No. 609,305. Patented Aug. 16, 1898.

G. K. SPITZENBERG.

SEED PLANTER.

(Application filed Apr. 19, 1895.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

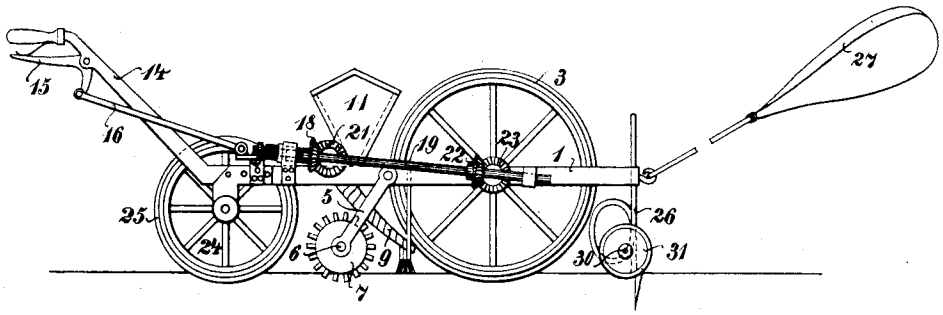


Fig. 2.

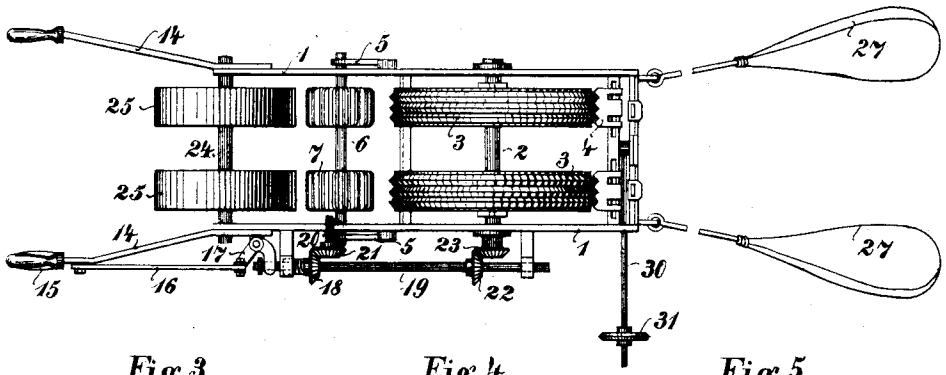


Fig. 3.

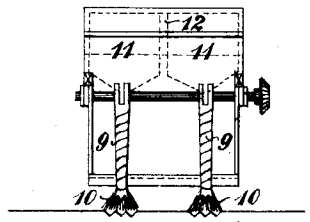


Fig. 4

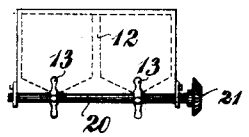


Fig. 5.



Witnesses.

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No. 609,305. Patented Aug. 16, 1898.

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(Application filed Apr. 19, 1895.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 6.

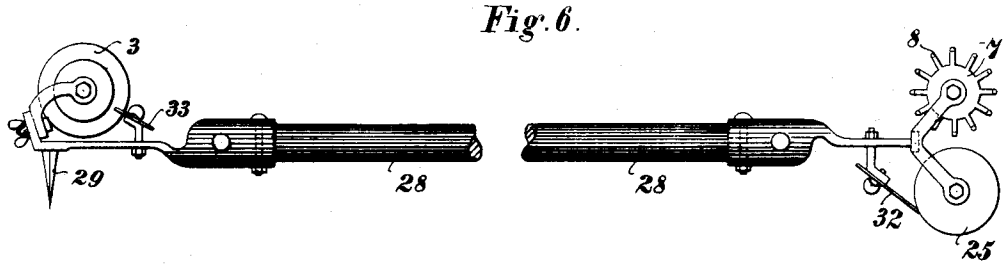


Fig. 7.

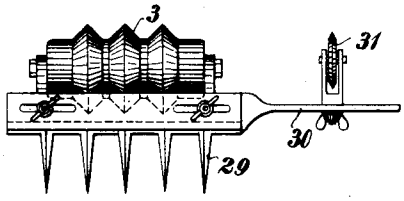


Fig. 8.

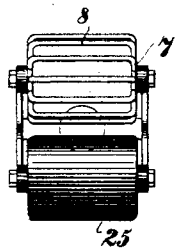


Fig. 9.

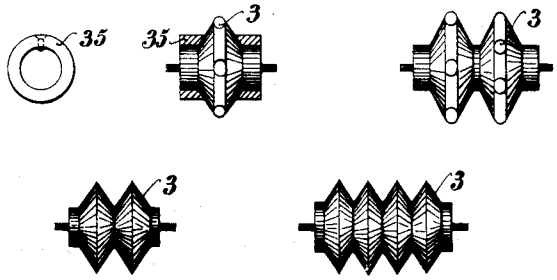
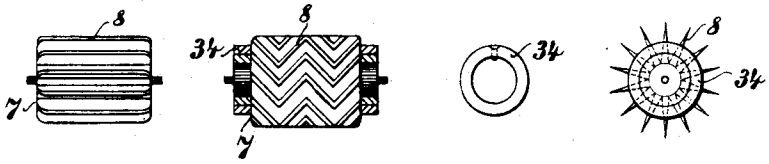


Fig. 10.



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UNITED STATES PATENT OFFICE.

GEORG KARL SPITZENBERG, OF EISENACH, GERMANY.

SEED-PLANTER.

SPECIFICATION forming part of Letters Patent No. 609,305, dated August 16, 1898.

Application filed April 19, 1895. Serial No. 546,419. (No model.) Patented in Germany January 11, 1893, No. 82,115; in Luxemburg February 23, 1895, No. 2,243; in France February 28, 1895, No. 245,452; in Belgium February 28, 1895, No. 114,334; in Spain February 28, 1895, No. 17,074; in Austria March 9, 1895, No. 19,563; in Switzerland March 11, 1895, No. 10,219; in Hungary March 26, 1895, No. 2,855, and in Italy March 26, 1895, No. 38,456.

To all whom it may concern:

Be it known that I, GEORG KARL SPITZENBERG, a subject of the King of Prussia, German Emperor, and a resident of Eisenach, in the Grand Duchy of Saxe-Weimar-Eisenach, in the German Empire, have invented a certain new and Improved Apparatus for Planting Seed, (for which I have obtained Letters Patent in Germany, No. 82,115, dated January 11, 1893; in Luxemburg, No. 2,243, dated February 23, 1895; in France, No. 245,452, dated February 28, 1895; in Belgium, No. 114,334, dated February 28, 1895; in Spain, No. 17,074, dated February 28, 1895; in Austria, No. 19,563, dated March 9, 1895; in Switzerland, No. 10,219, dated March 11, 1895; in Hungary, No. 2,855, dated March 26, 1895, and in Italy, No. 38,456, dated March 26, 1895,) of which the following is a specification.

This invention relates to means for use in and connected with the planting of seeds—that is to say, for the preparation of the soil, the formation of seed-drills, the planting of the seed, and covering and pressing down the latter. The improved apparatus for this purpose is constructed for arboriculture, horticulture, or agricultural use, and for this purpose is made as a rotary or vehicular device and as a simple hand-tool.

In the annexed drawings, Figure 1 is an elevation, and Fig. 2 a plan, of a vehicular device. Fig. 3 is an elevation of the seedbox, and Figs. 4 and 5 details. Fig. 6 is an elevation, and Figs. 7 and 8 end views, of a hand-tool; and Figs. 9 and 10, details thereof.

Referring to Figs. 1 to 5, the seed-drills are produced by the drill-rollers or drilling-wheels 3, keyed upon the shaft 2 of the frame 1. The felly-pieces of these drilling wheels or rollers are fixed to the tire, so as to be exchangeable in order that according to the species of seed to be sown the drill-pressing forms may be made of different suitable shapes. Besides the drilling-rollers 3 there is mounted upon a lateral bar 30, turning on a pivot in the center of frame 1, a marking-wheel 31 for designating the distance for the next drill, and this marking-wheel, by the rotation of the bar 30, can be thrown to the one or other side of the implement.

In front of the drilling-rollers 3 run the knife-rakes 26, which serve for soil-loosening, for leveling unevenness, or refreshing the dried-up soil-surface. For keeping the drilling-rollers 3 clean scrapers 4 are provided, which may be adjustable toward the rollers 3, as well as in a lateral direction.

The device for spreading the seed and covering the same will be seen from the whole arrangement. (Shown in Figs. 1 and 2.) Behind the seed-hoppers 11, described hereinafter, runs the seed-covering or spread rollers 7, which are fixed to the frame 1 by means of freely-moving arms 5, and the circumference of which rollers 7 is formed by transverse bars or knives, which latter during the rotary movement of the rollers 7 will, by engaging into the ground, spread a covering-layer over the seed or, if necessary, mix the same with the earth.

Behind the rollers 7 run the smooth-pressing rollers 25, which are likewise arranged in the frame 1 and which serve for pressing down the covering-layer of earth. To provide that the present method may be applicable under all conditions occurring in cultivation, the devices which serve for covering and pressing down the seed are also constructed in form of hand implements.

Behind the wheels 3 rest the seed-hoppers 11, which, according to the kind of drills to be drawn, possess one or more seed-holes and can be laterally adjusted to suit the chosen distance between the drills.

Behind the seed-chutes 9 are brooms or covers 10 for sweeping the seeds which have remained lying on the ridges of earth into the drills. The seed chest or hopper 11 is divided into two compartments by a removable wall 12, and in the bottom of each compartment is a bucket-wheel 13 for feeding the seed, Figs. 4 and 5. By this arrangement it is possible to sow separately two kinds of seed at the same time. These bucket-wheels 13 are made exchangeable, so as to suit any kind of seed, the lower part of the seedbox being likewise exchangeable.

For the immediate starting and stopping of the seed-feeding machinery a lever 15 is arranged on one of the handles 14. This lever is connected by means of a draw-bar 16 with the bell-crank 17, pivoted on the frame 1. The one arm of the bell-crank 17 is forked to engage a collar on the beveled wheel 18, which is set in rotary motion by the prismatic shaft 19. The beveled wheel 18 on lifting the lever 15 is thrown out of gear with the beveled wheel 21, keyed on the shaft 20 of the seed-feeding or bucket wheels 13, and the shaft 20 comes to a standstill. The shaft 19 receives its movement by the gearing of the beveled wheels 22 and 23 from the shaft 2 of the drilling-wheels 3.

The simple implement for producing seed-drills only is constructed as a drill-drawer for hand use, as in Figs. 6 to 8, with exchangeable drilling-rollers 3, Fig. 9, or drill-pressers, Fig. 10.

The drill-drawer for hand use (shown in Figs. 6 and 7) carries beside the rake 29, serving for working the soil, the drilling-roller 3, beside which latter, upon a removable bar 30, is a displaceable marking-wheel 31, arranged for designating the distance for the next following drill. The other end of the handle 28 of this hand drill-drawer may also be provided with two, Fig. 6, or more rollers, such as covering-roller 7 and pressing-roller 25. Analogous to the vehicular drill-pullers the simple hand drill-pullers have scrapers 32 33 for cleaning the rollers.

The adjustment of the drilling-rollers 3 with regard to the depth to be attained is effected by attaching or detaching nave-rings 35, Fig. 9, which are slid over the projecting naves of the rollers 3 and may be fixed by means of screws.

The rollers 7 may have blades 8 of any suitable shape and may also be fitted with nave-rings 34 to vary the penetrative power.

The hand implement shown in Figs. 6 to 10 is used in an analogous manner to the vehicular implement. The soil is first raked with rake 29. The seed-drills are then made with roller 3. The tool is then reversed, and after the seeds have been placed in the drills the roller 7 is used to cover them and the roller 25 to press down the covering earth.

I claim as my invention—

In an apparatus for planting seed the combination with a suitable frame of a roller having drill-pressing members on its surface, of a hollow covering-roller having its mantle formed by knives peripherically arranged and adapted to penetrate into the soil so as to spread earth over the seed-drills, and of a pressing-roller adapted to smooth the filled and covered seed-drills, substantially as described and for the purpose set forth.

In testimony whereof I have signed this specification in presence of two subscribing witnesses.

GEORG KARL SPITZENBERG.

Witnesses:
WM. H. HENY,
G. RATH.