

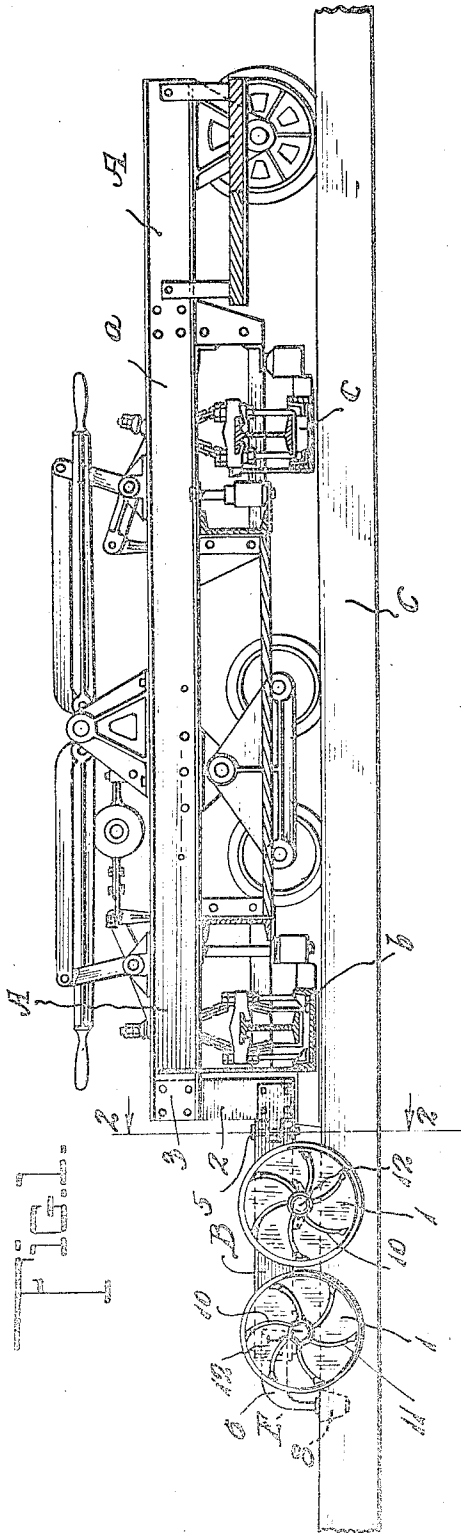
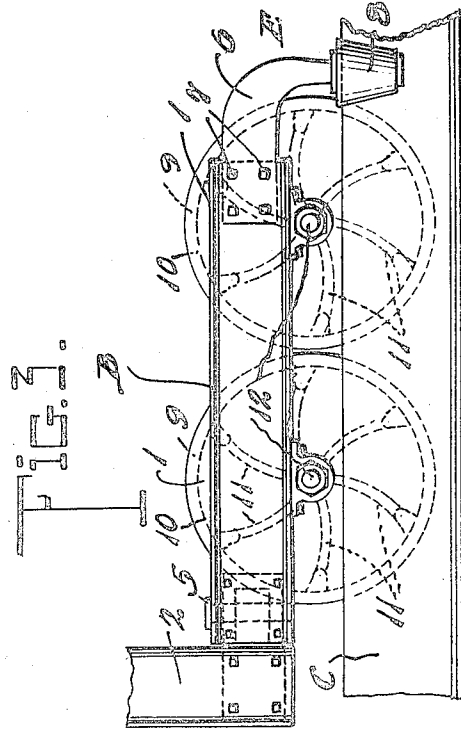
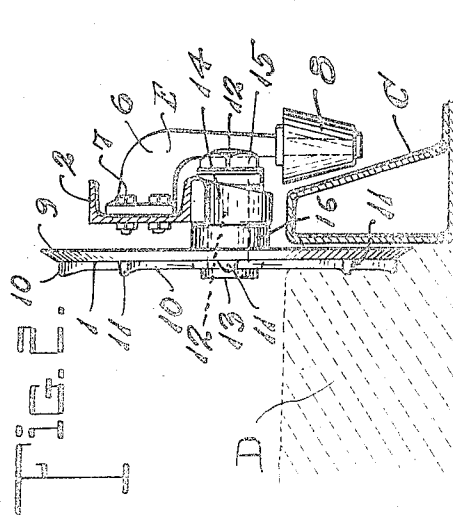
Oct. 31, 1933.

C. L. LOW

1,933,377

STUFFING DEVICE FOR CONCRETE FINISHING MACHINES

Filed Nov. 17, 1928



Inventor
C. L. Low

BY

Robt. & Robt.

ATTORNEYS

UNITED STATES PATENT OFFICE

1,933,377

STUFFING DEVICE FOR CONCRETE
FINISHING MACHINESCharles L. Low, Chicago, Ill., assignor to
Koehring Company, Milwaukee, Wis., a cor-
porationApplication November 17, 1928
Serial No. 320,125

23 Claims. (Cl. 94—39)

This invention comprises a novel device primarily designed for use in the laying of concrete roads, and acting to stuff or press or work down concrete to a compact body at the portions of the mass immediately adjacent to the road forms. The invention is applicable as a stuffing or pressing device for use with other types of forms, however.

In general, most of the highway departments of the different states require a stuffing or pushing down of the aggregate just inside of the road forms to prevent and reduce to the minimum air voids or incomplete concrete structure at the road edges which would be considerably in evidence if this were not done. It has been the custom in the past for the puddlers to do this stuffing with their spades or shovels, and it is obvious that it requires an appreciable amount of labor and time which could be dispensed with and expended on other phases of the work if this stuffing were done automatically.

It is an object of this invention to provide a means for automatically producing a stuffing or pushing down of the concrete adjacent the road forms.

A further object of the invention is to provide a device which is quickly and easily attachable to and detachable from any of the numerous types of road finishing machines now in use.

A still further object of the invention is to arrange the stuffing wheel attachment in such a manner as to cause the stuffing wheels to be retained in their proper position in close proximity to the road forms at all times, especially when curves occur in the roadbed.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the drawing:

Fig. 1 is a side elevation of the stuffing wheel attachment shown connected to a typical road finishing machine;

Fig. 2 is an enlarged vertical sectional view on line 2—2 of Fig. 1; and

Fig. 3 is an enlarged detailed side elevation of the attachment.

Like characters refer to like parts in the several figures of the drawing in which A denotes a conventional form of road finishing machine having a prime mover (not shown) mounted upon a frame *a* which carries the surface finishing or smoothing devices *b* and *c* and to which the stuffing wheel attachment B is attached, this particular form of finishing machine being well

known and shown for illustrative purposes only, as I do not wish to be limited to a specified type of finishing machine to which the attachment is to be applied. Road forms C are shown on which the finishing machine is adapted to travel and at the same time, said road forms define the side boundaries of the concrete aggregate D along the sides of the road.

The stuffing wheels or discs 1 are rotatably carried by a bracket arm support 2 removably attached to the frame of the finishing machine at 3, said bracket arm support being hinged at 5 by a vertical pivot in order to provide for horizontal swinging movement when encountering curved portions of the roadbed but prohibiting vertical swinging. Thus the stuffing wheels are enabled to always keep close to the road forms because it is at this point that the so-called stuffing action should take place, namely, immediately next the road forms. E denotes the means employed for causing the stuffing wheels to operate close to the forms, thereby preventing the hinged bracket arm support from swinging away therefrom due to the resistance of the aggregate to the forward motion of the finishing machine. This is accomplished by using any suitable means such as, for example, an arm 6 removably attached to the bracket arm support 2 as at 7 and rotatably carrying a guide roller 8 to engage the outer face of the road forms C, said roller being retained on the arm in any suitable manner.

In the drawing the stuffing attachment is shown connected to the forward end of the finishing machine in order that the preliminary stuffing of the roadbed edges may take place first. Subsequently the finishing strike-offs or screeds follow the stuffing wheels and fill in any depressions made by the stuffing wheels and finish off the whole surface if the roadbed.

The stuffing wheels 1 are made from any suitable material such as cast iron, cast steel or the like, and are preferably formed with a beveled flange or cutting edge 9 around the periphery of the wheels, said cutting edge acting as a penetrating means for the wheels and aiding to keep the aggregate from being pushed over the top edges of the road forms as the stuffing wheels advance. One face of the stuffing wheels is formed smooth to engage the inner face of the road forms, the opposite face of the wheels being provided with curved ridges or ribs 10 extending radially from the center of the wheels, the ends of said ribs terminating in enlarged portions or packing terminals 11. The ribs, incident to the

rotation of the stuffing wheels, serve to gather the aggregate and partially stuff the same, due to the converging of adjacent ribs, the final stuffing being produced by the enlarged terminals. Thus any voids or air pockets which might be formed if this stuffing were not done, are eliminated.

The wheels 1 are rotatably carried by a stub axle or shaft 12 formed with a head 13 on one end for retaining the wheel on the axle, and the axle is fixedly held in a bearing 14 which is bolted or secured to the bracket arm support 2, the other end of the axle being threaded to receive a nut 15 for keeping the shoulder 16 on the outer face of the stuffing wheel more or less close to the bearing whereby too much play of the wheel on the axle is prevented. However, I do not wish to be limited to this type of bearing mounting as any suitable manner of rotatably mounting the stuffing wheels might be employed. For example, the stuffing wheels might have integrally formed axles extending therefrom or axles sweated into the wheels, said axles being rotatably carried in the bearings 14. I further do not wish to be limited to the number of stuffing wheels used on each side of the finishing machine, as obviously it would depend on the consistency of the mix as to the amount of stuffing which would be necessary to eliminate the air pockets or voids. Generally speaking, however, two on each side are deemed to be sufficient.

Rotation is imparted to the stuffing wheels incident to the travel of the finishing machine by virtue of the fact that the stuffing wheels engage the aggregate below their axis of rotation and the resistance of the aggregate to the forward movement of the wheels causes rotation instead of a mere slicing or cutting through without rotation.

The rotation of the stuffing wheels causes the beveled edge to penetrate the aggregate and scrape the same from the inner face of the road forms and guide it towards the ribs which exert a preliminary stuffing as the device is moved forward, and finally the enlarged terminals create a final downward stuffing as they approach their lowermost position in their rotation. As curves in the roadbed are reached, the hinged construction of the bracket arm allows the stuffing wheels under the action of the guide roller to follow the curvature of the road forms and in this manner an easy and highly efficient stuffing action is automatically obtained.

While the specific details of construction have been herein shown and described, the invention is not confined thereto as changes and alterations may be made without departing from the spirit thereof, as defined by the appended claims.

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

1. In apparatus of the class described, a movable support adapted to travel over aggregate on a roadbed, and stuffing means engageable with the aggregate, said stuffing means having a raised portion presenting a surface of substantial width in movement of the support to stuff the aggregate adjacent the confines for the same.

2. In apparatus of the class described, a movable support adapted to travel over aggregate on a roadbed, and rotatable stuffing means having raised portions engageable with the aggregate in movement of the support to stuff the aggregate adjacent the confines for the same.

3. In apparatus of the class described, a

wheeled support, and aggregate stuffing means pivotally mounted on said support, said stuffing means comprising a disc having raised portions on the surface of the same.

4. In apparatus of the class described, a wheeled support, an aggregate stuffing device, and means connecting said device to said support including a vertical pivot whereby said device may swing in a horizontal plane only.

5. In apparatus of the class described, a frame adapted to move upon road rails, a support connected to one end thereof and swingable in a horizontal plane, and an aggregate stuffing device carried by said support in position to engage the aggregate next to the rails.

6. In apparatus of the class described, a frame adapted to move upon road rails, a support connected to one end thereof, an aggregate stuffing device carried by said support in position to engage the aggregate next to the rails, and guiding means to hold the stuffing device in operative relation to the rails.

7. An aggregate stuffing device comprising a support, and means carried by said support for stuffing aggregate comprising a disc having stuffing means on one face thereof for acting upon the aggregate.

8. An aggregate stuffing device comprising a support, and rotatable means carried by said support for stuffing aggregate comprising a disc having ribs on one face thereof for acting upon the aggregate.

9. An aggregate stuffing device comprising a support, and rotatable means carried by said support for stuffing aggregate comprising a disc having ribs on one face thereof for acting upon the aggregate, said ribs extending radially on the face of said disc.

10. An aggregate stuffing device comprising a support, and rotatable means carried by said support for stuffing aggregate comprising a disc having ribs on one face thereof for acting upon the aggregate, said ribs being arcuately shaped and extending radially on the face of said disc.

11. An aggregate stuffing device comprising a support, and means carried by said support for stuffing aggregate comprising a disc having a cutting edge, said disc having ribs on one face thereof for acting upon the aggregate.

12. An aggregate stuffing device comprising a support, and means carried by said support for stuffing aggregate comprising a disc having a cutting edge, said cutting edge being beveled on the side next the aggregate, and said disc having ribs on one face thereof for acting upon the aggregate.

13. An aggregate stuffing device comprising a rotatable disc having stuffing ribs on one face thereof.

14. An aggregate stuffing device comprising a rotatable disc having a smooth face on one side thereof and an opposite face having arcuate radial ribs formed with enlarged terminals adjacent the outer periphery of said disc, and a beveled cutting edge around the outer periphery of said disc.

15. An aggregate stuffing device comprising a rotatable disc having a smooth face on one side thereof and an opposite face having arcuate radial gathering ribs forwardly curved thereon and formed with enlarged packing terminals adjacent the outer periphery of said disc, and a beveled cutting edge around the outer periphery of said disc forming an obtuse angle with the peripheral surface of said packing terminals.

16. In combination with a concrete road finishing machine adapted to travel along road forms, a stuffing device carried by the finishing machine and operating to stuff the aggregates adjacent the inner sides of the road forms, said stuffing device including a disc having means carried thereby for compressing a section of the aggregates of substantial width during travel of the machine along the road forms. 80
17. In combination with a concrete road finishing machine adapted to travel along road forms, a concrete stuffing attachment carried by said finishing machine and operable incident to the travel of said finishing machine for stuffing the concrete adjacent the road forms, said attachment including a rotatable member having means disposed thereon for compressing a section of the aggregates of substantial width. 85
18. In combination with a concrete road finishing machine adapted to travel along road forms, a stuffing attachment therefor comprising a support, means carried by said support for stuffing the concrete adjacent the road forms, and means for guiding said stuffing means. 90
19. In combination, a road, a support adapted to travel upon parallel road forms above fresh concrete laid therebetween, and stuffing devices presenting substantially horizontal surfaces of substantial width at the instant of contact with the concrete, carried by said support and arranged to engage and press down to a compact body concrete aggregates at the portions thereof just adjacent to the inner sides of the road forms. 95
20. In apparatus of the class described, a frame adapted to move upon rails, and an aggregate stuffing device having a loose vertical pivotal connection with said frame, said device being disposed in position to engage the aggregate next to the rails, whereby said device is actuated by the aggregate contacting therewith as the frame is moved along the rails. 100
21. In apparatus of the class described, a movable support, and aggregate stuffing means rotatably mounted on said support, whereby said means is operated by the aggregate contacting therewith during movement of said support, said stuffing means including a disc having raised portions on one face thereof. 105
22. A machine for tamping the margins of a concrete roadway confined between side forms and while in plastic state, including a framework, carrier wheels movable along said side forms, as a track, and on which the framework is mounted, rotatable tamping discs mounted in the framework and positioned to work between the respective margins of the plastic roadway material and the adjacent side forms to stuff the plastic material adjacent to the said side forms. 110
23. A machine for tamping margins of a concrete roadway confined between side forms and while in plastic state, including a framework, means for supporting said framework for movement along the form and concrete confined thereby, and rotatably mounted tamping discs carried by the framework and positioned to work between the respective margins of the plastic roadway material and the adjacent side forms to stuff the plastic material adjacent to the said side forms. 115
- CHARLES L. LOW. 120

40 115

45 120

50 125

55 130

60 135

65 140

70 145

75 150