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HANDICAPPING DEVICE FOR RACING SULKIES

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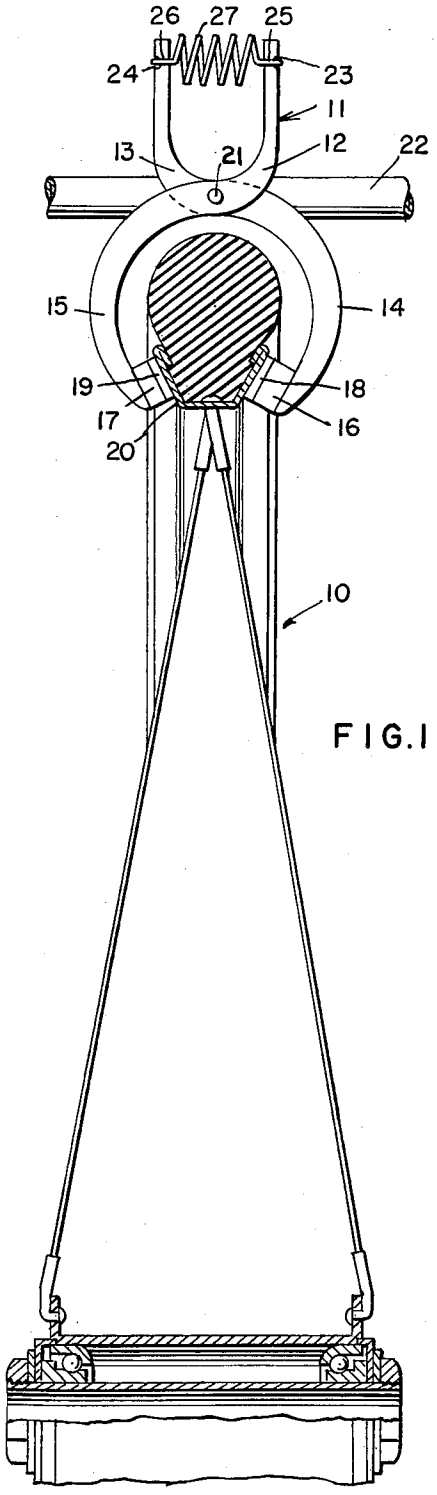


FIG.1

FIG.2

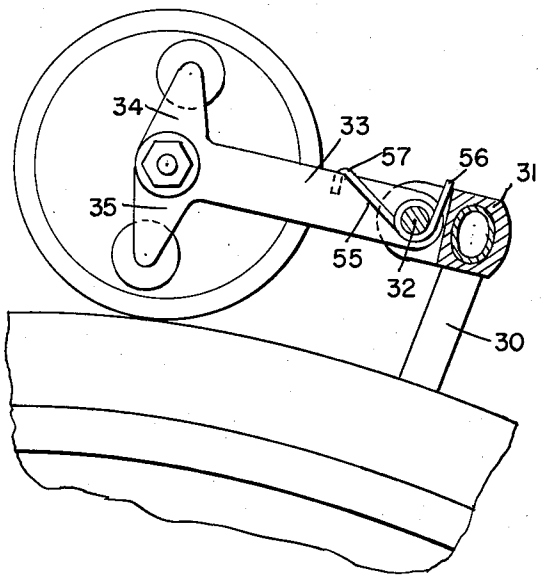
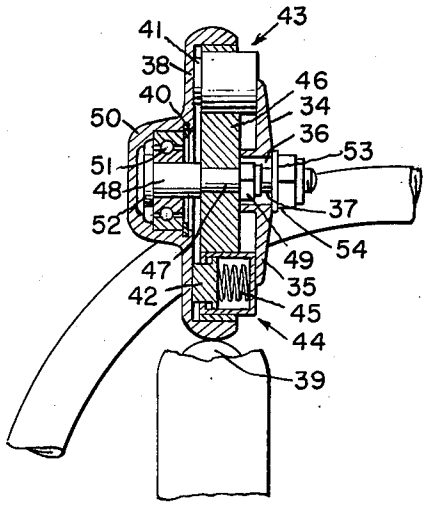


FIG.3



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HANDICAPPING DEVICE FOR RACING SULKIES

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Original application Dec. 31, 1956, Ser. No. 631,963, now Patent No. 2,997,136, dated Aug. 22, 1961. Divided and this application July 10, 1961, Ser. No. 122,704
3 Claims. (Cl. 188—19)

This invention relates to handicapping devices for racing sulkies and pertains more particularly to mechanism for effecting a constant frictional drag in resistance to the rotation of sulky wheels during a race and by so doing, imposing a handicap upon the horse drawing the sulky. This application is a division of our copending application Serial No. 631,963, filed December 31, 1956, for Handicapping Device for Racing Sulkies, now U.S. Patent No. 2,997,136.

Ordinarily, racing sulkies are attached to the horse in such a manner that the sulky and its driver are balanced and impose substantially no weight upon the horse's back. It is the usual practice in saddle racing, of course, to provide handicapping and it is a primary object of this invention to provide an equivalent system in sulky racing.

Another object of this invention is to provide a means for handicapping horses in sulky races by establishing a constant frictional drag resisting the rotation of the sulky wheels and to provide this means in such a form as to be easily changeable to vary the amount of handicap imposed.

Still another object of this invention is to provide a means for handicapping horses in sulky races which incorporates a device rotated in response to rotation of the sulky wheels and bearing thereagainst and including mechanism resisting rotation of the sulky wheels to impose a constant frictional drag thereupon.

With the above 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 drawing and pointed out in the claims hereto appended, it being understood that various changes in the form, proportions, 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 drawing:

FIG. 1 is a cross-sectional view taken through a sulky wheel illustrating one form of the handicapping device;

FIG. 2 is a side elevational view illustrating the modified form of handicapping device; and

FIG. 3 is a transverse sectional view taken through the assembly shown in FIG. 2.

Referring now more particularly to FIG. 1, the construction shown includes a sulky wheel designated generally by the reference character **10** and the handicapping device designated generally by the reference character **11**. The handicapping device consists of a pair of tongue-like members **12** and **13** having integral jaw portions **14** and **15** straddling the sulky wheel and carrying brake shoe members **16** and **17** respectively upon which members there are mounted suitable brake linings **18** and **19** which bear against the opposite sides of the wheel rim **20**. The two jaw members are pivotally interconnected by means of a pin **21** which is made fast to a portion of the sulky frame **22** and the upper ends of the jaw members are notched as at **23** and **24** near their extremities to receive the opposite hook eye ends **25** and **26** of a tension spring **27** which imposes a predetermined degree of squeezing action upon the jaw members to urge the linings **18** and **19** into engagement with the wheel rim. The amount of handicap is, of course, directly proportional to the strength of the spring **27** and the degree of handicapping may be varied at will by changing the spring and replacing it with either a heavier or lighter spring. Conveniently, such springs can be color coded according to their tension characteristics for the convenience of the track officials but, of course, it would be desirable to impound and test the springs of a winning horse or horses after each race and to check these spring tensions carefully. Alternatively, any suitable means may be provided for locking the spring against removal by unauthorized persons.

FIGS. 2 and 3 illustrate a modified form of handicapping device and in this case, the sulky frame portion **30** carries a mounting bracket **31** rigidly fixed thereto by suitable means, the bracket in turn carrying a pivot pin **32** which extends laterally therefrom and which is journalled within one end of the lever arm **33**. The opposite end of the lever arm **33** carries oppositely extending lateral projections **34** and **35** and intermediate these extensions is an aperture **36** through which a retaining bolt **37** projects. A hollow wheel member **38** engages the periphery of the sulky tire **39** and rotates in response to movement of the sulky wheel. The annular inner surface **40** of the hollow wheel provides a friction face against which the generally cylindrical brake stops or plungers **41** and **42** engage. These brake plungers are carried within thimble or capsule members **43** and **44** and within each capsule is a compression spring **45** which urges the brake elements against the friction surface **40** of the wheel **38** with a predetermined force as occasioned by the particular strength of the spring **45** utilized. The capsules themselves are held stationary by virtue of the lateral extensions **34** and **35** of the lever **33**, the free ends of which extensions overlie and engage upon the capsules. That is to say, the distance between the inner surface of the legs **34** and **35** and the opposing annular inner surface **40** of the wheel **38** is less than the length of the capsules. Thus, when the capsules are inserted and then the wheel attached to the lever **33**, the springs **45** are compressed a predetermined amount to impose the predetermined frictional drag.

The capsules **43** and **44** are carried by a circular body member **46** which is provided with suitable bores for slidably receiving the capsules and which body member is rigid with the previously mentioned bolt **37**. For this purpose, the member **46** is provided with a central opening through which an intermediate portion **47** of the bolt extends and an enlarged portion **48** of the bolt bears against one side of the member **46**, whereas against the other side is engaged a suitable self-locking nut **49** so as to firmly sandwich the body member **46** between the nut **49** and the enlarged portion **48**. The hub **50** of the wheel **38** receives a ball bearing unit **51** which surrounds the enlarged portion **48** of the bolt, with the head **52** of the bolt retaining the bearing assembly in place. The opposite extremity of the bolt **37** projects completely through the lever arm **33** and is provided with a suitable washer **53** and associated self-locking nut **54** so as to rigidly affix the lever arm, the bolt and the body member **46** together so that they are held in fixed position, whereas the wheel **38** is able to rotate against the resistance applied thereto by the brake members **41** and **42**.

In order to maintain the wheel **38** in proper engagement with the tire **39**, a suitable spring device **55** may be employed, see particularly FIG. 2. The spring device is wrapped about the pin **32** and one end **56** thereof engages over the bracket **31** and the other end **57** engages over the upper edge of the lever **33**, the spring being normally under tension so as to constantly urge the wheel into engagement with the sulky tire.

As this invention may be embodied in several forms without departing from the spirit or essential character-

istics thereof, the present embodiment is therefore illustrative and not restrictive, and since the scope of the invention is defined by the appended claims, all changes that fall within the metes and bounds of the claims or that form their functional as well as conjointly cooperative equivalents are therefore intended to be embraced by those claims.

We claim:

1. A handicapping device in combination with a sulky having a frame and wheels rotatably supporting the frame, said handicapping device comprising an arm, means pivotally mounting one end of the said arm on said frame and about an axis perpendicular to a plane containing one of said sulky wheels, a shaft parallel to said axis and fixed to the other end of said arm, a wheel including a radial disc and a ring-shaped flange secured to one side of said disc, said wheel being rotatably mounted on said shaft, resilient means urging said flange into frictional engagement with one of said sulky wheels with a constant predetermined force, a support disc rigidly secured to said shaft and received within said ring-shaped flange, a brake pad carried by said support disc, spring means urging said brake pad into engagement with said radial disc to impose a continuous and predetermined constant frictional drag upon said sulky wheel, said flange and radial disc enclosing the engaging frictional surfaces of said radial disc and friction pad so as to prevent said friction surfaces from being contaminated with foreign material.

2. The combination as defined in claim 1, including bearing means on one end of said shaft rotatably supporting said wheel, the central portion of said shaft extending through the center of said support disc, a radially extending shoulder formed on said shaft between said bearing means and said support disc, the other end of said shaft being provided with threads thereon and extending through an aperture in the other end of said arm, first nut means threaded on said threads and urging said support disc against said shoulder, second nut means threaded on said threads and urging the other end of said arm against said support disc.

3. The combination as defined in claim 2, including abutment means integrally formed with the other end of said arm and projecting radially outwardly from said shaft, said spring means being compressed between said abutment means and said brake pad.

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