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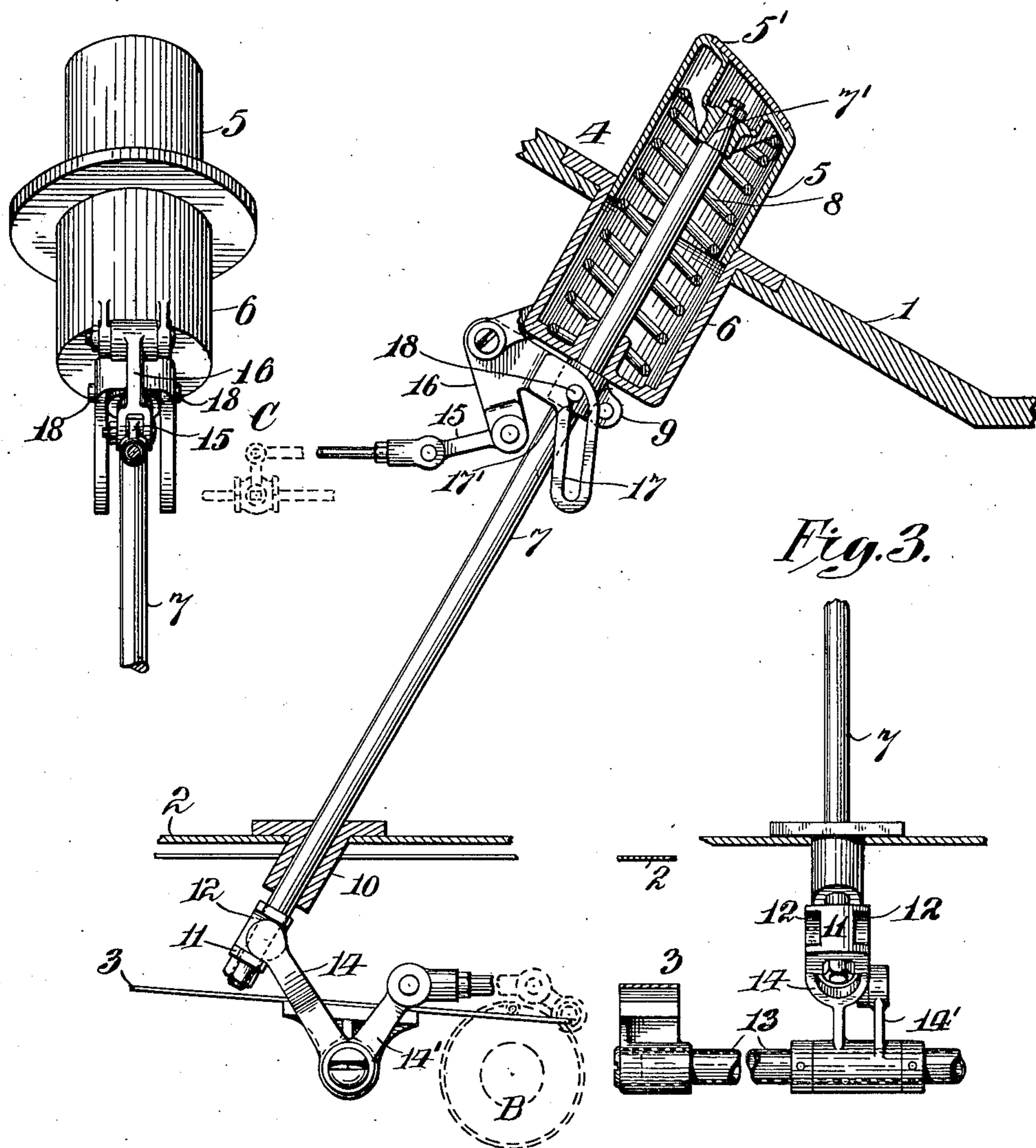
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## CONTROLLING MECHANISM FOR SELF PROPELLED VEHICLES.

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*Fig. 2.*

*Fig. 1.*



*Fig. 3.*

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# UNITED STATES PATENT OFFICE.

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## CONTROLLING MECHANISM FOR SELF-PROPELLED VEHICLES.

No. 872,101.

Specification of Letters Patent.

Patented Nov. 26, 1907.

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*To all whom it may concern:*

Be it known that we, CHARLES C. WORTHINGTON, a citizen of the United States, residing at Dunnfield, Warren county, New Jersey, (whose post-office address is the same,) and HENRY ROSSITER WORTHINGTON, a citizen of the United States, residing at Irvington-on-Hudson, in the county of Westchester, State of New York, (whose post-office address is 547 Fifth avenue, New York city,) have invented certain new and useful Improvements in Controlling Mechanism for Self-Propelled Vehicles, of which the following is a full, clear, and concise specification.

This invention relates to controlling mechanisms for self-impelled vehicles and consists briefly in the provision and arrangement of suitable mechanism hereinafter described, which is capable of simple, accurate and prompt operation and control, for interrupting or controlling the transmission of power to the driving members of the vehicle and applying the brakes to said members, and the invention also involves other important advantages of construction, operation and relative position of the parts hereinafter fully described and more particularly pointed out in the appended claims.

Referring to the one sheet of drawings forming a part hereof, Figure 1 is a side elevation, partly in section, of portions of a vehicle supplied with apparatus embodying this invention and showing clearly the relation of the invention to the said parts; Fig. 2 is an end elevation of the upper portion of Fig. 1; and Fig. 3 is an end elevation of the lower portion of Fig. 1.

The foot board or floor of the body of the car is indicated by the numeral 1 and the parts of the supporting frame of the vehicle are indicated by 2 and 3, these being of the usual ordinary construction well understood by those skilled in the art. A push treadle 4 is mounted in the floor of the car body, preferably on the inclined portion or foot board thereof, so as to be convenient of access to the foot of the driver, and this treadle is comprised of a depressible member 5 adapted to slide or telescope into a hollow support or cup shaped housing 6 which latter is formed with a marginal flange countersunk into the foot board 1 so that its open end will be substantially flush with the surface thereof, and the bottom of the housing extends below the floor, as shown, where it may be utilized for

the support of certain parts hereinafter referred to. It should be observed at this point that the depressible member 5 sliding snugly within its housing, is formed with side walls which move strictly in a direction parallel with the movement of said member and that it is entirely devoid of overhanging parts or apertures, under or into which obstructions, such as rugs and laprobes, might protrude, and thereby interfere with the control of the machine.

The presser rod 7 passes through a central aperture in the bottom of the housing in which it is journaled for sliding movement and is secured to the depressible member 5 by means of its shouldered and tapered end 7' and a nut therefor contained within a cavity or depression in the top of said member. The depressible member 5 is preferably, though not necessarily, hollow and a coil spring 8 is contained within the housing surrounding the rod and exerting its pressure in the direction to force the said member upwardly, which movement is limited by an adjustable collar 9 secured to the presser rod and taking against the bottom of the housing. When the treadle is to be operated by the toe of the driver, as distinguished from his heel, it is preferable for it to have its top surface inclined downwardly and rearwardly, as shown, to which surface a suitable wearing plate 5' may be secured covering the nut cavity beneath.

The presser rod 7, journaled as thus described within the treadle housing, is journaled at its lower end in a bushing 10 fast on a convenient part of the frame and extends below the same where it is provided with means for connection to suitable lever and link mechanism for actuating the brakes of the vehicle. Such connecting means consists of a cross-head 11 keyed and bolted to the extremity of the rod 7 and provided with two opposite straight-bottom cross-channels or recesses, indicated by 12, which recesses are engaged by the forked members of the arm of a bell crank lever 14, journaled on a hollow cross shaft 13 attached to opposite side members of the frame. The ends of the forked members are rounded as shown, and closely embrace the said cross-head so as to prevent axial rotation thereof and of the presser rod. The other arm 14' of the bell crank is connected by a link or other means to the braking apparatus B, shown dia-

grammatically in the drawing as a band or strap brake, although other kinds of brakes may be employed with equal facility. A depression of the presser rod, as by the operation of the treadle 4, will in this manner produce an application of the brakes but other modes than that described of transmission of rod movement to braking apparatus may be employed without departing from this invention. The depressible rod and push treadle are shown as acting in an inclined direction, but obviously they may be disposed vertically or at other angles, due regard being had to freedom of operation of the same.

At some point along the length of the presser rod 7 which is in most convenient proximity to the power transmitting apparatus, a connecting means is applied for utilizing the movement of the rod for the actuation of a device for interrupting the transmission of the motive power to the engine or to the driven members thereof. Such interrupting or controlling device may be embodied in various different mechanical forms according to the character of the transmission which it controls, and in steam driven vehicles may very conveniently be a throttle valve or stop cock C between the boiler and the engine cylinder.

Various mechanical methods of transforming movement of one direction into movement in another direction for operating the device C may be employed, but the method about to be described produces satisfactory results. It consists of a movable or pivoted part, such as a bell crank 16, connected by a link 15 or otherwise to the crank arm of the throttle valve and having a cam and pin engagement with the presser rod, the cam and pin being respectively capable of disposition upon either the rod or the bell crank, as desired, and the camming action of the two parts being so timed as to take place during the first or preliminary traverse of the downward movement of the presser rod. The bell crank 16 is shown as the part provided with the cam and is preferably forked to embrace the presser rod on both sides, as shown, each forked member being provided respectively with similar cam slots, as 17, engaged by cam pins, as 18, carried by the rod. Upon the depression of the rod, the pin or projection 18 rides first through the comparatively short and inclined portion 17' of the slot, giving to the lever its full and complete throw during the preliminary period of travel of said rod and immediately thereafter the remainder of the slot is brought into parallelism with the rod and the further passage of the pin therethrough produces no further movement but retains the lever in its operated position holding the throttle closed. The further traverse of the rod, however, produces an application of the brakes, de-

pendent upon the pressure applied, in obvious manner. Upon reverse movement of the rod under the influence of the spring, the pin striking into the inclined slot portion 17' returns the bell crank lever to its original position, which is such as brings the throttle valve or other power interrupting device to a position permitting full supply of power to the driving mechanism and, of course, the brakes have also been released during the first period of such return movement. In this manner it is rendered possible for the operator to control, by a single instrument, both the supply of power and the application of the brakes, and by the cam engagement described it is insured that the brakes will be off when the power is on and vice versa. The speed of the vehicle also may be slowed down and regulated without the use of the brake by holding the treadle in intermediate positions while the pin 18 still engages the inclined portion 17' of the cam slot. If desired, suitable detent mechanism may be provided for holding the treadle down and the brakes on when the operator's foot has been removed. In constructions of vehicle where the throttle is conveniently near the top of the presser rod, its operating means above referred to is mounted directly upon the depending housing of the treadle 4, provided with suitable lugs for this purpose, and the cam pins 18 are carried upon the collar 9, heretofore described.

It will be quite obvious that the relative arrangement of the several parts above described will be required to be considerably altered in adapting the invention to vehicles of different internal constructions and that in some instances it may be necessary to interchange the relative position, with respect to the presser rod, of the two motion transmitting means or to substitute for them other equivalent gearing or means for transforming and properly adapting the movement of the rod to the specified purpose so that during the travel of a single depression of the same, first the disconnection of the power will be effected and then the application of the brakes. All of such modifications and alterations are intended to be included in this specification and in the following claims:

Having described my invention, what I claim and desire to secure by United States Letters Patent is:—

1. In a controlling mechanism for self-impelled vehicles, the combination of a longitudinally depressible operating member, a throttle valve and a brake apparatus, the said valve being permanently connected with said member to be operated by it during its preliminary traverse and the brake apparatus being connected therewith to be operated by the member during its subsequent traverse.

2. In a controlling mechanism for self-

impelled vehicles, a device for interrupting the supply of motive power to a driven member of said vehicle and a braking apparatus, in combination with an upright reciprocable presser rod mounted in journals respectively carried by the frame of the vehicle and the floor of the body and adapted to operate said device and apparatus, a longitudinally reciprocable push treadle journaled in the said floor and connected to the end of said rod.

3. In a controlling mechanism for self-impelled vehicles, a depressible rod, connecting means associated therewith receiving a complete throw during a preliminary portion of the traverse of said rod, a device for interrupting the supply of motive power to a driven member of the said vehicle operated by said connecting means and a brake apparatus operated by the depression of said rod.

4. In a controlling mechanism for self-impelled vehicles, the combination of a depressible treadle-member, a throttle valve adapted to be regulated thereby during the preliminary traverse of said treadle member, means for connecting said valve and member adapted to hold the valve closed while permitting the further traverse of said member, and a braking apparatus controlled by the treadle member in its said further traverse.

5. In a controlling mechanism for self-impelled vehicles, a depressible rod and a bell crank pivoted adjacent thereto, a cam surface on one of said parts and a cam pin upon the other, in combination with a device for interrupting the supply of motive power to a driven member of the vehicle operated by said bell crank and braking apparatus operated by the depression of said rod.

6. In a controlling mechanism for self-impelled vehicles, a depressible rod and a lever having a forked end embracing said rod, a cam and pin engagement between said rod and forked members and a device for interrupting the supply of motive power to a driven member of the said vehicle actuated by said lever.

7. In a controlling mechanism for self-impelled vehicles, a longitudinally reciprocable presser rod, a lever provided with a slotted arm, a pin on the rod engaging the slot and a power interrupting device actuated by said lever, in combination with braking apparatus brought into action by the depression of said rod.

8. In a controlling mechanism for self-impelled vehicles, a longitudinally reciprocable presser rod and means actuated thereby during a preliminary portion of the traverse of said rod for interrupting the supply of motive power to a driven member of said vehicle, a lever pivoted to a fixed part having an arm in operative connection with the said presser rod and brake apparatus actuated by said lever.

9. In a controlling mechanism for self-

impelled vehicles, a presser rod and a device for interrupting the supply of motive power to a driven member of the said vehicle, actuated thereby, a transverse shaft mounted in the opposite side members of the frame of the vehicle, a lever journaled on said shaft having operative connection with said rod, and braking apparatus actuated by said lever.

10. In a controlling mechanism for self-impelled vehicles, a foot treadle comprising a depressible member, a housing therefor having its open end substantially flush with the floor of said vehicle and extending below the same, in combination with a spring contained in said housing and impelling said depressible member upwardly.

11. In a controlling mechanism for self-impelled vehicles, a foot treadle consisting of a hollow depressible member and a stationary hollow housing therefor into which said member telescopes, a spring contained within said housing and member tending to elevate the latter, in combination with a rod attached to said depressible member adapted to control the motion of the vehicle.

12. In a controlling mechanism for self-impelled vehicles, a foot treadle comprising a depressible member and a housing therefor disposed in the floor of said vehicle and extending below the same, a lever journaled on the exterior of said housing and actuated by said depressible member.

13. In a controlling mechanism for self-impelled vehicles, a foot treadle comprising a hollow depressible member and a housing therefor, a presser rod journaled in said housing and secured to said member, in combination with a spring contained within said housing and hollow member.

14. In a controlling mechanism for self-impelled vehicles, a foot treadle comprising a depressible member, a guiding support therefor and a presser rod journaled in said support and attached to said member, in combination with a spring tending to elevate the member and a collar on the rod taking against said support to limit the upward spring impelled movement thereof.

15. In a controlling mechanism for self-impelled vehicles, a presser rod and a depressible treadle member for actuating the same, a depression or cavity in the top of said member within which said rod is attached to the member and a top plate covering said cavity.

16. In a controlling mechanism for self-impelled vehicles, a treadle consisting of fixed and movable telescopic members and a spring holding them in relatively open or separated positions, the top of said movable member being inclined downwardly and rearwardly.

17. In a controlling mechanism for self-impelled vehicles, a fixed support for the depressible member of a push treadle, a rod

5 journaled in said support and actuated by  
said member, a spring elevating said rod and  
member, and a collar on said rod taking  
against said support to limit the play of the  
rod, in combination with a motion trans-  
mitting part also journaled on said support  
and a projection on said collar to actuate  
the said part.

10 18. In a controlling mechanism for self-  
impelled vehicles, a reciprocable rod for  
actuating braking apparatus, a cross-head  
secured thereto, a lever journaled on a fixed  
part and engaging with said cross-head to  
prevent axial rotation of said rod and adapt-  
15 ed to be oscillated by a depression of the  
rod, and brake apparatus operated by said  
lever.

19. In controlling mechanism for self-  
impelled vehicles, a stationary housing and  
a sliding push member therein having a top 20  
foot surface and its side walls parallel to the  
direction of its motion and being devoid of  
projections or apertures likely to be engaged  
by obstructions to the free operation of said  
member. 25

In testimony whereof, we have signed our  
names to the specification in the presence of  
two subscribing witnesses.

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