

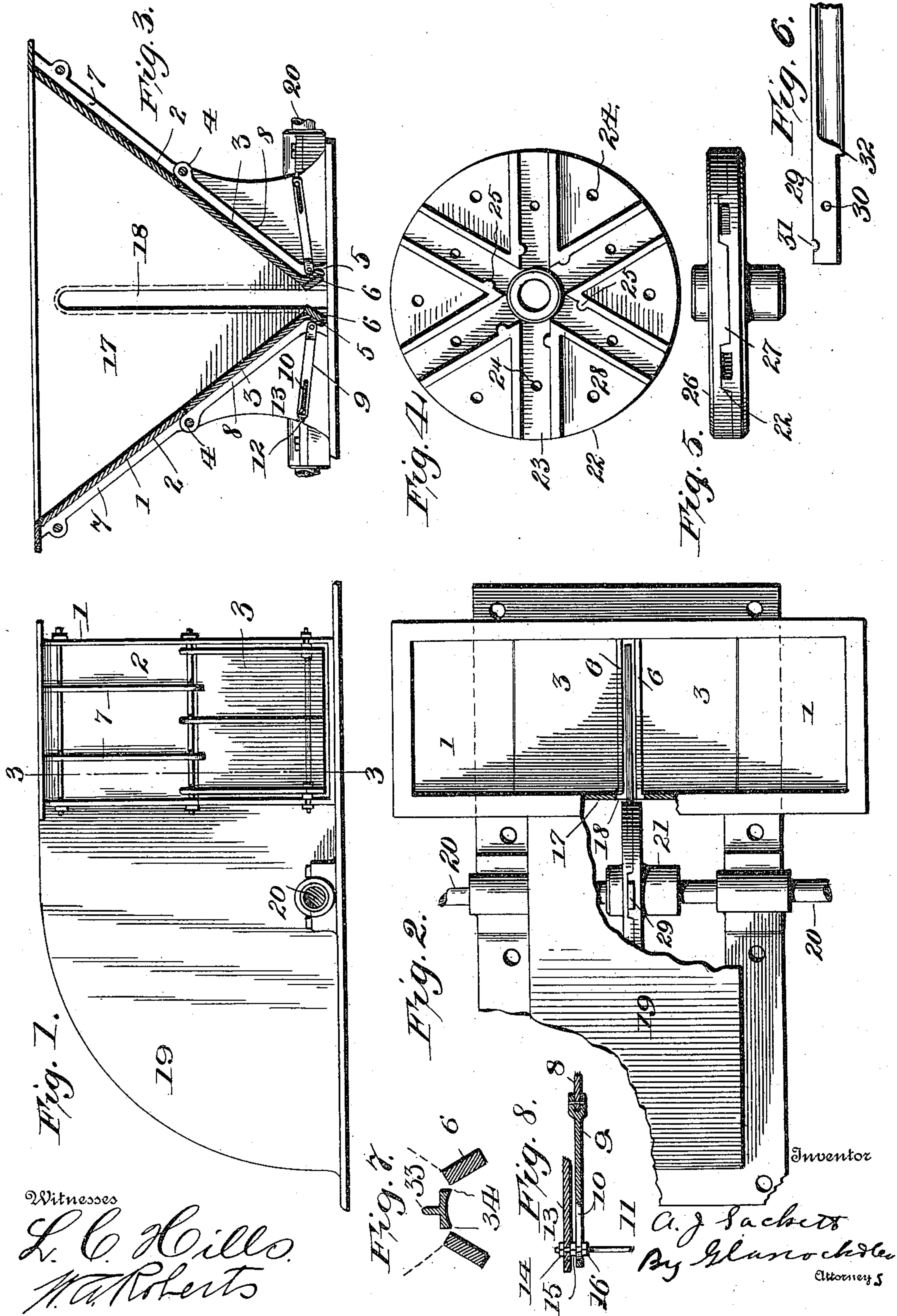
No. 617,885.

Patented Jan. 17, 1899.

A. J. SACKETT.
DOUBLE CUTTING MACHINE.

(Application filed Nov. 13, 1897.)

(No Model.)



UNITED STATES PATENT OFFICE.

AUGUST J. SACKETT, OF BALTIMORE, MARYLAND.

DOUBLE-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 617,885, dated January 17, 1899.

Application filed November 13, 1897. Serial No. 658,488. (No model.)

To all whom it may concern:

Be it known that I, AUGUST J. SACKETT, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Double-Cutting Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain improvements in a machine adapted for cutting various materials, and particularly animal substances such as are used in the manufacture of fertilizers.

The object of the invention is to provide a machine having a number of revolving knives or blades, said knives or blades at each stroke being adapted to make a double cut—that is, each knife or blade is provided with two cutting edges, the said edges being adapted to co-act with suitable stationary cutting edges and give the material being treated a double cut.

The machine consists of a hopper having converging sides forming the bottom thereof, the lower edges of the sides being separated and thus forming an opening, the said opening extending transversely of the hopper. The lower edges of the sides are provided with cutting edges, the said edges being pitched at a slight angle to the sides. The lower portions of the sides are provided with hinged sections and a suitable mechanism for adjusting said sections and holding them in a desired position. A hood is located at the back of the hopper, the back of the hopper having an opening communicating with the interior of the hood. The revolving cutting-knives are located under said hood and are adapted to pass through the opening in the back of the hopper and pass between the cutting edges of the bottom of the hopper and in so doing give the material a double cut.

In the accompanying drawings, Figure 1 is a side elevation of the machine. Fig. 2 is a top plan view, partly in section, of the machine. Fig. 3 is a sectional view of the hopper. Fig. 4 is a plan view of one of the plates forming the hub for the cutting-blades. Fig. 5 is a top plan view of the two plates forming the hub, the blades being removed. Fig. 6 is a side elevation of the inner end of one of the

blades. Fig. 7 is a cross-section of one of the blades and the cutting edges of the bottom of the hopper, showing the relative positions of these parts during the act of cutting; and Fig. 8 is a sectional view of a portion of the hopper, showing the adjusting mechanism for the hinged sections of the bottom.

The hopper 1 is open at the top and is adapted to receive the material to be cut. Said material may be phosphate, clay, or any other analogous substance. The sides 2 2 converge together toward their lower ends, the said sides forming the bottom of the hopper. Each side 2 is provided near its lower end with a hinged section 3, said section being hinged at the points 4. The lower edges of the hinged sections 3 are provided with the sockets 5, said sockets being adapted to receive the cutting edges 6.

It will be observed by referring to Fig. 7 that the upper surfaces of the edges 6 are pitched at a slightly-different angle to the upper surfaces of the sections 3, the object of which will be hereinafter stated. The end surfaces of the upper portions of the sides 2 are provided with the strengthening-rib 7, and the end surfaces of the hinged sections 3 are also provided with strengthening-ribs 8. The strips 9 are pivoted at their inner ends to the ribs 8, the outer ends of the strips 9 being provided with the elongated perforation 10. The rods 11 (see detail Fig. 8) extend transversely across the hopper, the outer ends of said rods 11 entering the slots 12, cut in the edges of the flanges 13, said flanges being an extension of the front and rear sides of the hopper. A jam-nut 14 is located at each outer end of the rod 11, said jam-nut being adapted to come in contact with the outer faces of the flanges 13. The jam-nuts 15 are also located on the rods 11, said jam-nuts being adapted to come in contact with the inner faces of the flanges 13, the rod 11 being suitably threaded to receive the nuts. By means of the nuts 14 and 15 the rods may be held in their proper positions in the slots 12 of the flanges 13. The rods 11 pass through the elongated perforations 10 of the strips 9, and the jam-nuts 16 are adapted to impinge the outer ends of the strips 9 against the jam-nuts 15, as shown in detail in Fig. 8. Thus it will be seen that by loosening the nut 16

the hinged section 3 may be swung in or out and secured by impinging the outer ends of the strips 9 between the jam-nuts 15 and 16, and thus the positions of the lower portions of the hinged sections 3 may be varied. The rear side 17 of the hopper 1 is provided with an elongated slot 18, and immediately behind the hopper 1 is located the hood 19, the slot 18 communicating with the interior of the hood 19. The shaft 20 extends transversely through the hood 19, said shaft being mounted in suitable bearings. A hub 21 is located on said shaft, said hub consisting of the plate 22, said plate having a number of radially-extending sockets 23, each socket having a perforation 24 and on one of its edges an offset 25. The plate 26 is adapted to come in contact with the said plate 22, as shown in Fig. 5, the plate 26 laterally closing the sockets 23, the plate 26 having on its periphery the projecting flange 27, said flange being adapted to enter registering recesses of the plate 22, and thus prevent any independent movement of either of the said plates relative to the other—that is, both of the plates must move together. The plates are held together by means of bolts passing through registering perforations 28. The inner ends of the knives 29 are provided with perforations 30, the said inner ends of the knives being adapted to enter the sockets 23, the perforations 30 registering with the perforations 24. The inner end of each knife is also provided with a recess 31, said recess 31 being adapted to receive one of the offsets 25. The inner end of each knife 29 is provided with a shoulder 32, said shoulder 32 being adapted to come in contact with the periphery of the hub 21. The knives 21 are held securely within the sockets 27 by means of suitable bolts that pass through the perforations 24 of the plates 22 and through the perforations 30 of the blades and through registering perforations located in the plate 26. The recesses receiving the offsets 25 also assist in holding the knives in their proper relation to the hub, and the shoulders 32 are provided for the same purpose. Each knife is provided on its upper side with a strengthening-rib 33 and on its under side with the cutting edges 34 34—that is, two cutting edges are provided, one at each side of the blade, and each cutting edge 24 is adapted to coact with one of the cutting edges 6 in treating the material.

In operation the machine works as follows: The knives 29, having been properly attached to the hub 27 and the sections 3 of the hopper having been properly adjusted, the material is placed in the hopper 1. The shaft 20 is then caused to revolve rapidly by any suitable power, and the knives 29 will fly rapidly through the opening 18 and will come in contact with the material located in the hopper 1. As the knives 29 pass between the cutting edges 6 the cutting edges 34 34 of the knives 29, acting in conjunction with the two cutting edges 6 6, will give the material a double

cut—that is, two of the cuts will be made at one stroke of each knife. The upper faces of the cutting edges 6 6 are pitched at a slightly-different angle to the upper faces of the sections 3 3, in order that the material when coming in contact with the upper faces of the cutting edges 6 6 will be slightly shunted toward the cutting edges 34 34 of the knives 29, and will thus be placed in such a position as to facilitate the cutting. The material as it is cut drops from the hopper into any suitable receptacle that may be provided. (Such a receptacle is not shown in the drawings.) Each knife 29 after performing the act of cutting revolves around and passes under the hood 19 and again passes through the opening 18 and repeats the operation. As the knives 29 are revolved very rapidly, every portion of the material located in the hopper 1 will be treated—that is, none of the material will shift from the hopper without receiving simultaneously a cut at each end.

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

1. In a machine such as described, a hopper having converging sides forming the bottom thereof, the lower portions of said sides being formed of hinged sections, cutting edges located at the lower end of said hinged sections, means for adjusting said hinged sections, a revolving knife having suitable cutting edges, the cutting edges of the knife being adapted to coact with the cutting edges of the hopper in treating the material located within the hopper.

2. In a machine such as described, a hopper having converging sides forming the bottom thereof, the lower portions of said sides being formed of hinged sections, cutting edges located at the lower edges of the hinged sections, strips pivotally connected to the hinged sections, said strips having elongated perforations, rods passing through said elongated perforations, the outer ends of said rods being secured by means of jam-nuts in suitable recesses provided in flanges located on the hopper, suitable jam-nuts being located on said rods, a revolving blade having suitable cutting edges, the cutting edges of the blade being adapted to coact with the cutting edges of the hinged sections of the hopper in treating the material located within the hopper.

3. In a machine such as described, a hopper having an opening in its bottom, cutting edges forming the sides of said opening, a means for adjusting the relative positions of said edges, a revolving shaft located to one side of the hopper, a number of radially-extending blades located on said shaft, each blade having suitable cutting edges, the said blades being adapted to pass through the opening in the back of the hopper and then between the cutting edges in the bottom of the hopper and treat the material located within the hopper.

4. In a machine such as described, a device adapted to contain the material to be treated,

a revolving shaft located to one side of said device, a hub located on said shaft, said hub consisting of two plates, said plates having between them radially-extending sockets, 5 each socket having in a side an offset, each plate having registering perforations passing through the sockets, knives adapted to be secured in said sockets, each knife having a recess adapted to receive the offset of the 10 socket and a perforation adapted to register with the perforations of the plates entering the sockets, each knife having near its inner end a shoulder the said shoulders being adapt-

ed to come in contact with the periphery of the hub, a suitable means for retaining the 15 plates together, the perforations being adapted to receive bolts, the knives adapted to come in contact with the material located within the opening of the device.

In testimony whereof I affix my signature 20 in presence of two witnesses.

AUGUST J. SACKETT.

Witnesses:

ENOCH HARLAN,
GEORGE KENT.