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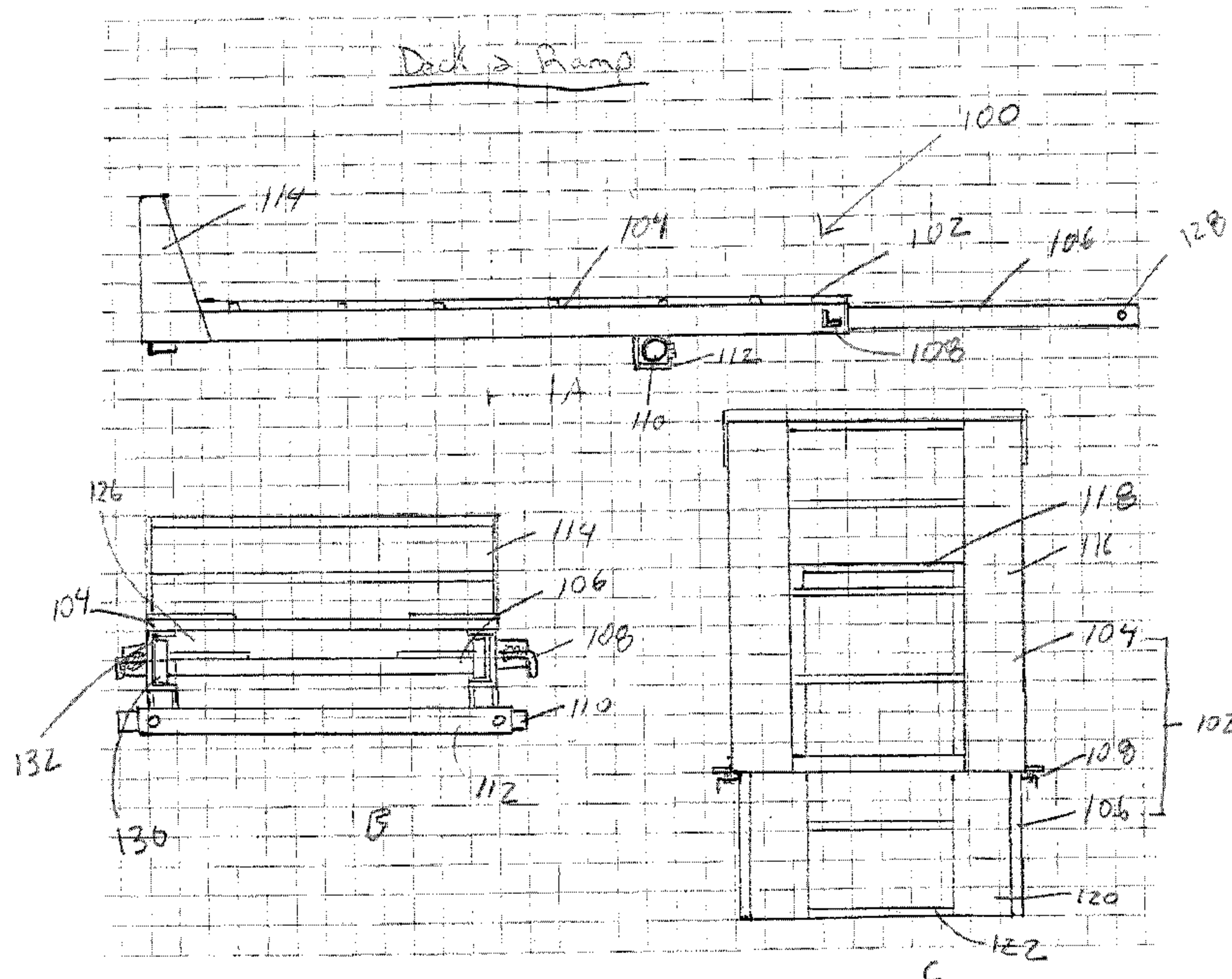
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(54) Title: TRUCK RAMP-TRAILER ASSEMBLY



(57) Abrégé/Abstract:

A truck ramp-trailer assembly is provided wherein in a first configuration the assembly functions as a ramp for moving objects onto or off of a bed of a truck. In a second configuration, the assembly functions as a trailer that can be connected to the truck or another vehicle.

Abstract

A truck ramp-trailer assembly is provided wherein in a first configuration the assembly functions as a ramp for moving objects onto or off of a bed of a truck. In a second configuration, the
5 assembly functions as a trailer that can be connected to the truck or another vehicle.

TRUCK RAMP-TRAILER ASSEMBLY

Field of the Invention

- 5 The present invention relates to ramps for moving objects onto a bed of a truck, and more specifically to ramps that may be configured into a trailer assembly for transporting objects while attached to the truck or another vehicle.

Background of the Invention

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Vehicles, such as trucks comprising a rear bed, are useful for transporting objects to different locations. For example, contractors generally use trucks to transport equipment and material as the rear truck bed provides easy access to the material to be transported. Furthermore, the truck bed allows for a significant amount of material to be transported as it is not constrained by an upper surface such as those typically used for vehicle trunks.

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However, depending on the amount and size of the objects that are to be loaded onto and off of a truck, it may be difficult for personnel to manually load and unload objects onto and off of the truck bed. Furthermore, safety issues are usually a concern when manually loading and unloading large objects.

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One way to overcome some of the problems associated with loading and unloading objects is to use a ramp that attaches to the rear edge of the truck bed. An object or several objects can be pushed from the ground and slid up the ramp that is attached the truck bed. Objects can also easily be removed from a truck bed by moving the object off of the bed and down the attached ramp.

25

However, large objects can still be difficult to load onto and off of a truck bed that has a ramp attached to its edge. This is because more force is typically required to move a large object over the edge portion of the truck bed. For example, a small vehicle, such as a snowmobile or a motorcycle, may have difficulty traveling up and over the rear edge of truck bed via a ramp,

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while attempting to load it on the bed. This is partly due to the front portion of the vehicle no longer being supported by the ramp as it travels over the bed edge. Furthermore, the change in angle between the ramp and the truck bed can cause a vehicle to have difficulty traveling up and over the rear edge of truck bed.

5

One way to overcome this is to use a rocker style ramp that attaches the truck bed at a pivot point. This involves a first position wherein the ramp is oriented in a manner that an object can move up the ramp from the ground as a first end of the ramp is in contact with the ground. At this position the second end of the ramp is elevated above the truck bed. As the object moves up, 10 the ramp pivots to a second position where the object and the second end of the ramp move towards the top of the truck bed and the first end of the ramp lifts off the ground.

When the deck and ramp are moved from the horizontal position to the angled position they offer a safe way to drive up and load a motor vehicle (or other object) and to safely drive off and 15 unload a motor vehicle (or other object). When the ramp is in the horizontal position which is parallel with a truck bed the deck and ramp can be used to transport a motor vehicle or other object.

There are still, however, other limitations when using a ramp that attaches to a truck bed for 20 loading and transporting an object. For example, in certain situations, a truck bed is still not large enough to carry certain objects that are to be loaded onto it. One way to overcome this is to attach a trailer to a truck to increase the loading area. However, a user may not have access to a trailer. It is also preferable that not too much equipment be used for a project. For some, using a truck, a ramp and a trailer for a particular project may be inconvenient. Furthermore, storage of 25 a trailer can be a nuisance when it is not in use and once hauling of an object with a trailer is completed, the empty trailer must be hauled to the next destination.

Another limitation is that a truck may not be suitable for transporting an object because it is not suited for travel on a particular terrain.

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It is desirable to have some sort of assembly to limit the amount of equipment for projects that require transporting objects.

What is needed, therefore, are efficient means for loading and unloading objects from a truck
5 while addressing the problems with using a truck, ramp and trailer to transport objects as described above.

Summary of the Invention

10 The present invention therefore seeks to provide an assembly wherein in a first configuration the assembly functions as a ramp for moving objects onto and off of a bed of a truck and in a second configuration, the assembly functions as a trailer that can be connected to the truck or another vehicle.

15 According to a broad aspect of the present invention, there is provided a truck ramp-trailer assembly comprising:

a load supporting platform comprising an anterior end and a posterior end;

20 a first mounting means configured for selectively connecting the load supporting platform to a bed of a truck, the load supporting platform pivotable at the first mounting means;

a second mounting means for selectively rotatably connecting at least one wheel to the load supporting platform; and

25 a hitching means configured for selectively connecting the load supporting platform to a hitch assembly of a vehicle;

whereas in a first configuration, the load supporting platform is disconnected from the
30 hitching assembly and pivotably connected to the bed with the first mounting means such that:

in a first position, the load supporting platform is substantially parallel to the bed;
and

5 in a second position, the load supporting platform is pivoted such that the
posterior end of the load supporting platform is positioned adjacent a ground surface; and

whereas in a second configuration, the load supporting platform is disconnected from the
bed and connected to the hitch assembly of the vehicle with the hitching means and the at least
one wheel is positioned for engagement with the ground surface while the at least one wheel is
10 connected to the load supporting platform with the second mounting means.

Optionally, the hitching means may be able to be in a foldable configuration.

Preferably, in the first configuration, the load supporting platform is disconnected from the
15 hitching means and pivotably connected to the bed with the first mounting means, wherein the
load supporting platform rotates from the second position to the first position as an object is
moved along the load supporting platform towards the anterior end of the load supporting
platform.

20 It is also preferable that, in the first configuration, the load supporting platform is disconnected
from the hitching means and pivotably connected to the bed with the first mounting means,
wherein the load supporting platform rotates from the first position to the second position as the
object is moved along the load supporting platform towards the posterior end of the load
supporting platform.

25 In some exemplary embodiments of the present invention, there is a plurality of the first
mounting means.

In some exemplary embodiments of the present invention, the first mounting means is the second
30 mounting means.

The vehicle that connects to the truck ramp-trailer assembly of the present invention in a second configuration may be the same vehicle connected to the truck ramp-trailer assembly in a first configuration or it may be another vehicle.

- 5 In some exemplary embodiments of the present invention, the load supporting platform comprises a deck portion, and a ramp portion that is configured to be slidably and selectively inserted into the deck portion. Preferably, the ramp portion is configured to be locked at a position relative to the deck portion while the ramp portion is inserted into the deck portion.
- 10 The hitching means may be configured to mount the at least one wheel.

A detailed description of exemplary embodiments of the present invention is given in the following. It is to be understood, however, that the invention is not to be construed as being limited to these embodiments. The exemplary embodiments are directed to particular
15 applications of the present invention, while it will be clear to those skilled in the art that the present invention has applicability beyond the exemplary embodiments set forth herein.

Brief Description of the Drawings

- 20 In the accompanying drawings, which illustrate exemplary embodiments of the present invention:

Figure 1A is a perspective side view of a first embodiment of the present invention;

- 25 Figure 1B is a perspective rear view of the first embodiment of the present invention;

Figure 1C is a perspective top view of the first embodiment of the present invention;

- 30 Figure 2 is a perspective side view of a second embodiment of the present invention attached to a truck bed;

Figure 3 is a perspective side view of a third embodiment of the present invention attached to a truck;

Figure 4 is a perspective view of a fourth embodiment of the present invention attached to a truck;

Figure 5A is a perspective view of a fifth embodiment of the present invention being transformed into a second configuration;

Figure 5B is a perspective view of the fifth embodiment of the present invention being transformed into the second configuration;

Figure 5C is a perspective view of the fifth embodiment of the present invention being transformed into the second configuration;

Figure 5D is a perspective view of the fifth embodiment of the present invention being transformed into the second configuration;

Figure 5E is a perspective view of the fifth embodiment of the present invention being transformed into the second configuration;

Figure 5F is a perspective view of the fifth embodiment of the present invention being transformed into the second configuration;

Figure 6 rear view of a deck portion of a loading support platform in accordance with an exemplary embodiment of the present invention;

Figure 7A is a perspective view of a deck portion of a loading support platform in accordance with an exemplary embodiment of the present invention;

Figure 7B is a perspective view of the deck portion of a loading support platform in accordance with an exemplary embodiment of the present invention;

Figure 8A is a perspective view of a head rack in accordance with an exemplary embodiment of the present invention;

5 Figure 8B is a perspective view of the head rack in accordance with an exemplary embodiment of the present invention;

Figure 9 is a perspective view of an axle in accordance with an exemplary embodiment of the present invention;

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Figure 10 is a perspective view of an axle in accordance with an exemplary embodiment of the present invention mounted on a bottom surface of a deck portion;

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Figure 11A is a perspective view of a pivot means for pivotably attaching a ramp assembly to bed of a truck in accordance with an exemplary embodiment of the present;

Figure 11B is a perspective view of the pivot means for pivotably attaching a ramp assembly to bed of a truck in accordance with an exemplary embodiment of the present;

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Figure 12A is a perspective top view of a ramp portion of a loading support platform in accordance with an exemplary embodiment of the present invention;

Figure 12B is a perspective side view of the ramp portion of a loading support platform in accordance with an exemplary embodiment of the present invention;

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Figure 12C is a perspective front view of the ramp portion of a loading support platform in accordance with an exemplary embodiment of the present invention;

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Figure 13 is a perspective view of another ramp portion of a loading support platform in accordance with an exemplary embodiment of the present invention;

Figure 14A is a perspective view of a hitching means in a folded state in accordance with an exemplary embodiment of the present invention;

Figure 14B is a perspective view of the hitching means in an extended state in accordance with an exemplary embodiment of the present invention;

Figure 15 is a perspective view of another hitching means in a folded state mounted to the hitch assembly of a vehicle in accordance with an exemplary embodiment of the present invention;

Figure 16A is a perspective view of a further hitching means in an extended state configured to be mounted to a deck portion in accordance with an exemplary embodiment of the present invention;

Figure 16B is a perspective view of the hitching means in an extended state mounted to a deck portion in accordance with an exemplary embodiment of the present invention;

Figure 16C is a perspective view of the hitching means in a folded state mounted to the hitch assembly of a vehicle in accordance with an exemplary embodiment of the present invention; and

Figure 17 is a perspective view of the hitching means in a folded state mounted to the hitch assembly of a vehicle and having two wheels mounted in accordance with an exemplary embodiment of the present invention.

Exemplary embodiments of the present invention will now be described with reference to the accompanying drawings.

Detailed Description of Exemplary Embodiments

Throughout the following description, specific details are set forth in order to provide a more thorough understanding to persons skilled in the art. However, well-known elements may not
5 have been shown or described in detail to avoid unnecessarily obscuring the disclosure. The following description of examples of the technology is not intended to be exhaustive or to limit the invention to the precise form of any exemplary embodiment. Accordingly, the description and drawings are to be regarded in an illustrative, rather than a restrictive, sense.

10 The present invention is directed to an assembly wherein in a first configuration the assembly functions as a ramp for moving objects onto and off of a bed of a truck and in a second configuration, the assembly functions as a trailer that can be connected to the truck or another vehicle.

15 The present invention is a truck ramp-trailer assembly. The assembly comprises a load supporting platform that has an anterior end and a posterior end. The load supporting can be selectively mounted to a truck bed via a first mounting means. The load supporting platform is preferably pivotable at the first mounting means.

20 In a first configuration, the load supporting platform is pivotably connected to the truck bed with the first mounting means and can be in either a first position or a second position.

In the first position, the load supporting platform is substantially parallel to the bed.

25 In the second position, the load supporting platform is pivoted such that the posterior end of the load supporting platform is positioned adjacent to a ground surface, while the anterior end is raised off of the truck bed.

In a second configuration, the load supporting platform is disconnected from the truck bed and
30 connected to the hitch assembly of the vehicle with a hitching means. At least one wheel is

connected to the load supporting platform with a second mounting means and positioned for engagement with the ground surface.

Turning to Figures 1A to 1C, a first embodiment of the present invention is illustrated. A ramp
5 assembly 100 is shown, comprising a load supporting platform 102. The platform 102 comprises a deck portion 104 and a ramp portion 106 that can be slidably inserted into the deck portion 104. Alternatively, in some exemplary embodiments, the platform may be of a unitary construction.

10 The deck portion 104 shown comprises two deck planks 116 that are arranged parallel to each other. The deck planks 116 are joined to each other by a series of deck support members 118. The deck planks 116 are preferably spaced apart in a manner that still allows the platform 102 to fit into the width of a truck bed. It is also preferable that the deck planks 116 are spaced apart in a manner that allows the wheels or tracks of a small vehicle to ride along the top of them. The
15 deck planks 116 may comprise a top surface that provides grip to facilitate a vehicle to ride along the top of them.

Alternatively, the deck portion 104 may be a solid sheet that allows objects to be moved along its center.

20 The deck portion 104 is preferably made of a strong material, such as, but not limited to, steel, which allows the deck portion 104 to support the weight of an object that is loaded onto it. A rubber material may be used to provide grip on the top surface of the deck planks 116.

25 The deck portion 104 further comprises an elongated slot 126 that is configured to allow the ramp portion 106 to be slidably inserted into the deck portion 104. This is further discussed below.

At the front end of the deck portion 104, a head rack 114 may be present for providing protection
30 to the cab of a truck from objects that are loaded onto the deck portion 104 while it sits on top of the truck bed. Preferably, the head rack 114 is made of material that can withstand the impact of

an object that may slide into it. Those skilled in the art will be aware of numerous ways suitable for securing the head rack 114 to the deck portion 104.

5 The ramp portion 106 shown comprises two ramp planks 120 that are arranged parallel to each other. The ramp planks 120 are joined to each other by a series of ramp support members 122. The ramp planks 120 are preferably spaced apart in a manner that allows the ramp portion 106 to slide into the deck portion 104. This involves the ramp portion 106 further comprising slot engagement members 130 positioned longitudinally along the outside of ramp portion 106. Each engagement member 130 slides into a channel 132 of the elongated slot 126 in the deck portion
10 104 allowing the ramp portion 106 to be slidably inserted or withdrawn from the deck portion 104.

Many other different methods for slidably engaging ramp portion 106 with the deck portion 104 are possible within the scope of the present invention and would be known to those skilled in the
15 art.

The ramp portion 106 further comprises at least one locking hole 128 that engages with at least one locking means 108 on the deck portion 104 allowing the ramp portion 106 to be locked at certain positions relative to the deck portion 104. When a locking hole 128 and a locking means
20 108 are engaged, the ramp portion is locked in place. When the locking hole 128 and a locking means 108 are not engaged, the ramp portion 106 can slide freely within the deck portion 104 or can be separated from the deck portion 104.

Many other different methods for locking the ramp portion 106 to certain positions relative to the
25 deck portion 104 are possible within the scope of the present invention and would be known to those skilled in the art.

It is also preferable that the ramp planks 120 are spaced apart in a manner that allows the wheels or tracks of a small vehicle to ride along the top of them. Alternatively, the ramp portion 106
30 may be a solid sheet that allows objects to be moved along its central portion.

The ramp planks 120 may comprise a top surface that provides grip to facilitate a vehicle to ride along the top of them.

Alternatively, both or either the deck portion 104 and the ramp portion 106 may comprise a
5 slidable surface for objects with no wheels. In some exemplary embodiments, both or either the deck portion 104 and the ramp portion 106 may comprise roller members that allow objects to easily move onto and off of the load supporting platform 102.

The ramp portion 106 should also be configured such that the ramp planks are substantially
10 aligned with the deck planks 116.

The ramp portion 106 portion is preferably made of a strong material, such as, but not limited to, steel, which allows the ramp portion 106 to support the weight of an object that is loaded onto it. A rubber material may be used to provide grip on the top surface of the ramp planks 120.

15 The ramp assembly 100 further comprises an axle 112 that is attached to the bottom surface of the deck portion 104. It is positioned laterally across the bottom surface. The axle 112 is preferably made of a strong material, such as, but not limited to, steel, which allows the axle 112 to support the weight of a loaded object and the weight of the ramp assembly 100.

20 At each end of the axle 112, the ramp assembly 100 comprises pivot means 110 that allow for the ramp assembly 100 to be pivotably attached to the bed of a truck. Preferably, the pivot means 110 are configured to engage with a truck's tailgate mounts. In operation, one would remove a truck's tailgate so that the ramp assembly 100 can then be securely pivotably anchored
25 to the tailgate mounts. The ramp assembly 100 shown has two pivot means 110. The pivot means 110 may comprise a spring loaded tubular member that engages with a truck's tailgate mounts.

A person skilled in the art would be aware of other arrangements or assemblies that can be used
30 to pivotably attach the ramp assembly 100 to the bed of a truck.

Turning to Figure 2, a second embodiment of the present invention is illustrated. A ramp assembly 200 is shown that is similar to the ramp assembly 100 of the first embodiment described above. Similarly, to the ramp assembly 100 of the first embodiment, the ramp assembly 200 of the second embodiment comprises a loading support platform 202 comprised of a deck portion 204 and a ramp portion 206 that is inserted into the deck portion 204. The ramp assembly further comprises a head rack 214 that is mounted onto the front end of the deck portion 204.

The ramp assembly 200 shown is pivotably attached to the bed of a truck 224. A person skilled in the art would be aware of arrangements or assemblies that can be used to pivotably attach the ramp assembly 200 to the bed of a truck. Preferably, the ramp assembly 200 comprises pivot means (not shown) that allow for the ramp assembly 200 to be pivotably attached to the bed of a truck. It is also preferable that the ramp assembly 200 comprises pivot means that are configured to engage with a truck's tailgate mounts.

Once installed onto the truck bed, the ramp assembly 200 can pivotably move from a first position to a second position along the pivot means.

While in ramp assembly 200 is in a first position, the load supporting platform 202 is substantially parallel to the truck bed and may also be sitting on top of the bed. As an object is moved along the load supporting platform 202 towards the posterior end of the load supporting platform 202, the load supporting platform 202 pivots from the first position to the second position.

While the ramp assembly 200 is in a second position, the load supporting platform 202 is pivoted such that the posterior end of the load supporting platform is positioned adjacent to a ground surface, while the anterior end is raised off of the truck bed. The ramp assembly 200 shown in Figure 2 is in the second position.

As an object is moved along the load supporting platform towards the anterior end of the load supporting platform 202, the load supporting platform 202 pivots from the second position to the

first position rendering the load supporting platform 202 substantially parallel to the bed. Preferably, the load supporting platform 202 stills remain pivotably attached to the bed of the truck 224 to keep it secured during transportation. It is also preferable that the front portion of the load supporting platform 202 is secured.

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The load supporting platform 202 shown in Figure 2 has its ramp portion 206 slid out and extending from the deck portion 204, while the ramp assembly 200 is in a second position when installed onto the truck bed. The locking holes (not shown) on the ramp portion 206 engage with the locking means 208 on the deck portion 204 allowing the ramp portion 206 to be locked at an
10 extended position, as shown, relative to the deck portion 204.

Turning to Figure 3, a third embodiment of the present invention is illustrated. A ramp-trailer assembly 300 is shown that is similar to the ramp assemblies 100, 200 described for the first and second embodiments. Similarly, to the ramp assemblies 100 of the first and second embodiment,
15 the ramp-trailer assembly 300 of the third embodiment comprises a loading support platform 302 comprised of a deck portion 304 and a ramp portion 306 that is inserted into the deck portion 304. The ramp-trailer assembly 300 may further comprise a head rack 314 that is mounted onto the front end of the deck portion 304.

20 The ramp-trailer assembly 300 also comprises a trailer hitch assembly 334 and at least one wheel 342.

The ramp-trailer assembly 300 can be in two configurations. In the first configuration, the assembly functions as ramp 300 for moving objects onto and off of a bed of a truck, wherein the
25 assembly 300 can pivot between two positions, similarly to embodiments described above.

The ramp-trailer assembly 300 shown is in a second configuration. In a second configuration, the assembly 300 functions as a trailer that can be connected to the truck 324 or another vehicle. This occurs by the loading support platform 302 being mounted to the vehicle 324 via a trailer
30 hitching means 334.

The trailer hitching means 334 shown comprises two L-shaped legs 340 that engage with the outside surface of the deck portion 304. The L-shaped legs 340 may be secured to the deck portion 304 via a variety of means which may include bolt or pin assemblies. The trailer hitching means 334 also comprises an extension member 338 wherein one end of it pivotably attaches to the L-shaped legs and another end is configured to engage with the hitch assembly of the vehicle 324. A person skilled in the art would be aware of various ways and methods for a member to engage with the hitch assembly of the vehicle 324.

Preferably the L-shaped legs 340 are pivotably attached to an extension member 338 allowing the trailer hitching means 334 to be foldable for storage and transport purposes. This feature is further described below.

The ramp-trailer assembly 300 further comprises at least one wheel 342 positioned for engagement with a ground surface while at least one wheel 342 is connected to the load supporting platform 302. Preferably, at least one wheel 342 is rotatably mounted onto the axle of the ramp-trailer assembly.

The ramp-trailer assembly 300 shown, has two wheels 342 and an axle (not shown) that is attached to the bottom surface of the deck portion 304. At each end of the axle, the ramp-trailer assembly 300 comprises pivot means (not shown) that allow for each wheel to be pivotably attached to the ramp-trailer assembly 300.

The axle of the ramp-trailer assembly 300 shown in a second configuration may be the same axle used to pivotably mount the ramp-trailer assembly 300 to the truck bed while in a first ramp configuration. Also, it is preferable that wheels are mounted to the same pivot means that also allow for the ramp-trailer assembly 300 to be pivotably attached to the bed of a truck while in a first ramp configuration. Mounting of the wheels may involve a spindle on the wheels being inserted into the pivot means and then it being secured by a pin or bolt. Alternatively, the pivot means, such as the tubular members described for Figure 1, may be removed and the wheel spindles may be secured directly onto the axle.

A person skilled in the art would be aware of other various ways and methods that the wheels can be pivotably mounted to the ramp-trailer assembly 300 that are possible within the scope of the present invention.

5 At the front end of the deck portion 304 shown in Figure 3, a head rack 314 is present for providing protection to the cab of a truck from objects that are loaded onto the deck portion 304 while it sits on top of the truck bed while the ramp-trailer assembly 300 is in a first configuration. In a second configuration, the head rack 314 provides a barrier from objects loaded onto the ramp-trailer assembly 300 moving forward and potentially off of the assembly
10 300, in particular, during transportation.

Preferably, the head rack 314 is made of material that can withstand the impact of an object that may slide into it. Those skilled in the art will be aware of numerous ways suitable for securing head rack 314 to the deck portion.

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While the ramp-trailer assembly 300 is in a second configuration, the load supporting platform 302 shown in Figure 3 has its ramp portion 306 partially slid out and extending from the deck portion 306. The locking holes (not shown) on the ramp portion 306 engage with the locking means 308 on the deck portion 304 allowing the ramp portion 306 to be locked at an extended
20 position, as shown, relative to the deck portion 304.

Turning to Figure 4, a fourth embodiment of the present invention is illustrated. A ramp-trailer assembly 400 is shown that is similar to the ramp-trailer assembly 300 described for the third embodiment. Similarly, the ramp-trailer assembly 400 of the third embodiment comprises a
25 loading support platform 400 comprised of a deck portion 404 and a ramp portion (not shown) that can be inserted into the deck portion 404. The ramp-trailer assembly 400 may further comprise a head rack 414 that is mounted onto the front end of the deck portion 404.

Similarly to the third embodiment, the ramp-trailer assembly 400 can be in two configurations.
30 In the first configuration, the assembly functions as a ramp 400 for moving objects onto and off

of the bed of a truck, wherein the assembly 400 can pivot between two positions, similarly to the other embodiments described above.

5 The ramp-trailer assembly 400 shown is in a second configuration. In a second configuration, the assembly 400 functions as a trailer that can be connected to the truck 424 or another vehicle. This occurs by the loading support platform 402 being mounted to the vehicle 424 via a trailer hitching means 434.

10 Figures 5A to 5F illustrate an exemplary embodiment of the present invention that is similar to the ramp-trailer assemblies described for the third and fourth embodiments. In particular, Figures 5A to 5F show a ramp-trailer assembly 500 being shifted from a configuration wherein it is sitting on the bed of a truck 534 to a second configuration wherein the assembly functions as a trailer.

15 Figures 5C and 5D show the legs of the trailer hitching means 534 being unfolded and engaged with the outside surface of the loading support platform 504. The trailer hitching means 534 also comprises an extension member 538 wherein one end of it attaches to the L-shaped legs and another end is configured to engage with the hitch assembly of a vehicle. In Figure 5E, the hitching means 534 shown is engaged with a different vehicle than the truck 534 in which the
20 ramp-trailer assembly 500 was sitting on the bed of a truck, while in its initial configuration.

A person skilled in the art would be aware of various ways and methods for a member to engage with the hitch assembly of the vehicle.

25 The load supporting platform 502 shown in Figure 5F has its ramp portion 506 slid out and extending from the deck portion 504, while the ramp assembly 500 is in a second configuration, and has logs loaded on top of it. Preferably, the ramp portion 506 is locked at an extended position as described above for the previous embodiments.

Figure 6 illustrates the rear of a deck portion of a loading support platform in accordance with an exemplary embodiment of the present invention, which is similar to those of the previous embodiments described above.

5 Figures 7A and 7B illustrate a deck portion of a loading support platform in accordance with other exemplary embodiments of the present invention, which is similar to those of the previous embodiments described above.

10 Figures 8A and 8B illustrate a head rack in accordance with an exemplary embodiment of the present invention, which is similar to those of the previous embodiments described above. The head rack shown provides for a logo to be carved out for branding purposes.

Figure 9 illustrates an unmounted axle in accordance with an exemplary embodiment of the present invention, which is similar to those of the previous embodiments described above.

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Figure 10 illustrates an axle mounted on a bottom surface of a deck portion of a loading support platform in accordance with an exemplary embodiment of the present invention, which is similar to those of the previous embodiments described above.

20 Figures 11A and 11B illustrate pivot means 1210 that allow for the ramp assembly to be pivotably attached to the bed of a truck in accordance with an exemplary embodiment of the present invention, which is similar to those of the previous embodiments described above. The pivot means 1210 shown are configured to engage with a truck's tailgate mounts 1244. The pivot means 1210 may be spring loaded tubular members that cover the tailgate mounts 1244 when
25 engaged. To disengage the pivot means 1210 from the tailgate mounts 1244, a user would simply pull the pivot means 1210 and release them.

In operation, one would remove a truck's tailgate 1244. A ramp assembly or trailer ramp assembly can then be securely pivotably anchored to the tailgate mounts 1244.

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Figures 12A to 12C illustrate of a ramp portion of a loading support platform in accordance with an exemplary embodiment of the present invention, which is similar to those of the previous embodiments described above.

5 Alternatively, the ramp portion may be a solid sheet that allows objects to be moved along its center.

Figure 13 illustrates another ramp portion of a loading support platform in accordance with an exemplary embodiment of the present invention, which is similar to those of the previous
10 embodiments described above.

Figures 14A to 17 illustrate several trailer hitching means in several states in accordance with exemplary embodiments of the present invention, which are similar to those of the previous embodiments described above.

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Figure 14A shows the hitching means 1534 in a folded state wherein L-shaped legs 1540 are pivotably attached to extension member 1538 allowing the trailer hitching means 1534 to be foldable for storage and transport purposes. The legs 1540 are folded back and engaged with each other and secured by securing means 1546. Figure 14B shows the hitching means 1534 in
20 an extended state.

Figure 15 shows another hitching means 1634 which is in a folded state wherein one end of an extension member 1638 engages with the hitch assembly of a vehicle allowing the hitching means 1634 to be stored or transported when not in use. A person skilled in the art would be
25 aware of various ways and methods for a member to engage with the hitch assembly of a vehicle.

Figure 16A and 16B show another hitching means 1734 which is in an extended state wherein its L-shaped legs 1740 are configured to engage with the outside surface of the deck portion 1704 shown. The L-shaped legs 1740 may be secured to the deck portion 1704 via a variety of means
30 which may include standard bolt or pin assemblies. A person skilled in the art would be aware of various ways and methods for a member to engage with the hitch assembly of a vehicle.

Figure 16C shows the hitching means 1734 in a folded state which further comprises wheel mounting means 1748 which are configured to mount the wheels of the ramp-trailer assembly during transport or storage.

5 Figure 17 shows a further hitching means 1834 in a folded state wherein one end of its extension member engages with the hitch assembly of a vehicle allowing the hitching means 1834 to be stored or transported when not in use. It also comprises wheel mounting means which have two wheels mounted.

10 Unless the context clearly requires otherwise, throughout the description and the claims:

- “comprise”, “comprising”, and the like are to be construed in an inclusive sense, as opposed to an exclusive or exhaustive sense; that is to say, in the sense of “including, but not limited to”.

- “connected”, “coupled”, or any variant thereof, means any connection or coupling, either direct or indirect, between two or more elements; the coupling or connection between the elements can
15 be physical, logical, or a combination thereof.

- “herein”, “above”, “below”, and words of similar import, when used to describe this specification shall refer to this specification as a whole and not to any particular portions of this specification.

- “or”, in reference to a list of two or more items, covers all of the following interpretations of
20 the word: any of the items in the list, all of the items in the list, and any combination of the items in the list.

- the singular forms “a”, “an” and “the” also include the meaning of any appropriate plural forms.

25 Words that indicate directions such as “vertical”, “transverse”, “horizontal”, “upward”, “downward”, “forward”, “backward”, “inward”, “outward”, “vertical”, “transverse”, “left”, “right”, “front”, “back”, “top”, “bottom”, “below”, “above”, “under”, and the like, used in this description and any accompanying claims (where present) depend on the specific orientation of the apparatus described and illustrated. The subject matter described herein may assume various
30 alternative orientations. Accordingly, these directional terms are not strictly defined and should not be interpreted narrowly.

Where a component (e.g. a circuit, module, assembly, device, etc.) is referred to herein, unless otherwise indicated, reference to that component (including a reference to a "means") should be interpreted as including as equivalents of that component any component which performs the function of the described component (i.e., that is functionally equivalent), including components which are not structurally equivalent to the disclosed structure which performs the function in the illustrated exemplary embodiments of the invention.

Specific examples of methods and apparatus have been described herein for purposes of illustration. These are only examples. The technology provided herein can be applied to contexts other than the exemplary contexts described above. Many alterations, modifications, additions, omissions and permutations are possible within the practice of this invention. This invention includes variations on described embodiments that would be apparent to the skilled person, including variations obtained by: replacing features, elements and/or acts with equivalent features, elements and/or acts; mixing and matching of features, elements and/or acts from different embodiments; combining features, elements and/or acts from embodiments as described herein with features, elements and/or acts of other technology; and/or omitting combining features, elements and/or acts from described embodiments.

The foregoing is considered as illustrative only of the principles of the invention. The scope of the claims should not be limited by the exemplary embodiments set forth in the foregoing, but should be given the broadest interpretation consistent with the specification as a whole.

CLAIMS

1. A truck ramp-trailer assembly comprising:

a load supporting platform comprising an anterior end and a posterior end;

a first mounting means configured for selectively connecting the load supporting platform to a bed of a truck, the load supporting platform pivotable at the first mounting means;

a second mounting means for selectively rotatably connecting at least one wheel to the load supporting platform; and

a hitching means configured for selectively connecting the load supporting platform to a hitch assembly of a vehicle;

whereas in a first configuration, the load supporting platform is disconnected from the hitching assembly and pivotably connected to the bed with the first mounting means such that:

in a first position, the load supporting platform is substantially parallel to the bed; and

in a second position, the load supporting platform is pivoted such that the posterior end of the load supporting platform is positioned adjacent a ground surface; and

whereas in a second configuration, the load supporting platform is disconnected from the bed and connected to the hitch assembly of the vehicle with the hitching means and the at least one wheel is positioned for engagement with the ground surface while the at least one wheel is connected to the load supporting platform with the second mounting means.

2. The assembly of claim 1 wherein in the first configuration, the load supporting platform is disconnected from the hitching means and pivotably connected to the bed with the first mounting means, wherein the load supporting platform rotates from the second position to the first position as an object is moved along the load supporting platform towards the anterior end of the load supporting platform.
3. The assembly of claim 2 wherein in the first configuration, the load supporting platform rotates from the first position to the second position as the object is moved along the load supporting platform towards the posterior end of the load supporting platform.
4. The assembly of claim 1 wherein there is a plurality of the first mounting means.
5. The assembly of claim 1 wherein the first mounting means is the second mounting means.
5. The assembly of claim 1 wherein the hitching means is removable from the assembly.
6. The assembly of claim 1 wherein the hitching means is foldable.
7. The assembly of claim 1 wherein the vehicle is the truck.
8. The assembly of claim 1 wherein the load supporting platform comprises a deck portion, and a ramp portion that is configured to be slidably and selectively inserted into the deck portion.
9. The assembly of claim 8 wherein the ramp portion is configured to be locked at a position relative to the deck portion while the ramp portion is inserted into the deck portion.

10. The assembly of claim 1 wherein the hitching means is configured to mount the at least one wheel when the at least one wheel is disconnected from the load supporting platform.

Deck & Ramp

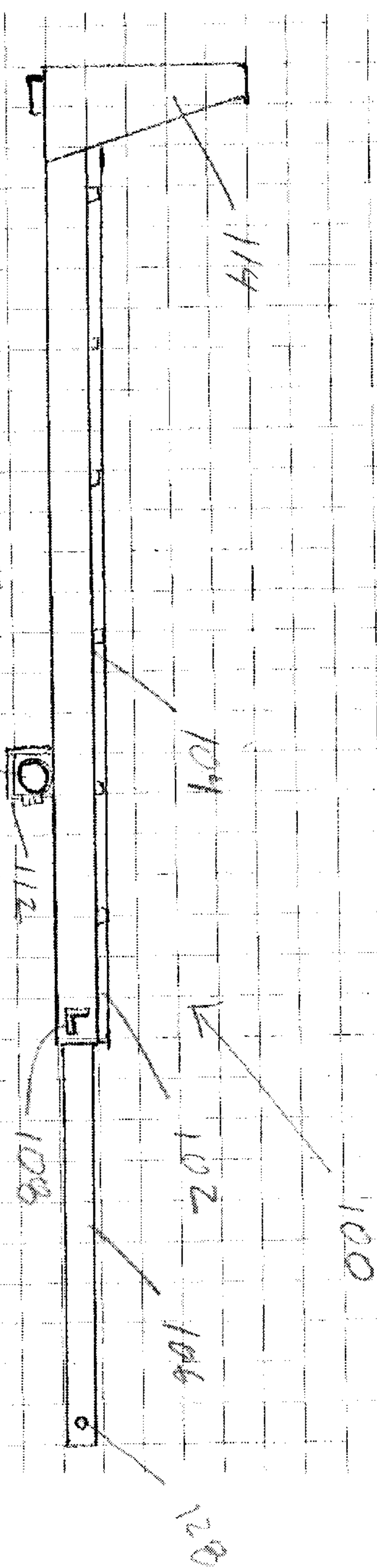


Fig 1A

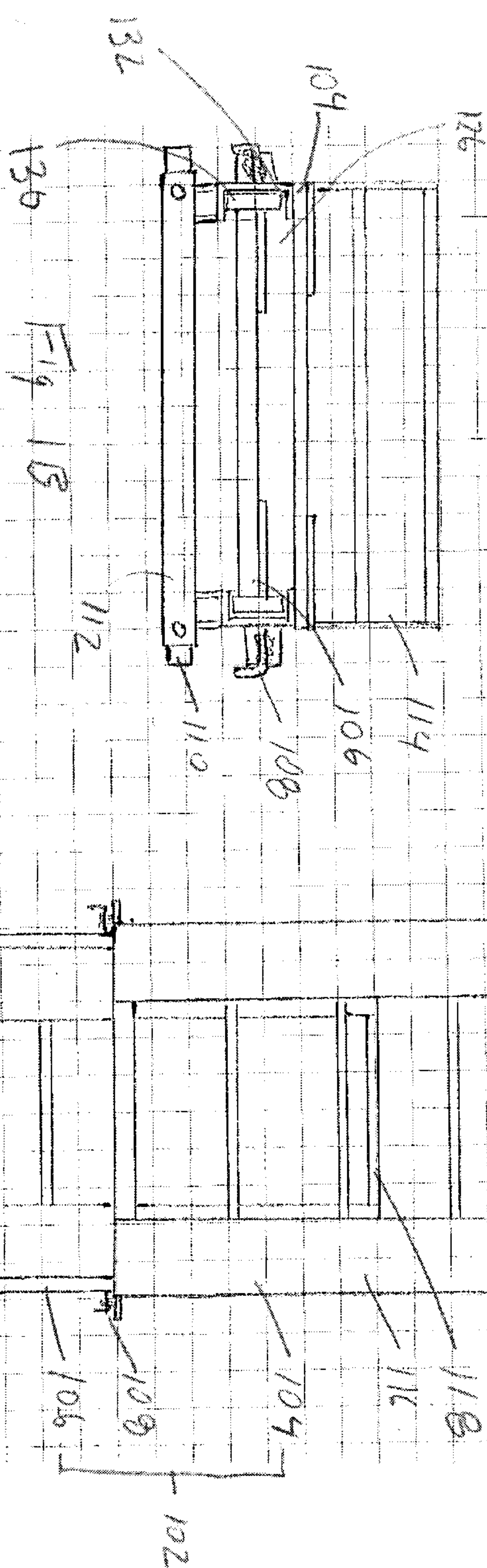


Fig 1B

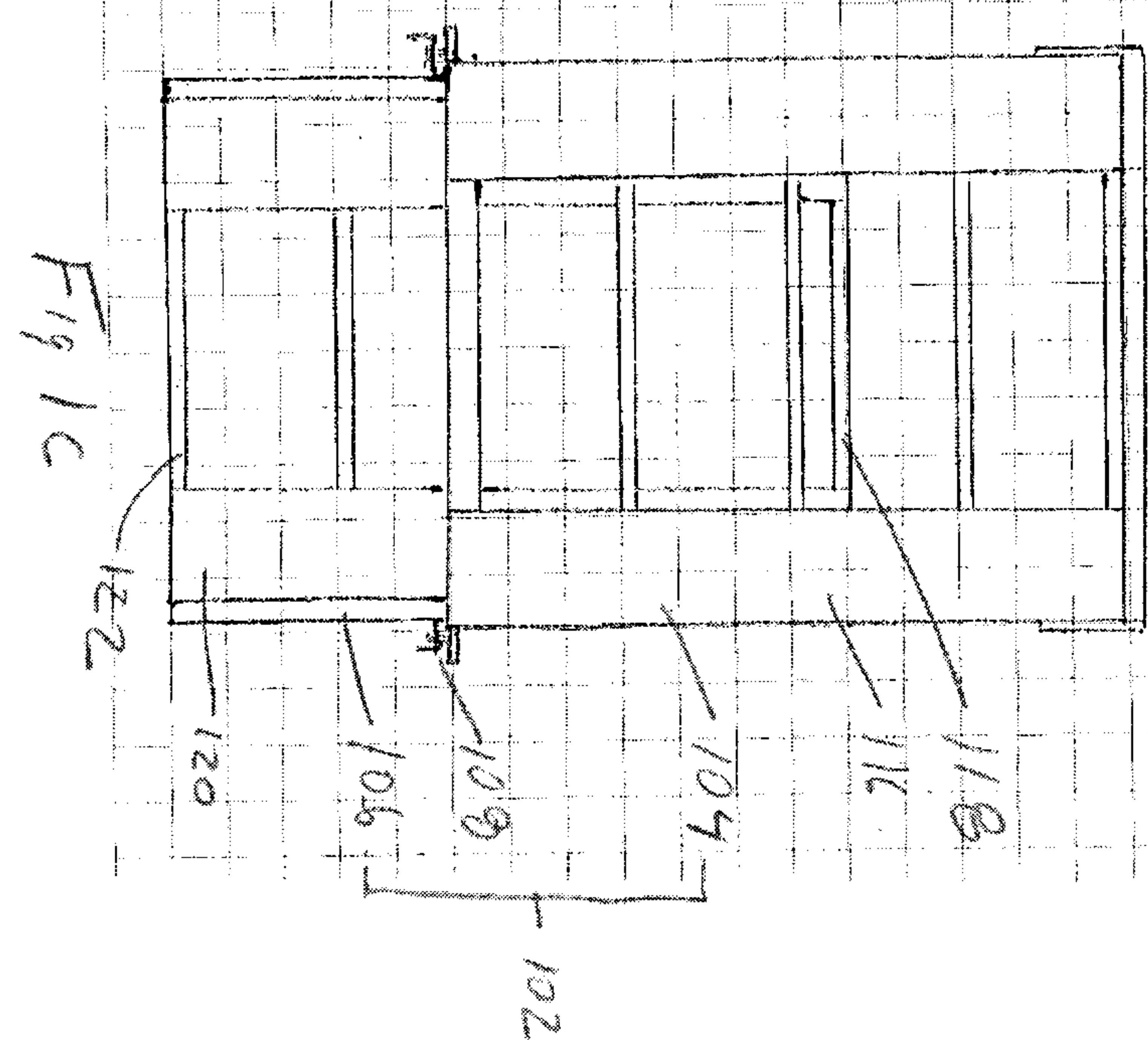
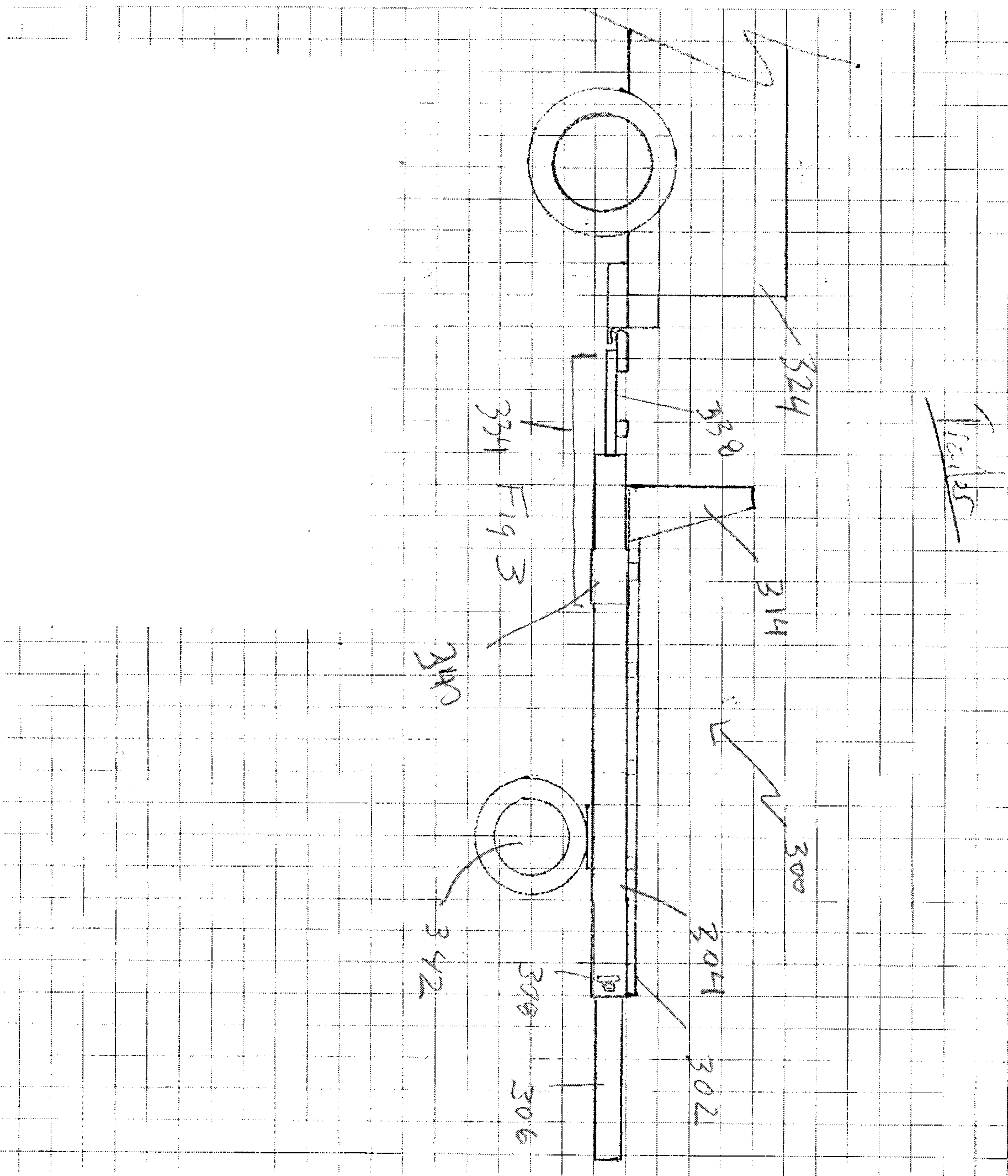


Fig 1C





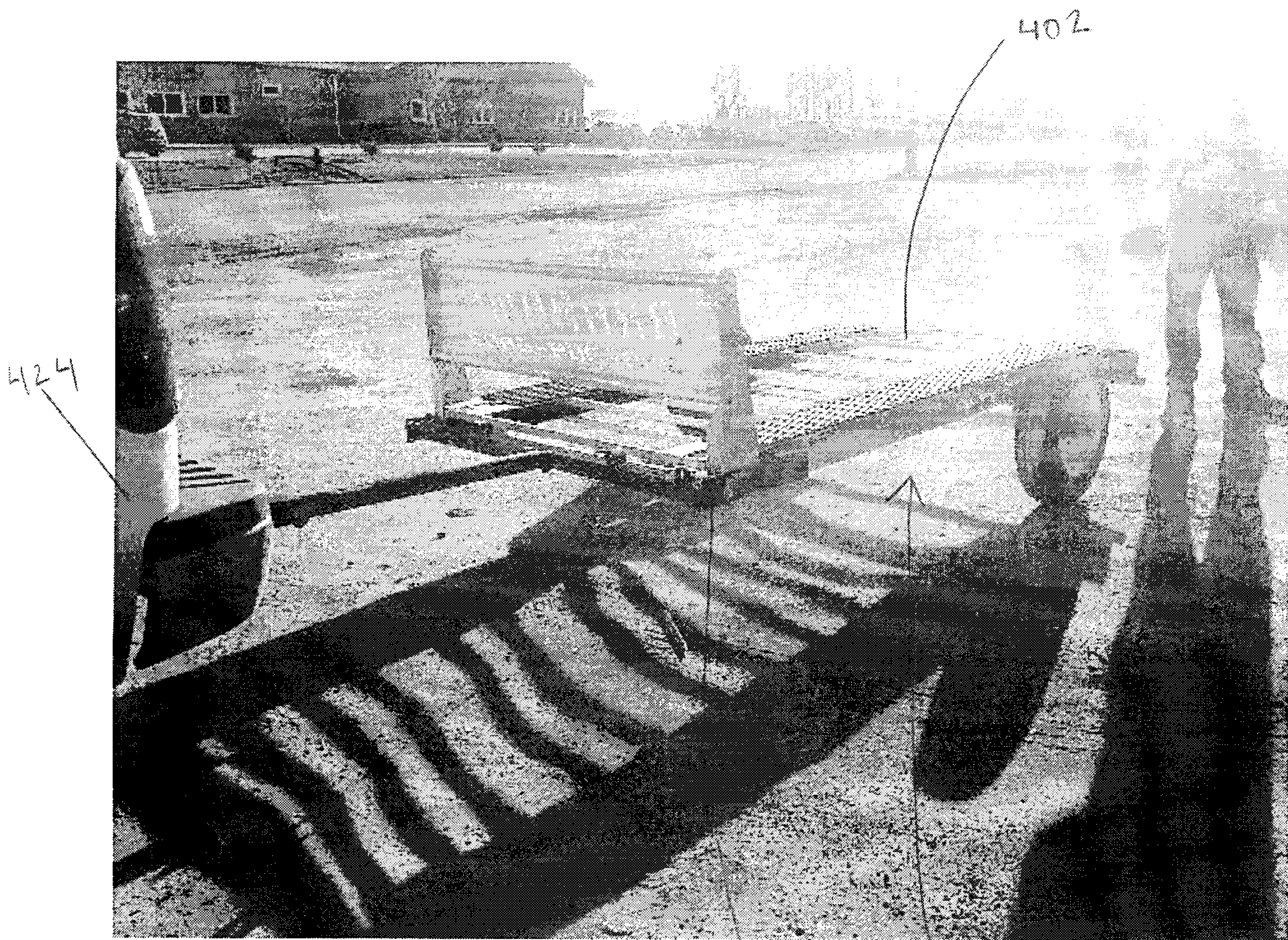


Fig. 4 434 400

534

500

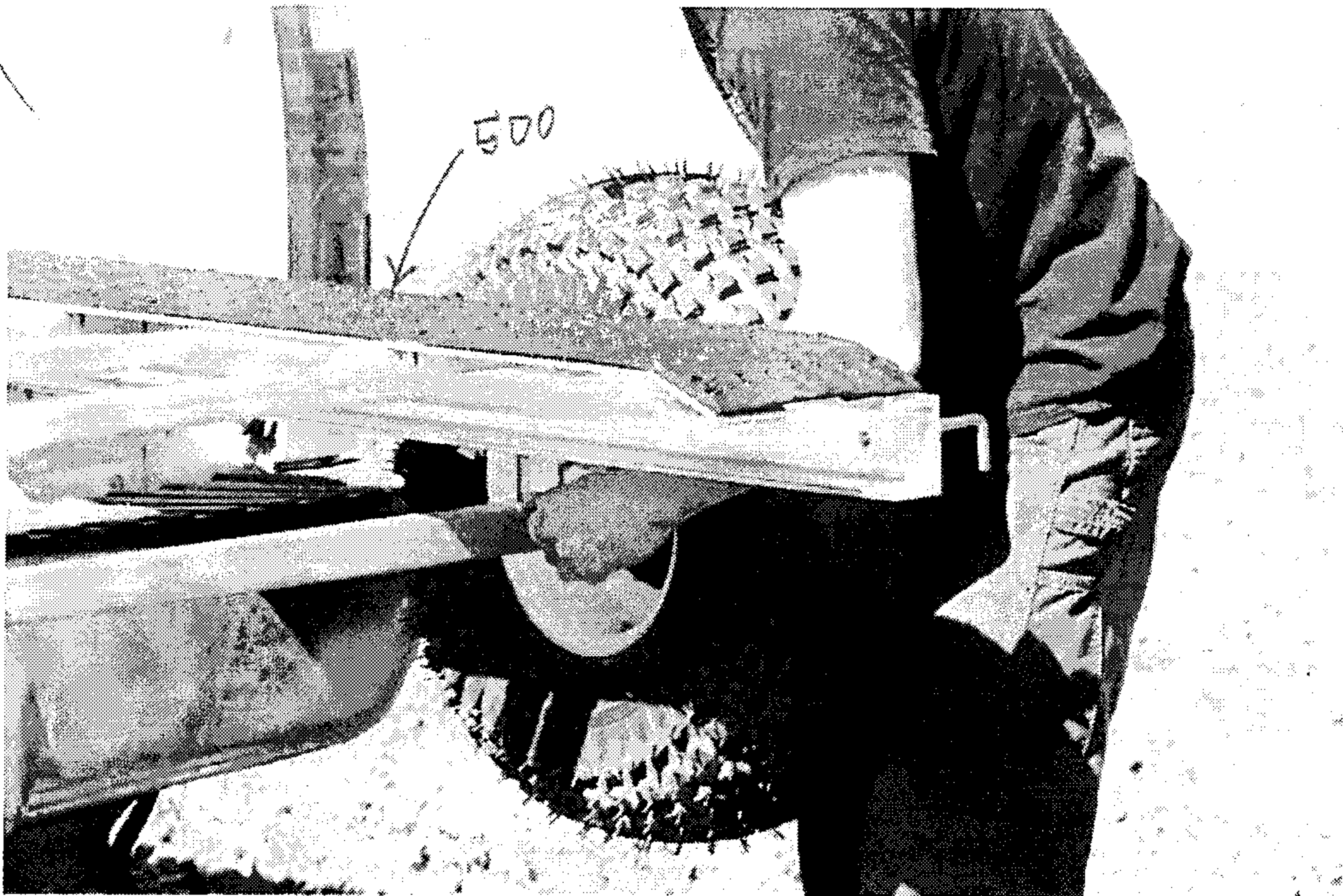


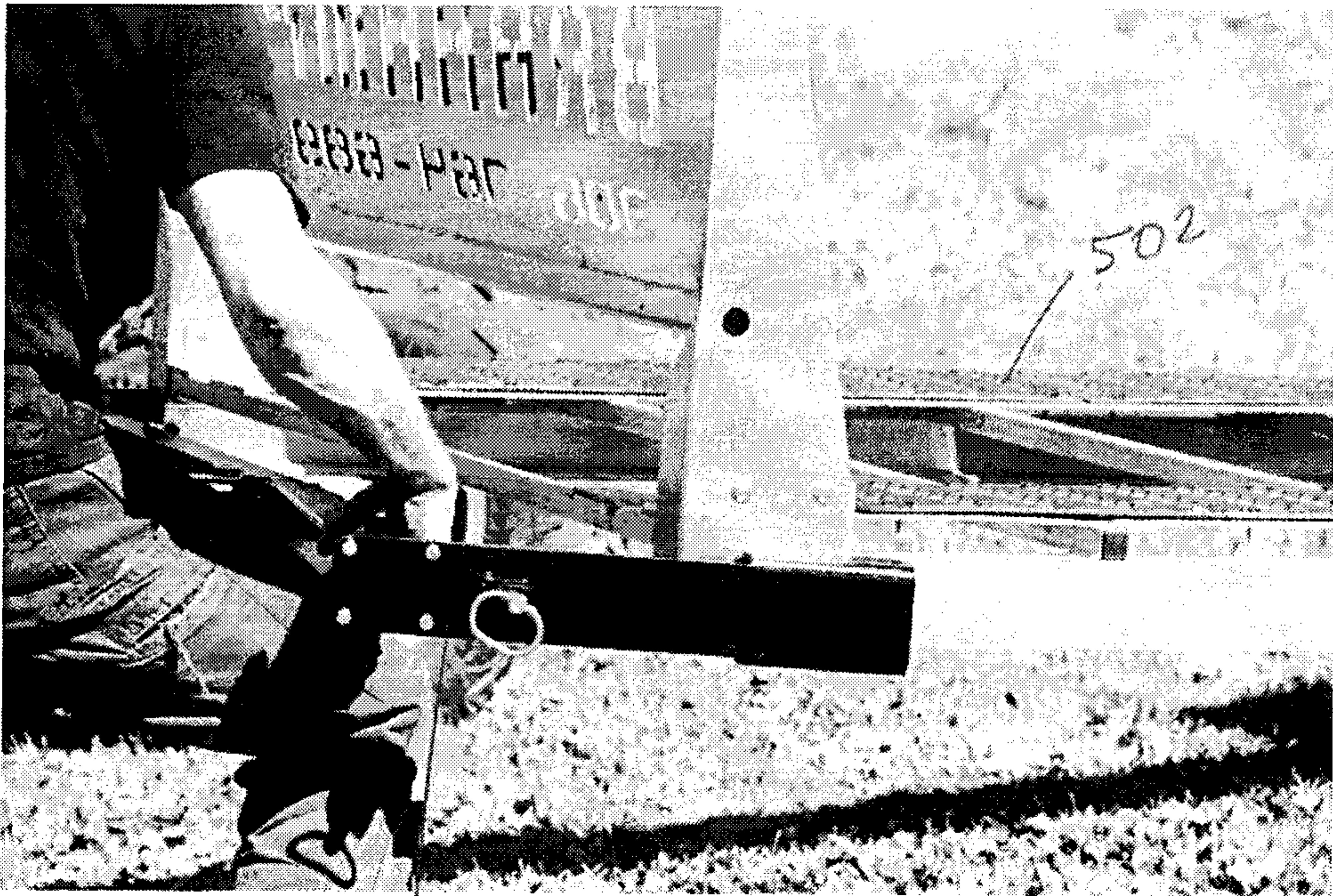
Fig 5A



Fig 5B



534 Fig 5C



534 Fig. 5D



Fig. 5E



Fig. 5F

504

502

506

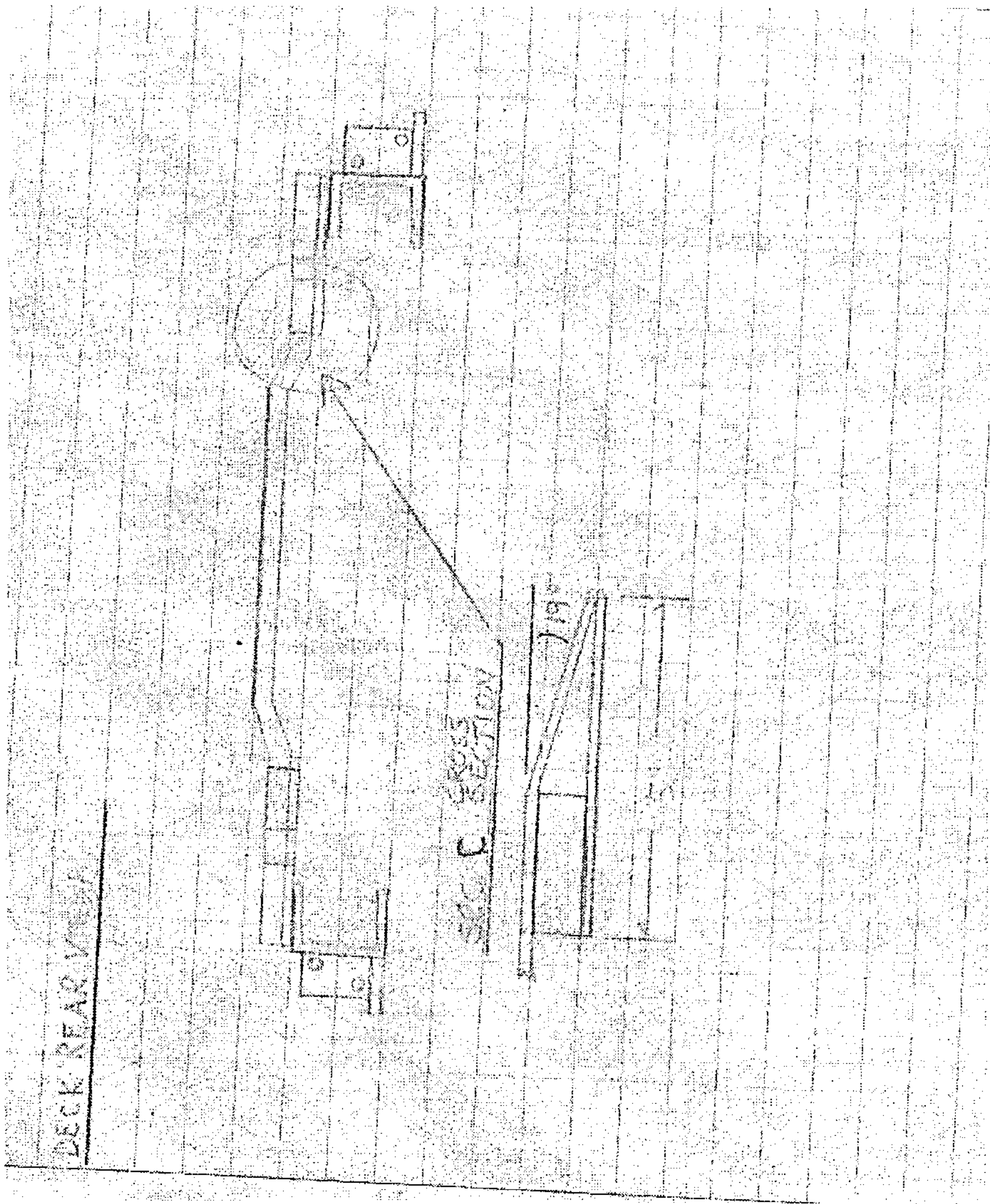


Fig 6

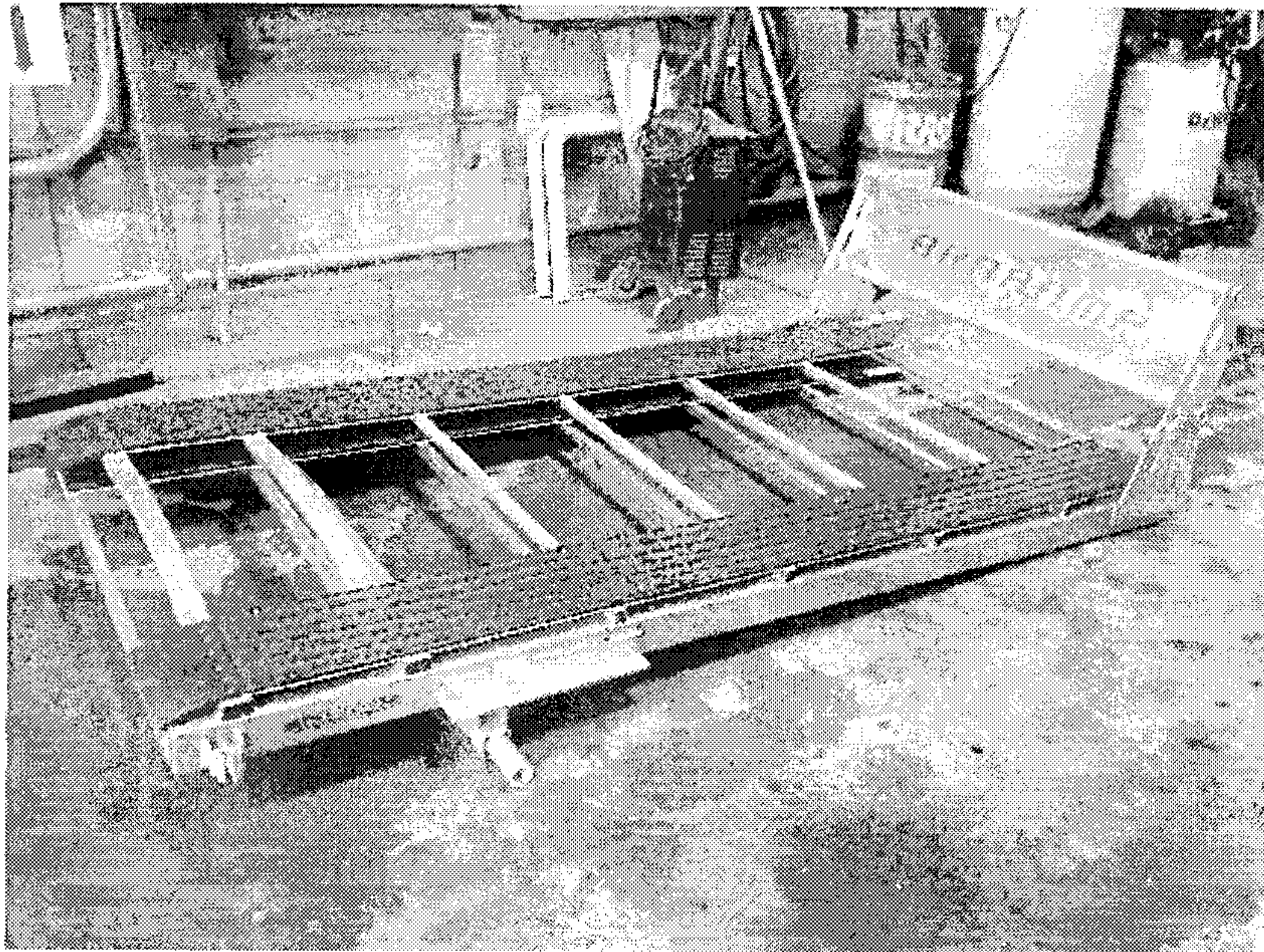


Fig 7A



Fig 7B



Fig 8A

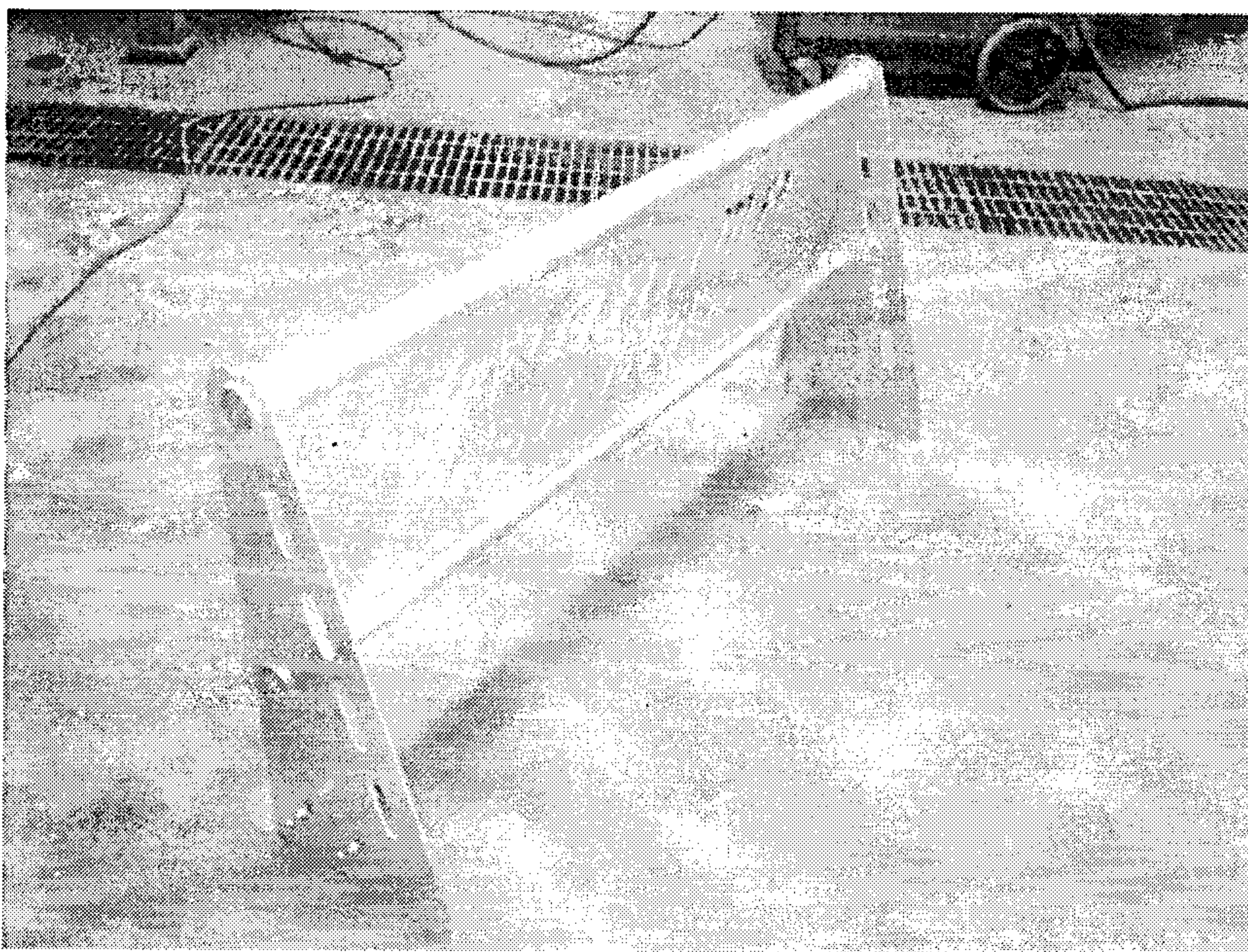


Fig 8B

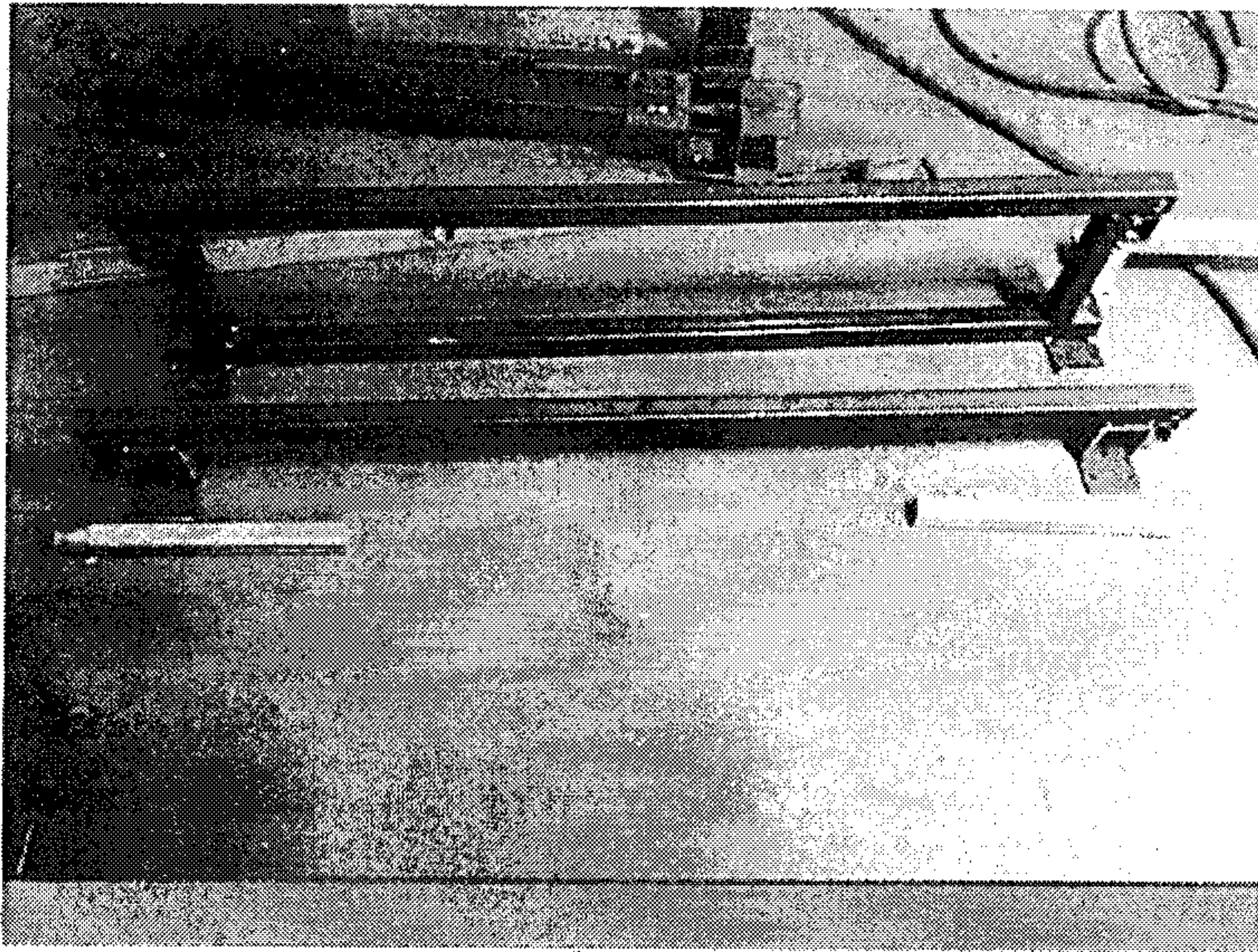


Fig. 9

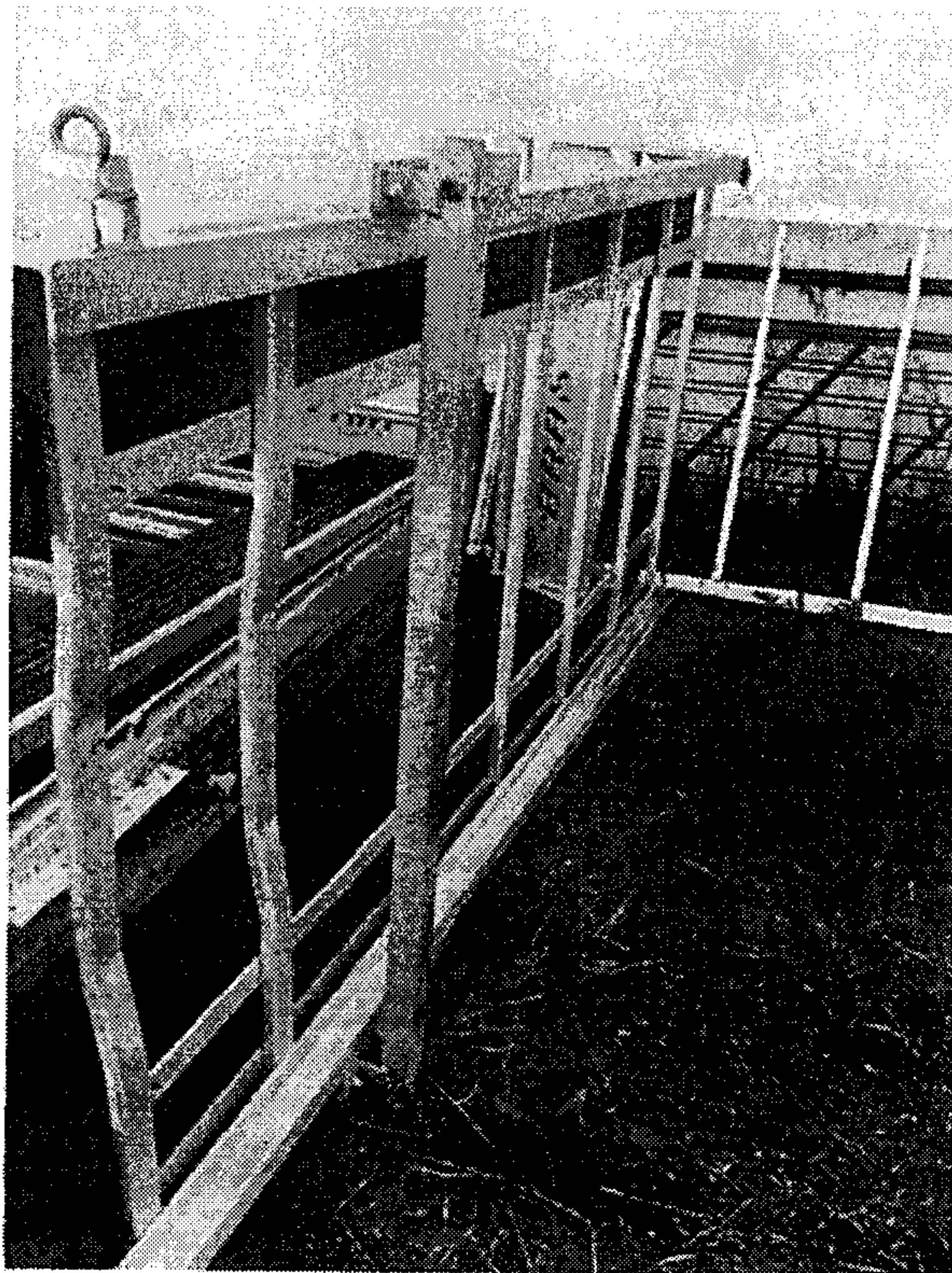


Fig 10



1244

Fig. 11A

1210

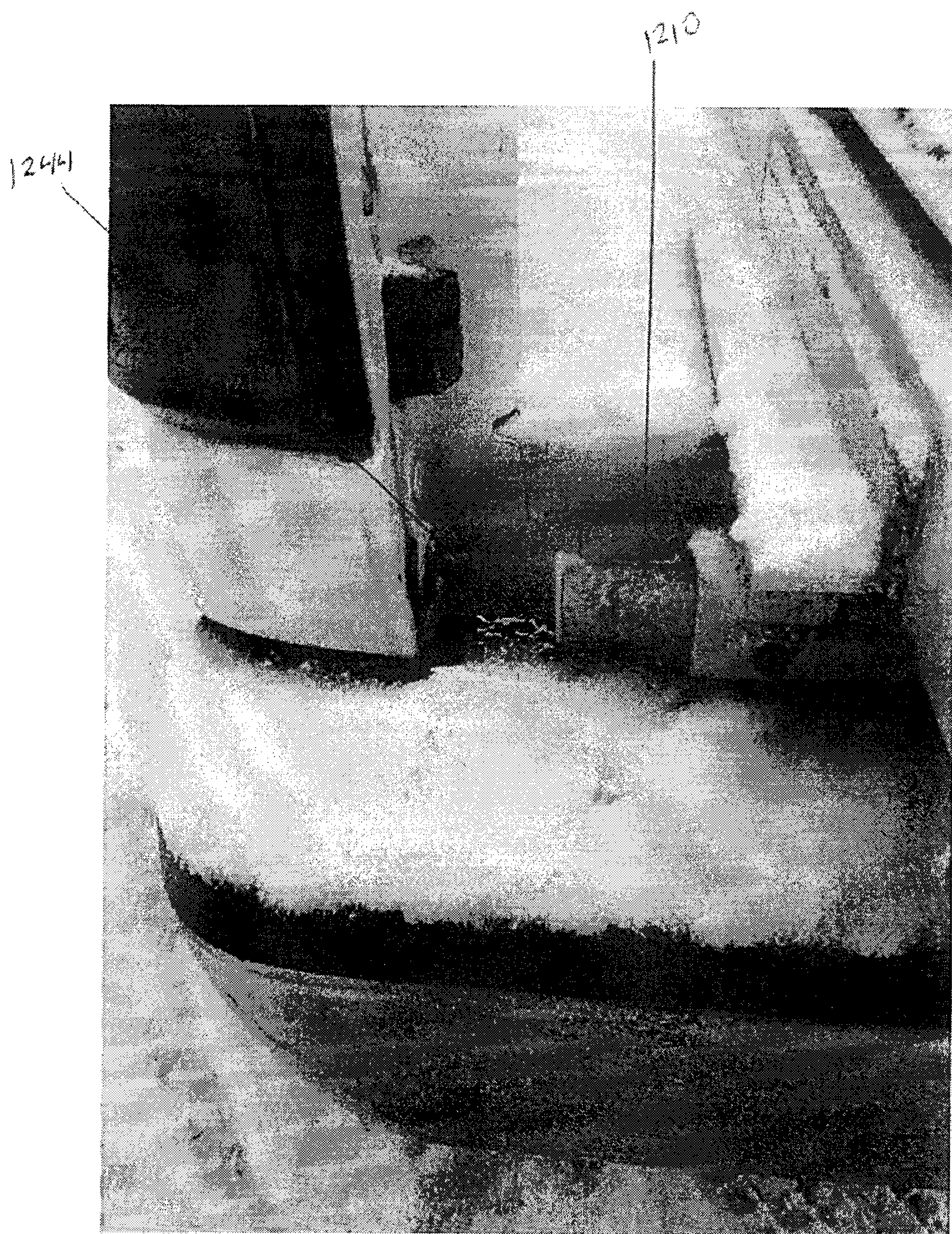
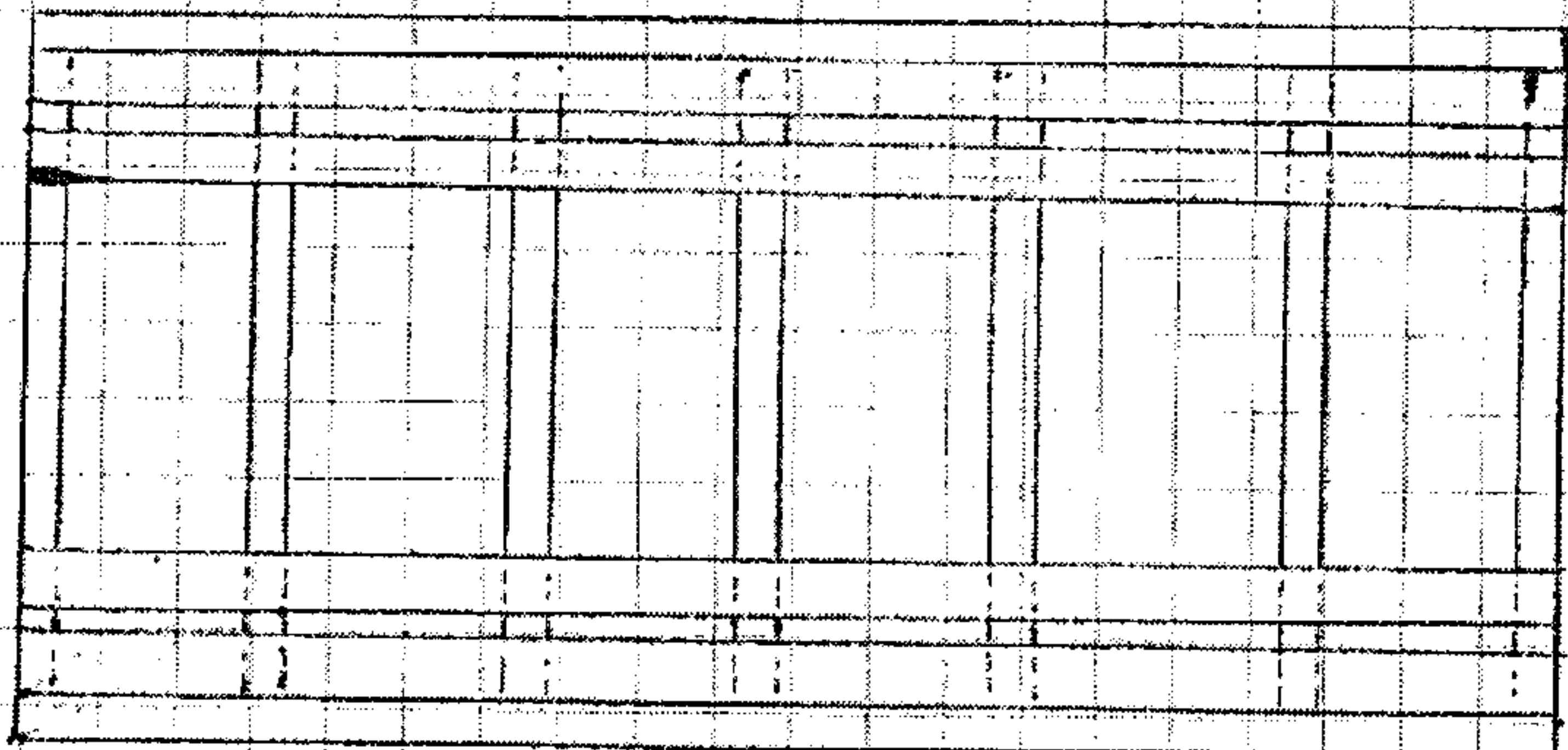


Fig. 11B

Ramp

Top



Side

Fig 124

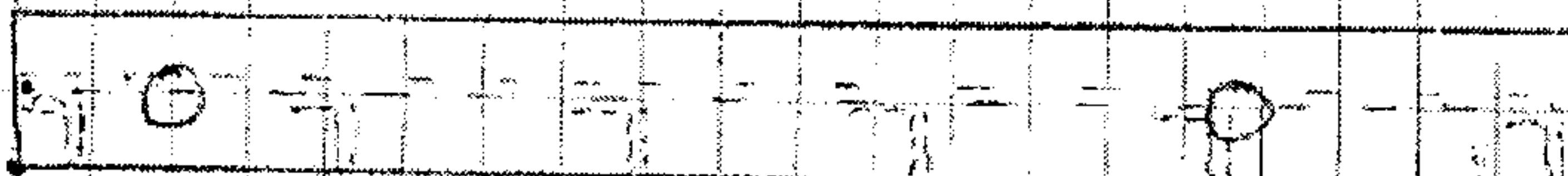


Fig 135

Front

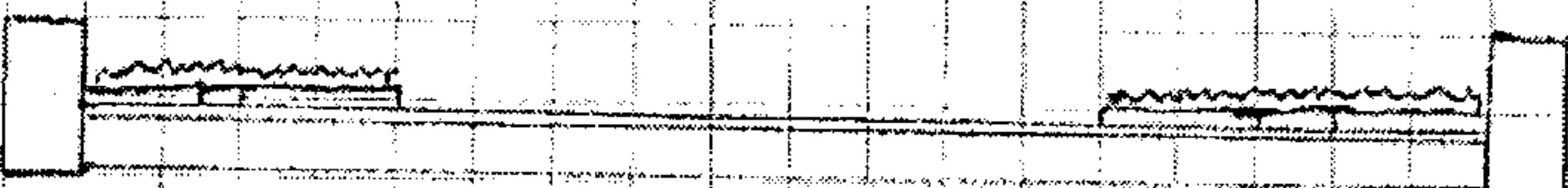


Fig 12c

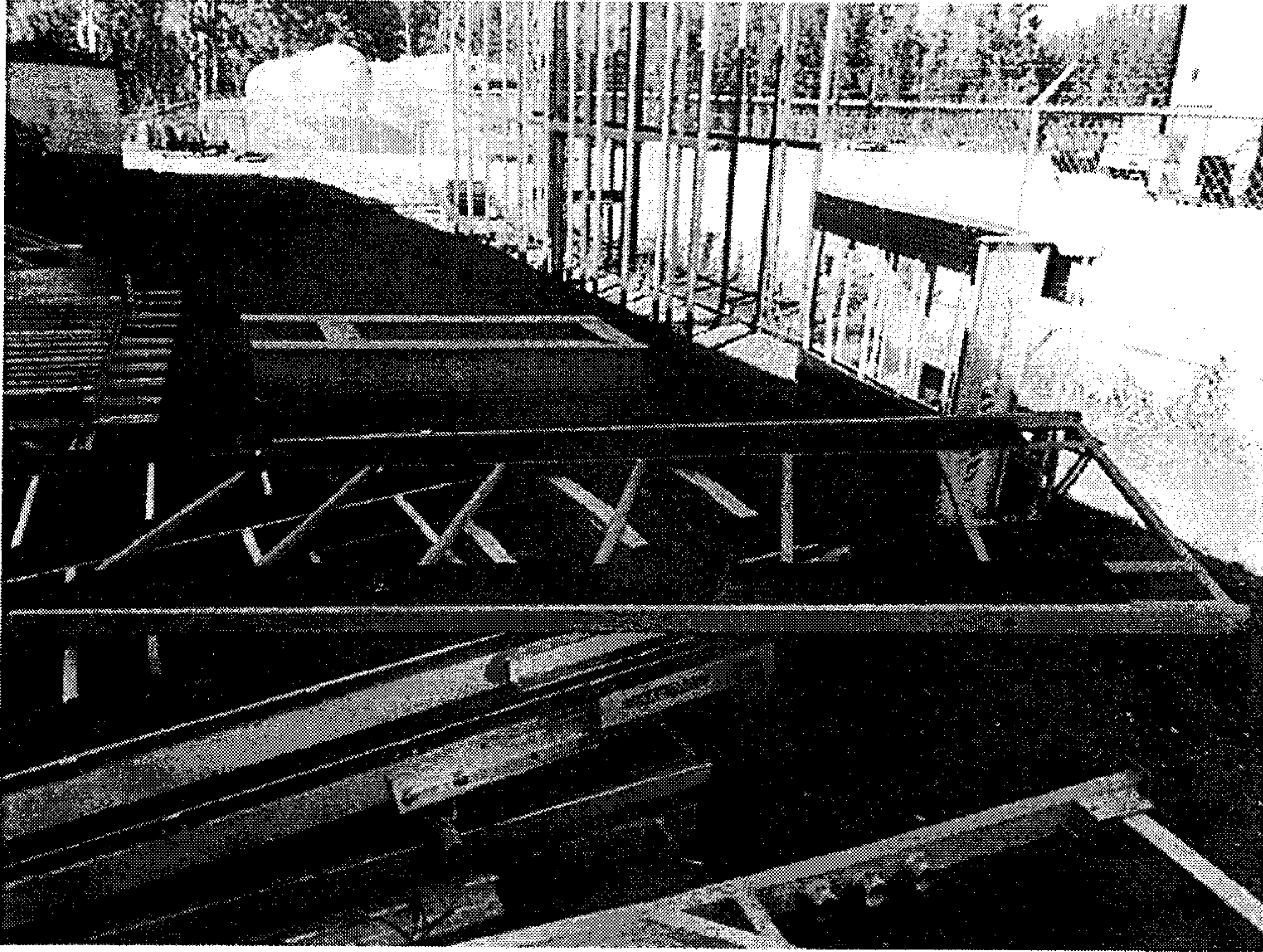
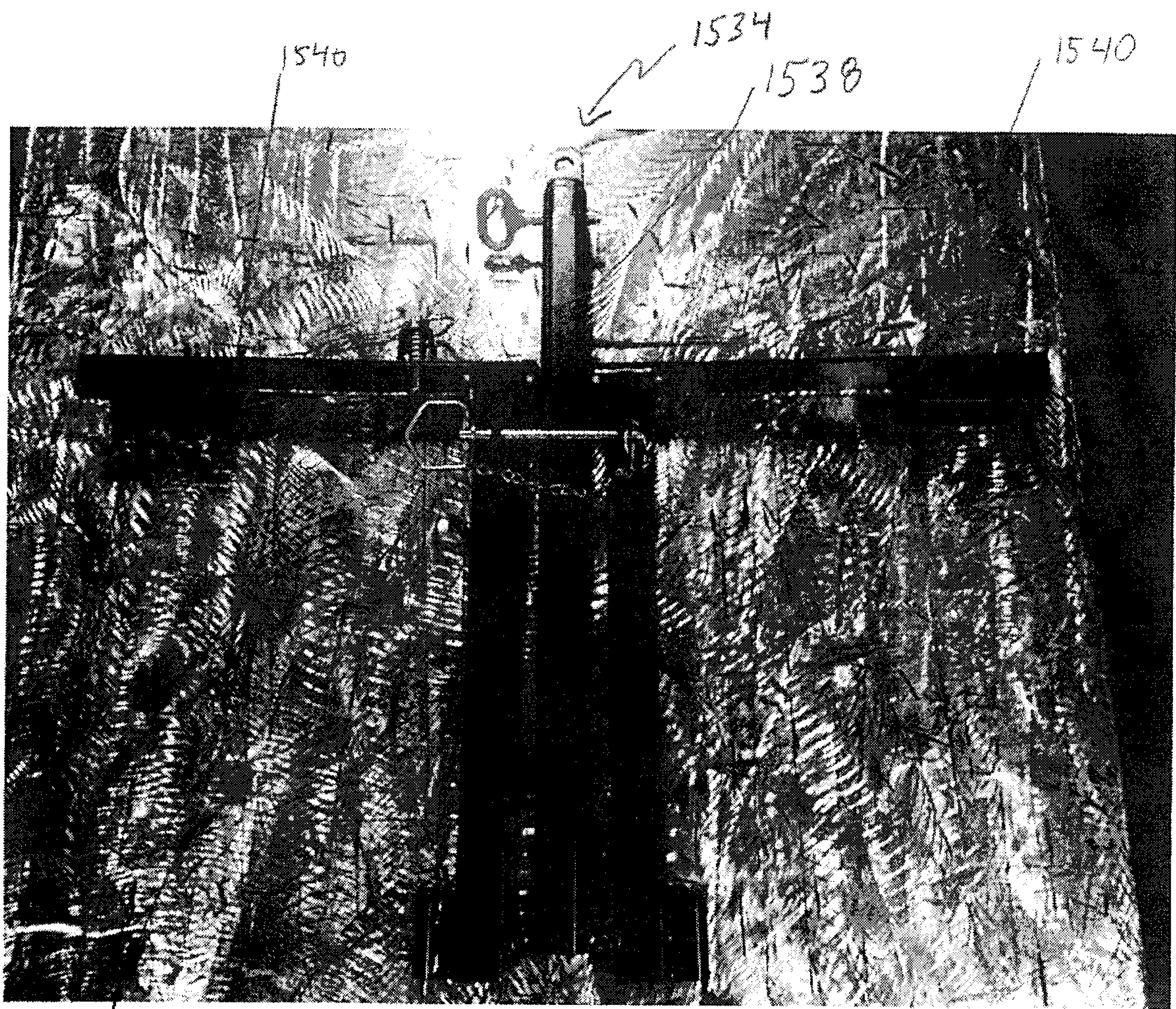


Fig. 13



1546

Fig 14A

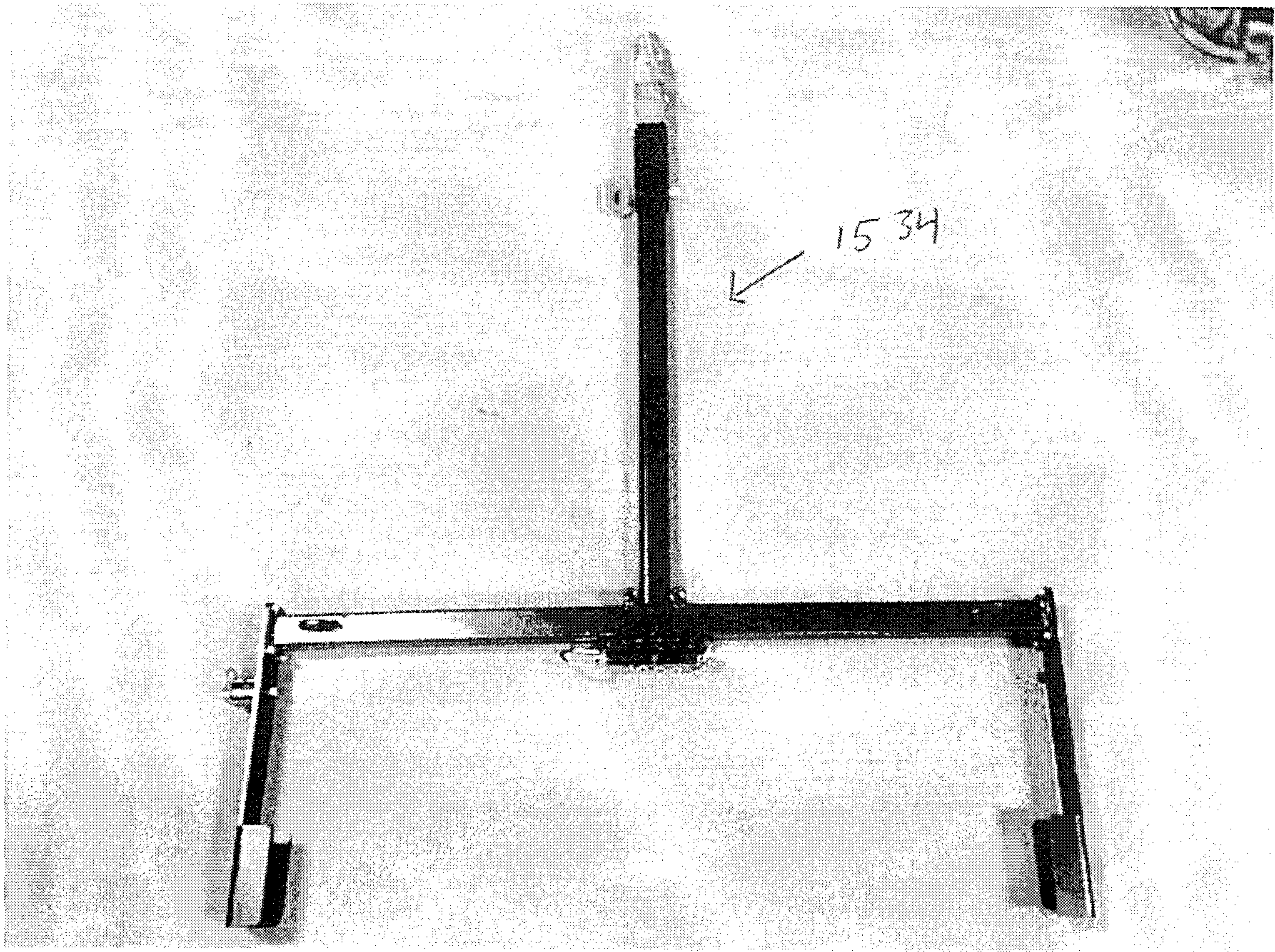


Fig. 14B

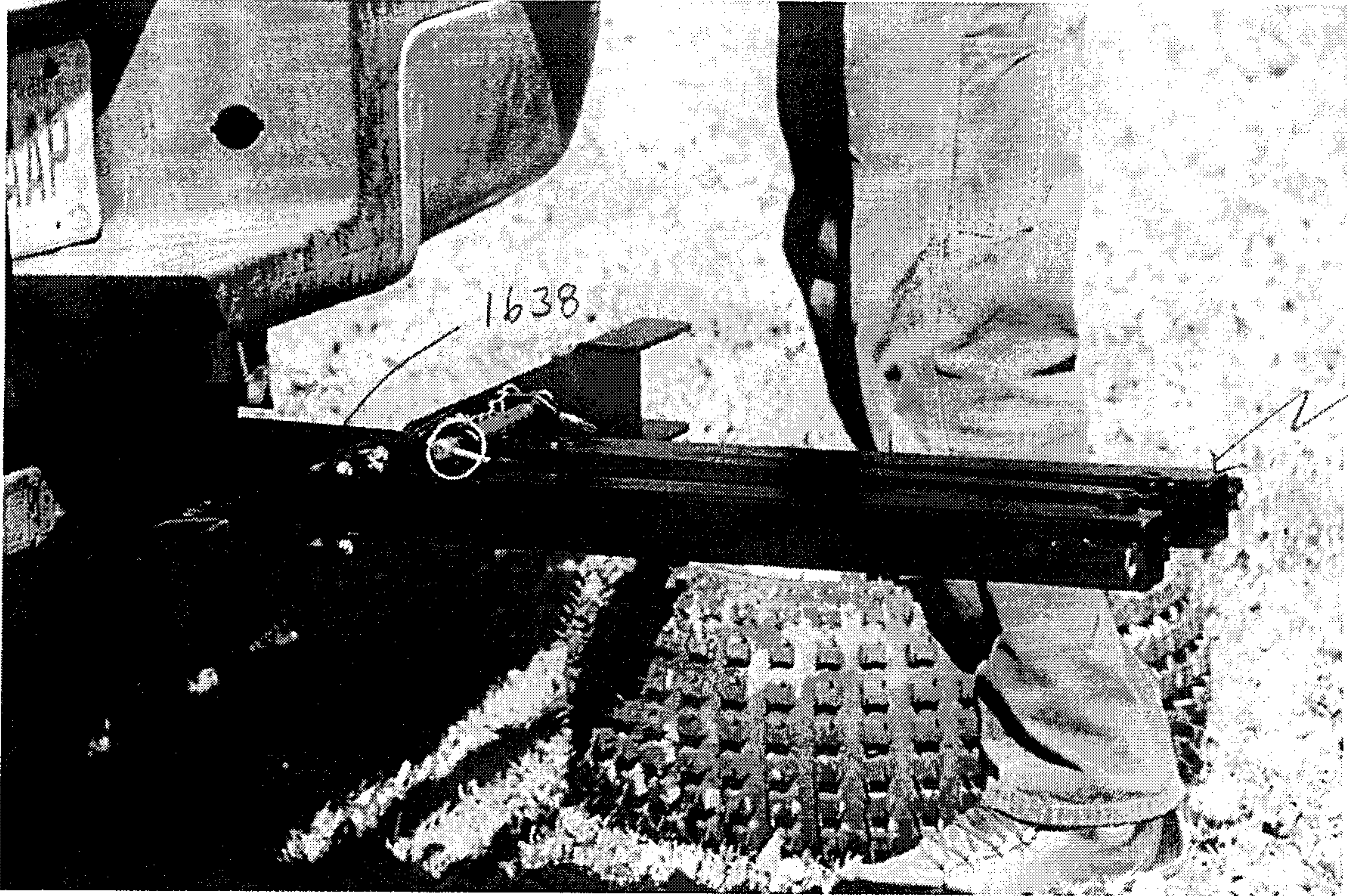


Fig 15

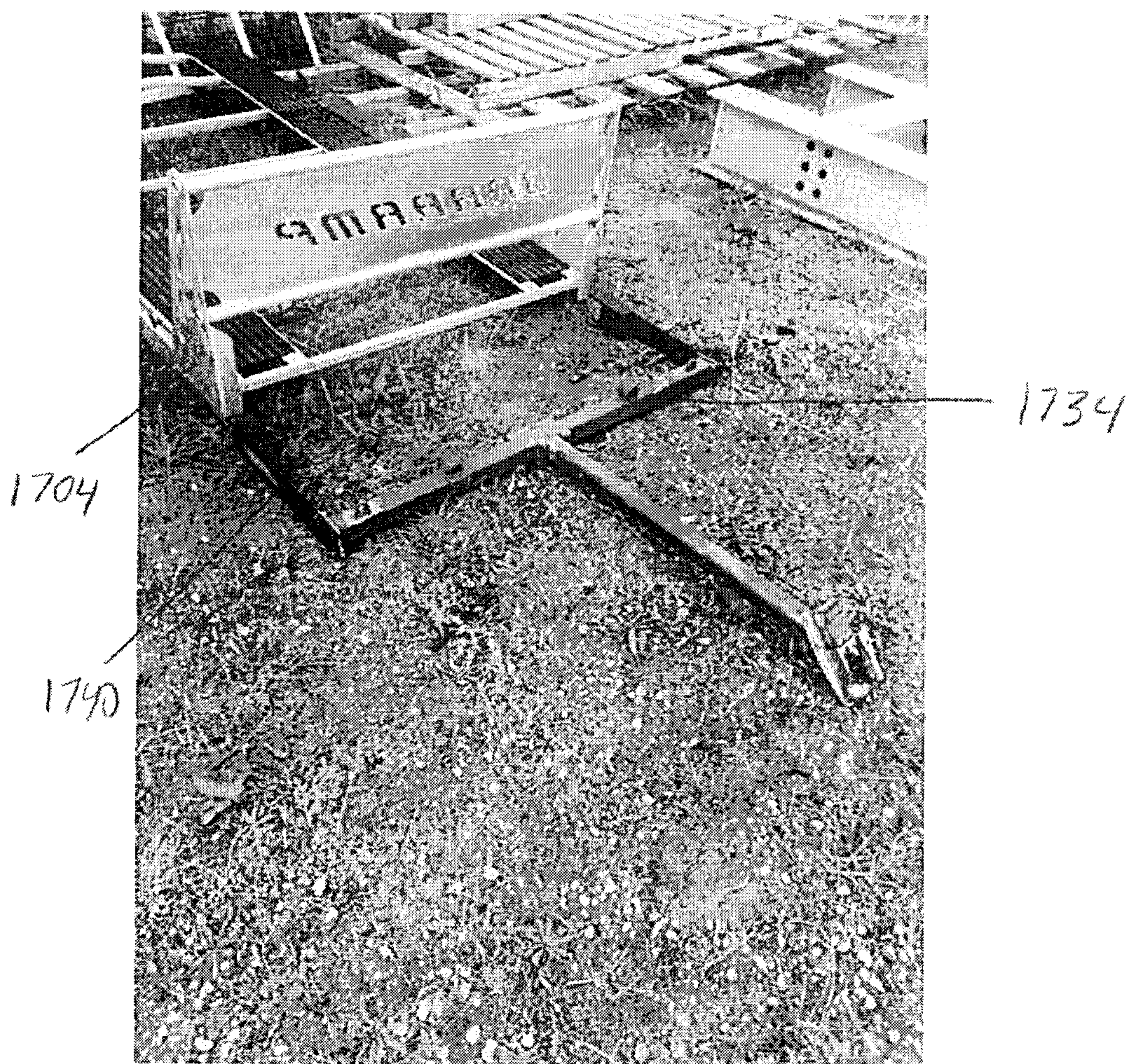


Fig 16A

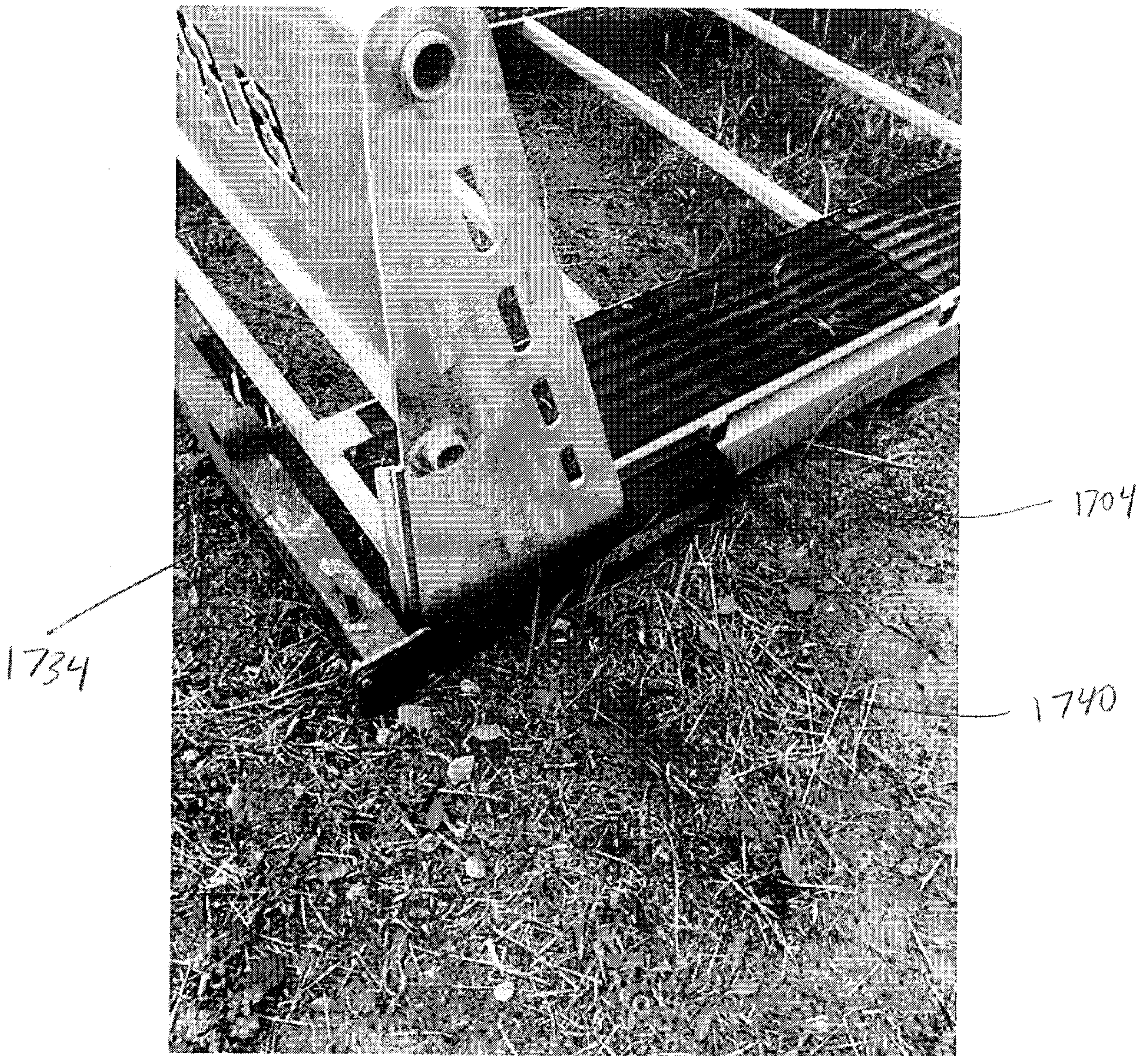
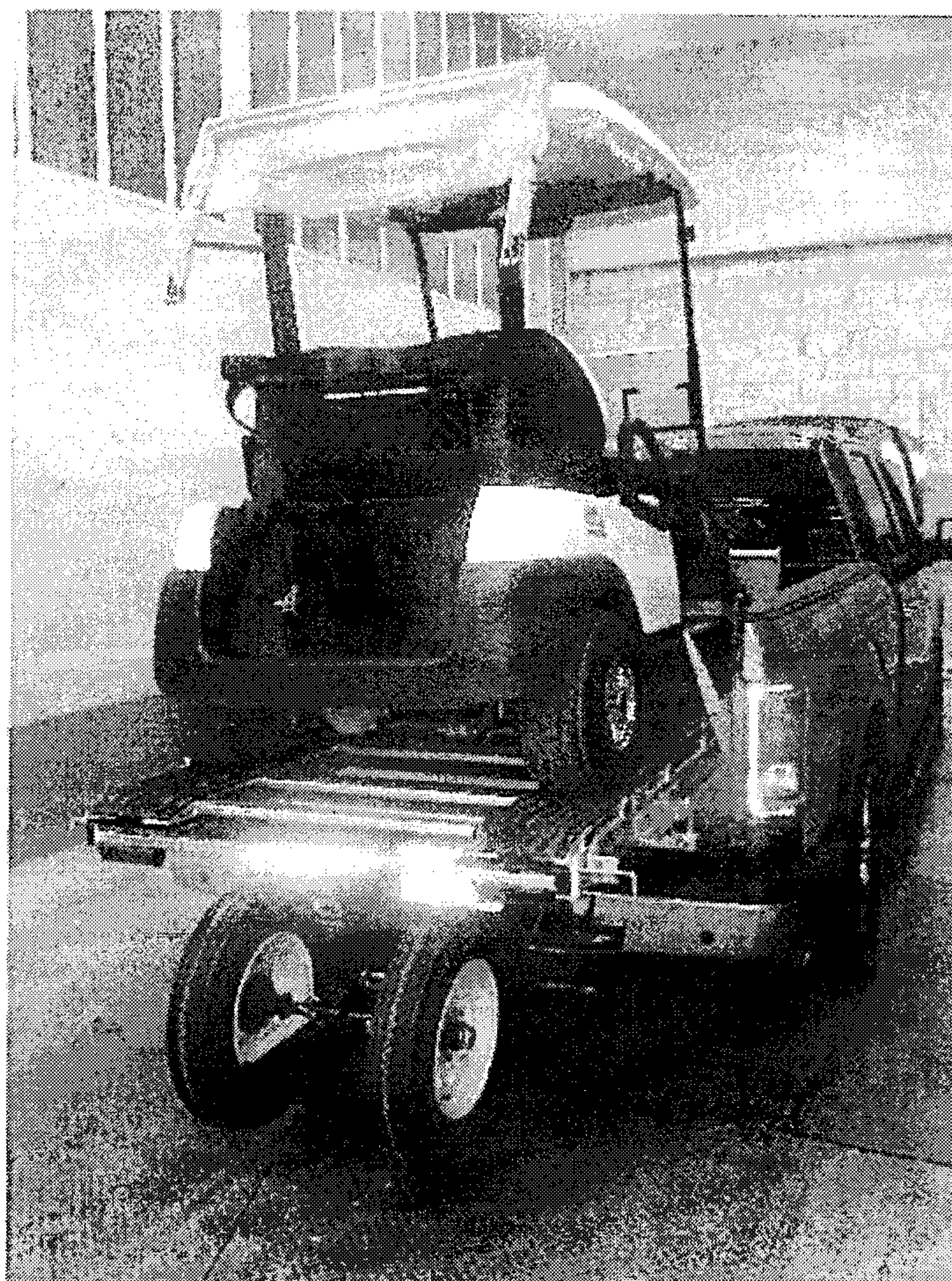


Fig 10B



Fig 16C



1834 Fig. 17

Deck & Ramp

