

(No Model.)

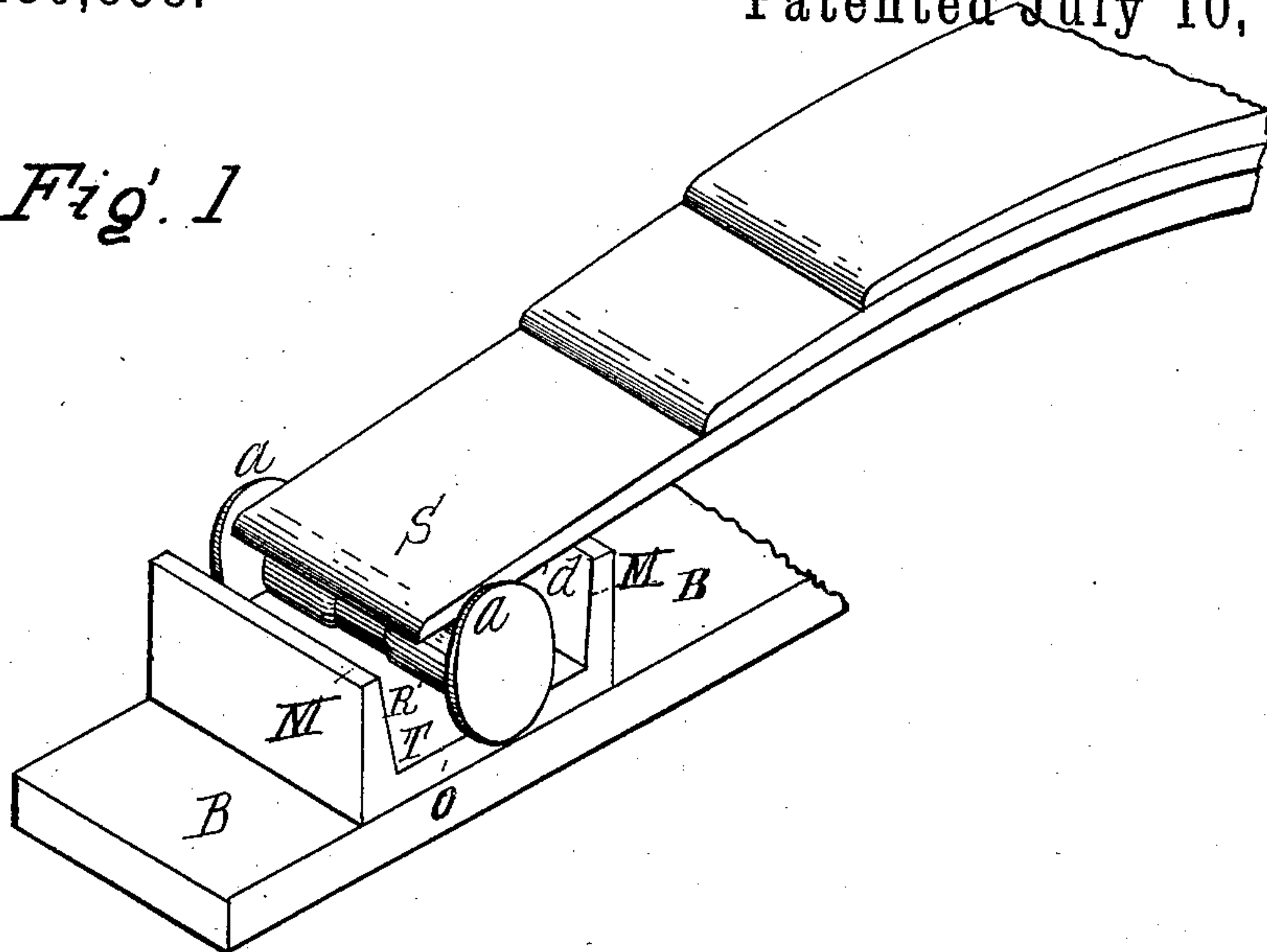
J. K. P. PINE.

WAGON SPRING.

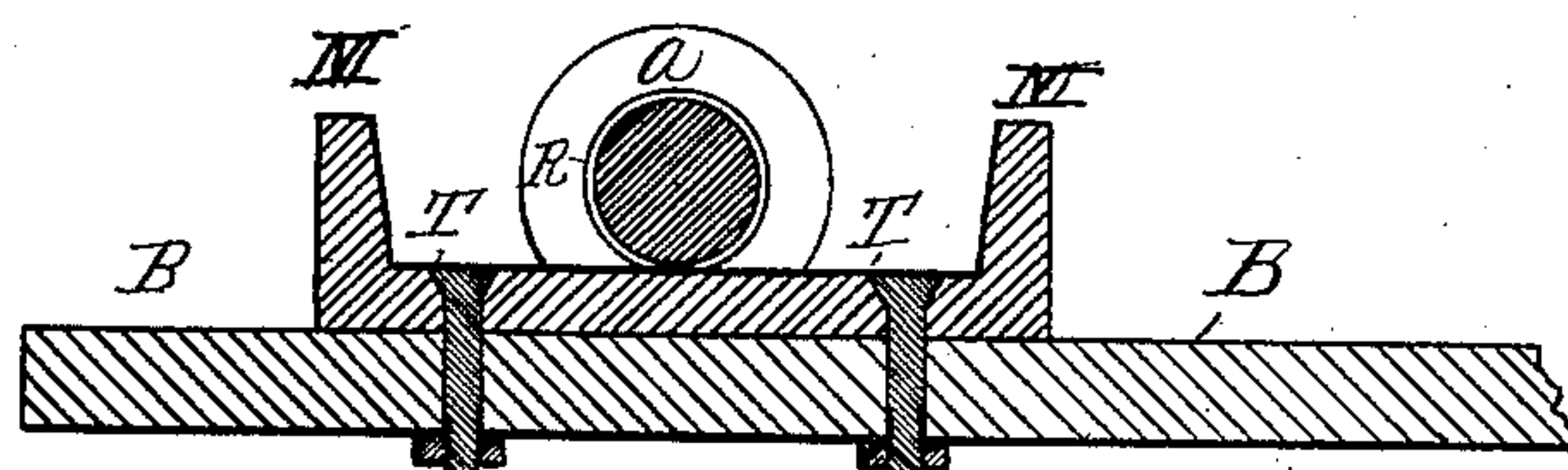
No. 280,858.

Patented July 10, 1883.

*Fig. 1*



*Fig. 2*



*Witnesses*

*Charles S. Brintnall*

*P. C. Ricketts*

*Inventor*

*James K. P. Pine*

*By W. E. Hagans  
his atty-*

# UNITED STATES PATENT OFFICE.

JAMES K. P. PINE, OF LANSINGBURG, NEW YORK.

## WAGON-SPRING.

SPECIFICATION forming part of Letters Patent No. 280,858, dated July 10, 1883.

Application filed April 20, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES K. P. PINE, of the village of Lansingburg, county of Rensselaer, and State of New York, have invented a new and useful Improvement in Friction-Rollers for Buckboard-Wagon Springs, of which the following is a specification.

My invention relates to that class of spring-boards in which a metallic spring and a spring-board are combined to support the body of the vehicle, the object of my improvement being to so construct the combined spring and spring-board that a friction-roller may be combined therewith to avoid the noise and grating sound produced by the adjusting ends of the spring as they slide over the plates at the ends of the board.

My invention consists, as will hereinafter be more fully described, in the combination, with a metallic spring and spring-board, of a roller, a roller-track, flanges upon the roller ends adapted to engage with the sides of the roller-track, and stops upon the latter, with the roller-track secured to the board, and the under side of the spring, at the ends, constructed to rest upon the rollers.

Accompanying this specification, and forming a part of it, is a sheet of drawings containing two figures illustrating my invention, and in both of which the same designation of parts by letter reference is used.

Figure 1 shows in perspective an end view of a combined spring and spring-board, and also showing the roller, roller-track, and roller-stops, the ends of the spring-board and spring being shown as broken off to illustrate only their operative parts in the combination that constitutes my invention, the application to each end of the spring-boards and springs being the same. Fig. 2 shows a longitudinal section taken through the roller, roller-track, roller-stops, and the end of the spring-board.

The parts of the apparatus are designated by letter reference and their operation explained as follows:

The letter S indicates the end of a metallic spring of the ordinary elliptical form used for

such purposes, and *d* a flat under surface produced on the end of the spring.

The letter B designates the end of the spring-board, which board is constructed of the usual form and adapted to be combined to operate in connection with the metal spring S to form a wagon-body support; and the letter R indicates a roller made with the flange ends *a a*. The letter T designates the roller-track, and M M stops on the end of the track. The roller R, between its end flanges, projects above the tops of the stops M M, and the flanges *a a* engage with the vertical sides O of the track. The track T and stops M M are preferably made of one piece of metal, and are secured firmly to the face of the board. The roller R, as thus constructed, is free to roll back and forth in the track between the stops. The flat surface *d* of the spring rests on the roller between the flanges, and as the spring is pressed down and extended laterally at the ends the latter move outwardly and inwardly on the rollers with an easy noiseless motion as this vibratory motion of the spring takes place. As the spring-board is also elastic and yields with the metallic spring under pressure, the roller device, being attached to the board, and as constructed, adapts itself to adjust under the elastic action of both spring and spring-board.

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

The combination of the roller R, constructed with the end flanges, *a a*, the roller-track T, constructed with the end stops, M M, and vertical sides O, and adapted to be attached firmly to the face of the spring-board B, and the flat under and end surface, *d*, of the spring S, constructed to rest on said roller, and arranged to operate as herein shown and described.

Signed at the city of Troy, N. Y., this 7th day of April, 1883.

JAMES K. P. PINE.

Witnesses:

CHARLES S. BRINTNALL,  
FRANK S. SEARLE.