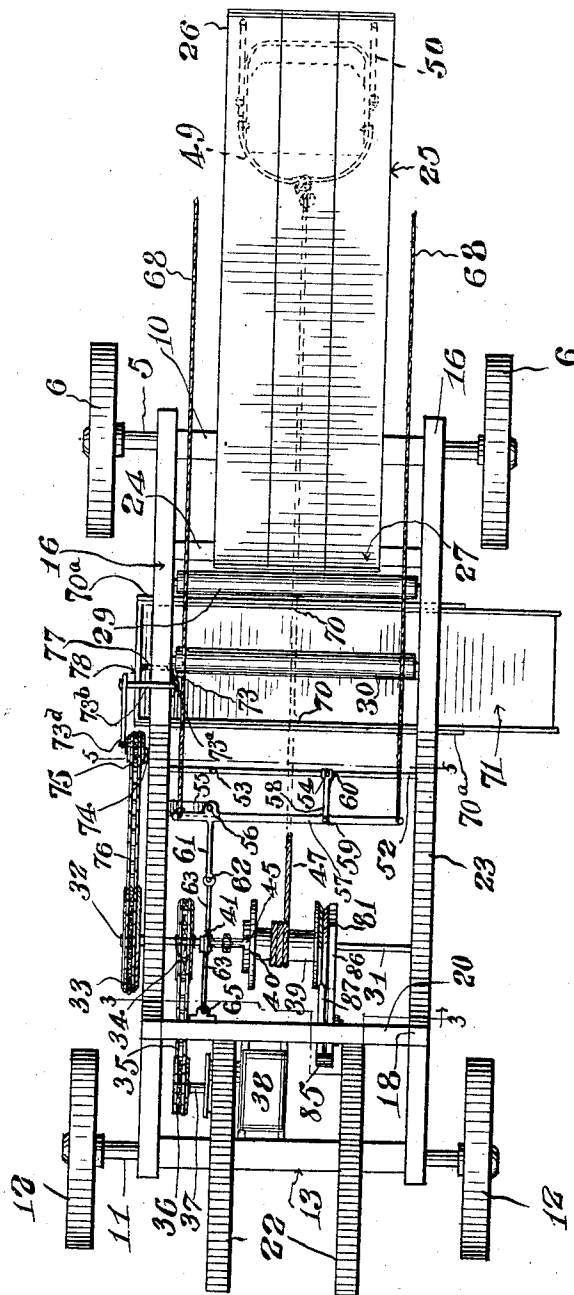


1,037,632.

A. M. JORDAN.  
AUTOMATIC LOADER.  
APPLICATION FILED DEC. 7, 1911.

Patented Sept. 3, 1912.  
3 SHEETS—SHEET 1.

Fig. 1.



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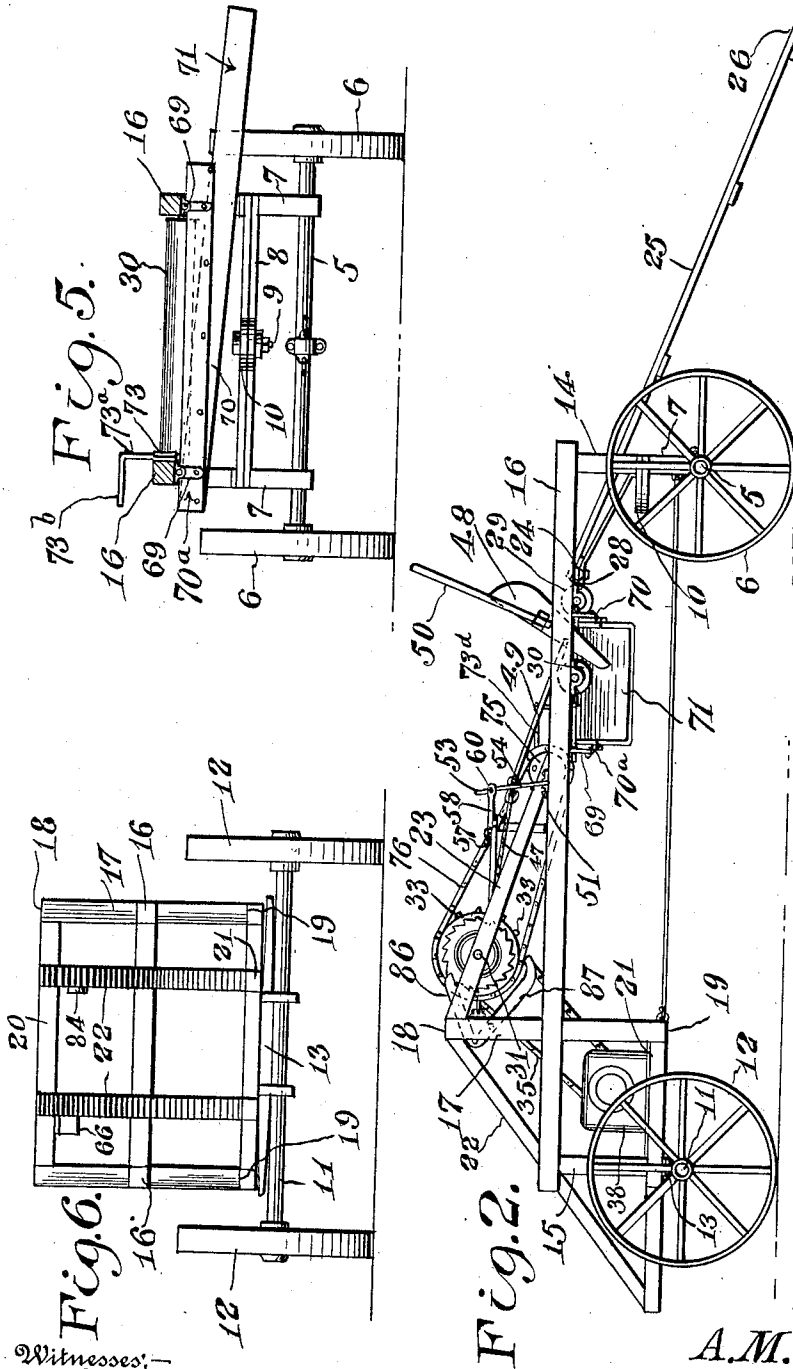
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3 SHEETS—SHEET 2.



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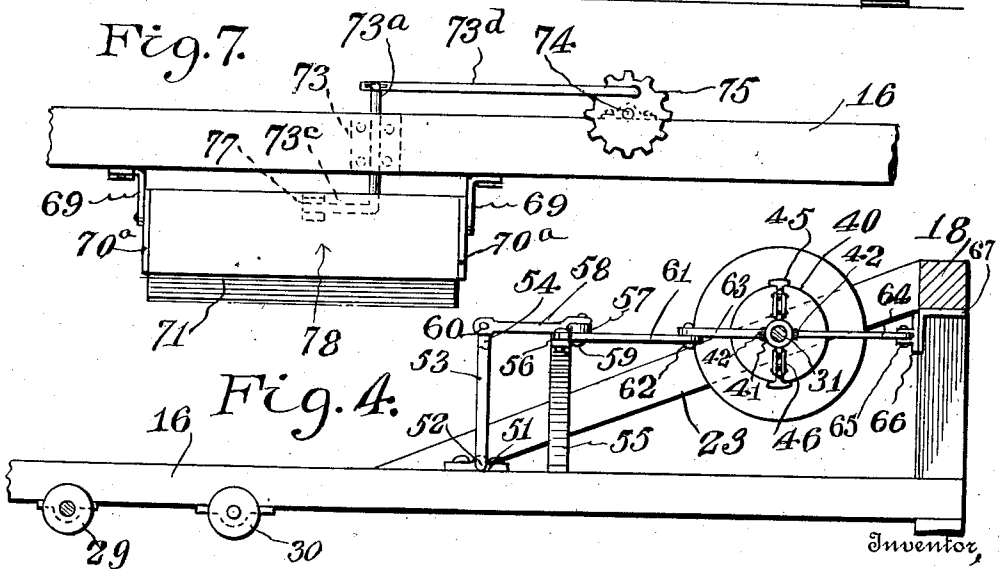
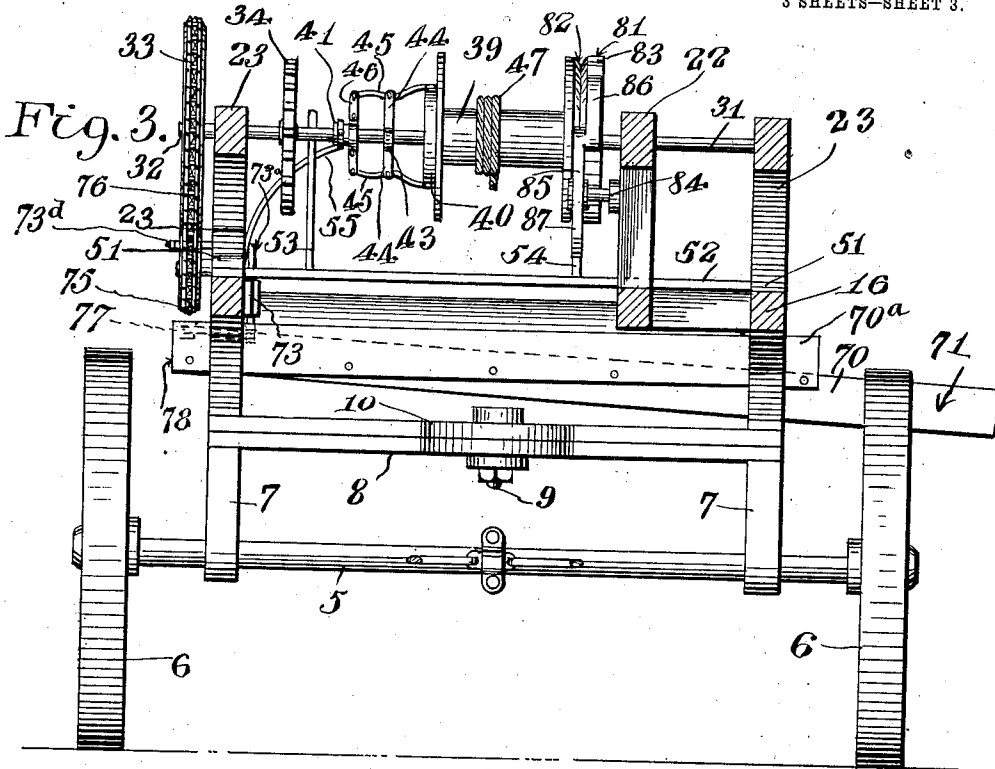
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3 SHEETS—SHEET 3.



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By

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# UNITED STATES PATENT OFFICE.

ALEXANDER M. JORDAN, OF OGDEN, KANSAS.

## AUTOMATIC LOADER.

1,037,632.

Specification of Letters Patent.

Patented Sept. 3, 1912.

Application filed December 7, 1911. Serial No. 664,340.

*To all whom it may concern:*

Be it known that I, ALEXANDER M. JORDAN, a citizen of the United States, residing at Ogden, in the county of Riley, State of Kansas, have invented certain new and useful Improvements in Automatic Loaders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improvement in loading machines especially adapted for elevating rocks, fertilizers, feed or other substance, and thence discharging the same by means of a chute into a wagon or other suitable conveyance.

The principal object of the invention is to provide a portable machine of the character described having a skid upon which a scraper is adapted to be drawn upwardly and automatically tilted to discharge the contents therefrom into a chute.

Another object of the invention is to provide a machine of the character described in which a novel form of hoisting means for the scraper is employed, said means including a novel clutch mechanism adapted to be released by the scraper when the latter has assumed its tilting position.

A further object of the invention is to provide a machine of the character described which includes a novel form of shaking chute.

A still further object of the invention is to provide a novel form of brake mechanism adapted to prevent the backward rotation of the drum when the scraper has assumed its tilted position, whereby the backward movement of said scraper will be prevented.

A still further object of the invention is to provide a machine of the type described, which is extremely simple in construction, it being composed of a minimum number of parts, and is therefore cheap to manufacture.

With these and other objects in view, the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being

understood that various changes in the form, proportion, size and minor details of construction within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings: Figure 1 is a top plan view of a loading machine constructed in accordance with my invention, Fig. 2 is a side elevation thereof, Fig. 3 is an enlarged transverse sectional view taken on the line 3—3 of Fig. 1, Fig. 4 is an enlarged detail sectional view of the clutch mechanism, Fig. 5 is a transverse sectional view taken on the line 5—5 of Fig. 1, Fig. 6 is a detail rear elevation of the machine—Fig. 7 is a detail side elevation of the shaker mechanism.

Like reference numerals designate corresponding parts in all the figures of the drawings.

Referring to the drawings, 5 designates the front axle having the usual ground wheels 6—6 associated therewith. Journaled upon the axle adjacent the wheels 6 are uprights 7—7 to the upper end of which is connected a plate 8, and upon this plate is rotatably mounted, by means of a king-bolt 9, a fifth-wheel 10. The rear axle 11 is provided with the usual ground wheels 12, and upon said axle is mounted the usual bolster 13.

My invention comprises a main frame which consists of a pair of uprights 14—14 carried by the fifth-wheel 10, and a pair of uprights 15—15 carried by the bolster 13. Secured to the upper ends of each pair of uprights 14 and 15 is a longitudinal beam 16. Disposed between the uprights 14 and 15 and secured to a respective beam 16 adjacent the upright 15 but in spaced relation thereto, is an upright 17. Each upright has one end 18 connected above the beam 16 and the other end 19 below said beam, the latter end being disposed in a plane substantially equal to the rear bolster 13. The upper ends 18 of said upright 17 are connected by a transverse member 20. Centrally disposed upon the bolster 13 are spaced longitudinal supporting members 21—21, the forward end of each member being connected to the lower end 19 of the

upright 17. The rear end of each supporting member 21 is connected by the lower end of a brace 22, the upper end thereof being connected to the upper end 20 of the upright 17. Inclined frame members 23—23 are disposed in advance of the upright 17, and each member has one end connected to the upper end 18 of said upright 17 and the other end to the respective beam 16. Secured to the beams 16 adjacent their forward ends is a transverse supporting member 24. A skid 25 projects forwardly of the machine, and has its forward end 26 adapted to rest upon the ground, and its rear or upper end 27 formed with a transverse cleat 28 on its underside, adapted to be hooked over the member 24, and thereby prevent the skid from becoming accidentally disengaged. Journaled in the beams 16 adjacent the upper end 27 of the skid is a transverse roller 29, and also journaled in the beam 16 in spaced relation to the roller 29 is a second transverse roller 30.

Journaled in suitable bearings formed in the inclined frame members 23 adjacent the transverse member 20, is a shaft 31, one end 32 thereof projecting beyond the frame and having a sprocket wheel 33 fixedly mounted thereon. Also secured upon the shaft 31 within the frame is a sprocket wheel 34 which is connected by means of a chain 35 to a sprocket wheel 36 mounted upon the shaft 37 of an engine, which is designated as a whole by the reference numeral 38, and which is mounted upon the supporting members 21.

Loosely mounted upon the shaft 31 is a pivoting drum 39 which is provided at one end with a fixed disk 40 constituting a clutch element. Loose upon the shaft 31 in spaced relation to the element 40 is a sleeve 41, and this sleeve is formed with a pair of opposed trunnions 42—42. Fixedly mounted on the shaft 31 intermediate the sleeve 41 and the clutch 40 is a hub 43 from which radiate opposed arms 44—44. Centrally fulcrumed upon each arm 44 is a clutch lever 45. One end of each lever is adapted for engagement with the clutch element 40, and the other end of each lever is pivotally connected by means of a link 46 to the sleeve 41. It will thus be observed that when the sleeve 41 is moved inwardly toward the drum 39, the rings 46 will cause the clutch levers 45 to tightly engage the clutch element 40 of said drum, and thereby lock said drum to the shaft 31. The reverse movement of the sleeve 41 will of course disengage the drum 39 from said shaft 31. A cable 47 is wound around the drum 39, and has its free end connected centrally to a bail 49, said scraper being provided with the usual handle 50. This scraper is adapted to be loaded with any suitable material while on the ground,

and by means of said cable and drum, the same is drawn up along the skid 25 and over the roller 29.

In order to actuate the clutch mechanism to disengage the drum 39 from the shaft 31, the following mechanism is employed: Mounted upon the beam 16 in rear of the roller 30, is a pair of alined bearings 51—51 in which is journaled a transverse rock shaft 52. Extending upwardly from this rock shaft is a striker arm 53 and a rocker arm 54. A bracket 55 is secured to one of the beams 16 and fulcrumed thereon, as at 56, is a lever 57. A pitman 58 is pivotally connected, as at 59, to the lever 57 adjacent one end thereof, and is pivotally connected at its other end as at 60 to the upper end of the rocker arm 54. A short arm 61 extends rearwardly from the lever 57 adjacent the pivot 56, and this arm is pivotally connected as at 62 to one end of a shipper lever 63. The shipper lever is formed intermediate its ends with a yoke 64, which is perforated to receive pintles 42 of the sleeve 41. The rear end of the shipper lever 63 is fulcrumed, as at 65, to a bracket 66 mounted upon a bracket 67, which depends from the transverse member 20 of the frame. Secured to the extreme ends of the lever 57 are forwardly extending cables 68—68 by means of which the clutch mechanism above noted may be manually actuated.

From the foregoing, it will be observed that as the shaft 31 and drum 39 are rotated, the cable 47 is wound therearound and the scraper 49 is drawn upwardly along the skid 25 until the scraper has assumed the position, as clearly shown in Fig. 2 of the drawings. When the scraper reaches this position, the bail 48 will contact with the striker 53 and cause the shaft 52 to rock. As a result, the rocker arm 54, through the medium of the pitman 58, will swing the lever 57 upon its pivot 56, and the short arm 61 will swing the lever 63 outwardly and consequently slide the sleeve 41 along the shaft 31, thereby disengaging the clutch elements as above noted.

Disposed below the rollers 29 and 30 is an inclined transverse chute 71, the sides 70—70 thereof being fixedly connected to auxiliary walls 70<sup>a</sup>—70<sup>a</sup>. Hangers 69 are each pivotally connected at one end to a respective beam 16 and at its other end to an auxiliary wall 70<sup>a</sup>. In order to automatically oscillate this chute transversely of the machine, there is mounted on the beam 16 adjacent the rear end of the chute, a vertical bearing 73 in which a rocker arm 73<sup>a</sup> is mounted, said arm terminating at its upper end in a crank arm 73<sup>b</sup> and at its lower end in a crank arm 73<sup>c</sup>, said crank arms being disposed at approximately right angles to each other. A pitman 73<sup>d</sup> is pivotally connected

at one end to the crank arm 73<sup>b</sup> and at its other end to a sprocket wheel 75 which is mounted upon a stub-shaft 74 carried by the beam 16, said wheel being driven by means of a chain 76 from the sprocket wheel 33. A link 77 is pivotally connected to the crank arm 73<sup>c</sup> and to the rear end 78 of the chute. It will thus be observed that upon rotation of the sprocket wheel 75, the pitman 73<sup>d</sup> will oscillate the rocker arm to reciprocate the chute transversely of the machine.

From the foregoing, it will be observed that when the scraper 49 reaches the position shown in Fig. 2 of the drawings, the clutch mechanism has been operated and the drum is loose upon the shaft. In this position of the scraper, the bail 48 of the scraper rests upon the rear roller 30.

In order to prevent the scraper from dropping into the chute, the following mechanism is employed: Secured to the end of the drum opposite the clutch mechanism is a circular head, designated as a whole by the reference numeral 81. This head is formed with a peripheral groove 82 and a series of ratchet teeth 83. Depending from the transverse member 20 of the frame and directly in rear of the head 81 is a bracket 84, and pivotally mounted thereon is one arm of a V-shaped brake element 85, the arms 86 and 87 being disposed in offset relation one with the other for alternate engagement with the ratchet teeth 83 and the groove 82. The arm 86 is adapted by gravity to always engage the ratchet teeth 83, while the arm 87 is normally disengaged from the groove 82. When the scraper 49 has assumed the position above noted and the drum has been released from the shaft 31, the arm 86 will prevent backward rotation of said drum, and thereby prevent the scraper 49 from dropping into the chute.

When it is desired to return the scraper down the skid 25 to the ground, the arm 86 is released from the ratchet teeth 83 and the arm 87 is brought into engagement with the groove 82, pressure is exerted upon the arm 87 to create sufficient friction between said arm and the groove to retard the downward movement of said scraper. After the scraper 49 has been loaded, the proper cable 68 is pulled to actuate the clutch mechanism above noted to clutch the drum 39 upon its shaft 31. The machine is then in readiness for the next operation.

What is claimed is:

1. In a loading machine, the combination with a frame, of a skid supported at one end thereof, a chute disposed below the frame in rear of the skid, a drive shaft supported by the frame, a winding drum loosely mounted on the shaft, a clutch mechanism for securing the drum to the shaft, a scraper, a cable trained around the drum and con-

ected at one end to the scraper for elevating the latter along the skid and over the chute, releasing means for the clutch mechanism adapted to be operated by the scraper when the latter assumes its dumping position over the chute, and means for locking the drum against backward rotation when the clutch mechanism is released.

2. In a loading mechanism, the combination with a frame, of a skid supported at one end thereof, a chute disposed below the frame in rear of the skid, a drive shaft supported by the frame, a winding drum loosely mounted on the shaft, a clutch mechanism for securing the drum to the shaft consisting of a clutch element secured to the drum to rotate therewith, a sleeve slidably mounted on the shaft, a hub fixedly mounted upon the shaft between the sleeve and the clutch element, opposed arms extending from the hub, clutch levers respectively fulcrumed intermediate their ends upon said arms, one end of each lever being adapted for engagement with the clutch element, links respectively connecting the sleeve and the other ends of said clutch levers, a scraper, a cable trained around the drum and connected at one end to the scraper for elevating the latter along the skid and over the chute, releasing means for the clutch mechanism connected to the sleeve and including a striker arm disposed in the path of movement of the scraper adapted to be actuated by said scraper when the latter assumes its dumping position over the chute.

3. In a loading machine, the combination with a frame, of a skid supported at one end thereof, a chute disposed below the frame in rear of the skid, a drive shaft supported by the frame, a winding drum loosely mounted on the shaft, a clutch mechanism for securing the drum to the shaft consisting of a clutch element secured to the drum to rotate therewith, a sleeve slidably mounted upon the shaft, a hub fixedly mounted upon the shaft between the sleeve and the clutch element, opposed arms extending from the hub, clutch levers respectively fulcrumed intermediate their ends upon said arms, one end of each lever being adapted for engagement with the clutch element, links respectively connecting the sleeve and the other ends of said clutch levers, a rock shaft secured to the frame intermediate the drive shaft and the chute, a striker arm normally extending upwardly therefrom, a rocker arm extending from said rock shaft, a shipper lever engageable with the sleeve and pivotally connected at one end to the frame, a bracket supported by the frame intermediate the shipper lever and the rocker arm, a lever fulcrumed intermediate its ends upon the bracket, a pitman

pivotally connected at one end to the lever  
adjacent one end thereof and at its other  
end to said rocker arm, a short arm extend-  
ing rearwardly from the lever and pivotally  
5 connected to the free end of the shipper  
lever, a scraper including a bail, a cable  
trained around the drum and connected at  
one end to the scraper for elevating the lat-  
10 ter along the skid and over the chute, releas-  
ing means for the clutch mechanism con-  
nected to the sleeve and including a striker

arm disposed in the path of movement of  
the scraper and adapted to be actuated by  
said scraper when the latter assumes its  
position over the chute.

In testimony whereof, I affix my signa-  
ture, in presence of two witnesses.

ALEXANDER M. JORDAN.

Witnesses:

P. C. HOSTRUP,  
R. C. BARR.

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

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