W. WISE.

Ditching Plow.

No. 19,597.

Patented Mar. 9, 1858.

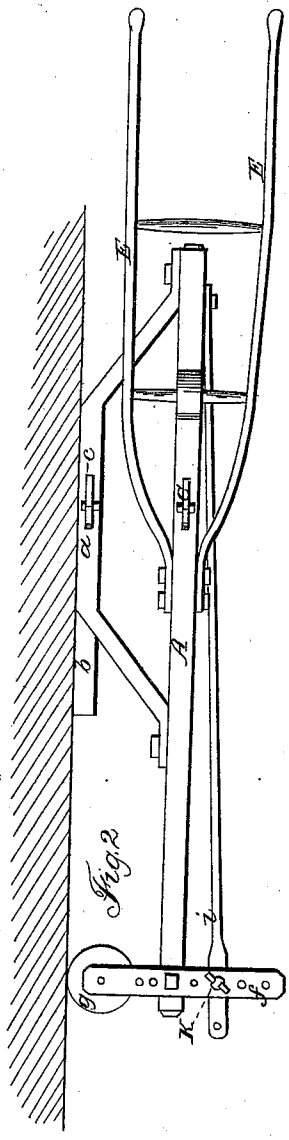


Fig 2

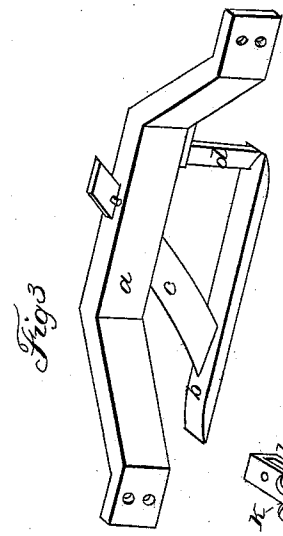


Fig 3

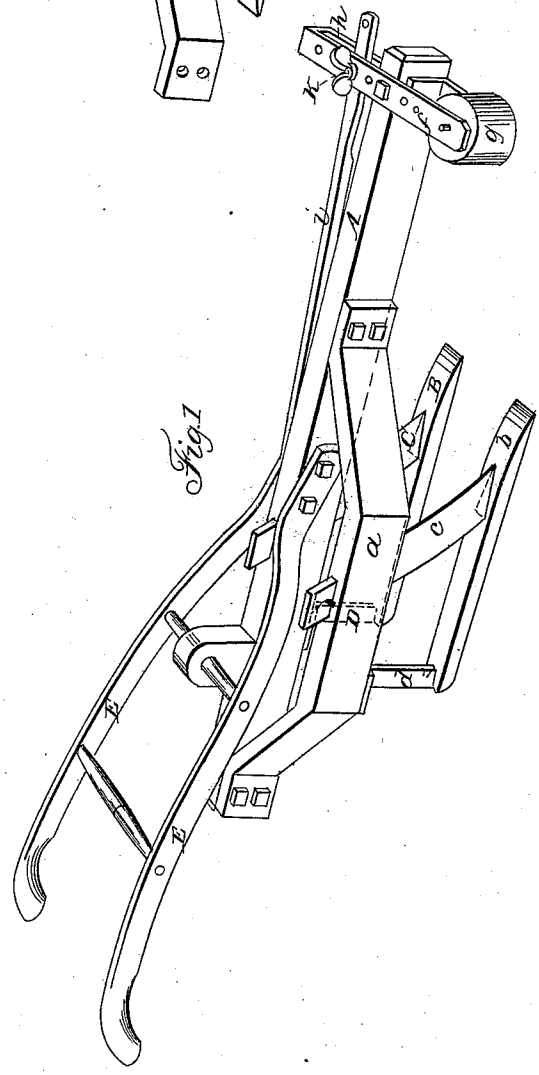


Fig 1

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WM. WISE, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN TRENCHING-PLOWS.

Specification forming part of Letters Patent No. **19,597**, dated March 9, 1858.

To all whom it may concern:

Be it known that I, WILLIAM WISE, of Washington city, in the District of Columbia, have invented certain new and useful Improvements in Plows, specially adapted for the excavation of trenches and sewers, but also adapted for other uses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a view in perspective of a trenching-plow embracing my improvements; Fig. 2, a plan or top view of the same, and Fig. 3 a view in perspective of one of the shares and colters detached.

In constructing a trench or sewer by the method heretofore adopted, it is usual to loosen the earth in the middle of the cut by means of a plow, preparatory to shoveling it out; but it is necessary to loosen the earth from the sides of the cut by means of picks, as the plow is prevented by the projection of its single-trees from running sufficiently close to the banks or walls of the cut to accomplish this object. This process is both tedious and expensive, as it necessitates the employment of so large a force of pickers, or else the plow hands and team must remain idle much of the time and the work progress very slowly.

The object of my invention is to provide a means by which the earth, when not too stony, or otherwise unadapted for plowing, may be entirely loosened by the plow, thereby dispensing with the picking, and doing the work at less cost and with greater expedition. To accomplish this object, I take a plow of the ordinary construction for breaking up the earth in excavations, having a beam, A, share B, colter C, standard D, and handles E, and attach an auxiliary frame to one side thereof. In this frame I place an auxiliary share, *b*, colter *c*, and standard *d*, similar to and parallel with those first mentioned, and at a distance therefrom sufficient to allow the outside of the auxiliary share to cut in the plane of the vertical wall of an excavation, while the horses which draw the plow are walking alongside of the wall. The lateral distance of the auxiliary from the main share will have to be greater when the horses work side by side than when they work in single file—one in front of the other—which last-mentioned mode of working I prefer. A cross-bar, which acts as a guide to keep the plow-beam parallel with the wall of the cut, is attached to the front end of the plow-beam and projects on one side as far as the auxiliary share. The end of the cross-bar carries a roller to diminish the friction produced by the lateral pressure of the plow toward the wall. To prevent the contact of the single-trees with the sides of the cut, I attach an iron strap to the heel of the plow-beam, on the side opposite the auxiliary share, which strap extends forward and passes through a slot in the guide-bar above referred to. The single-trees are attached to an eye in the end of this strap, the distance of which latter from the plow-beam is regulated by means of a series of holes in the cross-bar and strap, into which holes a pin is inserted to hold the strap in the required position.

By reference to the drawings the construction of my improved plow will more fully appear. The projecting frame *a* is attached by nuts and bolts to one side of the beam A in such manner as to admit of being readily attached and detached. One end of the guide-bar *f*, which is attached to the beam A, embraces the roller *g*, which is arranged to run along the side of the cut in the same vertical plane as the outer edge of the auxiliary share *b*. The strap *i*, attached to one side of the beam A, at the heel of the plow, passes through the slot *h* in the guide-bar *f*, which has a series of holes in it, into which holes the pin *k* is inserted to hold the strap and single-trees at the required distance from the beam.

The process of cutting a trench by my improved plow is as follows: The bottom of the trench is first broken up by the plow, without the auxiliary share, as near the full width as the single-trees will permit. The auxiliary share is then attached. The strap to which the single-trees are attached being fastened on one side of the beam tends to press the forward end of the latter toward the wall, which, if not counteracted, would cause the shares to run into the bank, when the team would be stopped or the plow broken; but this is prevented by the guide-bar, which holds the end of the beam off the wall, while at the same time it permits the plow to run as close to the wall as may be desired, the strap to which the single-trees are attached being adjusted at a distance from the

beam sufficient to keep them from striking the side of the cut.

It is obvious that my improved plow is susceptible of modification in various ways without departing from the principle of my invention. For instance, a curved runner, like that of a sleigh, might be substituted for the guide-bar and roller, but its friction against the wall of the cut would be greater. The guide-bar might also be attached to the plow-beam at a point intermediate between the handles and its forward end. It might also be made adjustable laterally in relation to the plow-beam, so that the roller on its end could be placed nearer to or farther from the plow-beam.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the auxiliary share with the plow, substantially as described.

2. The combination of the guide-bar with the plow, substantially as described.

In testimony whereof I have hereunto subscribed my name.

WM. WISE.

Witnesses:
HENRY BALDWIN, Jr.,
WM. D. BALDWIN.