(12) **United States Patent**
Davis

(10) **Patent No.: X2954**
(45) **Date of Patent: May 27, 1818**

(54) **TUYERE & WATER BACK**

(76) Inventor: **Gideon Davis**

United States Patent

Patent No.: X2954

For Gideon Davis Specification Inspt in the Plough, Patented
to him on the 27th May 1818. See Vol. 5. page 161.
Copied.

Sidney Davis, Patented October 1, 1825.
Reissued, March 6, 1833

Letters Patent.

The schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Sidney Davis himself of his improvement in the bar share or fallow plough patented to him on the 1st day of October 1825. which Letters Patent being hereby cancelled, on account of a defective specification,

The greatest possible perfection to be attained in the Bar share or fallow Plough is that it be so shaped and constructed as to detach the furrow slice from the solid ground, raise it up and turn it over in the easiest, the neatest, the most uniform and effectual manner, with the least labor, both to the ploughman and the team combining at the same time, also the advantages of being simple in its structure, strong, durable, easy to keep in repair, and cheap in its sale.

With a view as far as is practicable to combine all these various objects I begin by making the mould board land side and standard a whole or plane for the Beam to rest on) all of cast-iron, and in a solid piece the same in the manner which Charles Newbold of New Jersey made his unimproved plough patented in the year 1797 But with these several alterations and improvements hereinafter particularly specified and described

First item of the shape of the moulding part or what is commonly called the face of the moulding board. The general principle heretofore concurred in by all scientific men, who have turned their attention to this subject, is that as the furrow slice is detached from the solid ground at a straight line parallel to the surface what ever depth may be required, that it should be raised up and turned over, so as to retain as far as possible that same flat shape, and in order to accommodate the shape of the moulding part, or what is commonly called the face of the mould board. To this idea of raising the furrow slice up, and turning it over, it has been so constructed as to form straight lines lengthwise, either horizontal or more or less inclined, so as to correspond with another set of straight lines at right angles with the land side

is nearly to commencing at the point, touching the edge of the share and lower edge of the mould board which as they recede from the point of commencement gradually change from a horizontal to a perpendicular direction, and even so far beyond the perpendicular as enough to give the proper overjet behind and it has been thought that mould boards so constructed, would fit and embrace every part of the under side of the furrow slice, in the operation of raising it up, and turning it over in the most perfect manner possible Not observing however that the furrow slice does and must necessarily acquire a convex form on the under side of it, during the operation of it's being raised up and turned over,

But the true state of the case is, that in detaching the furrow slice from the solid ground raising it up and turning it over it always does either acquire a convex form on the under side, or else it is broken off into pieces, and thrown over in chunks. Turn as might well be so adapted it is, and always will be found that all the mould boards which are constructed on this principle wear through in the operation of ploughing about midway, whilst the upper and lower edges are scarcely rubbed at all

It also necessarily results that ploughs of this construction work hard and are of heavy draught, because the moulding part or the face of the mould board thus worked off is not adapted to the convex form which the furrow slice is disposed to assume, of course it lefts at a single point, and that in the middle of the mould board (or partially so) instead of being equally applied over the whole face of it.

In order to remedy the inconveniences arising from this mode of structure I form the moulding part or the face of the mould board of my plough into a different shape. This I do with a view to make it fit and embrace the convex form, which the furrow slice is disposed to assume, in the act of being raised up and turned over, and thereby bring it as near as may be to an equal bearing on all parts of the face of the mould board so as to render the wear of it as nearly uniform throughout as it can be made to wear. Which is the instead of working off the moulding part, or the face of the mould board of my plough to straight lines corresponding to a straight lines at right angles or nearly so, I work it off to fit circular or spheric lines of different Radius and at various angles, which to explain see plate Fig 1st. Is a segment of a circle of 36 inches radii. Fig 2 is segment of a circle 12 inches radii. Fig. 3 is a bottom view of the moulding part of my improved plough including the land side and shoe, (or heel piece) with the mould board and shoe, Fig 4. is a right hand side view of a right hand

plough with a cast-iron share, Fig 5 is a left hand view of a right hand plough with a wrought-iron share,

To shape the moulding part or make the face of the mould board &c. &c. &c. it to be for a 10 inch (or a two horse) plough, such as would be a suitable size for turning a furrow slice of about 12 inches, having obtained a suitable block, I begin by laying off the bottom, see fig. 3 I consider 24 inches a suitable length for the land side, say from (a.) at the point to (b.) at the heel of the plough; it may be more or less; from (a.) at the point I draw a circular line with the large segment fig. 1. so as to intersect a line at right angles to the plane of the land side at b.) and 12 inches distant, with the arch of the circle extended out from the plane of the land side see (a. a. a. a.) Then having worked the edge of the block nicely off to this line, I turn the block down on this bottom, and then work the side from (a.) at the point fig. 4. to a.) at a perpendicular raised 12 inches from the horizon. or bottom) and 24 inches back from the point of commencement. and vertical to the circular bottom line at that point with the arch of the circle extended in towards the plane of the land side. Then having wrought to the shape of this circular line, I apply the small segment Fig. 2. with the arch of the circle extended in towards the aforesaid two lines, and as near at right angles with them as is practicable, and then I work off the face of the block so, that this small segment will touch the aforesaid two circular lines, at various places, corresponding to lines (c. c. c. c. &c.) and so as to produce as near as may be an equal bearing on all parts of the face of the block. These lines at (c. c. &c.) if extended would all terminate at a point at (d.) which is about 24 inches below the horizontal line (or bottom) of the mould board and vertical to heel or end of the land side. This done forms a shape (which so far as appears) has not before been applied to any solid that is, not before used, or even known, But which however, of these shapes, that are known and used, it is thought to approach nearest to these of the Cycloidal or Spiral curve but it is not exactly either, neither can I find a name that would properly embrace this shape, save it is, (moulding form for reversing the soil.) But it is a fact that this shape when applied to practice, is found in the operation of raising the furrow slice up and turning it over, to fit the convex form, which it is disposed to assume on the under side much more uniformly, than any other shape heretofore applied to that purpose. The proof is, that mould boards of this shape

wear on all parts (or over the whole face) as near alike as it is to be expected that a mould board will wear.

This is one shape which has been put into practice, and in various sizes, from the large three horse (12 inch) plough, down to the small one, horse (or hand) plough, and all work and wear to good satisfaction

But this principle may be modified so as to produce a vast variety of different shapes merely by enlarging or diminishing the radii of either, the horizontal or inclined circular lines lengthwise or of the circle of the of the segment which is applied cap wise, and all of which, no matter to what extent, is only a modification of the same principle which may be produced by simple changes of the radius which are used in preparing the segments to work by. When after having obtained this shape in whatever I consider to be the best form, adapted to my purpose, among all the vast variety of simple changes that may be made; I mould the face of the block in sand and take casts in lead. These finish off the pattern for the mould board in proper style,

Believing that this mode or mode of obtaining a proper shape for the moulding part or what is commonly called the face of the mould board of a plough is an original invention of my own, not heretofore used or even known, and that it is a very useful and important improvement in the plough, I therefore claim the whole exclusive privilege of making, using and vending the same to others to make, use, and vend, and that all the variety of simple changes that may be made conformably to the rule heretofore described.

Second Item. Of the shape of the throat (as it is commonly called) and of the hind part of the mould board see Fig 4 and 5. a b (c) I construct this part of my plough with a gentle curve, from the top of the share inclining up to the beam: which is a suitable height for any plough, corresponding to its size with inclines so much forward at the top as to project considerably over. This is the termination of the fore end of the top part of the mould board the top of which is made so as to form a birth or place for the beam to rest upon, and be made fast to, and is properly the standard (or shoulder) of the plough. I also dress off the edge or fore part of the throat round as it ascends from the top of the share, and make it round instead of its being sharp as it naturally would be, if left at the angle which it forms with the land side and I make it broad and broader as it approaches the beam. The object and use of this particular shape and form for the

throat of the plough is to prevent trash, long grass, weeds, or stalks of any kind from lapping so short on the throat, as they would do, if it was sharp, consequently prevent it from hanging & dragging with the plough, as it otherwise would do, and the inclination forward at the upper part of the throat, forms a curve with the under side of the beam so as to prevent any thing from becoming jammed, under the beam in ploughing because the pressure from below naturally forces the incumbrance up, then it works forward, and of course it falls off, and the plough runs clear.

The effect is; that in using a plough with the throat of this construction, and without a share or coulter the seldom if ever choak, and I consider an improvement of great value in ploughing in (or among) clover, any tall grass, weeds, long manure &c.

The hind part of the mould board. see (f) Fig 4. I drop off in a gentle curve from the hind end of the wing of the share up to the hind corner of the mould board. This shape answers every purpose in turning over the furrow slice and as it does not come down to the bottom of the furrow; the plough works easier to the ploughman, is lighter, cheaper, and handsomer,

Believing that the shape for the throat (or fore part) and hind part of the mould board, have not been known or used before I applied them to use, and that they are valuable improvements in the construction and use of the plough I therefore claim the whole and exclusive right of the use and control of them to me and Heirs & others &c

Third Item, of the structure of the land side and the connection of it with the mould board and of the standard or fore and top part of the mould board in the construction of the plough Charles Newbold aforesaid, in his improvement made the land side and mould board in a solid piece. His land side was nearly square, and made stout in order to give it strength I make the land side of my plough thin and broad see (g.) Fig 3 and 5. which shape gives more strength vertically, and without so much weight. This form of structure makes it a guard also which prevents sods and dirt from working and clogging that part of the plough. In order then to give the necessary strength side ways, I make a rib on the land side about midway between the top and bottom of it see (h.) fig. 3. This rib I make broad where it joins the mould board at (h.) and tapering as it extends back, towards the end of the

land side where there is a birth for the handle of the plough to be fastened on at (i) Fig. 3. and (k) Fig. 5, where I make a projection (or jog) which however cannot be represented in this drawing to rise about half an inch for the end of the handle to rest against. This rest (or jog) sustains the pressure of the handle endwise, so that the screw bolt is only required to confine it sidewise.

Charles Newbold aforesaid in the construction of his unproved plough made the standard (or fore and left part of the mould board) to pass up through a mortice in the beam. In my plough I make the standard (fore and left part of the mould board) to extend only up to the beam, the top of it I make broad and flat, so that the beam may rest solid on it, and be fastened to it with a thumb screw bolt, which may be made either to pass up through the top of the standard vertically at (j) Fig 5, or it may pass down through the beam and the standard in an inclined direction, having on the inside of it a birth for the nut of the screw to work on at (j) Fig 4. My object in using this mode of connecting the standard and the beam together is, that of adjusting the plough, that is, that this, which I term the beam bolt, I use also as a swivel on which to turn the beam to the right or left by the operation of which, the plough may be made take more or less land. There has been heretofore land sides constructed which were made broad and thin, but supported in a different manner, my improvement therefore consists only in my mode of making and applying the rib and the advantage of this particular mode, which is, that a rib thus made and applied gives ample support to the land side in every way, and is at the same time cutting out of the way in ploughing so that clods &c. which sometimes fall in between the land side and the mould board, and clog up that part of the plough go through, and are not at all in the way. The peculiar shape in which I make the mould board of my plough, and of bringing the forepart of it (or rather) the standard up to the beam naturally causes it to extend further forward under the beam, than the standard, of any other construction of the plough does that I have seen, and which is quite an improvement because it equalizes the bearing of it the effect is that a smaller piece of timber will make the beam, than would if the standard and soldering to the handle were made nearer together, and of course the plough is lighter,

What I claim as my own invention and improvement in this item is the

mode of connecting the land side to the mould board by a rib as here described, with the joint or rest) on the land side to sustain the handle, and the extension of the standard, or fore and top part of the mould board, forward, so much further under the beam than is usual; all of which I believe lead much to the improvement of the plough, and which I claim the use and control of as aforesaid.

Fourth Item. The shoe (or heel piece) Charles Newbold aforesaid in the construction of his improved plough, made a bar of wrought iron to extend from the wing of the share, back to the end of the land side, and to lay flat on the under part of it; and fastened it on with a screw bolt passing up through this bar (which is properly a shoe or heel piece) and the land side.

The Stephens of New York, in the construction of their improvements on the plough in 1830 and '31 applied a shoe (or heel piece) on the bottom of the land side of their plough, which they fastened on by extending an ear (or projection) up and on the inside of the Land side, with a small screw bolt passing through bolt. Now it is manifest that shoes of such construction as these, will only protect the bottom of the land side, whilst the side, though quite as much exposed is not protected at all. Then to obviate this inconvenience I make a countersink (or groove) on the outside and lower edge of the land side of the plough, which forms a berth, for the shoe, and admits of thickness enough for the substance of the shoe, that may be required, without any inconvenience from its projecting out (see fig. 3 and 5. I make the shoe to extend round, and under the bottom of the land side, and fasten it on with a small screw bolt. By which means the shoe thus constructed protects both the side and bottom of the land side. In making the shoe of cast iron they may be made in malleable moulds, the chill makes the shoe harder, of course they wear better, and they may be made cheaper. But they may be made of wrought iron or steel. The improvement which I claim in this item, is, that of constructing the shoe, so that it will protect both the side and bottom of the land side, and my mode of making the cast iron shoe, in malleable moulds all of which I claim the use and control of.

Fifth Item. Any mode of making, applying, and using the share of the plough either made of wrought or cast iron. If I apply the wrought iron share I make it partly in the usual way by welding the wing of the share

on a Land side See fig. 6. but I make the bar to extend back of the wing some two or three inches as at (m) and fasten it to the cast iron part of the Land side with a small screw bolt at (N) Fig 5. I then fasten the wing of the Share to the mouldboard with a strong screw bolt having the head of it made to fit a tapering hole in the mould board and passing down through the wing of the Share at (p.) fig 6. and drawn tight with a nut, If it be a right hand plough, this should be a left hand screw and if a left hand plough it should be a right-hand screw,

The point and edge of the Share may be made in the common shape but I think that those shapes represented at Fig. 3. 4. and 6. are really much more useful, whether made of wrought or cast iron. If a plough works well, the point of the Share is disposed to wear off round. In this, as well as in some other things, I have attempted to copy after nature, Hence it was that I made the point of the Share round at first; I also made it much broader than usual somewhere about twice the common width, and much thinner, and am now convinced from a great deal of use that has been made of Shares of this construction (whether made of wrought or cast iron) that they are much better than Shares made in the common shape, because they wear more uniformly, and being so much thinner, they wear longer and work better at the same expence. But if I apply the cast-iron Share I then make a berth or recumbent on the lower and front-part of the mould board at (q.) Fig 4. and at (s.) Fig. 3. on which I set the Share somewhat in the manner in which Richard B. Chenoweth of Baltimore fitted the Share on his improved plough, patented in the year 1808, but with some alterations and improvements, He fastened the Share on his plough with two small screw bolts; and to enable him to set the edge of the Share deeper as it was worn off he made the holes in the mould board of considerable length, and in such a form that when required, the Share could be moved down, or with the point or edge forward. Thus although the point and edge of the Share could be directed forward, still the desired effect was not produced, the fact is that the point and edge will naturally come to a bevel on the underside, and it was owing to this circumstance that the Share would

not penetrate the ground. and not because it would more caught and the extending of the point and edge of the share forward, did not alter the position of the bevel on the under part of it. Then in order to adapt the point and edge of the share to the principle of adjustment. that is so that it may be set deeper and deeper as the under part of it wears off and more and more bevelling. I fasten the share on my plough with a single screw bolt. (two or more may be used) and when first put on I lay between the lower edge of the mould board and the underside of the share a small piece or strip of some soft wood as at (a) Fig. 3. This piece or strip may be about one fourth of an inch think at or near the point of the mould board and made tapering off to an edge, at the other end, and about half or three quarters of an inch in width. This piece or strip now used, should be made of a proper thickness, so as to set the point and edge of the share level with the after part of the plough. (or the land side or shoe). The true effect in the use of it is, that as the substance of this piece, or strip of soft wood is somewhat elastic. it has a tendency to diminish the sharpness of the stroke, which otherwise would be produced if the castings were to come together, But the great advantage of this mode of applying the cast iron share to the plough is that, it affords an opportunity of adjusting the point and edge of the share so that when it has worn to a bevel on the under side, the piece or strip of wood may be taken out, and a thinner one put in, and when needed that taken out entirely. By this means the point and edge of the share as it wears off to a bevel on the under side, and dulls, so that it would not work longer in that position, may be let down, that is, set deeper and deeper, as much as is necessary at each time and besides that it has the effect also, of setting the point more and more to the land, as it is set deeper, which in fact is about as necessary to make the plough work well, as it is to let the point and edge down

Thus when worked as long as it can be in this way, the piece or strip of wood may be inserted between the upper edge of the share and the mould board consequently the cast iron share thus constructed, applied and used, will wear a great deal longer and do a great deal more work, and do it better than cast iron shares heretofore in use, and as they were used. In making the cast iron share I also use a different process. If I have good metal, that is that suitable for moulding the fallow of the share wholly in sand, I make one part of the mould of metal, This I consider a very material improvement because the effect is

is that the Shares are sufficiently chilled to render them hard enough, the metallic part of the mould being applied to the upper surface of the share in making it render the upper wearing part of it clean, hard, and smooth, which lessens the friction, and again that this mode saves nearly one half the labor, in moulding, of course the Shares are cheaper, I have also made some cast iron Shares in moulds made wholly of metal but hitherto they seem to be too much chilled, and are so brittle. Now what I claim as my invention of improvement in this Item is my mode of making and manner of applying and using the Share of the plough, as here described, the use and benefit of which I claim as aforesaid, whether made of wrought or cast iron.

Sixth Item. My mode of Stocking and manner of using the plough.

Formerly so far as I have been made acquainted, it was the object of all the constructors of ploughs in the Stocking of them, to make the beam immovably fast, to the Standard and Land side handle whatever may have been the mode, of fastening adopted, But Charles Newbold aforesaid in the Stocking of his improved plough, constructed it, so that, the fore end of the beam could be raised or lowered, by the use of a key (or wedge) at the Standard, but it could not be moved side wise, and the hind end of the beam was made fast in a mortice in the land side handle, This was the first attempt that I am aware of, of adjusting the set of the plough, by altering the Stock. Though he did not describe this circumstance in his Specification, he told me himself that such was the fact, But since that time, there has been various modes of raising and lowering the beam of the plough at the Standard, some by screws others by keys or wedges, &c

In the Stocking of my plough I begin by making the Land side handle, fast to the inside of the land side, as at (h) Fig. 5, I then fit the beam solid on a block of wood of about one inch in thickness, laid on the top of the Standard, as at (e) Figs 4 & 5. and then I make the hind end of it to fit fair against the inside or outside of the handle, as at (k) Fig. 4 and 5, I then make the beam fast on the Standard with a strong screw bolt, either passing up through the front part of the Standard and the beam as at (j) Fig 5. or by passing a screw bolt inclined down through the beam and Standard as at (j) Fig 4. Either of these modes will permit the beam to move on the top of the Standard in the manner of a swivel, so that I can move the fore end of it to the right or left

at pleasure. the hind end of the beam I then make fast to the inside or outside of the land side handle as at (W.) Fig 4 and 5. with a screw bolt, my object in using this mode of applying and fastening the beam, to the land and to the handle is for the purpose of affording the ploughman an opportunity of adjusting the plough. that is if the plough is disposed to work too shallow, it may be set deeper by merely putting a piece of leather (or wood) between the top of the mould and and the beam, or rather the block under the beam.) and if one piece is not enough put in as many as may be required. But if the plough should work too deep, then take some of the block and then let it down, or raise it up until it works (or runs) precisely right for depth, or the fore end of the beam, may be raised or lowered as much as may be required for any kind of work, by affixing the hind end of it higher or lower at the handle, By the use of this mode of adjusting the plough it may very soon be rendered to work after either horse, mule, or Oxen. I then fasten the other handle to the mould board, with two small screw bolts as at Fig. 1, and 5. the two handles I connect together with two round bars (W.W.) Fig. 4 and 5. thus framed if it is desired to set the plough more to land, then I loose the upper screw bolt, by which the handle is fastened to the mould board, and drive a wedge between the handle and the mould board, as at (Z) Fig. 5 and as required. I loose the screw and drive the wedge, until the plough takes land enough. But if the plough should take too much land, then I loose the lower bolt and drive a wedge between the lower end of the handle and the mould board. Hence it is that by this simple process, I can alter my plough so as to work deep or shallow take a wide or a narrow furrow with very little trouble, and to an absolute certainty, so that in ploughing if the beam does not walk to suit the plough I can soon set the plough to suit the beam. But again if I wish to set a two horse plough to work after three horses abreast, then I loose the beam from the handle and put in a block of about two inches thick as at (w.x.) Fig. 5. it may require more or less, the thickness of the block must be adjusted by practice. But then the end of the screw bolt, which confines the end of the beam, the block and the handle together must have a brace, applied, which I make fast up the handle, fifteen or eighteen inches above, By this means a plough may be changed from a two to a

three, or from a three to a two horse plough at pleasure, and with one rattle trouble and even more than that, if required; which it sometimes is) the plough may be made to work after the team walking on the land or turf by the side of the open furrow, and the plough work well, and the only alteration required will be to put in a thicker block between the handle and the end of the beam. This has been required and done in marsh land where the horses sunk, or could not walk in the open furrow.

The only use of the block which I put under the beam of my plough and on the top of the —— standard is that it raises the beam that much higher from the ground and affords an opportunity of continuing the curve of the throat of the plough in a more complete form than it would be without at the same expense, and also if it be required to let the beam down, on the top of the standard the block may be dispensed off without weakening the Beam, I mostly fasten the block to the beam with nails

What I claim as my invention or improvement in this Item is, my mode of applying the beam to the standard, and my manner raising and lowering it on the standard, and my mode of fastening the end of the beam on the side of the handle, together with that of adjusting the fore end of the beam, by turning it to the right or left, and of making the hind end of it fast to the handle higher or lower, and the application of the blocks between the beam and the standard, and the beam and the handle, all of which I consider to be valuable improvements, and therefore claim the use and benefit of them as aforesaid.

Seventh Item. Of the coulter if I apply the locked coulter, I put on a nib on the point of the share, which of course must be made of wrought iron. The only difference in my mode of applying the Locked coulter to the plough from what has been common, is that instead of making a mortise in the beam, for the upper end of the coulter to pass through and be made fast in, I make a mortise on the land side of the beam, by putting on a block of wood with a place cut in it which forms a mortise by the side of the beam, this block I fasten on with screw bolts, and of course I can give the coulter my inclination back that may be required, and fasten it tight with wedges in the usual way. The advantages of applying and

and using the locked coulter in this way is, that it lets the top of it to lean a little over to the land, which causes it to detach the furrow slice from the sward (or sod) more easily than it would, if it was set vertical, or inclined a little over to the furrow; and again, it does not injure the beam so much as that of making a coulter mortise through it, But having satisfied myself, by actual experiment that it requires an increase of 33 per cent of power in the draught or more to urge the plough along with a locked coulter than with sward coulter, properly fitted to it, my attention was principally directed to the latter,

But this I apply in a different manner from any heretofore in use. Instead of putting the coulter through a mortise in the beam, I apply it to the side of the beam, see (y.) Fig. 4 and 5. My mode of fastening the coulter is thus, I have holes made through the coulter shank, I then put a strong screw bolt through the beam, and the coulter at whatever hole is best suited to my purpose, I then apply a strong iron strap on the outside of the coulter, having a hole in it for the screw bolt to pass through, all of which I draw hard up with a nut, then having the lower end of this strap, made square or round in front of the standard a the end I bend it back behind the coulter and round in front of the standard or throat of the plough. Then fitted on, if the coulter rests solid against the side of the standard and fair against the beam, it will be very permanent, and cut the sward or sod to the greatest possible advantage, with which to operate most beneficially, the edge should not be more than four or five inches forward of the throat and from half to an inch to the land, The effect is; that having the sward coulter thus applied the point of the share when at work, runs from two to three and sometimes five or six inches in advance of the edge of the coulter, by which means it has the sward or sod so much raised, that it is very much strained, if not in the act of tearing, then the edge of the coulter cuts it open in the very raised and neatest manner, possible. That which I claim in this Item as my invention or improvement is, the mode of applying the coulter to the side of the beam, instead of through a mortise in it, and more especially, that of the particular manner of fastening the sward coulter to the plough, and using it so as not to cut the sod, until the point of the share has raised it up so as to have

it on a drain; all of which I claim the use and control of, whether in use or owned, or disposed of to others to use as owned as aforesaid.

Witness:

Alex. McPatrick
J. McDonald

Nelson Davis

(6816 words)

E.A.
C.L.W.

DRAFTSMAN'S DIVISION.

All communications should be addressed to "The Commissioner of Patents, Washington, D. C."

2—328 *a.*

DEPARTMENT OF THE INTERIOR,

United States Patent Office.

Washington, D. C., ..., *189*__

SIR:

The printed copies *of Patent No.* G. Davis

are *exhausted.* May 27, 1818

As soon as reprinted a copy will be mailed you to complete your order.

By direction of the Commissioner:

Very respectfully,

Chief Clerk.

3143b6-97-5m

United States Patent

Patent No.: X2954