

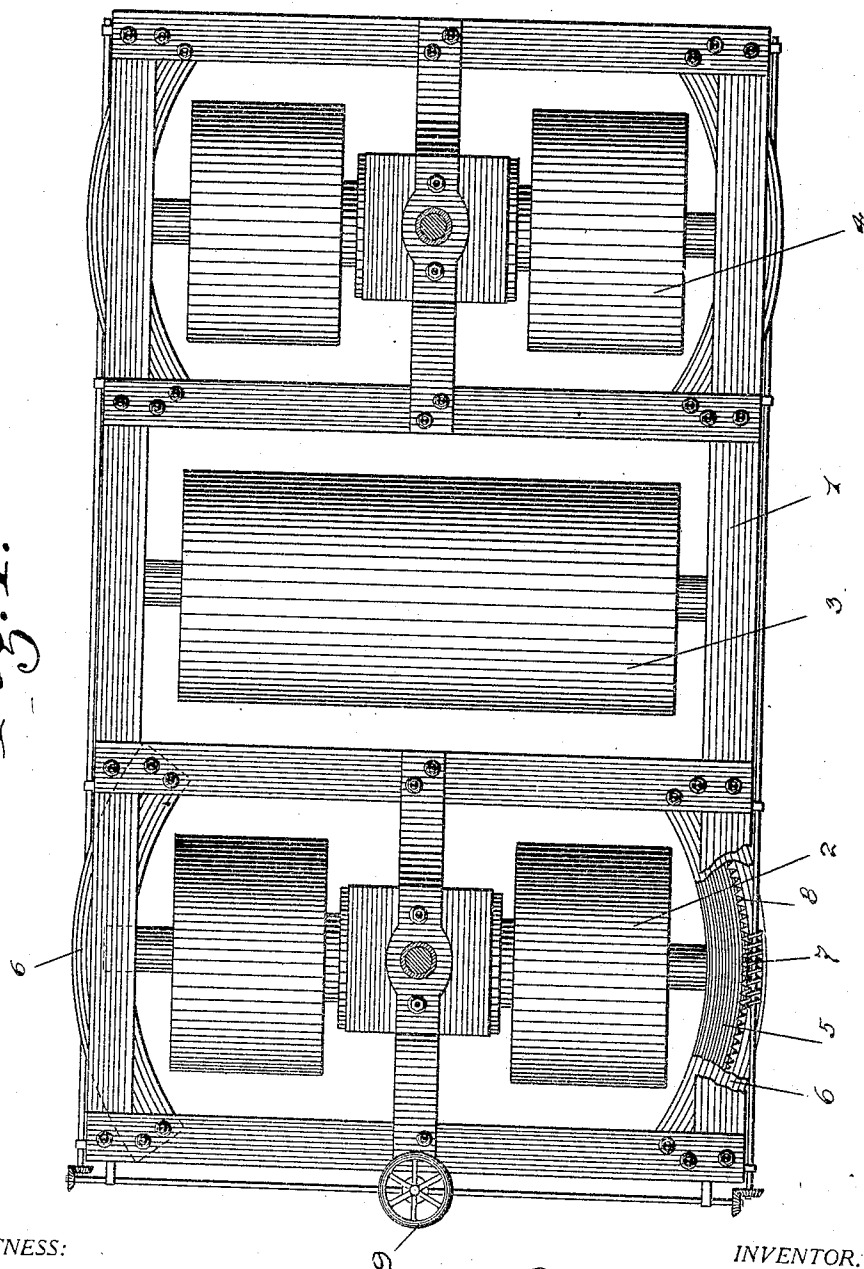
G. W. CARTWRIGHT.
ROAD AND STREET PLANER,
APPLICATION FILED NOV. 1, 1916.

1,304,741.

Patented May 27, 1919.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESS:

Ronald P. Pratt

INVENTOR.

George W. Cartwright

BY

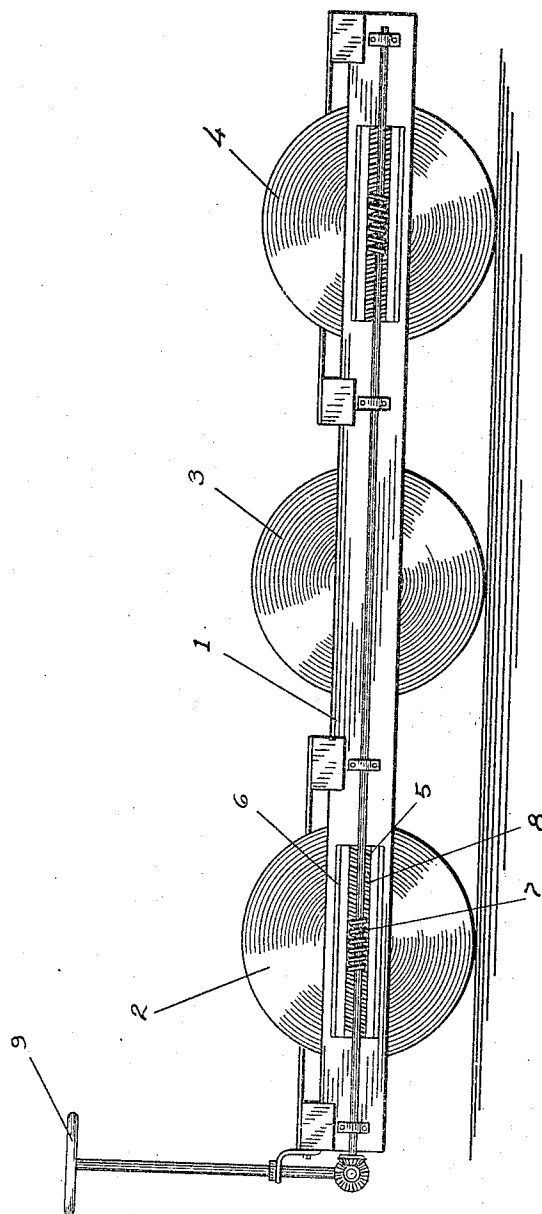
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2 SHEETS—SHEET 2.

Fig. 2



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UNITED STATES PATENT OFFICE.

GEORGE W. CARTWRIGHT, OF SACRAMENTO, CALIFORNIA.

ROAD AND STREET PLANER.

1,304,741.

Specification of Letters Patent.

Patented May 27, 1919.

Application filed November 1, 1916. Serial No. 128,892.

To all whom it may concern:

Be it known that I, GEORGE W. CARTWRIGHT, a citizen of the United States, residing at Sacramento, in the county of Sacramento, State of California, have invented certain new and useful Improvements in Road and Street Planers; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in implements for the treating and finishing of road, street and alley surfaces either during the original construction of the same or for the purpose of maintaining their proper condition after they are built.

A great many of the modern roads and streets are built with an asphaltum, oil macadam or similar surface having a yielding or elastic quality which has a tendency to roll up into waves or undulations and to form ruts or chuck holes which are extremely annoying and often dangerous to persons traveling over the road and seriously interferes with traffic thereon. It is a very costly and lengthy operation to smooth out these undulations with the present day commonly used forms of machinery and implements. As a matter of fact, the cost of treating the road to remove the undulations is almost prohibitive. These waves or undulations, as well as ruts or chuck holes, are, in a large measure, the result of the work of imperfect machinery, tools and implements now employed in the construction of roads, streets and other highways. Thus, even the best and most expensively constructed roads and streets have slight waves or undulations at the very moment of their completion.

When automobiles and other vehicles, especially rapidly moving vehicles are driven along such roads or streets, the wheels, with the added weight of the vehicle and its load, gain a downward momentum or thrust as they roll along the downward inclination of the wave or undulation and bear with greater force and weight upon the trough of the wave or undulation than upon the level and smooth portions of the road or street. Then as the wheel rebounds from this thrust it travels up the opposite slope

or upward inclination of the wave or undulation with lighter pressure and weight than upon the level and smooth portions. This process constantly repeated by many vehicles finally so increases the depth of the trough and the height of the wave crest that the road or street becomes almost impassable and must be repaired or abandoned. Ruts and chuck holes are made in much the same manner. The wheel of each vehicle passing over the rut strikes the bottom of the rut with the thrust of its downward momentum and passes up the other side upon the rebound with comparatively slight pressure upon the crest of the rut wall, thereby constantly digging the rut deeper and building its walls higher until the road or street must be repaired.

If such streets or roads be then rolled by the ordinary street or road roller now in use, the roller bears more heavily at the bottom of the trough or rut than upon the crest of the wave or rut-wall on account of the downward momentum or thrust at the moment of reaching the bottom of the wave trough where the upward incline commences. For this reason rollers now in use increase the depth of the undulations, the only advantage derived from their use being the increased density of the surface rolled.

The action and effect of my improved road planer upon waves and ruts are exactly opposite to the action thereon of vehicles and of road rollers now in use for the reason that I have provided three or more sets of rollers on a frame vertically rigid and consecutively arranged one behind the other so that the lower surfaces of all of the rollers are held upon a plane with respect to each other without regard to the smoothness or roughness of the surface over which they move. This, as will readily be seen, prevents any single roller from dropping into a wave trough or rut but on the contrary the maximum weight of the planer will be constantly carried upon the crests of the waves or rut walls of the road surface. The great weight of the planer thus acting upon the yielding and usually more or less elastic surfaces of the road or street will smooth out the waves or undulations and give unusual density and wearing quality to the road or street.

These objects I accomplish by means of

such structure and relative arrangement of the parts as will fully appear by a perusal of the following specification and claim.

Figure 1 is a top plan view of my improved form of road planer.

Fig. 2 is a side elevation of the same.

Referring now more particularly to the characters of reference on the drawings, I provide first a supporting frame 1 which is vertically rigid and all of its connecting parts are carried as a vertical rigid unit with the frame itself.

Within this frame I journal three or more sets of rollers 2, 3 and 4. These rollers are so journaled as to be rigid vertically with respect to the frame 1 but they have horizontal movement to enable the device to be turned. This horizontal movement is provided for by means of the fact that the shafts of the said rollers are journaled in curved supports 5 which extend into curved guides 6. A means for turning them in the guides at will may be provided, as, for example, worm gears 7 may be provided within the guides meshing with racks 8 on the members 5. These worms 7 could be operated from a common wheel 9 suitably connected with the worms by gears and shafts as shown.

In practice the frame 1 when built will be of great weight, say approximately from ten to twelve tons or greater weight as may be found desirable. It will be advanced along the road under its own power or drawn as may be preferable. As it advances along the road it moves as a solid rigid unit since there is no vertical flexibility to the same. Being of sufficient length for the purpose, the implement will tend to maintain itself always on a plane and hence as it advances over a road or street full of undulations it will iron the same out and leave the surface uniformly smooth and even.

While I believe that the implement itself will be sufficient to smooth out the undulations, still, if desired, it may be preceded by suitable scarifiers and road dressers. Especially would scarifiers and road dressers be used in roads having a large number of chuck holes or other cut out portions which

would have to be filled before the action of the rollers would be of sufficient force or effect.

The supporting frame for the rollers being rigid and the implement as a whole having thus a tendency to maintain itself on a plane, this will cause the complete weight of the implement to at all times bear downwardly on the highest point of the road surface over which the implement may travel. The highest undulations would therefore be rolled out first and then the succeeding similar undulations would be successively eliminated.

The weight of the planer may be increased by ballast to any weight desired to meet the varying degrees of hardness or softness of the wave crests.

From the foregoing description it will readily be seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention as defined by the appended claim.

Having thus described my invention what I claim as new and useful and desire to secure by Letters Patent is:

A road planer comprising a rigid frame, a plurality of shafts pivotally mounted in the frame central of their length, curved guides mounted in the sides of the frame at each end of the shafts, such guides being radial from the vertical turning axis of the shafts radially curved supports movable in the guide, and projecting therethrough each shaft being journaled in one pair of supports, rollers on each shaft on each side of their central pivotal points, teeth on the outer vertical edges of the supports, a worm meshing with the teeth on each of said supports, and means for imparting motion to the worms and supports to steer the shafts and rollers.

In testimony whereof I affix my signature.

GEORGE W. CARTWRIGHT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."