H. R. SCHEIDLER.

JACK.

APPLICATION FILED AUG. 31, 1914.

1,161,982.

Patented Nov. 30, 1915.

2 SHEETS—SHEET 1.

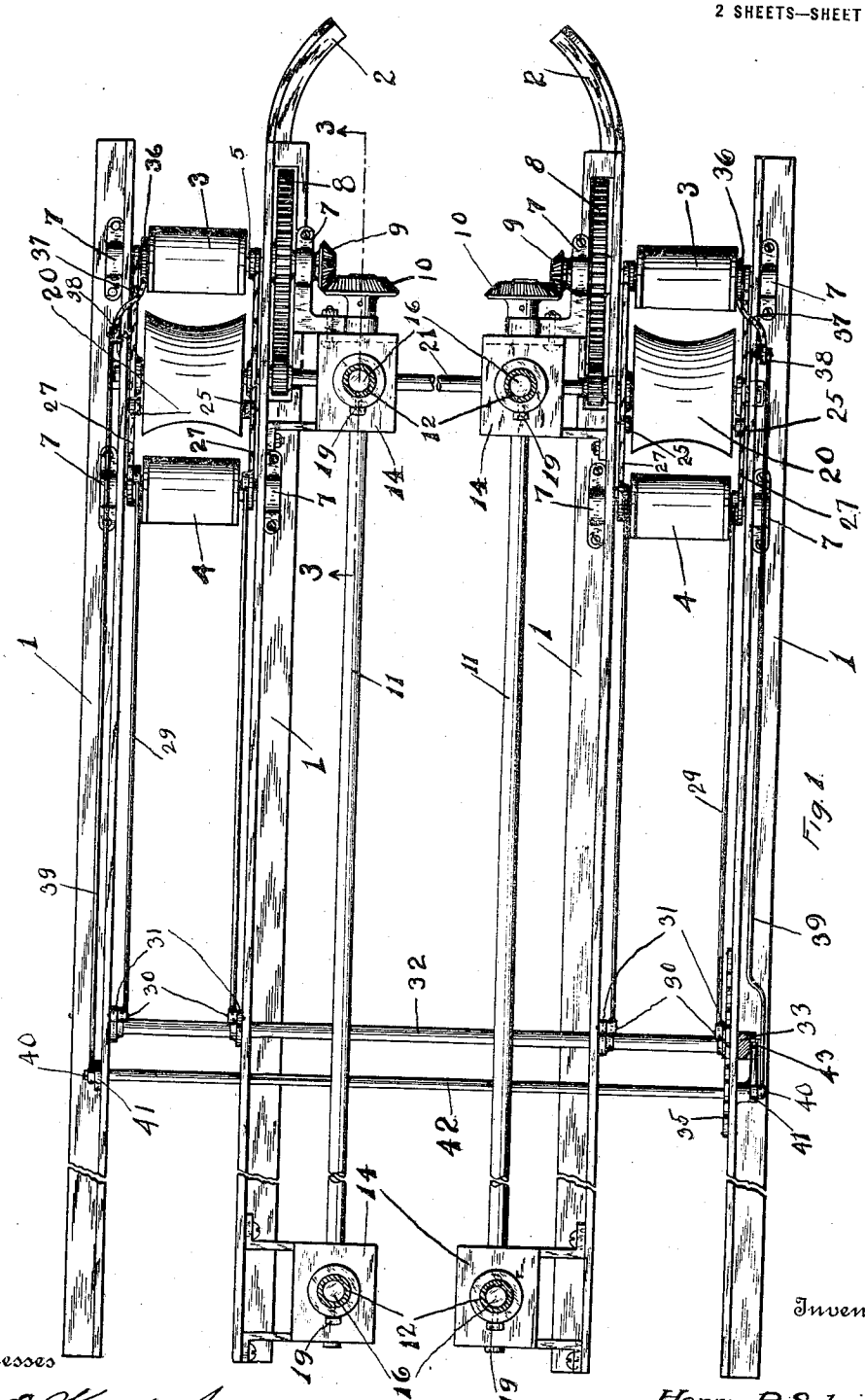


Fig. 1.

Witnesses

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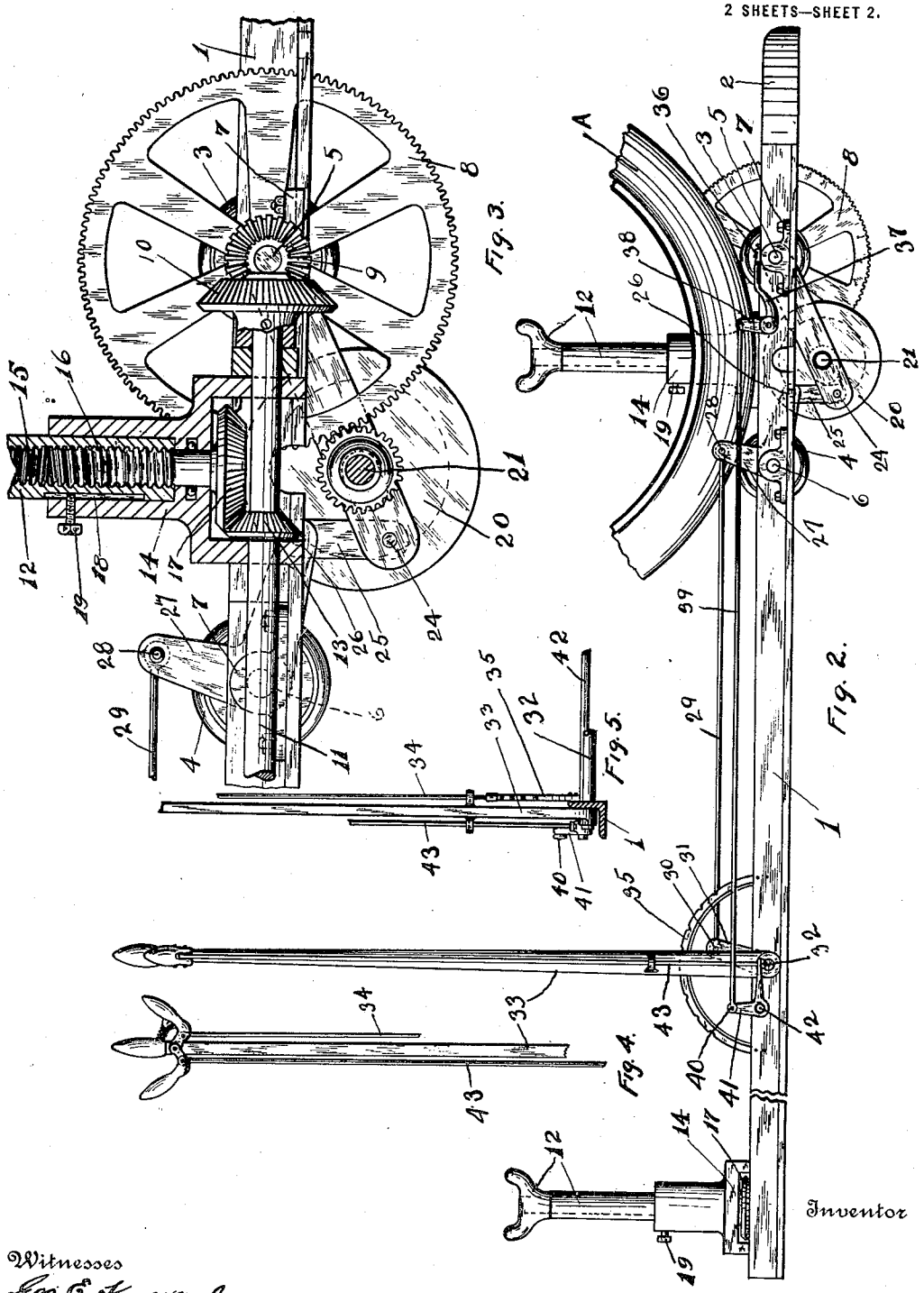


Fig. 3.

Fig. 2.

Fig. 5.

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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JACK.

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To all whom it may concern:

Be it known that I, HENRY R. SCHEIDLER, a citizen of the United States, residing at Newark, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Jacks, of which the following is a specification.

My invention relates to jacks for use in connection with motor vehicles, whereby these vehicles may be slightly elevated or jacked up to relieve their supporting wheels of their weight. It is well known that pneumatic tires especially suffer to a marked extent by being required to sustain the heavy weight of the vehicle itself for intervals of time. My invention aims to overcome this by a structure so arranged that the vehicle may be conveniently run on to the same and then slightly elevated to relieve the wheels of the supporting weight.

The main object of my invention resides in so constructing my jack that it can be made to automatically elevate the vehicle when the same has been run thereon to assume a proper predetermined position. This I accomplish by utilizing the tractive powers of the vehicle drive wheels when the same are caused to continue their rotation after they are correctly positioned over my truck.

My invention also resides in the provision of adjustments for this structure requiring manual operation to effect the elevation.

The preferred embodiment of my invention is shown in the accompanying sheets of drawings, in which similar characters of reference designate corresponding parts, and in which:

Figure 1 designates a top plan view of my automobile jack, Fig. 2 is a side elevation of the structure shown in Fig. 1, Fig. 3 is an enlarged section taken on line 3—3 of Fig. 1 looking in the direction of the arrows, Fig. 4 is an end view of the upper portion of an operating handle used by me, and, Fig. 5 is an end view of the lower portion of this operating handle showing a portion of the jack framework in section.

In the drawings, the base or main framework of my jack is shown as being formed of four angle irons 1, the middle two of which are provided at their forward ends with guide members so shaped as to form an arc of a circle as is indicated at 2. The purpose of these curved portions is to assist somewhat in guiding the vehicle onto the jack should it not be considered in correct alinement while the major portion of the framework, as a whole, is to be placed slightly below the floor line or embedded in cement or concrete, which usually forms the floor of vehicle storage places.

Idle rolls 3 and 4 arranged in pairs, as shown, to fit the drive wheel spacing of an automobile, are mounted upon shafts 5 and 6 respectively, these shafts being supported in bearing members 7 in any desired manner upon the base framework. The inner ends of the shafts 5 are extended somewhat and rigidly carry spur gears 8 in the position shown and also rigidly carry bevel pinions 9 at their extreme inner ends. The idle rolls 3 are mounted to run free on their shafts as opposed to the rigid mounting of the gears 8 and 9, while the idle rolls 4 may be loosely or rigidly mounted on the shafts 6 as may be desired. The bevel pinions 9 are arranged to mesh with bevel gears 10 rigidly carried upon shafts 11 extending longitudinally of the entire framework and designed to be operatively connected to the lifting jack standards 12 in the following manner.

Referring particularly to Fig. 3, it will be noted that the shafts 11 carry bevel pinions 13 located within housings formed by the base structures 14 for the lifting jacks. These base structures 14 have their upper portions centrally bored to receive the lower portions of the lifting jacks 12, which portions are internally threaded as indicated at 15 to receive the upwardly extending threaded shafts 16 each carrying a bevel gear 17 at its lower end arranged to mesh with the bevel pinions 13. In order to prevent rotation of the jack standards 12 upon turning of the threaded shafts 16, I have provided the lower portions of these jacks with a slot 18 within which set screws 19 carried by the housing 14 are arranged to seat themselves. In this manner, vertical movement of the jack standards themselves is permitted while their rotation is prevented.

In order to cause an elevation of these lifting jacks, I have placed drive rolls 20 between each pair of idle rolls 3 and 4, these drive wheels being both mounted upon the transverse shaft 21. This shaft is supported in links 22 pivotally mounted to swing about the shafts 5, these links being of such length that the spur pinions 23 carried by the shaft 21, are always in mesh with the spur gears

8. The ends of the links opposite their pivotal connection about the shafts 5 are pivotally connected at 24 to links 25 whose opposite ends are also pivotally connected at 26 to one arm of a bell crank lever 27, the latter being pivotally mounted upon the shafts 6. The other arm of the bell crank 27 is pivotally connected at 28 to an operating rod 29, the latter extending rearwardly and being pivotally connected at 30 to levers 31 rigidly carried upon a transverse shaft 32. Also rigidly mounted upon this shaft 32 is an operating handle 33 carrying a hand operated locking rod 34 designed for coöperation with the toothed segment 35. It will thus be apparent that the drive wheels 20 may be positively locked in any desired position according to the position assumed by the handle 33 with respect to the locking segment 35.

The operation of my device thus far described is as follows: Assuming the vehicle to have run into the correct position, which position is indicated by the portion A of one tire shown in Fig. 2, continued rotation of the vehicle drive wheels will permit it to remain stationary because of the idle rotation of the rolls 3 and 4. The operator then grasps the handle 33 and by movement toward the left of Fig. 2, the drive rolls 20 are moved to a position of engagement with the vehicle drive wheels. Their rotation is then transmitted through spur gears 23 and 8 and bevel gears 9 and 10 to the bevel gears 13 and 17, the latter operating directly to cause an elevation of the lifting jacks 12. When these lifting jacks have been elevated to the desired level, the handle 33 may again be retracted to discontinue this elevation or the motive power of the vehicle itself may be discontinued. Should it be desired to automatically elevate the vehicle upon its entrance on to the jack, the handle 33 may be positively held in such position that the driving rolls 20 will instantly assume a contacting engagement with the vehicle drive wheels as these drive wheels enter upon the jack. As soon as the vehicle has been sufficiently elevated, their engagement with the vehicle wheels will be relieved and, therefore, continued elevation is impossible.

In order that the vehicle may be removed from the jack by its own power, I have provided each of the rolls 3 with a ratchet wheel 36 rigidly mounted thereon inasmuch as these rolls are mounted idly upon the shafts 5 and adapted to coöperate with the pivoted dog 37, the latter carrying an upwardly extending arm 38 to which is pivotally attached an operating rod 39 leading toward the handle 33 and being pivotally connected at 40 to a bell crank 41, the latter being also pivotally mounted on a transverse shaft 42 to the base framework. The other arm of this bell crank is connected to the operating rod 43 carried upon the opposite side of the handle 33 from the rod 34. Thus, should it be desired to lower the vehicle from the jacks, the rod 43 is operated to cause a movement of the bell crank 41 to retract the pivoted dogs 37 from their position of engagement with the ratchet wheels 36. Then, a reverse movement of the vehicle drive wheels when they are in engagement with the operating rolls 20 will cause the jack standards 12 to be lowered. As soon as these drive wheels rest upon the idle rolls 3 and 4 and are set in engagement with the drive rolls 20, the dogs 37 may again be dropped to the position shown in Fig. 2, whereupon idle movement of the rolls 3 is prevented and, therefore, the vehicle will move from its position upon the jack.

It will thus be apparent that I have provided a type of jack wherein the vehicle may be automatically elevated upon assuming a correct position over the jack or the operating handle may be so set that this elevation is not automatic, as may be desired. It will further be apparent that my jack may be permanently mounted or embedded in the floor of the vehicle storage room and effectually serve its purpose.

What I claim, is:

1. An automobile jack comprising a base framework, a plurality of pairs of rolls journaled in said framework to fit the wheel spacing of an automobile, said pairs of rolls running idle in one direction, means for preventing rotation of certain of said rolls in a reverse direction, a plurality of upwardly movable jack standards, and means for giving upward movement to said jack standards by forward rotation of the drive wheels of the automobile when they are resting on said rolls.

2. An automobile jack comprising a base framework, a plurality of pairs of rolls journaled in said framework to fit the wheel spacing of an automobile, a plurality of upwardly movable jack standards, said pairs of rolls being arranged to run idle under continued rotation of said drive wheels without moving said jack standards, and means for giving upward movement to said jack standards when desired by rotation of the automobile drive wheels.

3. An automobile jack comprising a base framework, a plurality of pairs of idle rolls journaled in said framework to fit the drive wheel spacing of an automobile, a plurality of upwardly movable jack standards, a drive roll operatively connected to said standards and movably mounted adjacent said idle rolls supporting the drive wheels of the automobile, and means for moving said drive roll into contacting engagement with the automobile drive wheels when they are resting on their idle rolls.

4. An automobile jack comprising a base

framework, a plurality of pairs of idle rolls journaled in said framework to fit the drive wheel spacing of an automobile, a plurality of upwardly movable jack standards, drive rolls operatively connected to said standards and movably mounted, said pairs of idle rolls supporting the drive wheels of the automobile, means for moving said drive rolls into contacting engagement with the automobile drive wheels when they are resting on their idle rolls, and adjusting means for maintaining said drive rolls in a position to automatically cause an elevation of said jack by the movement of the drive wheels of the automobile ontc their respective idle rolls, said means being releasable to move said drive rolls out of a position of engagement with the automobile drive wheels.

5. An automobile jack comprising a base framework, a plurality of pairs of idle rolls journaled in said framework to fit the drive wheel spacing of an automobile, a plurality of upwardlv movable jack standards, a drive roll operatively connected to said standards and movably mounted adjacent said idle rolls supporting the drive wheels of the automobile, means for moving said drive roll into contacting engagement with the automobile drive wheels when they are resting on their idle rolls, and means for locking certain of said idle rolls for the automobile drive wheels against movement in one direction.

6. An automobile jack comprising a base framework, a plurality of pairs of idle rolls journaled in said framework to fit the drive wheel spacing of an automobile, a plurality of upwardly movable jack standards, drive rolls operatively connected to said standards and movably mounted between each pair of idle rolls adapted to support the drive wheels of the automobile, an operating handle mounted intermediate the ends of said framework, connections between said handle and said drive rolls arranged to move the drive rolls into contacting engagement with the automobile drive wheels when they are resting on their respective idle rolls, and means for holding said handle to any position of adjustment to hold the drive rolls to a corresponding position.

7. An automobile jack comprising a base framework, a plurality of pairs of idle rolls mounted in said framework to fit the wheel spacing of an automobile, shafts carried by said framework upon which said rolls are mounted, a gear rigidly mounted upon one of the shafts of each set of rolls, bevel pinions rigidly mounted on the same shafts, bevel gears meshing with said pinions, shafts extending longitudinally of the framework upon which said bevel gears are rigidly mounted, a plurality of upwardly movable jack standards operatively connected to said last named shafts, a plurality of drive rolls mounted between each pair of idle rolls, links pivotally mounted on the shafts carrying said gears and bevel pinions, a shaft for supporting said drive rolls carried by said links opposite their pivotal support, pinions carried by said last named shaft meshing with said first named gear, an operating handle, and leverage means between said handle and said drive rolls for moving the drive rolls in and out of engagement with the automobile drive wheels.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY R. SCHEIDLER.

Witnesses:
WALTER E. L. BOCK,
A. L. PHELPS.

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