Aug. 9, 1955 G. S. BRANHAM 2,714,860

TRACK SKATE APPLYING MACHINE

Filed Oct. 5, 1950 4 Sheets-Sheet 1

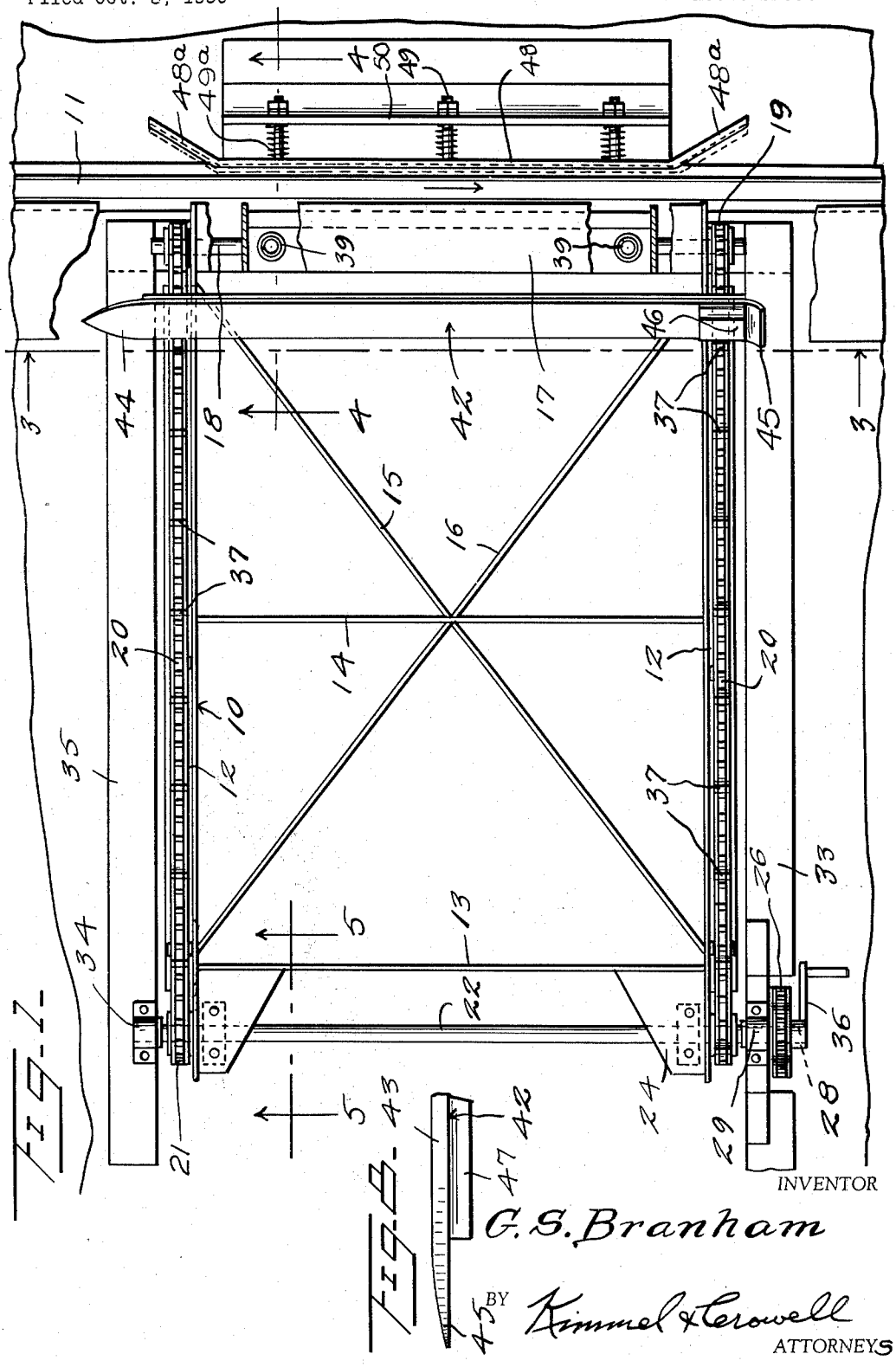


FIG. 1.

FIG. 2.

INVENTOR

G. S. Branham

BY Kimmel & Crowell

ATTORNEYS

Aug. 9, 1955 G. S. BRANHAM 2,714,860

TRACK SKATE APPLYING MACHINE

Filed Oct. 5, 1950 4 Sheets-Sheet 2

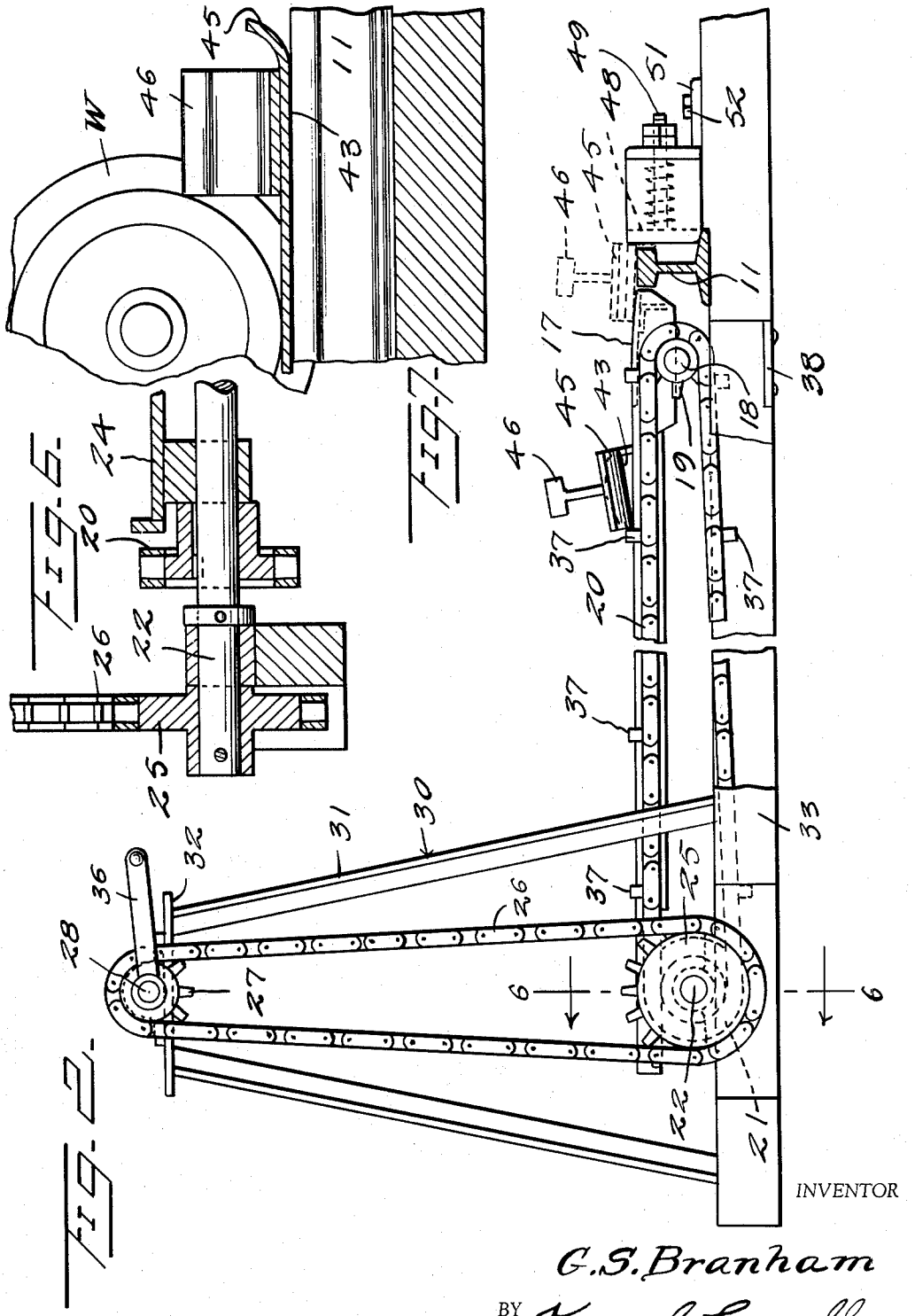


FIG. 1.

FIG. 6.

FIG. 2.

INVENTOR

G. S. Branham

BY Kimmel & Crowell

ATTORNEYS

Aug. 9, 1955 G. S. BRANHAM 2,714,860

TRACK SKATE APPLYING MACHINE

Filed Oct. 5, 1950 4 Sheets-Sheet 3

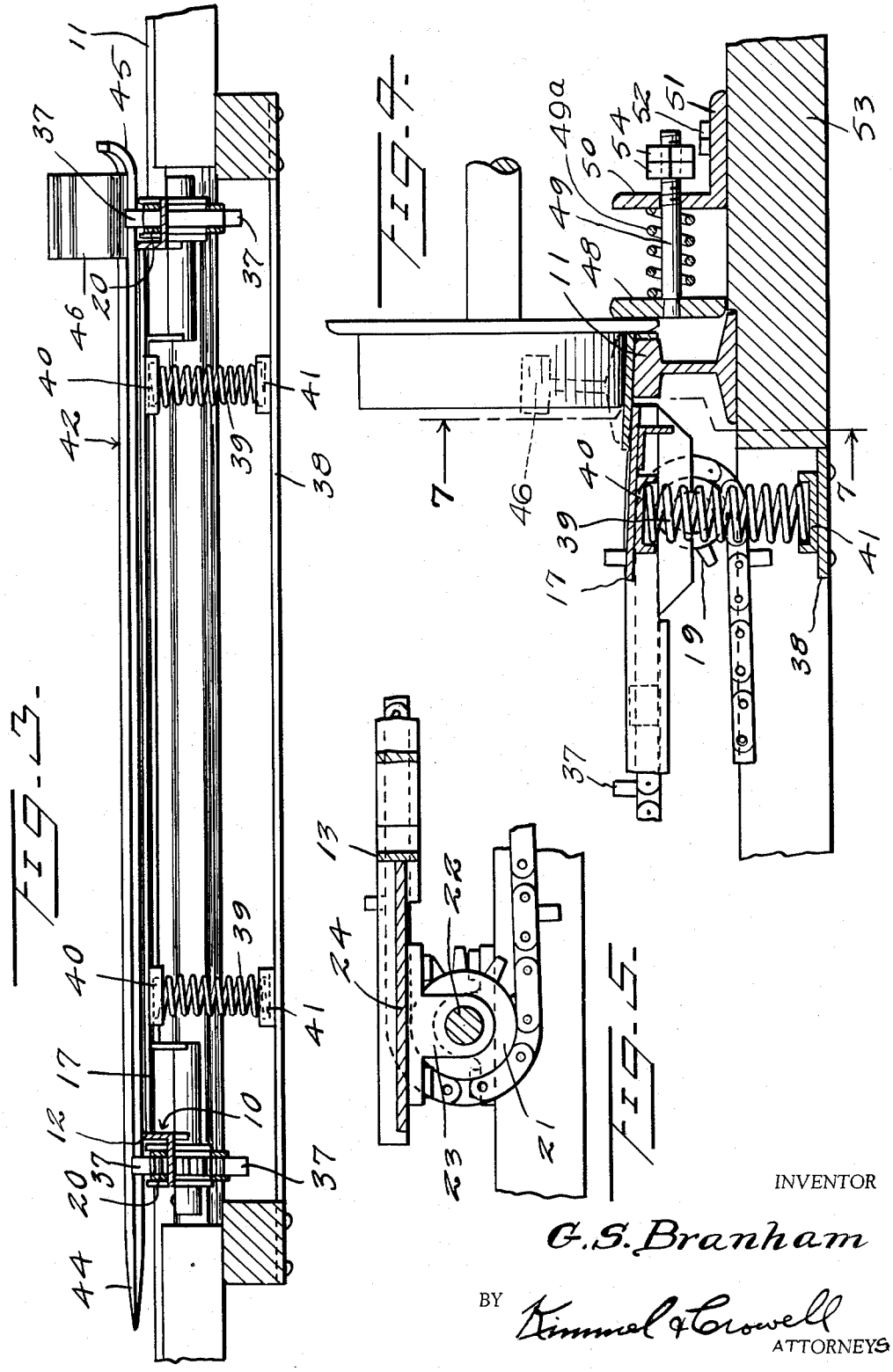


FIG. 3.

FIG. 4.

FIG. 5.

INVENTOR

G. S. Branham

BY Kimmel & Crowell

ATTORNEYS

Aug. 9, 1955 G. S. BRANHAM 2,714,860

TRACK SKATE APPLYING MACHINE

Filed Oct. 5, 1950 4 Sheets-Sheet 4

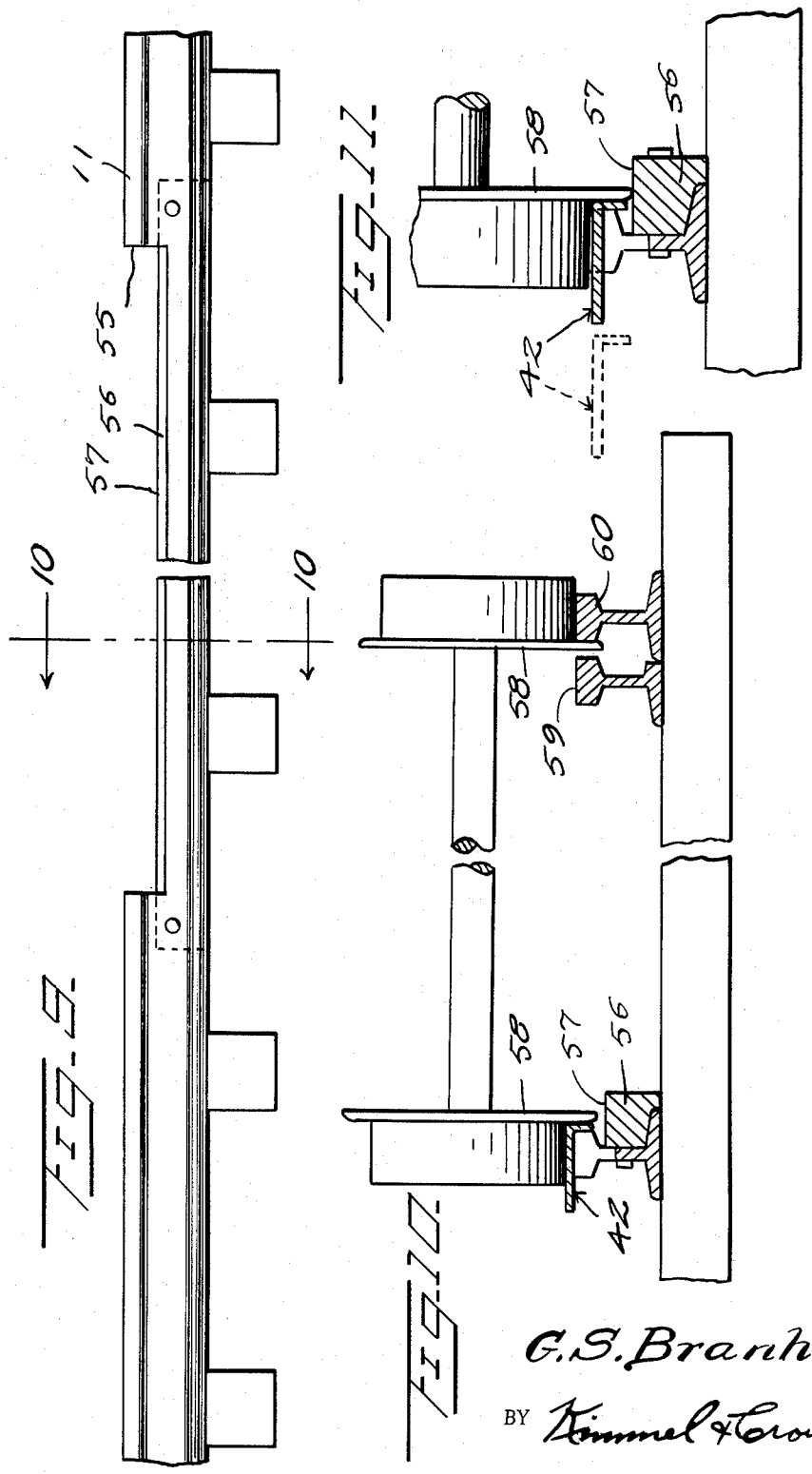


FIG. 9

FIG. 11

FIG. 10

INVENTOR

G. S. Branham

BY Kimmel & Crowell

ATTORNEYS

United States Patent Office 2,714,860 Patented Aug. 9, 1955

2,714,860

TRACK SKATE APPLYING MACHINE

George Shannon Branham, Garrison, W. Va.

Application October 5, 1950, Serial No. 188,583

6 Claims. (Cl. 104—257)

This invention relates to a track skate applying machine.

An object of this invention is to provide a machine which will readily position a skate on a rail in a position to engage beneath one or more wheels of a rail car, such as a mine car, so that the car will be braked against movement, particularly on an incline.

Another object of this invention is to provide in combination with a track skate applying machine, a spring-pressed retainer for holding the skate against slipping while the car wheel or wheels are rolling thereonto.

A further object of this invention is to provide an improved means for releasing the skate from the rail.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a plan view partly broken away of a track skate applying machine constructed according to an embodiment of this invention.

Figure 2 is a detailed side elevation partly broken away of the device.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a fragmentary sectional view taken on the line 4—4 of Figure 1.

Figure 5 is a fragmentary sectional view taken on the line 5—5 of Figure 1.

Figure 6 is a fragmentary sectional view taken on the line 6—6 of Figure 2.

Figure 7 is a fragmentary sectional view taken on the line 7—7 of Figure 4.

Figure 8 is a fragmentary side elevation of one end of the track skate.

Figure 9 is a detailed side elevation of the skate releasing means.

Figure 10 is a sectional view taken on the line 10—10 of Figure 9 showing the skate beneath a wheel adjacent the releasing station.

Figure 11 is a sectional view showing the skate in released position in the releasing zone.

Referring to the drawings, the numeral 10 designates generally a frame structure which is disposed in laterally extending position to a rail 11. The frame 10 is formed of parallel side members 12 constructed from angle iron which are connected together by connecting bars 13 and 14 and braced by means of crossed bracing bars 15 and 16.

A plate 17 is fixed between the forward ends of the side bars or guide members 12 and is adapted to be disposed closely adjacent the outer side of the rail 11. A pair of stub shafts 18 are disposed at the forward end of the frame 10 being fixed beneath the plate 17 and a forward sprocket 19 is rotatably mounted on each stub shaft 18. A chain 20 is engaged over each sprocket 19 and is also engaged over a rear sprocket 21 fixed to a rear shaft 22. The rear shaft 22 is journalled in bearings 23

carried by corner plates 24 fixed at the rear corners of the frame 10.

A sprocket 25 is fixed to the shaft 22 and has an endless chain 26 engaging thereabout. The chain 26 extends upwardly and engages about an upper driving sprocket 27 fixed to a shaft 28. The shaft 28 is journalled in a bearing 29 carried by the upper end of a standard 30. The standard 30 is formed with a pair of upwardly convergent bars 31 having a headplate 32 fixed to the upper ends thereof, and the lower ends of the bars 31 are fixed to a side member or base 33. The shaft 22 is also journalled in a bearing 34 carried by the rear end of a second side member 35.

A crank 36 is fixed to the short shaft 28 so that the shaft 28 may be manually operated. The chain 20 has fixed thereto at spaced intervals upwardly projecting lugs 37 which project upwardly a short distance above the vertical sides of the angle member 12 so that a track skate resting on the upper edges of the vertical sides 12 will be moved forwardly by movement of the upper run of each chain 20. The side frame members 33 and 35 have fixed therebetween a lower plate 38 and a pair of springs 39 which engage in upper and lower sockets 40 and 41 carried by the plates 17 and 38, respectively, are adapted to yieldably support the forward end of the frame structure with the upper side of the plate 17 substantially flush with the top of the rail 11, so that the forward end of the frame may swing downwardly under weight of a car on rail 11 and initial contact of a wheel with the skate.

A track skate generally designated as 42 is adapted to engage on the upper edges of the side members of the angle bars 12 and comprises an elongated flat plate 43 which is formed with a tapered leading end 44 and an upturned trailing end 45. An abutment 46 is fixed to the upper side of the plate 43 adjacent the trailing end 45 and is adapted to be engaged by a car wheel W so as to hold the wheel W against further movement along the plate 43. The plate 43 has projecting downwardly from the inner edge thereof a flange 47 which when the skate is in applied position is engageable on the inner side of the rail head shown in Figure 4.

A spring-pressed skate clamping plate 48 which is formed with flared opposite ends 48*a* is disposed in confronting position to the inner side of the rail 11, and the clamping plate 48 has fixed thereto a plurality of guide bolts 49 which are slidable through an upright plate 50. Springs 49*a* are positioned between plates 48 and 50 about bolts 49 for biasing plate 49 toward the rail head. The plate 50 is formed with a right angularly disposed base 51 which is adapted to be fixed by fastening means 52 to the upper side of a rail tie 53.

Each bolt 49 has threaded thereon a pair of nuts 54 which are adapted to limit the movement of the clamping member 48 toward the adjacent side of the rail 10. The rail 11 at a point remote from the skate applying machine is provided with an elongated cutout 55 which is of a length substantially equal to or slightly greater than the length of the plate 43 so that when the skate is pushed forwardly along the top of the rail 11 the skate will drop into the cutout 55 and will be released from beneath the wheel W. An elongated wheel supporting block 56 is fixed to the inner side of the rail 11 and is of sufficient height that the upper side 57 thereof will be engaged by the wheel flange 58 at the time the skate 42 is in the releasing zone defined by the cutout 55.

A guard rail 59 is disposed inwardly of the adjacent outer rail 60 and is provided so as to hold the car against lateral shifting to the left as viewed in Figure 10 at the time the car wheels are within the skate releasing zone 55. When the skate has been released from beneath the car wheel or wheels by dropping into the cutout 55, the skate

may be manually or otherwise returned to the skate applying machine hereinbefore described.

In the use and operation of this device the skate **42** is initially placed on the upper edges of the side members **12** with the upturned end **45** of the skate disposed to the right as viewed in Figure 3. When it is desired to apply the skate **42** the crank **36** is rotated so as to move the upper runs of the chains **20** forwardly. The outer edge of the skate **42** will be engaged by a lug **37** on each of the two chains **20** so that the skate will be moved forwardly and onto the upper side of the rail **11**. At the time the skate **42** is moved over the rail head, the flange **47** of the skate will abut the clamping plate **48**. As a car wheel W hits the end **44** of the skate, end **44** will be depressed against the rail head. At the same time the wheel flange will press plate **48** away from the rail head against the action of springs **49***a* so that flange **47** will drop between the plate **48** and the rail. As the wheel moves progressively, the plural spring mounting of the clamping plate will cause that portion thereof released by the wheel flange to move back towards the rail head securely to clamp flange **47** in position. As the wheel moves the flexible resilient support afforded by springs **39** will permit the progressive depressing of skate **42** until the car is stopped by abutment **46** at which time the abutment **46** being beyond the end of plate **48**, flange **47** will be completely clamped against the rail head. The springs **39** will permit the forward end of the frame to be slightly depressed under weight of the car without damage to the frame.

When a car wheel W or a pair of wheels are moved onto the skate **42** the leading wheel will engage the abutment or stop **46** so that the forward movement of the car will be resisted by the friction contact of the skate and the rail **11**. Normally these skates are applied on rails which are disposed on an incline and are used as a substitute for brakes to hold the cars against downward movement along the inclined track. The skate is normally released by forcibly pushing the car forwardly thereby dragging the skate **42** over the top of the rail until the skate enters the releasing zone formed by the cutout **55** in the rail.

This machine will provide an improved and simple means whereby one person may readily apply a track skate to a rail so as to provide a frictional braking force to hold a mine car against forward movement on a pair of rails.

What is claimed is:

1. A track skate applying machine comprising a substantially rectangular frame adapted to be disposed in substantially horizontal position and projecting laterally of a rail, skate guide means carried by said frame, means yieldably supporting the forward end of said frame adjacent a rail with said guide means substantially flush with the top of the rail, whereby said frame may move downwardly under weight of a car wheel on said skate and rail, and means for moving the skate toward and onto the rail.

2. A track skate applying machine comprising a substantially rectangular frame adapted to be disposed in substantially horizontal position and projecting laterally of the outer side of a rail, skate guide means carried by said frame, means yieldably supporting the forward end of said frame adjacent a rail with said guide means substantially flush with the top of the rail whereby said forward end may move downwardly under pressure of a car wheel, means for moving the skate toward and onto the rail, and spring-pressed clamping means disposed on the inner side of the rail for yieldably clamping the skate in wheel holding position on the upper side of the rail.

3. A track skate applying machine comprising a substantially rectangular frame adapted to be disposed in laterally projecting position with respect to a rail, means carried by said frame for moving a skate toward and onto a rail, and means yieldably supporting the forward end of said frame whereby said forward end may be depressed by weight of a wheel on the skate.

4. A track skate applying machine comprising a substantially rectangular frame adapted to be disposed in laterally projecting position with respect to a rail, means carried by said frame for moving a skate toward and onto a rail, means yieldably supporting the forward end of said frame, whereby said forward end may be depressed by weight of a car wheel on the skate, and yieldable clamping means disposed on the inner side of the rail for yieldably clamping the skate in wheel holding position on the upper side of the rail.

5. A track skate applying machine comprising a base frame formed of parallel side members disposed at right angles relative to a rail and projecting laterally of the outer side of a rail, a connecting bar secured to the forward ends of said side members, a sprocket shaft journalled between the outer ends of said side members, a conveyor frame rockably mounted on said sprocket shaft and extending forwardly between said side members, a forward sprocket shaft rotatably carried by the forward end of said conveyor frame, a pair of sprockets on each shaft, a pair of chains engaging about said sprockets, said conveyor frame including horizontal angle shaped bars having a horizontal side engaging beneath and supporting the upper runs of said chains, said bars having vertical sides on the upper edges of which the skate is slidably engageable, conveyor lugs carried by said chains projecting above the upper edges of said vertical sides and engageable with a skate for moving the latter along said guide bars, springs between the forward end of said conveyor frame and said connecting bar yieldably supporting the forward end of said conveyor frame, and means for rotating the rear one of said shafts.

6. A track skate applying machine comprising a base frame formed of parallel side members disposed in outwardly projecting position relative to the outer side of a rail, a connecting bar secured to the forward ends of said side members, a conveyor frame between said side members, an outer sprocket shaft journalled through said conveyor and rotatably carried by said conveyor frame, a pair of sprockets carried by each shaft, chains trained over said sprockets, springs interposed between the forward end of said conveyor frame and said connecting bar, said conveyor frame being formed of parallel combined chain supporting and skate guiding bars of angle shape, with one side horizontal and the other side vertical, the upper runs of said chains engaging on said horizontal sides, the upper edges of said vertical sides forming guides for the skate, lugs carried by said chains engageable with a skate on said latter named guides for moving a skate along the latter, and a spring-pressed skate clamping plate carried by the inner side of said rail.

References Cited in the file of this patent

UNITED STATES PATENTS

713,446	Jones	Nov. 11, 1902
1,545,524	Scheuchzer	July 14, 1925
1,584,031	Hannauer et al.	May 11, 1926
1,611,200	Kellenberger	Dec. 21, 1926
1,958,955	Pomeroy	May 15, 1934
2,199,166	Warden	Apr. 30, 1940