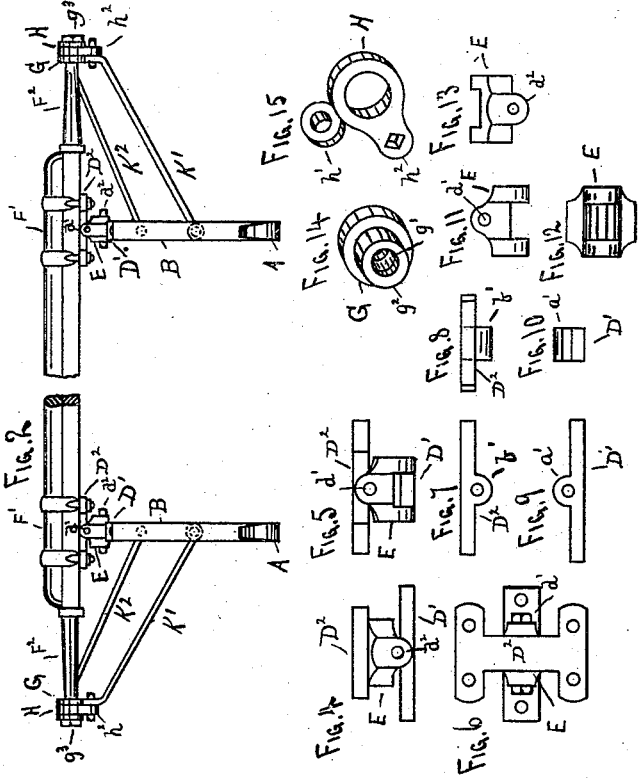
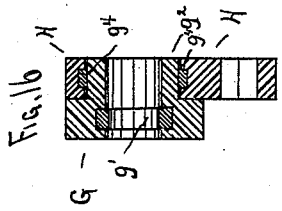
(No Model.) 2 Sheets—Sheet 1.

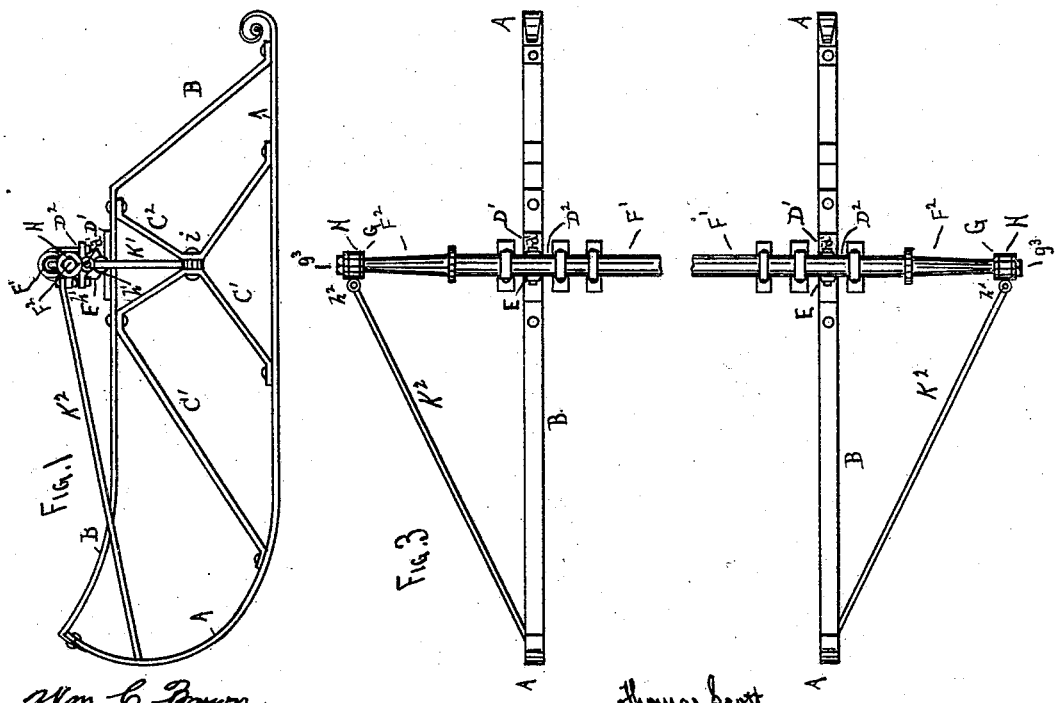
# T. SCOTT.

## SLEIGH ATTACHMENT FOR VEHICLES.

No. 343,610. Patented June 15, 1886.







Wm. C. Brown
H. S. Webster. WITNESSES.

Thomas Scott.
INVENTOR, BY
Charles N. Woodward. Attij.

(No Model.) 2 Sheets—Sheet 2.

# T. SCOTT.

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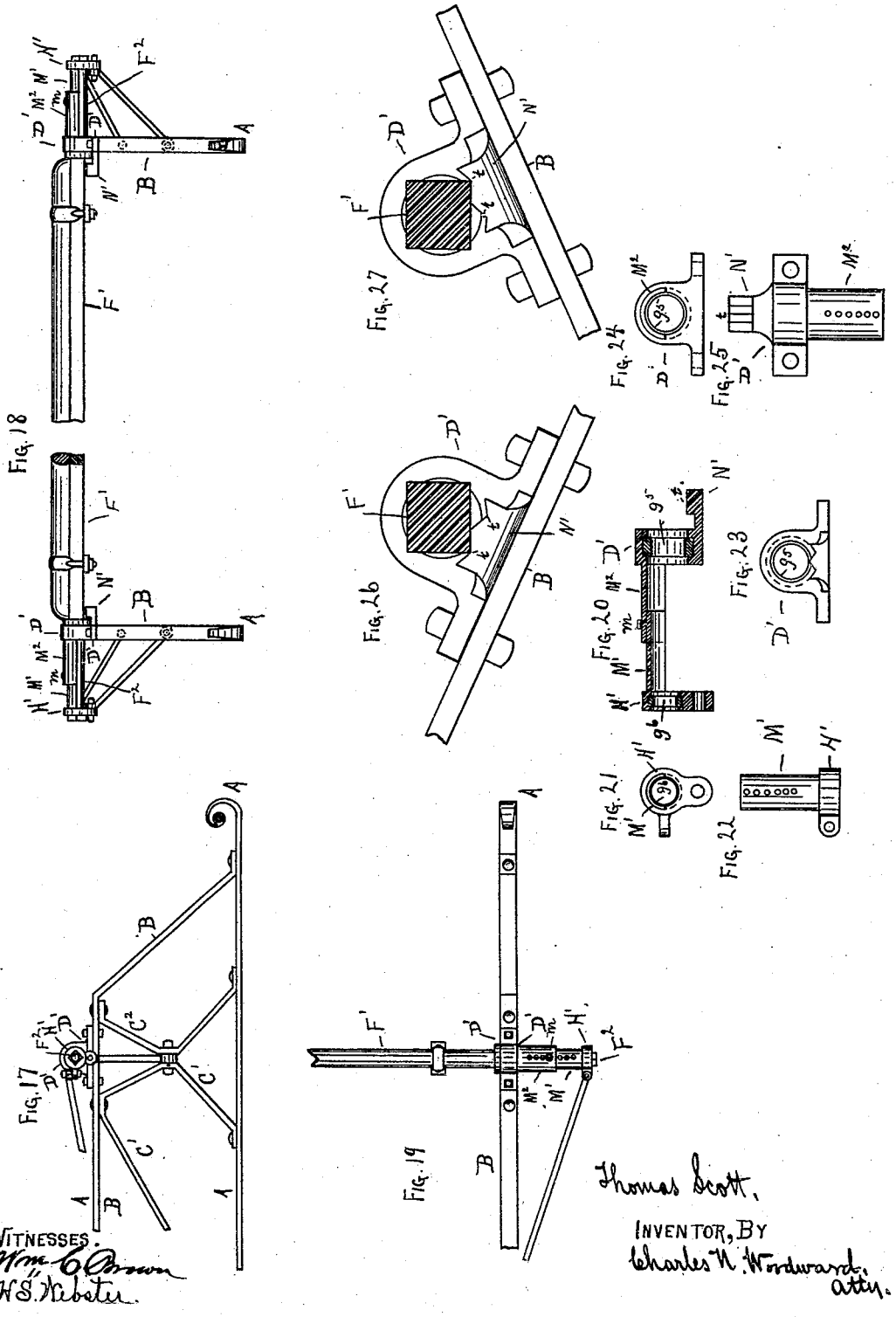


Witnesses.
Wm. E. Brown
H. S. Webster.

Thomas Scott.
Inventor, By
Charles N. Wordward.
Atty.

# UNITED STATES PATENT OFFICE.

THOMAS SCOTT, OF ST. PAUL, MINNESOTA, ASSIGNOR TO MARGARET L. SCOTT, OF SAME PLACE.

## SLEIGH ATTACHMENT FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 343,610, dated June 15, 1886.

Application filed June 5, 1885. Serial No. 167,792. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS SCOTT, a citizen of the United States, and a resident of St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Bob Sleigh Attachments to Vehicles, of which the following is a specification.

This invention relates to bob-sleighs adapted to be attached to the axles of vehicles; and it consists in the construction, combination, and arrangement of parts, as hereinafter shown and described.

In the drawings, Figure 1 is a side elevation. Fig. 2 is a rear elevation, and Fig. 3 is a plan view of the invention complete, Figs. 2 and 3 being shown with a portion of the central part of the axle broken out to reduce the size of the drawings. Fig. 4 is a side elevation. Fig. 5 is a rear elevation, and Fig. 6 is a plan view of one of the couplings detached. Figs. 7 and 8, 9 and 10 are detail views of the clip-plates of the couplings detached. Figs. 11, 12, and 13 are detached details of the "head" of the coupling. Figs. 14 and 15 are detached perspective views of one of the swiveled brace couplings. Fig. 16 is an enlarged detached sectional view of the swiveled brace-coupling. Fig. 17 is a side elevation. Fig. 18 is a rear elevation, and Fig. 19 is a plan view showing a modification of the construction. Fig. 20 is an enlarged sectional detail of the axle-coupling. Figs. 21, 22, and 23, 24, and 25 are detached views of the parts shown in Fig. 19. Figs. 26 and 27 are enlarged details illustrating the operation of the "stop" on the coupling.

The runners are formed of iron bars A, turned up at their forward ends and with their forward and rear ends connected by bent raves B, as shown.

C' $C^2$ are curved or bent braces connecting the runners A and the raves B, and riveted, bolted, or otherwise fastened thereto, as shown.

Attached to the top of each of the raves B above the point where the braces C' $C^2$ converge toward each other are plates D', each provided with a semicircular projection, $a'$, at right angles to the rave, to which the plate is attached, and adapted to fit into a cavity in the lower side of a "knuckle" or connecting block, E, this knuckle having a similar cavity in its upper side, but at right angles to the cavity in the lower side. Into this upper cavity a semicircular projection, $b'$, on the lower side of a plate, $D^2$, fits, the two semicircular projections, being secured to the knuckle-block by bolts $d'$ $d^2$, and the two plates D' $D^2$ being at right angles to each other. The plate $D^2$ is attached to the axle F' of a vehicle by clips or other suitable devices just inside of the journals $F^2$ of the axle, as shown in Figs. 1, 2, and 3.

The knuckle-block E is shown disconnected from the other parts in Figs. 11, 12, and 13, and the knuckle-block and the plates D' $D^2$ are shown connected together in Figs. 4, 5, and 6, while the plates D' $D^2$ are shown disconnected in Figs. 7, 8, 9, and 10. The body of the knuckle-block E does not fit closely upon the plates D' $D^2$, so that spaces are left between them to permit a slight degree of oscillation between the runners and the axle, as hereinafter described.

On the outer end of each of the axle-bearings or journals $F^2$ is secured a collar, G, somewhat larger than the axle, and having a rubber ring or washer, $g'$, in its interior, the latter adapted to press upon and remain in contact with the axle-journals, so that all the strains between the axle and collar are borne by this washer, and thus no wear or friction will occur upon the journals. The collars G are provided with projecting rings or sleeves $g^2$ on one side, over each of which a ring or collar, H, fits, the latter being held in position upon the collars G and the sleeves $g^2$ by the ordinary nut and washer, $g^3$, of the axle. These collars H are also provided with rubber bearing-washers $g^4$ and with two projecting perforated lugs, $h'$ $h^2$, the lug $h'$ adapted to support one end of a brace, $K^2$, which brace passes forward and is bolted to the runner A near its forward end, while the lug $h^2$ is adapted to receive and support one end of a brace, K', whose other end runs downward and inward, and is pivoted by the bolt $i$ between the braces C' $C^2$ at their nearest meeting points. By this means the runner is firmly connected to the axle, both horizontally and perpendicularly, so that it will not turn over beneath the vehicle or swing or play laterally, but at the same time the presence of the braces does not in-

terfere with the play of the runner beneath the axle horizontally, or, in other words, the runner is free to run into all the irregularities or surface on the ground without affecting the axle or the body of the vehicle. Another advantage is that each runner is independent of all the other runners under the vehicle, so that if one runs into a hollow or over an obstruction it does not affect any of the other runners. The braces K′ K² also serve to hold the runners parallel with each other and at right angles to the axle, while at the same time not interfering with the oscillation of the runners on the axle. The runners and raves may be made as heavy or as light as desired to adapt them for use under the heaviest wagons or the lightest buggies or gigs.

I also claim a great advantage by the use of the rubber washers or bearing-rings $g'$ $g^4$, as all strains are thereby neutralized and no wear occurs upon the axle-bearings, which would destroy their usefulness when the wheels are replaced.

In Figs. 17, 18, 19, &c., I have shown a slight modification in the construction, consisting in inserting the journals F² of the axle directly through the "chocks" D′, attached to the raves B, instead of connecting them by the knuckle-blocks E, and forming upon the inner face of the collar H′ a semicircular plate, M′, adapted to fit over or underneath a similar plate, M², projecting from the chock D′, as shown, these two plates partially encompassing the journal F² and secured together by bolts or rivets *m*. The chocks D′ and the collars H′ will be provided with rubber washers or collars $g^5$ $g^6$, to receive the thrust and friction of the journals F², and thereby prevent wear or undue friction on the axles. Projecting from the inner edges of the chocks or plates D′ are lugs N′, having their inner ends turned upward beneath the axles, and with notches *t* in said upturned portions, to serve as stops to the runners to prevent them oscillating to too great an extent upon the axles, and to prevent the runners turning completely around upon the axles, as there might be danger of their doing if the stops were not placed where shown to prevent it.

In Figs. 26 and 27 the action of the stops on N′ N′ is more clearly shown.

Having thus described my invention, what I claim as new is—

1. The runners, consisting of the curved bars A, raves B, and braces C′ C², and adapted to be pivotally attached to the axle F′ of a vehicle, collars H, pivoted upon the outer ends of the journals F² of said axle, braces K′, connecting said collars H with said braces C′ C² at their nearest meeting points, and braces K², connecting said collars H with the forward ends of said runners A, substantially as and for the purpose set forth.

2. The combination of axle F′, having plate D² attached thereto, runners consisting of the curved bars A, raves B, and braces C′ C², plates D′, attached to said raves, block E, pivoted by its opposite sides to and between said plates D′ D², collars H, pivoted upon the outer ends of the journals of said axle, braces K′, connecting said collars with said braces C′ C² at their nearest meeting points, and braces K², connecting said collars with the forward ends of said curved bars A, substantially as and for the purpose set forth.

3. The runners of a bob-sleigh, bearing-blocks secured to said runners, and stop-notches formed on said blocks, in combination with an axle rotatively mounted in said blocks, which engages said notches, whereby the extent of its rotation is limited in either direction, substantially as set forth.

4. In a bob-sleigh, runners, tubular collars, and brace-rods connecting said collars with said runners, in combination with an axle rotatively mounted in said collars, and rubber rings or washers interposed between the bearing-surfaces of said collars and axle, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

THOMAS SCOTT.

Witnesses:
C. N. WOODWARD,
J. P. LEITNER.