

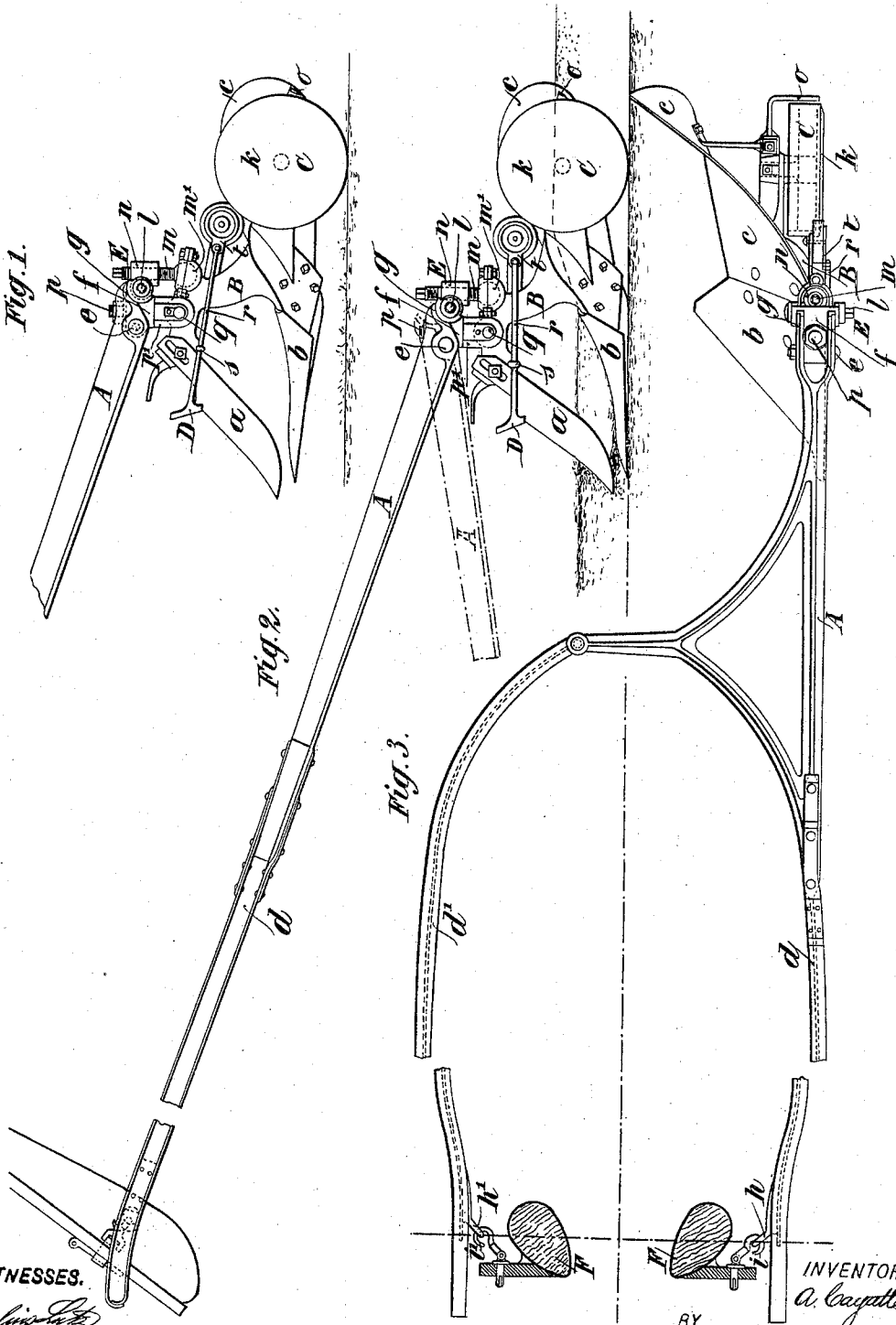
(No Model.)

A. CAYATTE.
PLOW.

2 Sheets—Sheet 1.

No. 582,041.

Patented May 4, 1897.



WITNESSES.

Julius [Signature]

Isaac C. Moring

INVENTOR.

A. Cayatte

BY

[Signature]

ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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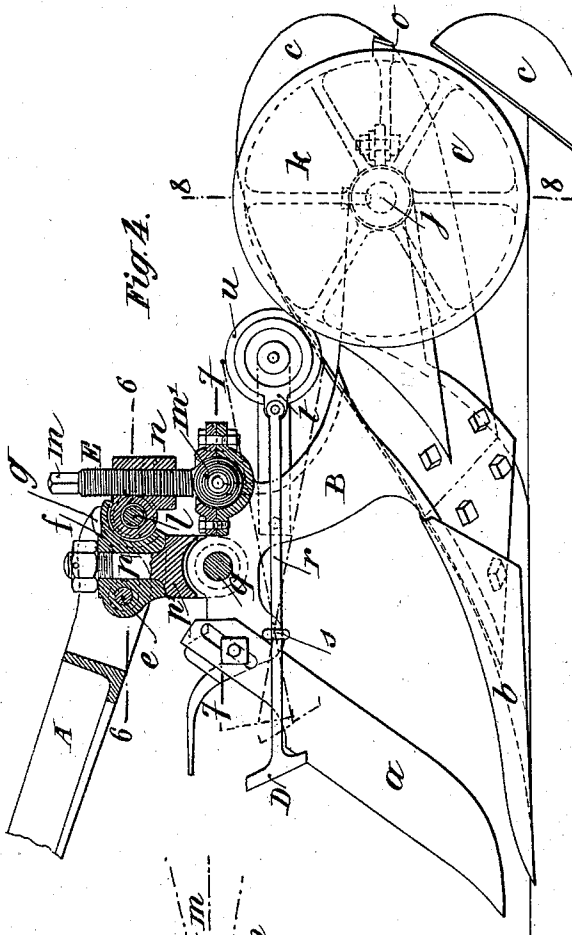


Fig. 1.

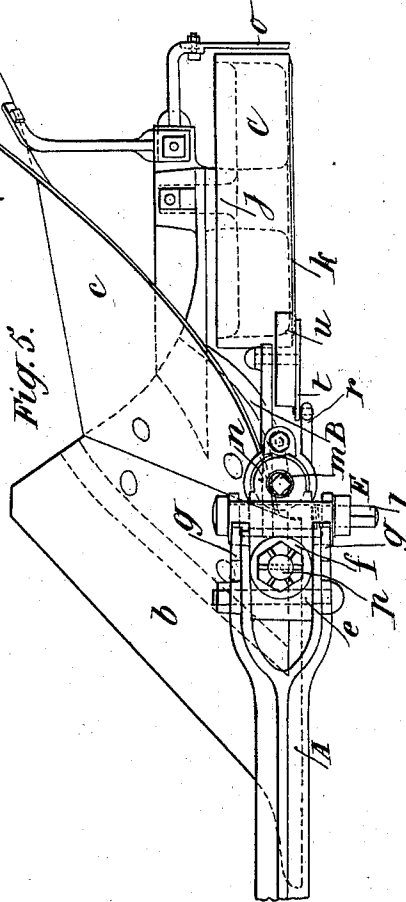


Fig. 5.

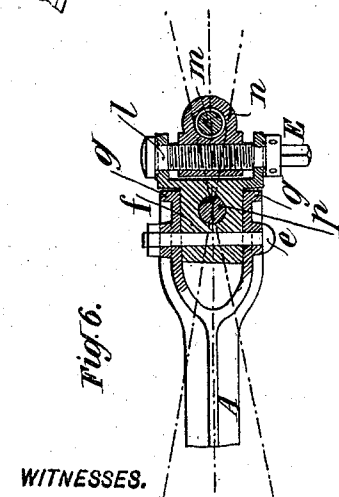


Fig. 6.

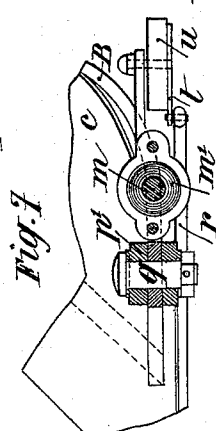
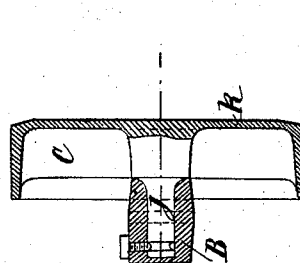


Fig. 7.

Fig. 8.



WITNESSES.

Julius Lutz

Isaac B. Moring

INVENTOR:

A. Cayatte

BY

M. W. Lutz

ATTORNEYS.

UNITED STATES PATENT OFFICE.

ANTOINE CAYATTE, OF BAUDONVILLIERS, FRANCE.

PLOW.

SPECIFICATION forming part of Letters Patent No. 582,041, dated May 4, 1897.

Application filed October 13, 1896. Serial No. 608,694. (No model.) Patented in France March 19, 1896, No. 254,748.

To all whom it may concern:

Be it known that I, ANTOINE CAYATTE, a citizen of the Republic of France, residing in Baudonvilliers, par Saudrupt, Meuse, France, have invented certain new and useful Improvements in Plows, (for which I have obtained a French patent, dated March 19, 1896, No. 254,748,) of which the following is a specification.

The improvements which form the subject of the present application relate to wheelless plows, called "Belgian plows," and have for their object to insure the stability of these implements upon the soil and to enable a single person to hold several plows at the same time with the greatest facility. They comprise, moreover, certain details of construction or arrangement, the advantages of which are stated in the course of the description hereinafter given with reference to the accompanying drawings. With these improvements a group of Belgian plows under the control of a single plowman becomes a veritable multiple plow, more economic in every respect, applicable to culture on a small, medium, and large scale, and working a considerable width proportionate to the number of plows united.

In the accompanying drawings, Figure 1 is a longitudinal elevation of an improved plow in the position it occupies during the turning and transport. Fig. 2 shows a similar view of the plow at work. Fig. 3 is a plan corresponding to Figs. 1 and 2. Fig. 4 shows, to an enlarged scale, the body of the plow, partially in section. Fig. 5 is a corresponding plan of this body of the plow. Fig. 6 is a horizontal section taken on the line 6 6 of Fig. 4. Fig. 7 is another horizontal section taken on the line 7 7 of Fig. 4. Fig. 8 is a transverse section taken on the line 8 8 of Fig. 4.

In Figs. 1, 2, and 3, A is the plow-beam, forming the pole for the harness. B is the stanchion, which receives the colter *a*, the share *b*, and the moldboard *c*. C is a roller or rotary sock mounted upon the stanchion. D is a scraper or cleaner for the colter *a*, and will be fully described hereinafter, and E is the whole of the regulating device.

The plow-beam A comprises two poles *d* and *d'* of appropriate form, dimension, and construction, which are connected to a main part

A, adapted to turn upon a horizontal pin or axis *e*, Figs. 4, 5, and 6, appertaining to a block *f* and possessing heel pieces or hooks *g*, adapted to bear upon cylindrical and lateral shoulders of the block *f*. This block *f* is mounted upon a vertical pivot *p*, forming a body with a fork *p'*, articulated upon a horizontal axis *q* at the upper part of the stanchion B.

The poles *d* and *d'* are provided in front with rings *h* *h'*, Figs. 2 and 3, designed to receive the draft-hooks *i* and *i'*, jointed to the collar F of the harness. The rings *h* and *h'* and the articulated hooks *i* and *i'* constitute a universal front joint, which, combined with the universal rear joint formed by the axis *e* and the pivot *p*, enables the pole-beam to make an angular movement as well in the vertical direction as in the horizontal direction. The fixing of the pole-beam to the collar of the harness insures the stability of the implement upon its points of support formed by the said collar F and by the roller or rotary sock C. It will, moreover, be observed that the stability is insured by the fact that the center of gravity of the whole of the instrument is as near as possible to the line of the supports F and C.

The roller C, arranged at the rear of the stanchion B, is connected with a horizontal axis *j*, adapted to turn in the stanchion. It possesses a full disk *k*, Figs. 4, 5, and 8, situated on the side of the wall of the furrow in which the said roller moves and is designed to obviate the soiling of the arms and of the axis. A fixed scraper *o* cleans the rolling-surface, whose extent may be varied at will. This roller or rotary sock transforms the movement of the ordinary sock, giving rise to sliding friction into a movement which causes rolling friction, facilitates the transport of the instrument without any other special arrangement, and actuates the scraper or cleaner D hereinafter referred to.

As will be seen, the roller C possesses advantages which are peculiar to it, and it does not increase in any way the stability of the plow, which stability might be obtained, owing to the special arrangement of the beam hereinbefore described, by making use of the ordinary sliding sock secured to the stanchion. This signifies that the roller or rotary

sock constitutes only a portion of the improvements made in plows.

The regulating device is formed of two screws—that is to say, one screw *l* arranged horizontally and having for its object to regulate the width of the furrow, and the other screw *m* arranged vertically and having for its object to regulate the depth of the said furrow. These two screws, perpendicular to each other, are screwed into a part or double nut *n*, connected, through the medium of the screw *l*, to the aforesaid block *f* and through the medium of the screw *m* to the stanchion B. The screw *l* turns upon the ears of the block *f*, and by its rotary movement enables the said nut *n* to be displaced to the right or to the left, which nut then causes the entire body of the plow to turn about the vertical pivot *p*. The vertical screw *m* terminates at the bottom in a ball *m'*, which, being connected to the stanchion B by means of a spherical cap, constitutes a universal joint. By its rotary movement it permits of a change in the form of the triangle constituted by the centers *q*, *l*, and *m'*. The whole of this regulating device, therefore, enables me to vary the assemblage of the beam and the body of the plow, Fig. 6, for the purpose of varying the width of the plowing and causing the plow to pass more or less deeply into the ground, Fig. 2, and even making it leave the same altogether, Fig. 1, so as to vary the depth of the plowing and cause the plow to occupy the raised position for transport. The screws *l* and *m*, hereinbefore referred to, may be replaced by levers or by gear-wheels, the essential feature being to effect two perpendicular movements.

The cleaner D is a scraper placed in front and at the upper part of the colter *a*. It is connected with a rod *r*, guided at *s* in a ring appertaining to the stanchion B, and connected to the strap or collar of an eccentric *t*, belonging to a roller *u*, slid upon an axis which is fixed to an appendix of the stanchion. The said roller *u*, in contact with the rotary sock C, receives by friction the movement from the latter and transmits it by the eccentric *t* to the scraper or cleaner D, which makes such a movement that it frees the colter *a* from any herbs which the latter may take up during its action.

The operation of the plow, improved as hereinbefore set forth, is as follows: The plow arrives on the ground to be plowed in the position for transport, Fig. 1. The first care of the plowman is to act upon the two screws *l* and *m* of the regulating device, with the end of a suitable key fitting upon the squares of the said screws. The action of the vertical screw *m* has the effect of causing the body of the plow to be turned about the horizontal axis *q*, while the plow-beam turns about the imaginary horizontal axis *h h'*. This movement causes a general sinking of the body of the plow, whose share *b* penetrates into the ground, Fig. 2, until the depth may be deemed

sufficient. The movement of the roller or rotary sock C at the bottom of the furrow or gage keeps this bottom parallel to the surface of the ground, while the rigidity of the system renders the depth of the plowing constant. This depth may be regulated by turning the vertical screw *m* of the regulating device more or less in the desired direction. However that may be, the colter *a* and share *b*, by reason of their edges and their broad friction-surfaces, cause the plow to take the position of least resistance parallel to the wall of the furrow, and the width of the latter is constant. For increasing it I cause the point of the share *b* to penetrate into the wall by acting upon the horizontal screw *l*. In this case the body of the plow turns about the vertical axis *p*, the beam follows this movement by turning about the imaginary axis formed by the hooks *i* and *i'* of the collar, and the colter *a* penetrates into the fallow or unplowed soil till the width is deemed sufficient. The body of the plow then becomes parallel to the wall and the plowing preserves the given width. I may reduce this width by effecting the inverse operation.

From the foregoing it will be seen that the plowman can attend to several plows working simultaneously, his part consisting solely in regulating the depth and width of the plowing. Accordingly the plowman disposes of his entire independence for stimulating and controlling intelligently all his horses and making them perform the maximum amount of work. The horses follow each other perfectly by reason of the instinctive tendency of draft-animals to walk in the gage or furrow. If necessary, they may be held by attaching them to the plow which precedes them.

In conclusion, it will be understood that I do not limit myself either to the forms or to the proportions represented in the drawings, and that I reserve, moreover, the right to make my improved plows of any sizes and provide them with a suitable colter, share, and moldboard in conformity with the nature of the ground and the work to be effected.

What I claim is—

1. In a plow, the combination of a stanchion, a plowshare carried by the stanchion, a pivot-pin connected to the stanchion by a transverse pivot, a plow-beam pivoted on the pivot-pin, a screw transversely mounted on the plow-beam rearward of the pivot-pin, a block receiving the screw and movable transversely by the operation thereof, and a second screw movable vertically in the block and universally connected to the stanchion, substantially as described.

2. In a plow, the combination of a stanchion, a pin extending horizontally and transversely in the stanchion, a pivot-pin pivotally mounted on the first-named pin and extending vertically therefrom, a beam, a block pivoted on the pivot-pin and to which the beam is connected, a screw revolvably mounted in the block, a second block embracing the

screw and adjustable transversely by the operation thereof, a second screw passing through the said second block and adjustable vertically therein, a sphere at the lower end of the said second screw, and a socket carried by the stanchion and receiving the sphere, substantially as described.

3. In a plow, the combination of a stanchion, a pivot-pin pivotally connected to the stanchion on a transverse axis and extending upwardly from the stanchion, a plow-beam pivoted to the pivot-pin, a block supported by said pivot-pin, a second block supported by the first-named block and adjustable transversely thereon, and a screw universally connected to the stanchion and vertically adjustable in said second block, substantially as described.

4. In a plow, the combination with a stanchion, of a roller mounted thereon, a scraper-rod pivotally and slidably connected with the

stanchion, an eccentric to which the rod is pivoted, the eccentric being mounted on the stanchion and driven by the roller, a scraper carried by the scraper-rod, and a colter with which the scraper operates, substantially as described.

5. The combination of a stanchion, a plow-beam, a pivot-pin mounted to swing on the stanchion and connected with the plow-beam, a screw universally mounted on the stanchion, and a block adjustable longitudinally on the screw and transversely on the plow-beam, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ANTOINE CAYATTE.

Witnesses:

LEON FRANCKENS,
EDWARD P. MACLEAN.