S. McCOLM.
Soil-Pulverizer.

No. 204,988. Patented June 18, 1878.

Fig. 1.

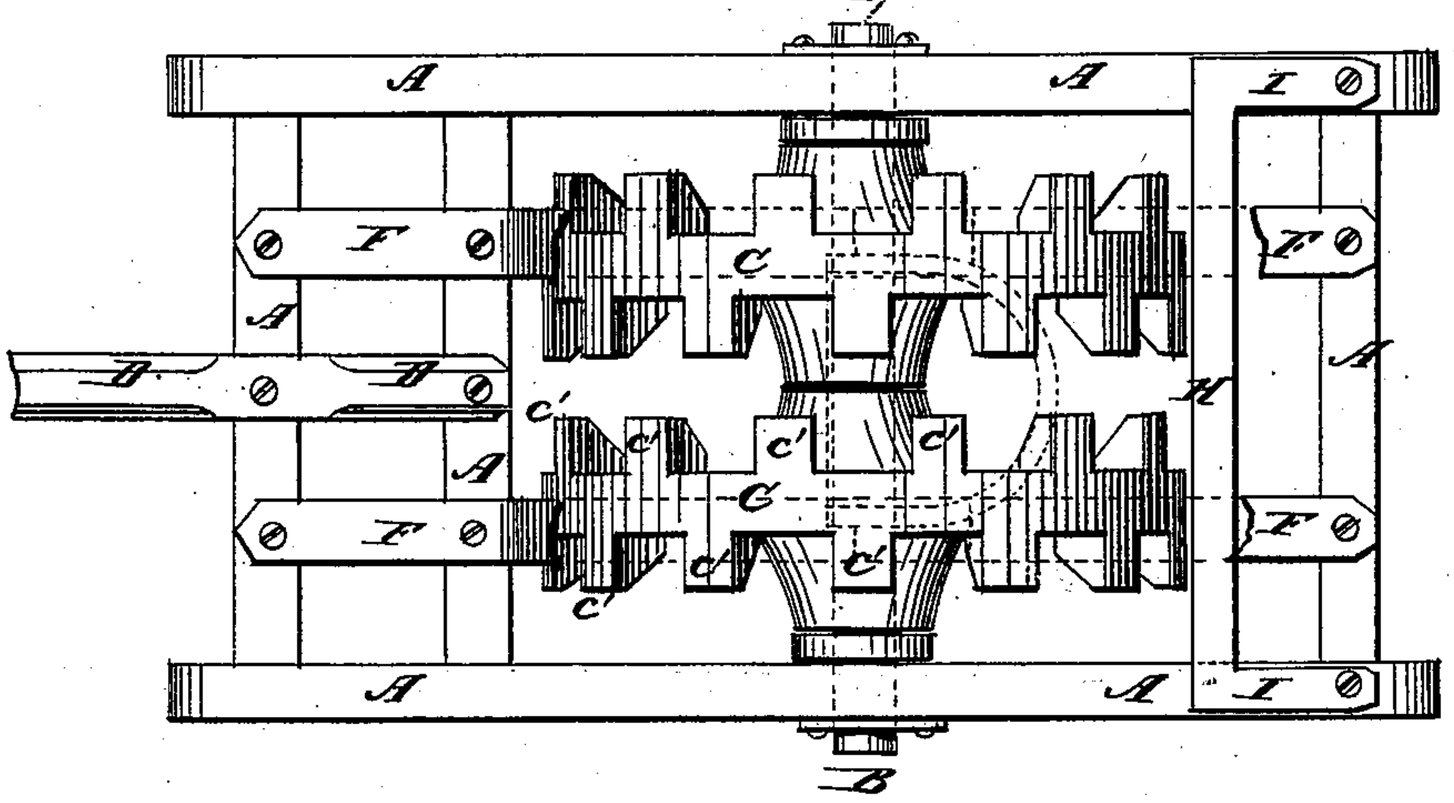
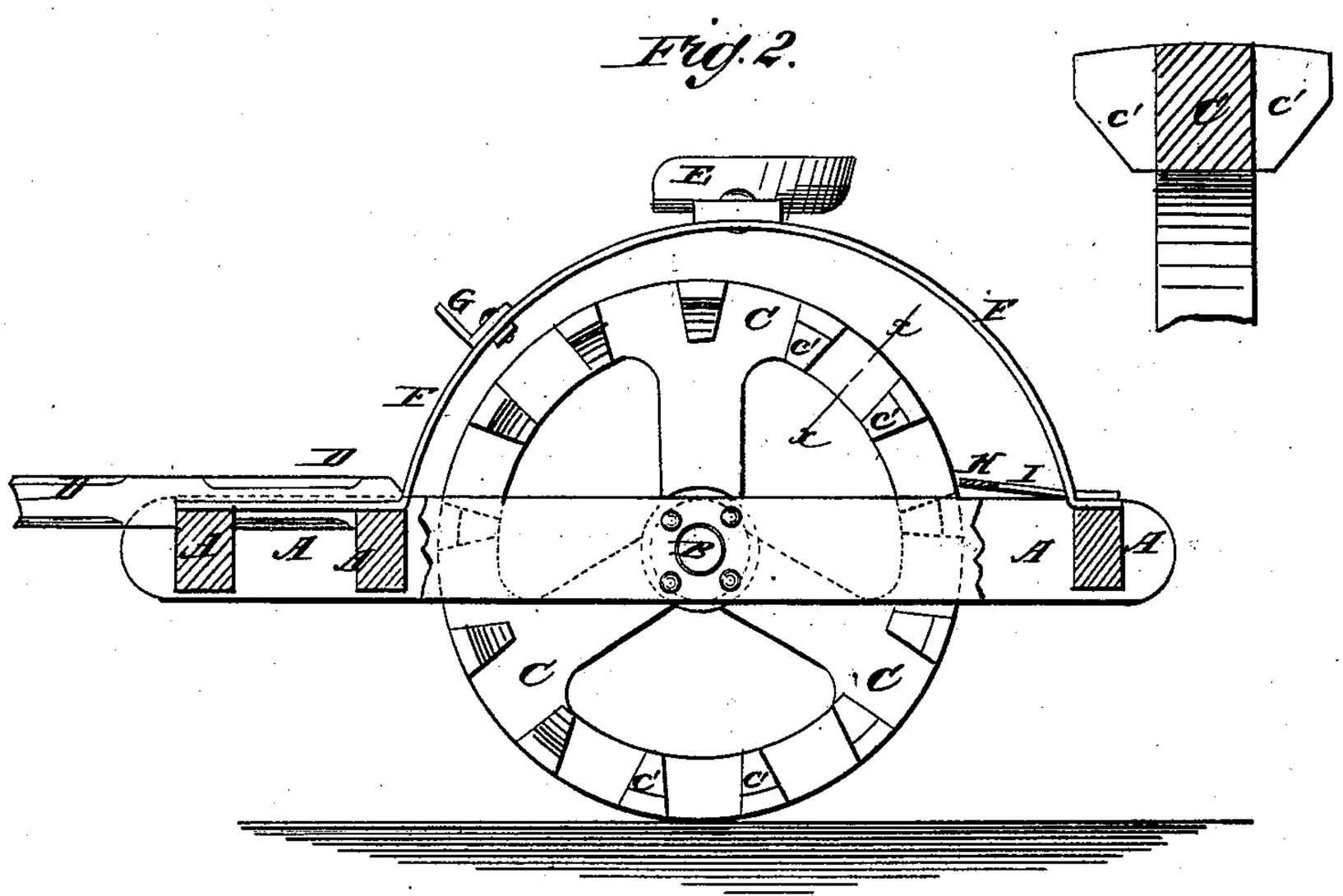


Fig. 3

Fig. 2.



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UNITED STATES PATENT OFFICE.

STEPHEN McCOLM, OF WAGGONER'S RIPPLE, OHIO.

IMPROVEMENT IN SOIL-PULVERIZERS.

Specification forming part of Letters Patent No. **204,988,** dated June 18, 1878; application filed May 20, 1878.

To all whom it may concern:

Be it known that I, STEPHEN McCOLM, of Waggoner's Ripple, in the county of Adams and State of Ohio, have invented a new and useful Improvement in Soil-Pulverizers, of which the following is a specification:

Figure 1 is a top view of my improved machine, parts being broken away to show the construction. Fig. 2 is a side view of the same, parts being broken away to show the construction. Fig. 3 is a detail cross-section of the rim of one of the wheels.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved machine for breaking in pieces the lumps and clods of soil, to better adapt it for cultivation, and which shall be so constructed as to bring the weight of the machine in contact with the surface of the soil on about one-third of the surface covered by the machine, which will readily clear itself of clods that may be forced into its interior, and which may be used with frames of various shapes and sizes, as circumstances may require.

The invention consists in an improved pulverizer formed by the combination of a series of wheels, having projections or blocks formed upon or attached to the opposite sides of their rims, in such positions as to alternate with each other, with an axle or axles, and a framework, as hereinafter fully described.

A represents the frame of the machine, in bearings formed on or attached to the side bars of which is secured an axle, B. Upon the axle B are placed a number of wheels, C, in such a way that each wheel may revolve freely and independently. Upon the opposite sides of the rims of the wheels C are formed, or to them are attached, projections or blocks *c'*, which alternate with each other, as shown in Fig. 1. The side edges of the blocks or projections *c'* are beveled off, as shown in Fig. 2, so that the space between any two adjacent blocks may be a little wider at the inner edge of the rim than at its outer edge or face.

By this construction any clod or lump which enters the space between two of said blocks or projections will readily pass through into the interior of the wheels without lodging in the said space. Any clods which may pass into the interior of the wheels will soon be broken in pieces and sifted out.

The face of the wheel C and the projections or blocks *c'* are rounded off, as shown in Fig. 3, so that the weight of the machine may be kept as much as possible from the blocks *c'* when passing over hard or rough ground, stones, or other hard substances, to prevent the said blocks from being broken off. The wheels C may all be placed upon a single axle, as shown in Fig. 1.

If desired, the wheels C may be placed upon two parallel axles, B, attached to the same frame A, in which case the wheels of each axle should be placed opposite the spaces between the wheels of the other axle. If desired, the wheels may be placed upon three axles attached to three separate frames, which are hinged together. In this case the central frame should be placed in front of the space between the two rear frames. This construction makes the machine, when made large, better adapted for use upon rough and uneven ground.

To the forward part of the frame A is attached the tongue D, to which the draft is applied. E is the driver's seat, which is attached to the upper parts of the two arched bars F, the ends of which are attached to the front and rear parts of the frame A.

To the forward part of the arched bars F is attached the foot-board G, as shown in Fig. 2. To the rear part of the frame A is attached a scraper, H, to scrape off any soil that may adhere to the faces of the wheels C. The scraper H is connected with the frame A by springs I, so that the said scraper may yield if struck by a stone accidentally lodged between the blocks or projections *c'* of the wheel C, and thus prevent it or the wheel from being broken.

With this construction, as the machine is drawn forward the faces of the wheels C and blocks *c'* come in contact with about one-third of the space over which the machine is drawn, so that lumps and clods will be thoroughly broken into pieces.

Another advantage of this construction is, that it leaves the surface of the ground rough, so that light seeds sown upon it will be less liable to be swept off should a shower occur

before they have sprouted and thus become attached to the ground, the projections and the face of the wheel forming depressions, and the spaces between the wheels and the projections leaving projections or ridges upon the surface of the soil, so that the seed will have a better chance to come up evenly than when sown upon ground made flat by a smooth roller.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

An improved pulverizer formed by the combination of a series of wheels, C, having projections or blocks *c'* formed upon or attached to the opposite sides of their rims in such positions as to alternate with each other, with an axle or axles, B, and a frame-work, A, substantially as herein shown and described.

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Witnesses:
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