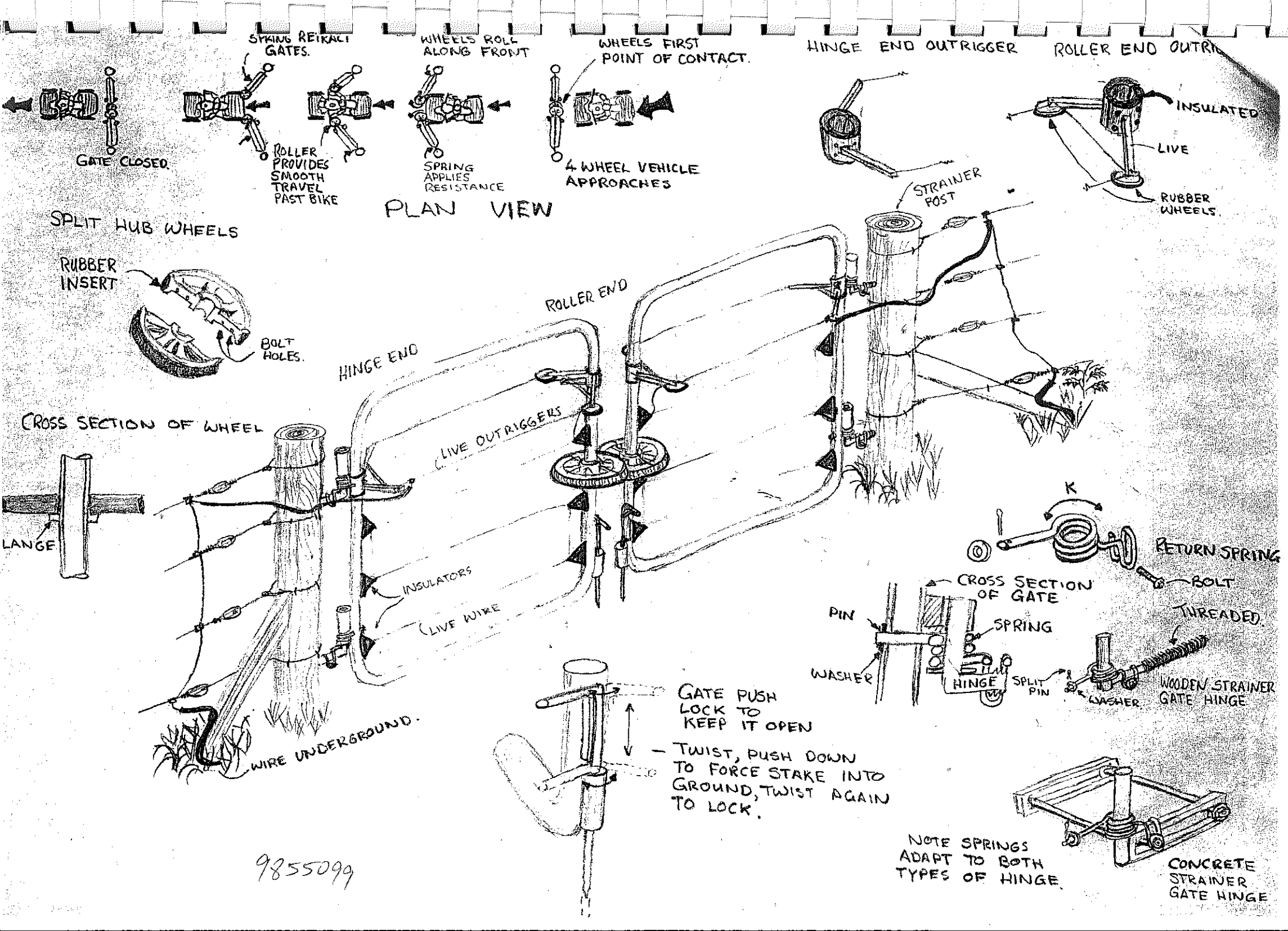
Concept Design

Examples from previous years

Self Closing Farm Gate

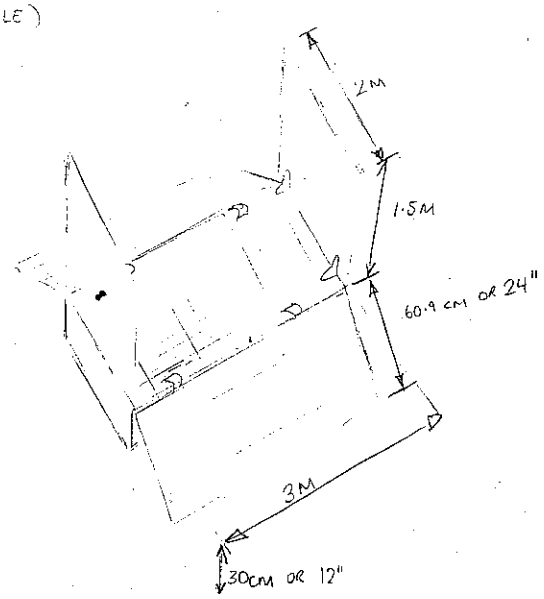
Please return to Dr Alexander E523

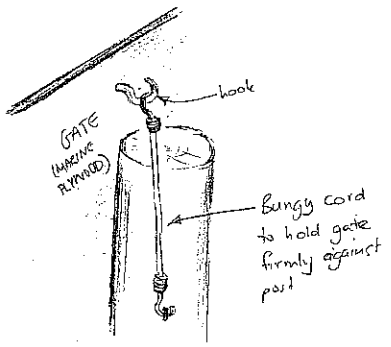

GATE CLOSED.
SPRING RETRACTS GATES.
ROLLER PROVIDES SMOOTH TRAVEL PAST BIKE
WHEELS ROLL ALONG FRONT
SPRING APPLIES RESISTANCE
WHEELS FIRST POINT OF CONTACT.
4 WHEEL VEHICLE APPROACHES
HINGE END OUTRIGGER
ROLLER END OUTRIGGER
INSULATED
LIVE
RUBBER WHEELS.
PLAN VIEW
SPLIT HUB WHEELS
RUBBER INSERT
BOLT HOLES.
STRAINER POST
ROLLER END
HINGE END
LIVE OUTRIGGERS
INSULATORS
LIVE WIRE
CROSS SECTION OF WHEEL
LANGE
WIRE UNDERGROUND.
K
RETURN SPRING
BOLT
CROSS SECTION OF GATE
PIN
SPRING
WASHER
HINGE
SPLIT PIN
WASHER
THREADED
WOODEN STRAINER GATE HINGE
GATE PUSH LOCK TO KEEP IT OPEN
– TWIST, PUSH DOWN TO FORCE STAKE INTO GROUND, TWIST AGAIN TO LOCK.
NOTE SPRINGS ADAPT TO BOTH TYPES OF HINGE.
CONCRETE STRAINER GATE HINGE

9855099

BASIC DIMENSIONS

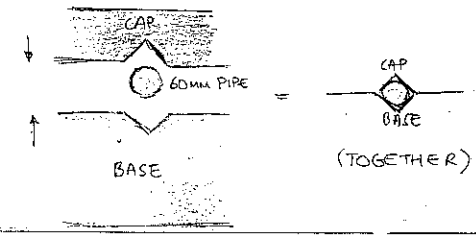
(NOT TO SCALE)

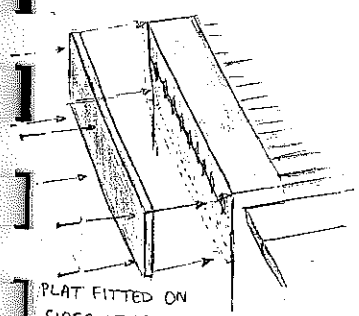




GATE ATTACHMENT

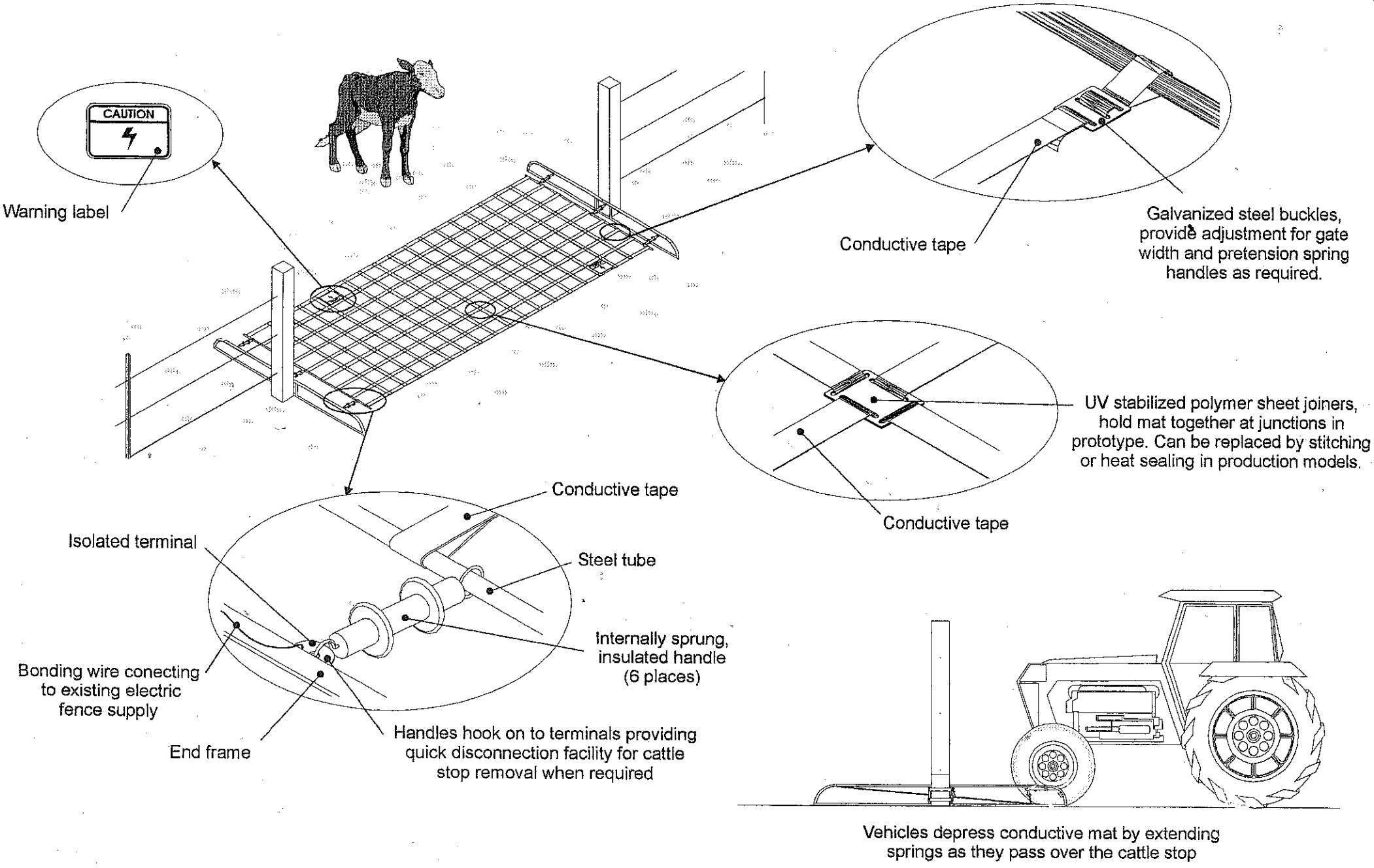
PIPE FASTENING SYSTEM





PLAT FITTED ON
SIDES AFTER
STRUCTION COMPLETED
EVENTING PIPES SLIDING
F POSITIONS THESE
S ARE NAILED ON

Electric Cattle Stop



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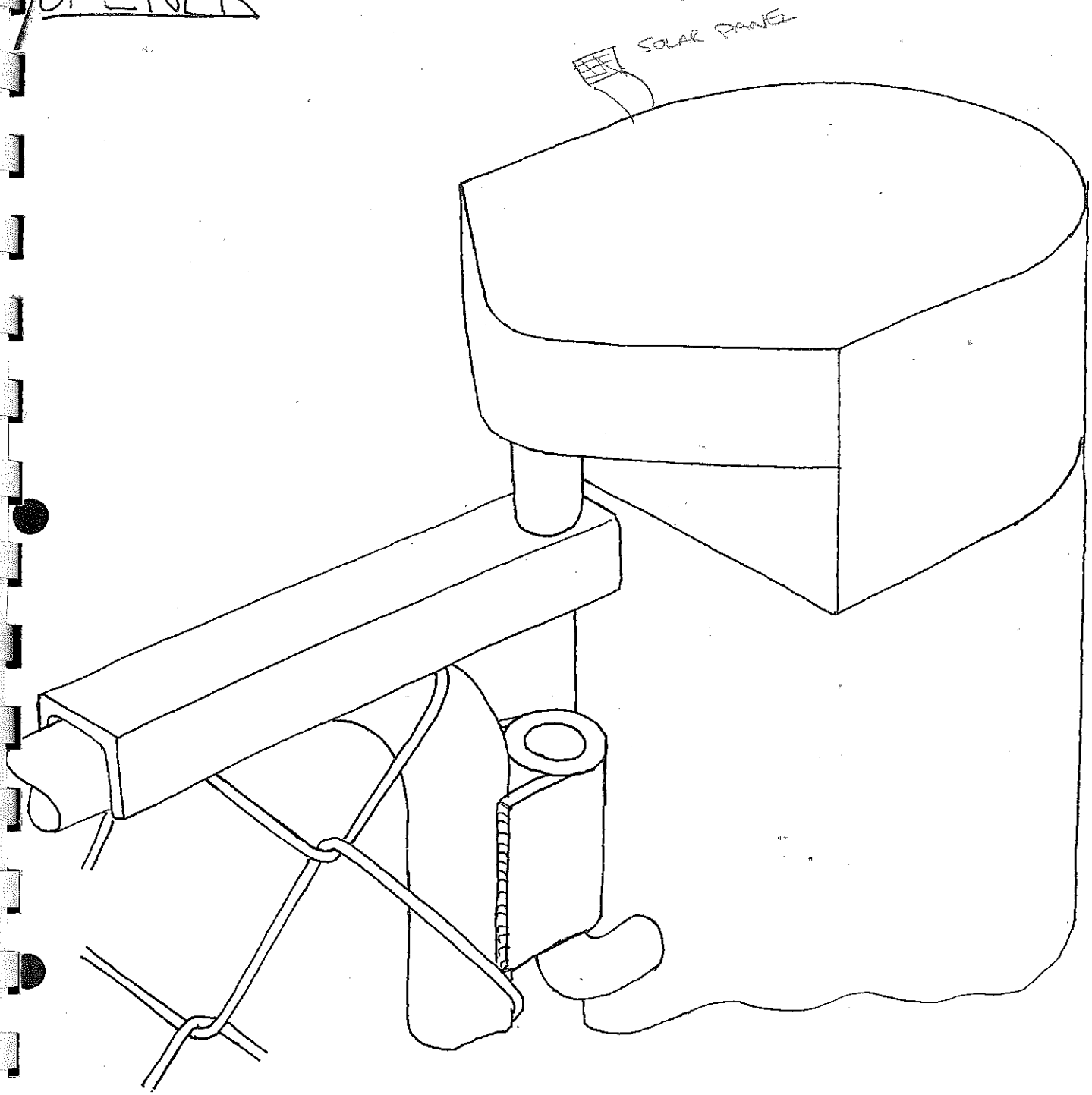
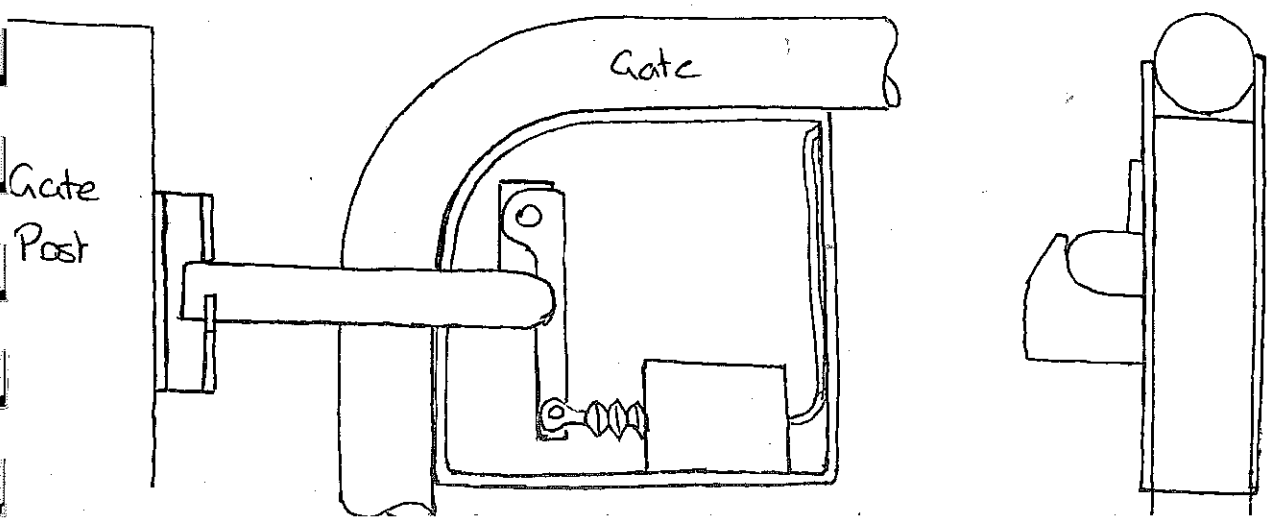
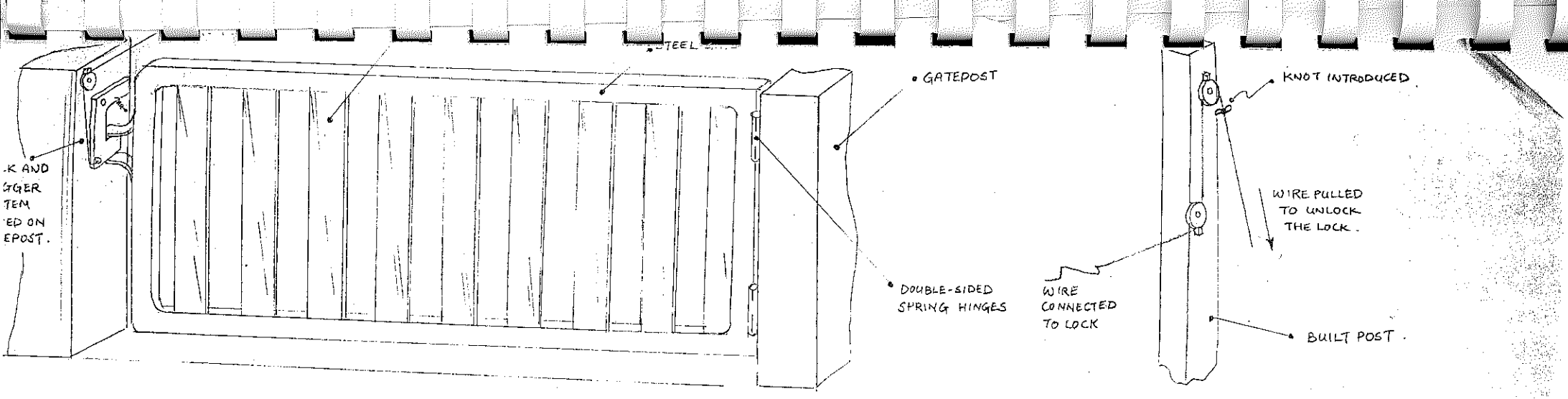
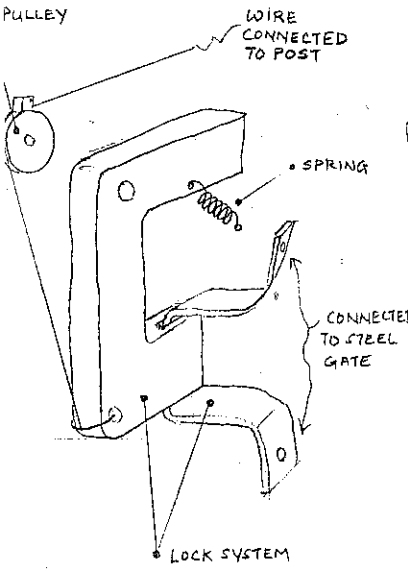
OPENER

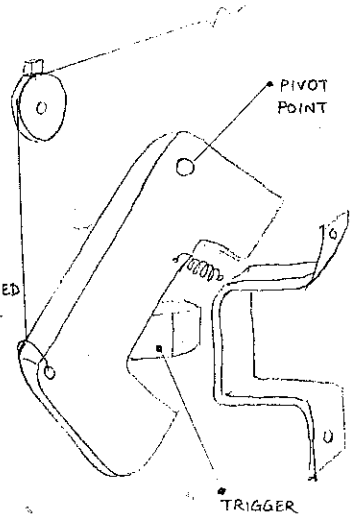


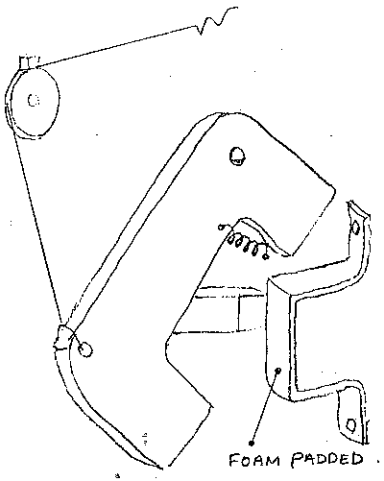
LATCH

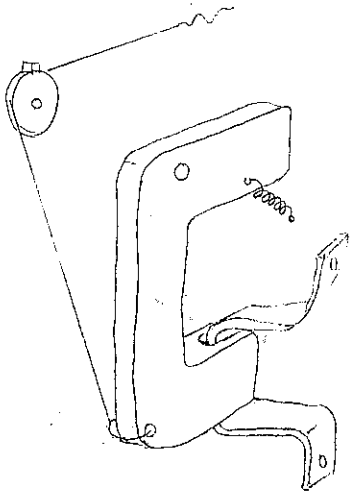


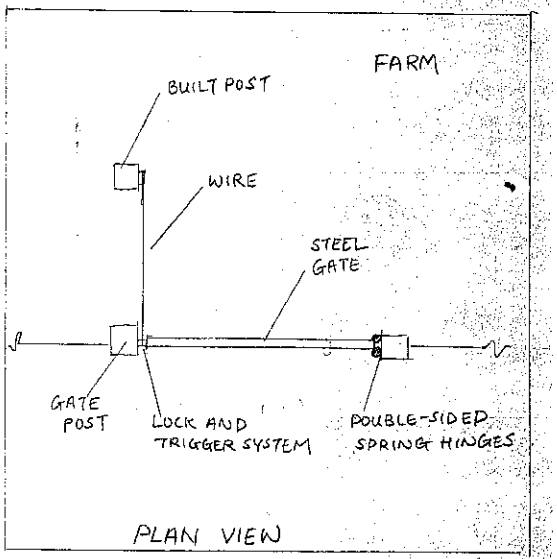












① - Vehicle can drive in but not out of farm.
- Gate locked

② - Gate unlock when wire pulled.
- Trigger initially blocked sprung out

③ - Trigger push open the gate slightly.
- Blocking the 'U' shaped lock.

④ - The gate spring back after the vehicle drives through.
- The gate hit the trigger, releasing the lock.
- Gate locked.

DRAWING NOT TO SCALE.

The Drive-Through Gate

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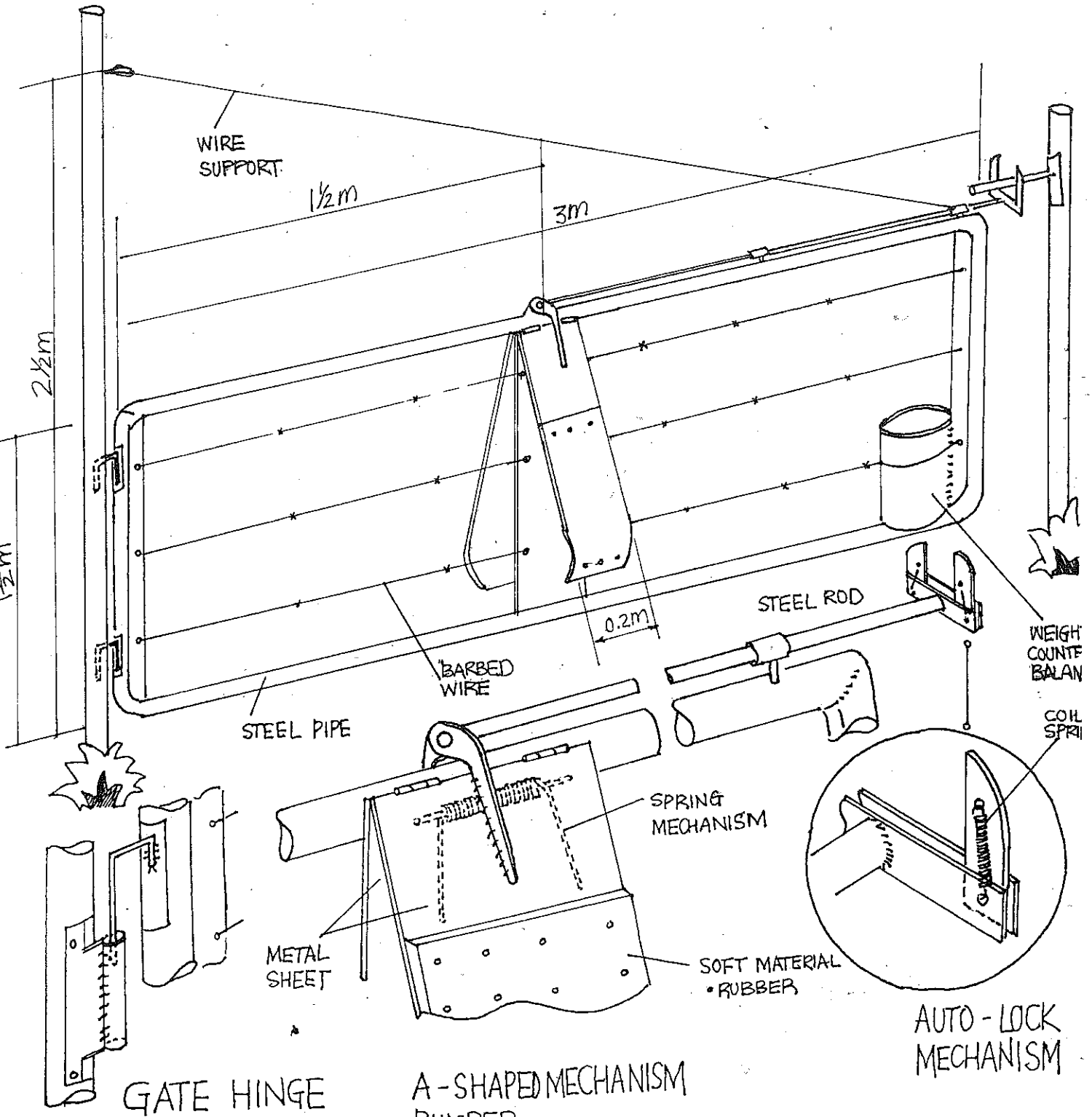
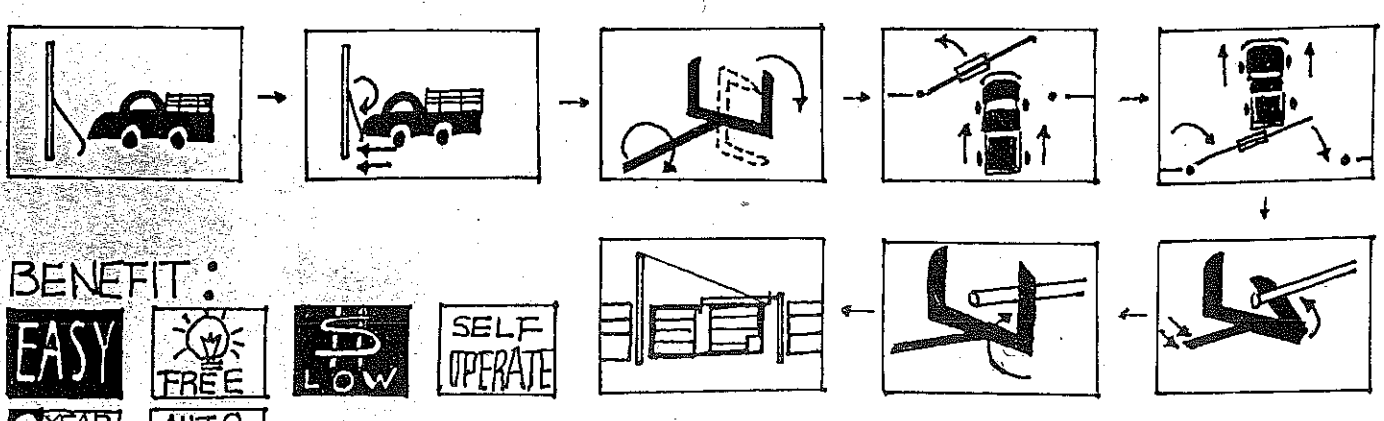
ANME 340
DESIGN : V-ease® GATE

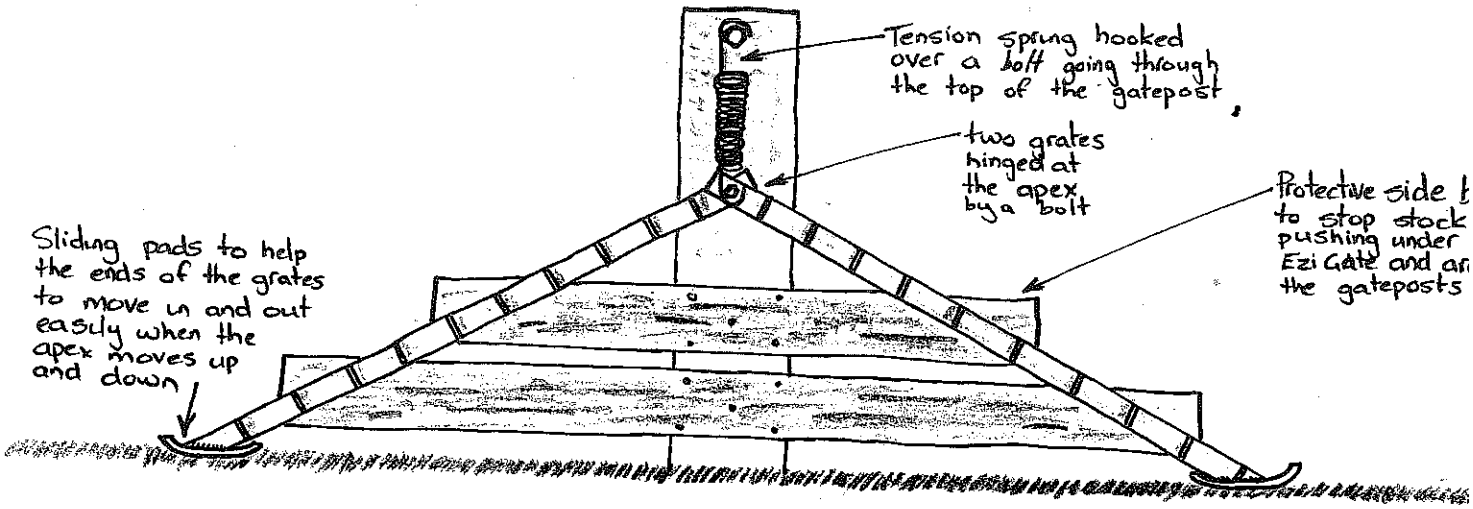
9721538

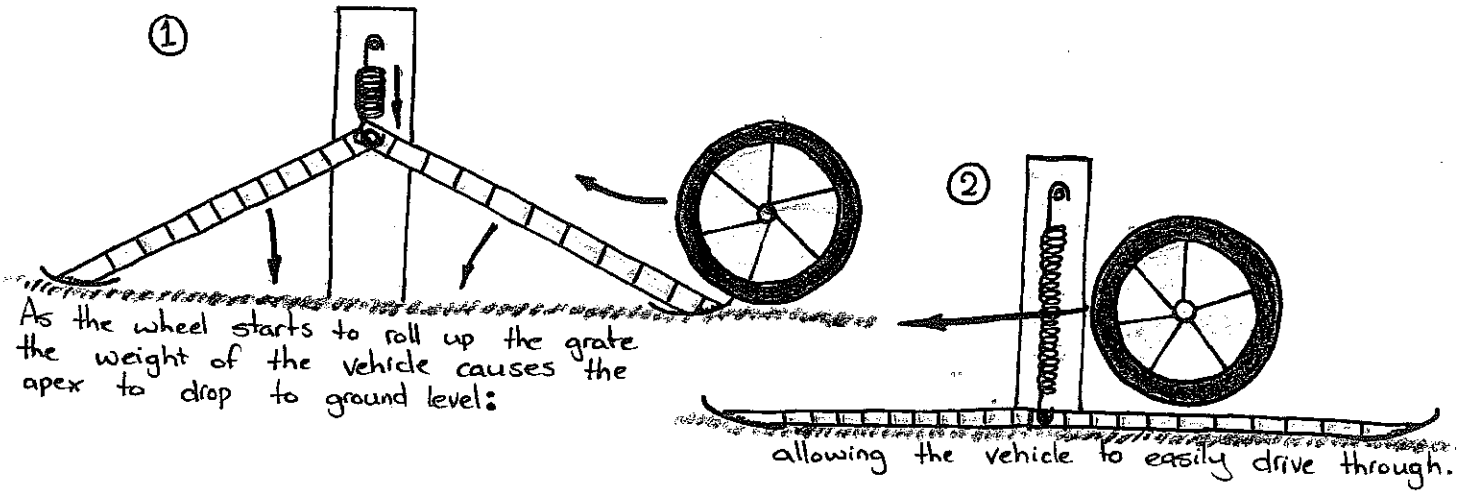




BENEFIT :

Ezi Gate





As the wheel starts to roll up the grate the weight of the vehicle causes the apex to drop to ground level:

allowing the vehicle to easily drive through.

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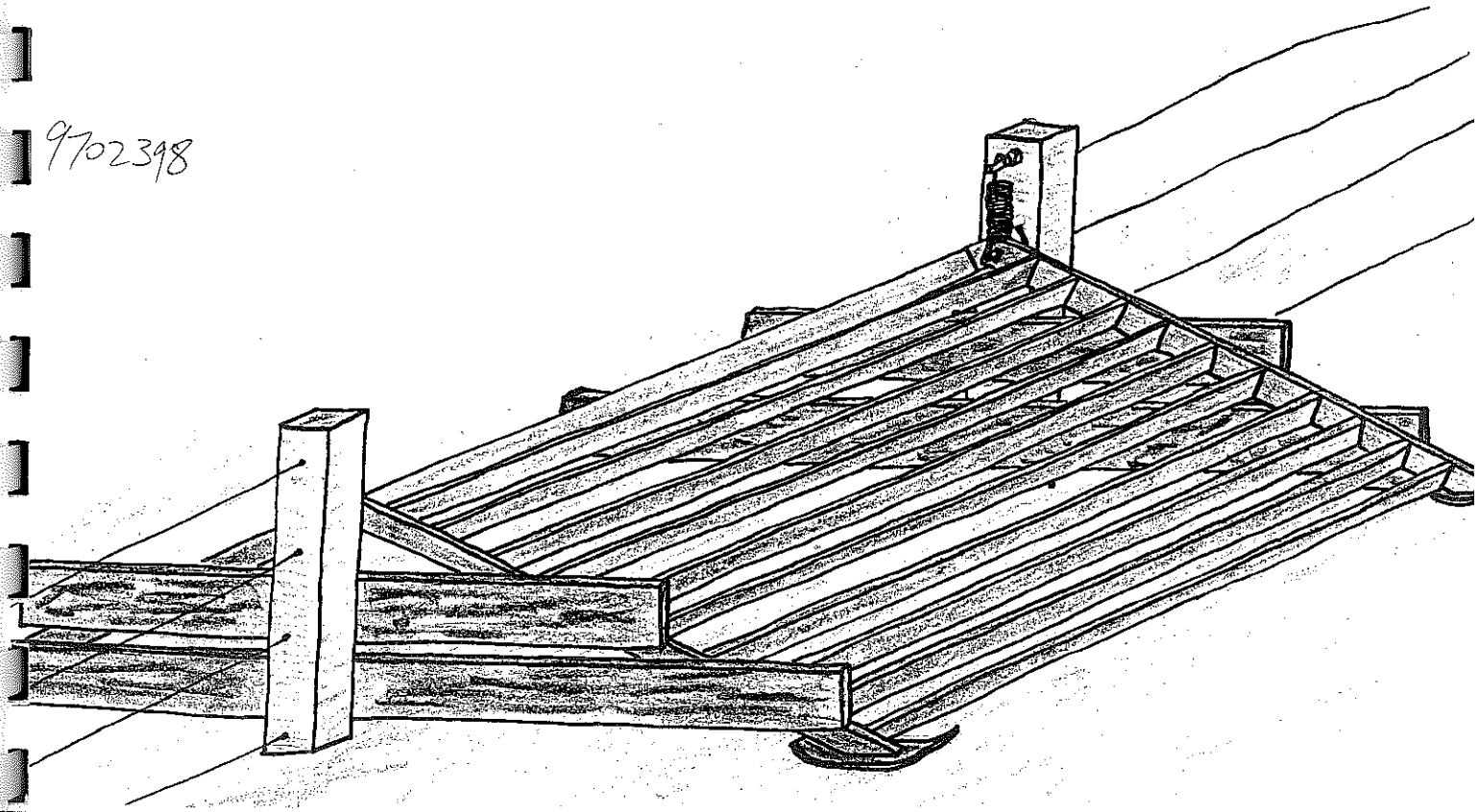

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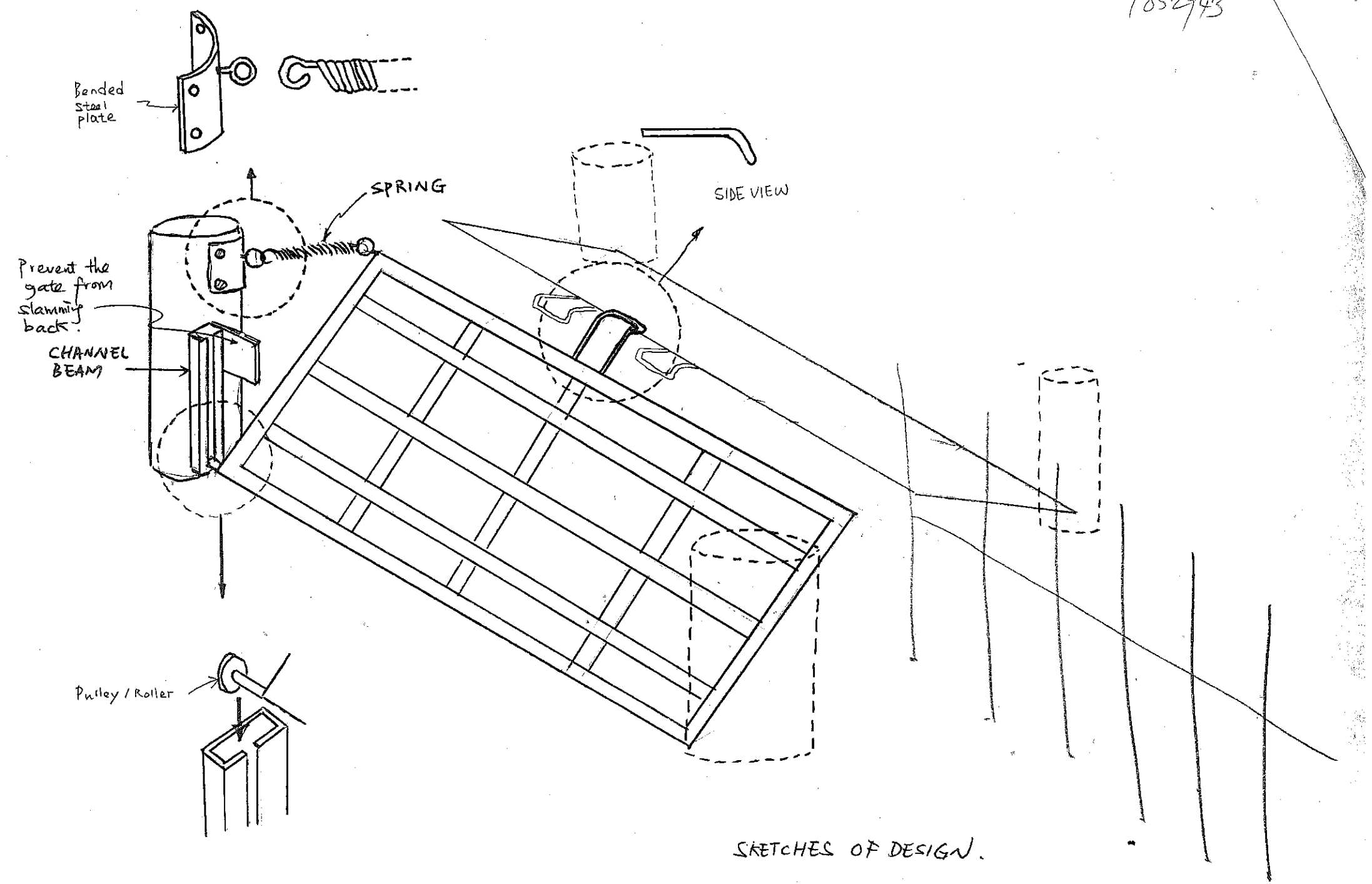
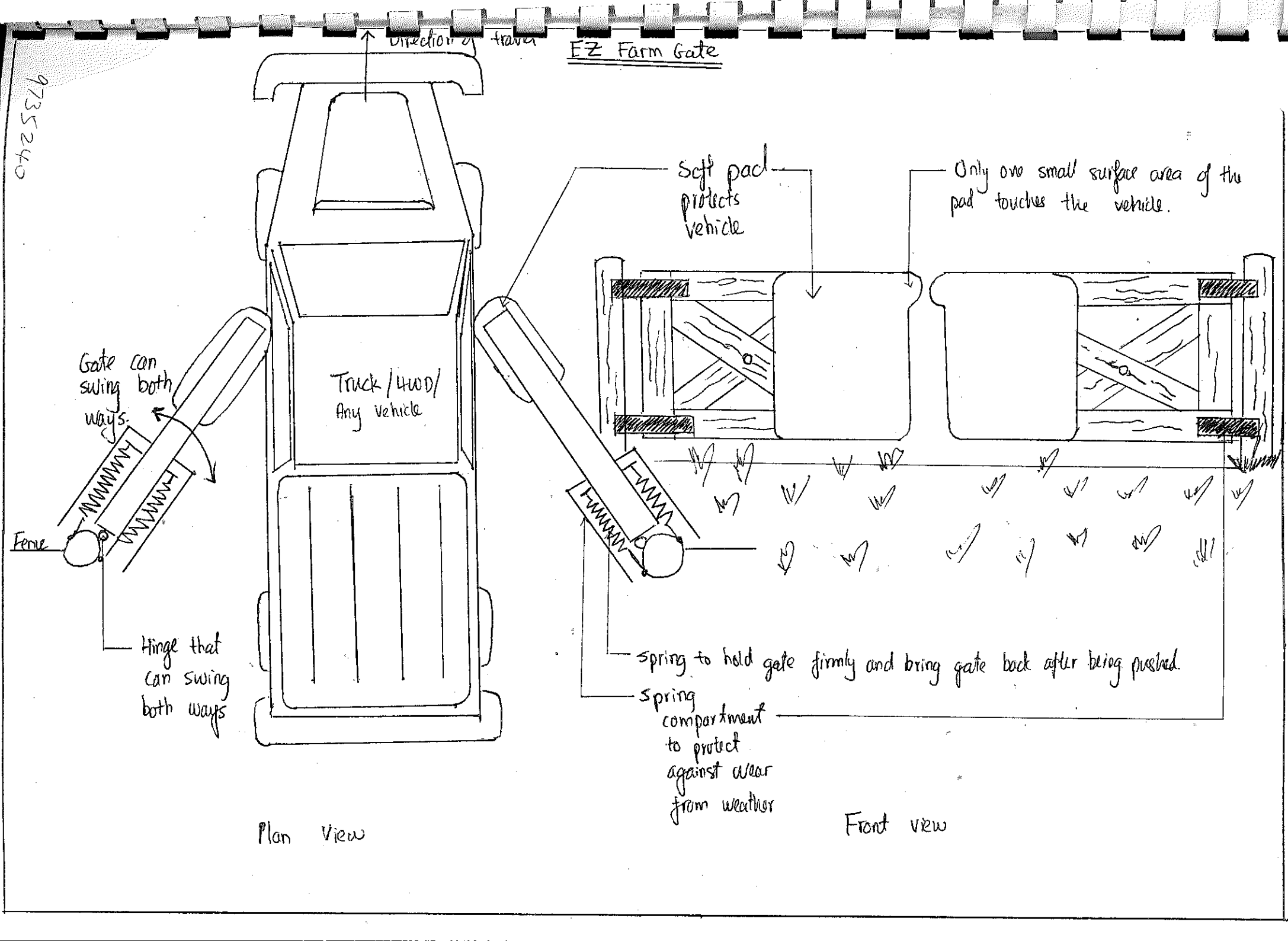
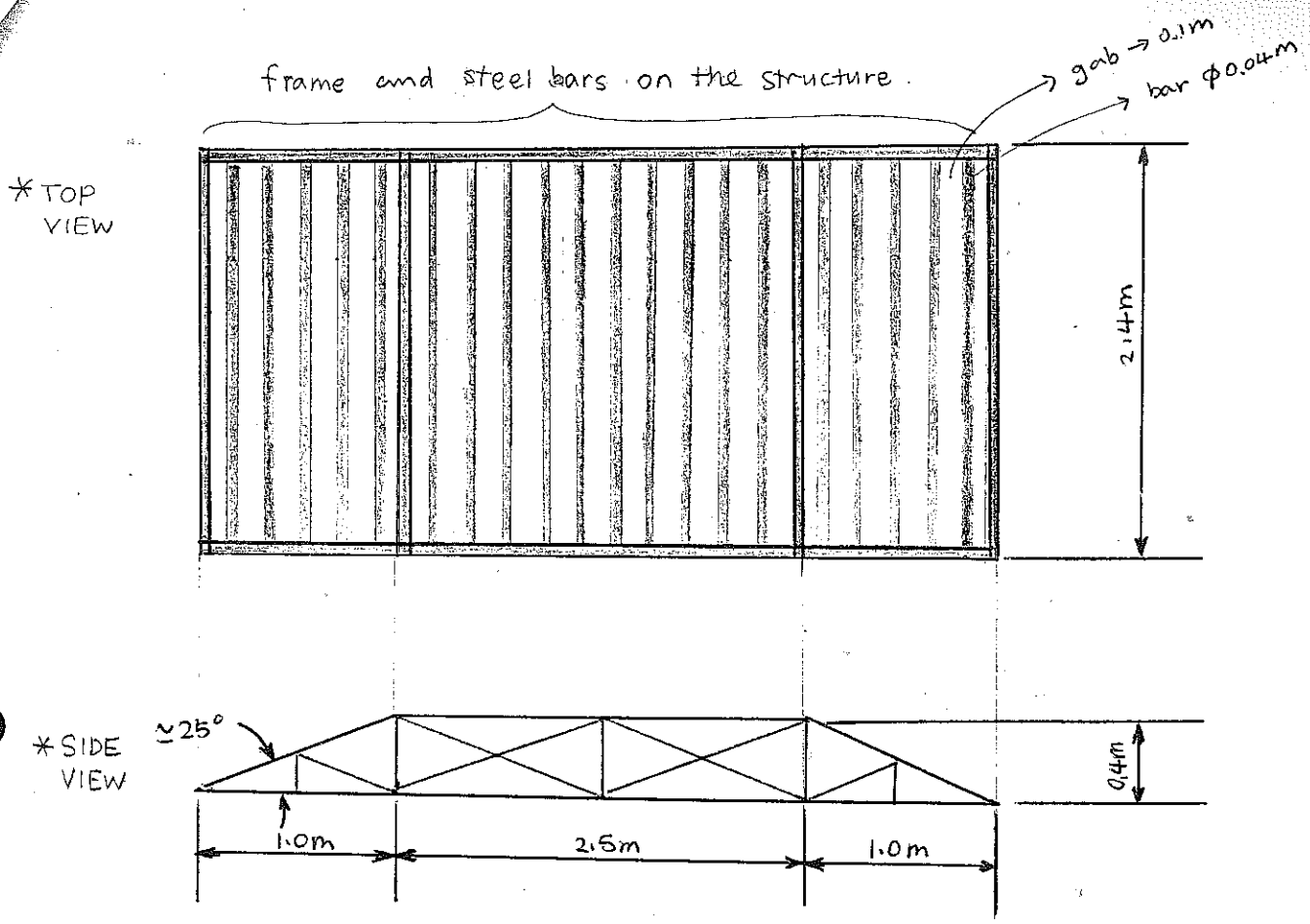
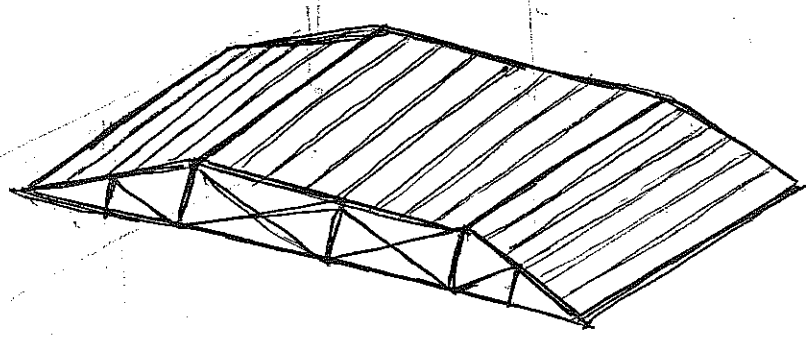


SKETCHES OF DESIGN.

EZ Farm Gate


Direction of travel
Truck / 4WD / Any Vehicle
Gate can swing both ways.
Fence
Hinge that can swing both ways
Plan View
Soft pad protects vehicle
Only one small surface area of the pad touches the vehicle.
spring to hold gate firmly and bring gate back after being pushed
Spring compartment to protect against wear from weather
Front view





* The structure is located between fences.

It's very similar to a cattle-stop.
There are steel bars on the structure.

The structure sizes and dimensions were ideally determined.

The structure is very simple, like a small bridge, and there is no time consuming to open or close a gate.

The structure can be moved easily.

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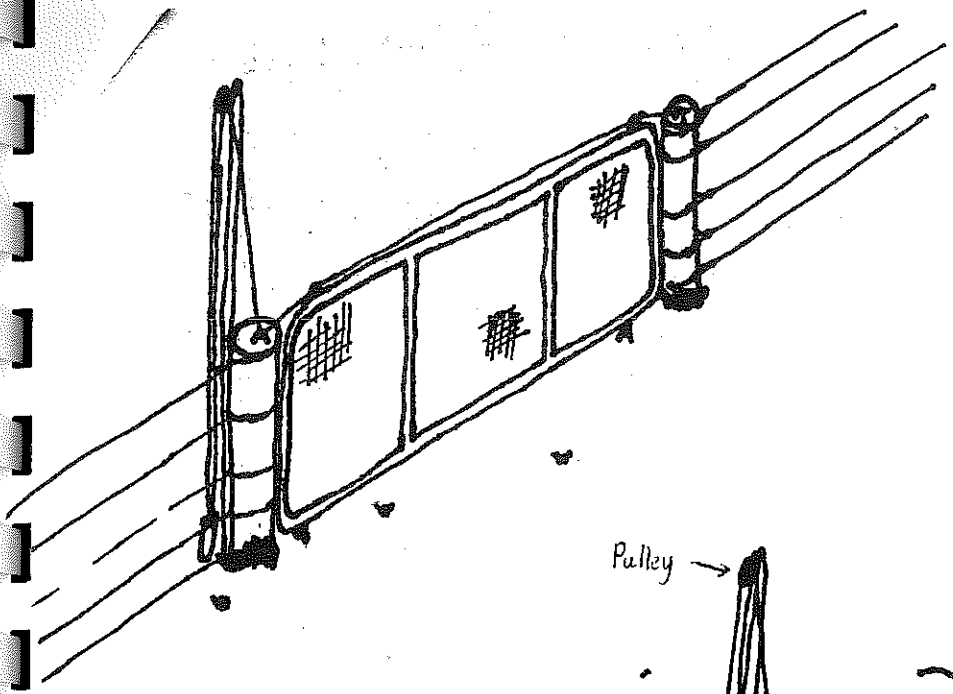

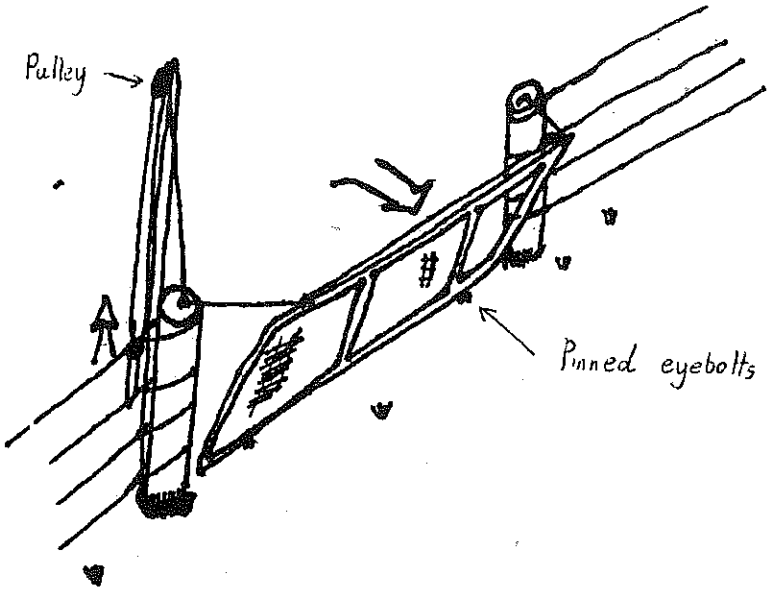

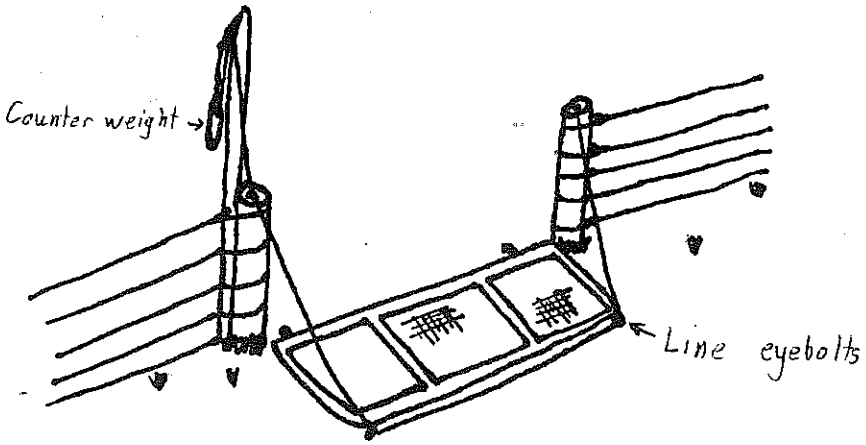

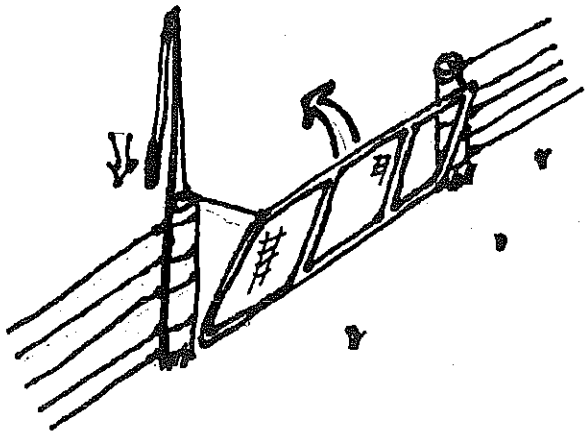

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The Specification

As with all businesses, farms have to cut costs and streamline operations in order to be viable. Agritech Ltd, a agricultural based engineering company have endeavoured to solve the inconvenient and expensive problem of farmers needing to stop to open and close farm gates, by manufacturing a gate which allows the farmer to ride through without needing to get on or off the vehicle.

The challenges of the farming environment required the design to be robust and able to withstand the elements, as well as allowing for non vertical fence posts and the boggy, uneven ground found around farm gates. Consideration to stock movement, cost and ease of instalment is also imperative.

The Solution

The proposal was for a gate which rotated about a central axis, the force for the rotation being provided by a farm vehicle being driven into the fence to push it around, and the fence locking back in its original position once the vehicle was through.

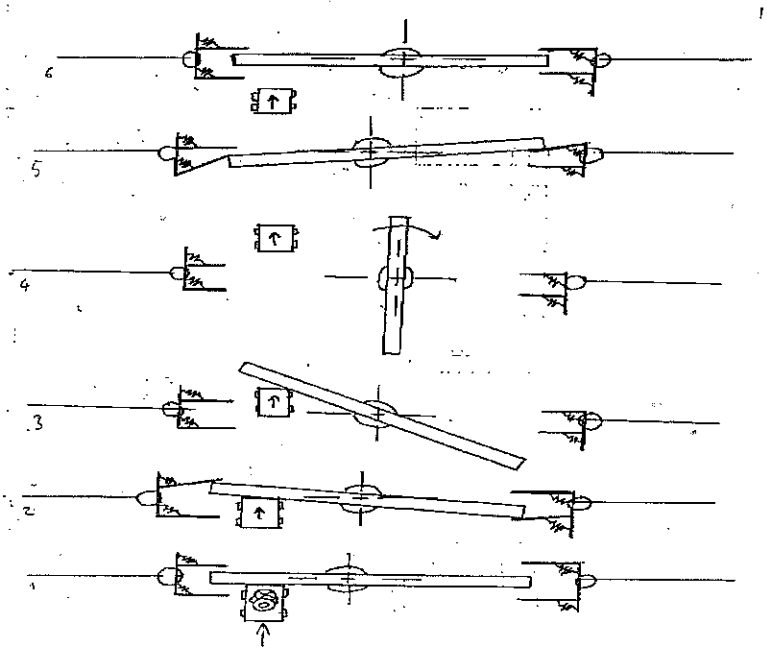

Fig. 1 Diagram of how farmer opens Roto-Fence

How it Works

- A post is driven into the ground in the centre of the gate.
- A bearing system is placed into the top of the post, the o.d. of the bearing being larger than the diameter of the post.
- The gate assembly; which consists of a enclosed hollow shaft with up to three metres of gate on either side, is placed over the bearing so that it is free to rotate.
- The fence posts on either side of the fence (or just on one side for the containment of small animals) are fitted with the self contained locking device consisting of two hinged and sprung loaded bars at 60 degrees to each other, allowing for gate movement in only one direction, and locking of the fence once a rotation of 180 degrees is complete.