrest embodying therein bars adapted to be mounted upon the screw bolts on opposite sides of the back frame of a saddle, angle brackets, one arm of each of which is connected with one of said bars, plates, a stove bolt pivotally connecting said plates with the other arm of said brackets respectively, two corrugated washers positioned on each of said bolts between said brackets and said plate, an ear formed integrally with each of said washers and bent to overlap and engage the edge of its associated bracket or plate, whereby one of said washers is maintained in a fixed relation to said bracket and to said plate respectively, and a backrest frame pivotally mounted upon said plates.

9. A motorcycle backrest embodying therein bars adapted to be mounted upon the screw bolts on opposite sides of the back frame of the saddle, means whereby said bars may be adjusted longitudinally or laterally of the saddle, angle brackets carried by said bars, plates adjustably mounted upon said angle brackets, clutch mechanisms whereby said plates may be pivotally adjusted with relation to said brackets, a backrest frame pivotally mounted upon said plates, a tie rod connecting said plates, and means mounted on said tie rod and operatively engaging said backrest frame, whereby said frame may be lowered.

In witness whereof I have hereunto affixed my signature, in the presence of two subscribing witnesses, this 9th day of September, 1919.

WILLIAM A. LAWRENCE.

Witnesses:
A. E. RENTON,
F. T. WENTWORTH.