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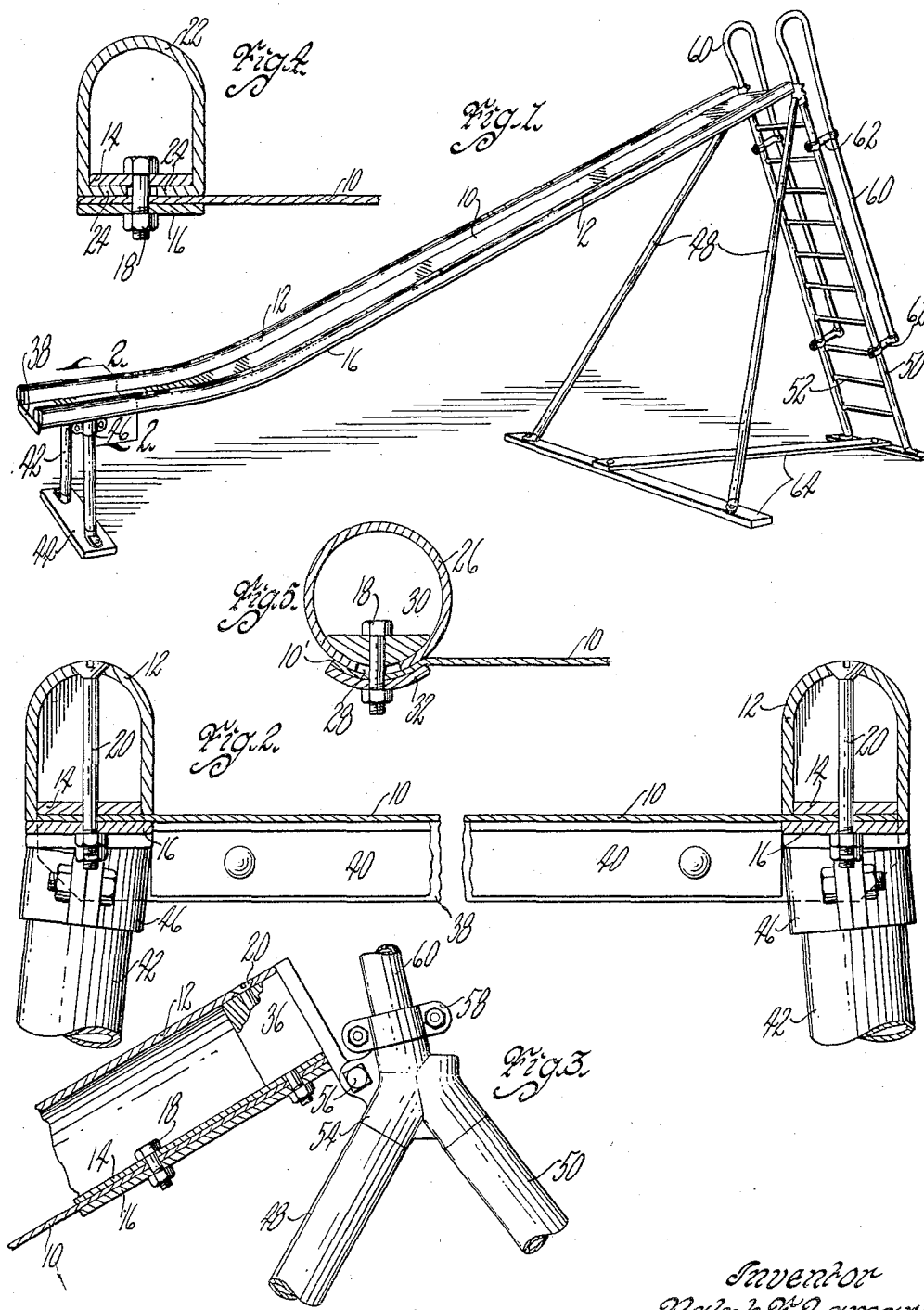
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1,888,350

ALL METAL SLIDE

Filed Nov. 30, 1931

2 Sheets-Sheet 1



Witness
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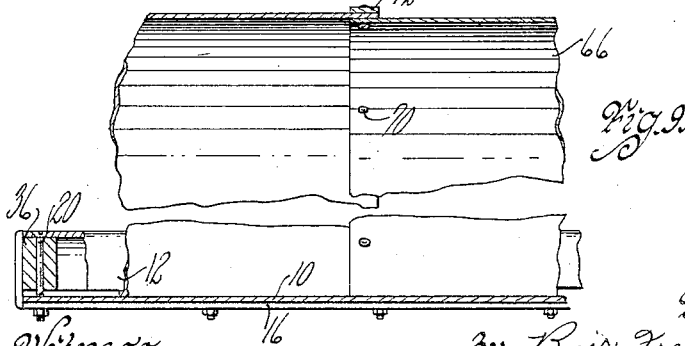
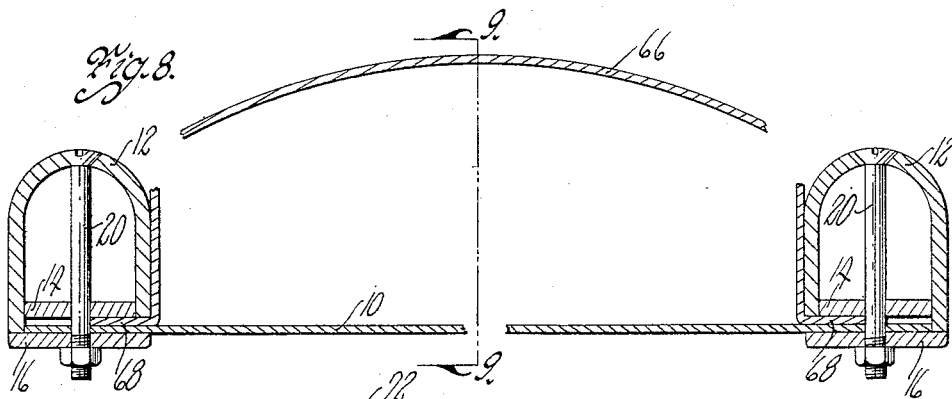
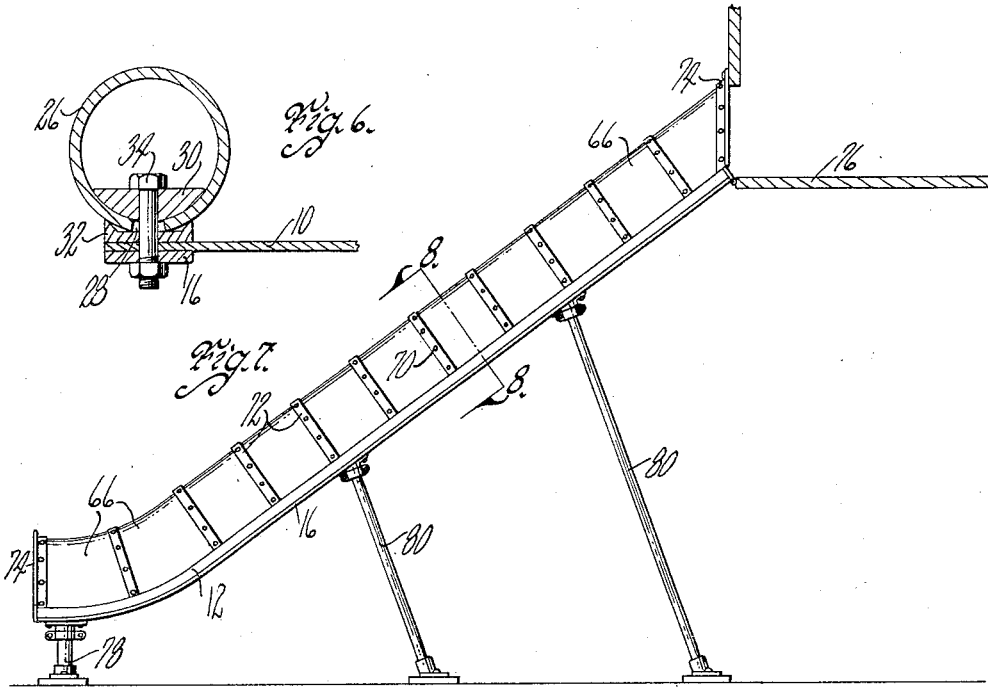
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ALL METAL SLIDE

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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ALL-METAL SLIDE

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This invention relates primarily to slides or chutes of the type commonly employed for amusement purposes on playgrounds of schools, parks and other institutions as well as in private playgrounds.

The principal object of this invention is to provide an improved construction whereby the entire device including the side rails of the bedway may be composed of metal.

The invention also contemplates a construction whereby with some modifications the slide or chute may be adapted for use as a fire escape, particularly in connection with school buildings.

A further object of the invention is to provide an all steel slide having a suitably supported bedway and tubular side rails at the lateral slides thereof, together with novel means for securing the parts in assembled relation.

Still another object is to provide an improved construction for a slide whereby the device is durable and capable of long continued service, and is relatively inexpensive in the manufacture and assembly of the parts, consideration also being given to ease of replacement of those parts which are particularly subject to wear.

A further object is to provide an improved construction whereby a sheet metal covering may be applied to the chute, particularly when the device is to be used as a fire escape.

With these and other objects in view my invention consists in the construction, arrangement and combination of the various parts of my device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:—

Figure 1 is a perspective view of a playground chute or slide embodying my invention.

Figure 2 is a detail cross section through the lower end of the device on the line 2—2 of Figure 1.

Figure 3 is a detail sectional elevation of a portion of the upper end of the slide and its supporting means.

Figure 4 is a cross section through a por-

tion of the bedway and one of the side rails, showing one type of tubular rail and the method of assembling the parts.

Figure 5 is a similar section showing a different type of tubular side rail and its method of assembly.

Figure 6 is a similar view showing a further modified construction of the tubular side rail and assembling means.

Figure 7 is a side elevation, partly in section, showing a fire escape chute or slide embodying the principles of my invention.

Figure 8 is an enlarged cross section of the same on the line 8—8 of Figure 7.

Figure 9 is a detail longitudinal section on the line 9—9 of Figure 8.

The slide, whether employed for amusement or safety purposes, includes an inclined bedway preferably composed of an elongated sheet having a polished upper surface and with side rails at its opposite lateral margins, together with suitable supporting means. In certain instances, particularly when the slide is employed for safety purposes such as a fire escape, the bedway is also provided with a suitable arched covering extending longitudinally and having marginal portions clamped between the bedway and side rails.

I will first describe the playground slide embodying my invention as illustrated particularly in Figures 1 to 6 inclusive. In Figure 1 the slide is illustrated as of the portable type, but it is to be understood that my invention applies with equal facility to the stationary type of slide.

The bedway 10 is composed of a relatively heavy sheet of metal having a smooth upper surface and mounted in inclined position in such manner that a body placed upon its upper end will travel with considerable rapidity to the lower end. As shown in Figure 1 the bedway may be straight or arranged in the same inclined plane throughout the greater portion of its length and then changing to a more nearly horizontal position near its lower end; or it may be provided with waves or undulations intermediate its ends in a common manner.

Slides of this type should be provided with

projecting side rails at their lateral margins as will be understood, and it has heretofore been common to employ wood for the construction of the side rails, even in devices where metal is employed for the bedway.

It being my purpose to provide a slide which can be constructed entirely of metal, I have devised several different constructions of tubular side rails, all embodying the same general principles.

In the construction shown particularly in Figure 2 the side rails are designated by the numeral 12. These members are composed of U steel bars or channel members having rounded surfaces and placed with their open sides downwardly and in engagement with the longitudinal side margins of the bedway 10.

For ease and security in assembling the parts, I place a metal strip 14 within the open side of each side rail 12 in engagement with the upper surface of the bedway 10 and another metal strip 16 against the lower face of the slide and then mount a series of short bolts 18 through the strips 14 and 16 and the bedway sheet 10.

I also mount a series of longer bolts 20 through these same members and through the top wall of each of the side rails 12, the bolts 20 preferably having heads which are countersunk in the upper wall of the side rail as shown in order that the surface of the rail may be smooth and free from obstructions.

The longer bolts 20 may alternate with the short bolts 18 and when the nuts are applied to these bolts and drawn up tightly, a rigid assembly of the parts is assured.

The construction illustrated in Figure 4 is only slightly different from that just described. According to Figure 4 the U-shaped side rail, designated by the numeral 22, is formed at its margins with inwardly directed flanges 24 which engage the side margins of the bedway sheet 10 and are clamped between metal strips 14 and 16 by the bolts 18. Inasmuch as the flanges 24 of the rail 22 are thus securely gripped, it is not necessary according to this construction to employ long bolts such as 20 extending entirely through the side rail.

According to Figure 5 a tubular side rail 26 is employed which is substantially cylindrical and is formed at its lower side with a longitudinal slit or slot 28. As shown in this view the bedway 10 may be formed at its side margin with a curved portion 10' fitting the lower side of the side rail 26. I employ in this connection an inner bar 30 and an outer bar 32, both of which have curved surfaces for engaging the curved parts with which they are associated. For instance, the inner bar 30 has a curved lower surface fitting the inner surface of the tubular rail 26, while the outer bar 32 is curved on its upper face to fit

the curved portion 10' of the bedway. The parts are held together in clamping relation by a series of short bolts such as 18 extending through the bar 30, marginal portion 10' of the bed plate and bar 32 and passing loosely through the slot 28 of the side rail.

The modification shown in Figure 6 is only slightly different from that shown in Figure 5 and employs the same cylindrical side rail 26 with longitudinal slot 28. In this construction the regular or plane bedway sheet 10 is employed and the inner bar 30 with curved lower face is mounted within the side rail. The flat bar or strip 16 of the first described construction is mounted against the lower face of the bedway sheet.

In addition I mount between the bedway 10 and side rail 26 a special form of bar 32 which is channeled, or in other words—has a plane lower face engaging the plane face of the bedway sheet and a countersunk upper face engaging the curved lower surface of the rail. I employ a series of bolts such as 34 slightly longer than the short bolts previously referred to, which extend through the inner bars 30, intermediate channeled bars 32, bedway sheet 10 and lower bar 16, passing loosely through the slot 28 of the side rail and holding the parts securely in assembled relation.

By employing either type of tubular metal side rail herein shown and described, I am enabled to construct the bedway and its side rails entirely of metal, all parts having smooth surfaces, and to provide means for securely clamping and holding the parts in assembled relation.

The ends of the tubular members constituting the side rails may be closed by means of suitable metal plugs 36 suitably held in place as for instance by certain of the bolts 20 in the construction according to Figures 1 and 2, or by other bolts if necessary.

The ends of the bedway sheet may be turned down to provide a finishing flange such as 38 at the upper and lower end of the slide, and such flange may be reinforced by an angle bar 40 riveted thereto.

The lower end of the slide may be supported at a short distance above the ground by means of a pair of short posts 42 which may either be set in concrete or be fixed to a cross plate 44. The upper ends of the posts 42 engage in clamping sockets 46 carried by the side margins of the lower portion of the bedway and suitably secured thereto.

The upper end of the slide may also be supported at a greater elevation by inclined legs 48 and by other parallel legs 50 which are connected by cross bars 52 to constitute a ladder by means of which access may be had to the upper end of the slide. The ends of the legs 48 and 50 are engaged in sockets of a fitting 54, one of which is provided at each side of the upper end of the slide and

secured thereto by a bolt or the like 56. The fittings 54 also carry clamping members 58 in which are secured hand rails 60, which are arched upwardly and then extend downwardly in substantially parallel relation to the ladder rails 50 and supported therefrom by means of duplex clamping members 62.

The lower ends of the legs 48 and ladder rails 50 may be embedded in concrete, or they may be supported on a suitable frame work such as 64 resting on the surface of the ground.

It will be understood, however, that the details of the elements for supporting the slide may be of conventional or any desired type and form no part of my present invention.

A similar construction of slide may be employed for safety purposes as for instance in the nature of a fire escape from a school building or the like, and such embodiment of the invention is illustrated in Figures 7, 8 and 9.

In these views I have illustrated the same type of construction for the bedway and side rails as is shown particularly in Figure 2 and have employed the same reference numerals for corresponding parts.

When the slide is used as a fire escape it is, of course, desirable to provide a covering, which as here shown may be made up of a plurality of sheet metal sections of substantially inverted U shape, each section being designated by the numeral 66. Each section is formed at its side margins with outwardly projecting flanges 68, which rest on the bedway sheet 10, project beneath the adjacent edges of the side rails 12 and inner bars 14, and are held in place by the bolts such as 18 and 20 which are employed for clamping the parts together.

The adjacent edges of adjoining sections 66 may be caused to overlap slightly as shown in Figure 9 and the joints preferably are secured together by rivets or bolts 70 extending through the overlapping portions and through U-shaped braces 72 which overlie the joints.

Angle iron braces 74 of U-shaped formation may be employed at the upper and lower ends of the slide for strengthening the ends of the covering.

The safety slide may be of any length and supported in any suitable manner. For instance, its upper end may lead from and be secured to a balcony or platform such as 76 attached to or forming a part of a building. The lower end of the slide is, of course, located near the surface of the ground and may be supported by posts 78 while intermediate posts or braces 80 may be provided for supporting the intermediate portions of the device.

Another advantage which is inherent in my new construction and method of assembly is that it facilitates the replacement of the bed-

way plate, which is the only part that is particularly subject to wear.

It is also evident that a slide constructed in accordance with my invention will be extremely durable and that by employing metal side rails I avoid the necessity for replacing these parts and also make sure that they will remain in good condition for use over a long period because they are not subject to objectionable wear or splintering.

Some changes may be made in the construction and arrangement of the parts of my device without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents, which may be reasonably included within their scope.

I claim as my invention:

1. A slide device comprising a metal bedway plate, a side rail at each lateral side of said plate, each rail being composed of a substantially tubular metal member, and means for securing said rails to said bedway plate.

2. In a slide device, a metal bedway plate, a side rail arranged along each lateral side of said plate, each rail being composed of a substantially tubular metal member having an opening extending lengthwise of its lower side, and securing means extending through the opening in said rail and through the bedway plate for holding said parts in assembled relation.

3. In a slide device, a metal bedway plate, a substantially inverted U-shaped metallic side rail extending along the side of said plate on the upper face thereof, a retaining member on the lower face of said plate opposite said rail, and bolts for holding said retaining member, plate and rail together.

4. In a slide device, a bedway plate, a substantially U-shaped side rail extending along the side of said plate, said rail being arranged with its open side toward said plate, a retaining member confined within said rail, another retaining member engaging the plate on that side opposite to the rail, and bolts extending through said plate and retaining members for holding said parts and the rail in assembled relation.

5. A slide device comprising a metal bedway plate, a side rail at each lateral side of said plate, each rail being composed of a substantially tubular metal member, means for securing said rails to said bedway plate, and a covering for the bedway composed of metallic sheets of substantially inverted U-shape bridging the space between said side rails, said sheets having their side margins confined between the bedway plate and the inner margins of the side rails.

6. A slide device comprising a metal bedway plate, a side rail at each lateral side of said plate, each rail being composed of a substantially tubular metal member, means

for securing said rails to said bedway plate, a covering for the bedway composed of metallic sheets of substantially inverted U-shape bridging the space between said side rails, said sheets having their side margins confined between the bedway plate and the inner margins of the side rails, and reinforcing bars overlying the joints between adjoining sheets of said covering.

7. In a slide device, an elongated bedway plate, means for supporting said plate in inclined position, and side rails extending lengthwise at the lateral sides of said plate, said rails being composed of substantially tubular metal members having longitudinal openings directed toward the bedway plate, a retaining bar confined within each of said rails, and securing bolts extending through the retaining bars and bedway plate for holding said parts and the side rails in assembled relation.

8. In a slide device, an elongated bedway plate, means for supporting said plate in inclined position, and side rails extending lengthwise at the lateral sides of said plate, said rails being composed of substantially tubular metal members having longitudinal openings directed toward the bedway plate, retaining bars extending along the sides of said plate on that face opposite to the side rails, and bolts extending through the retaining bars and bedway plate and through the openings in said rails for holding the parts in assembled relation.

Des Moines, Iowa, October 6, 1931.

RALPH F. LAMAR.