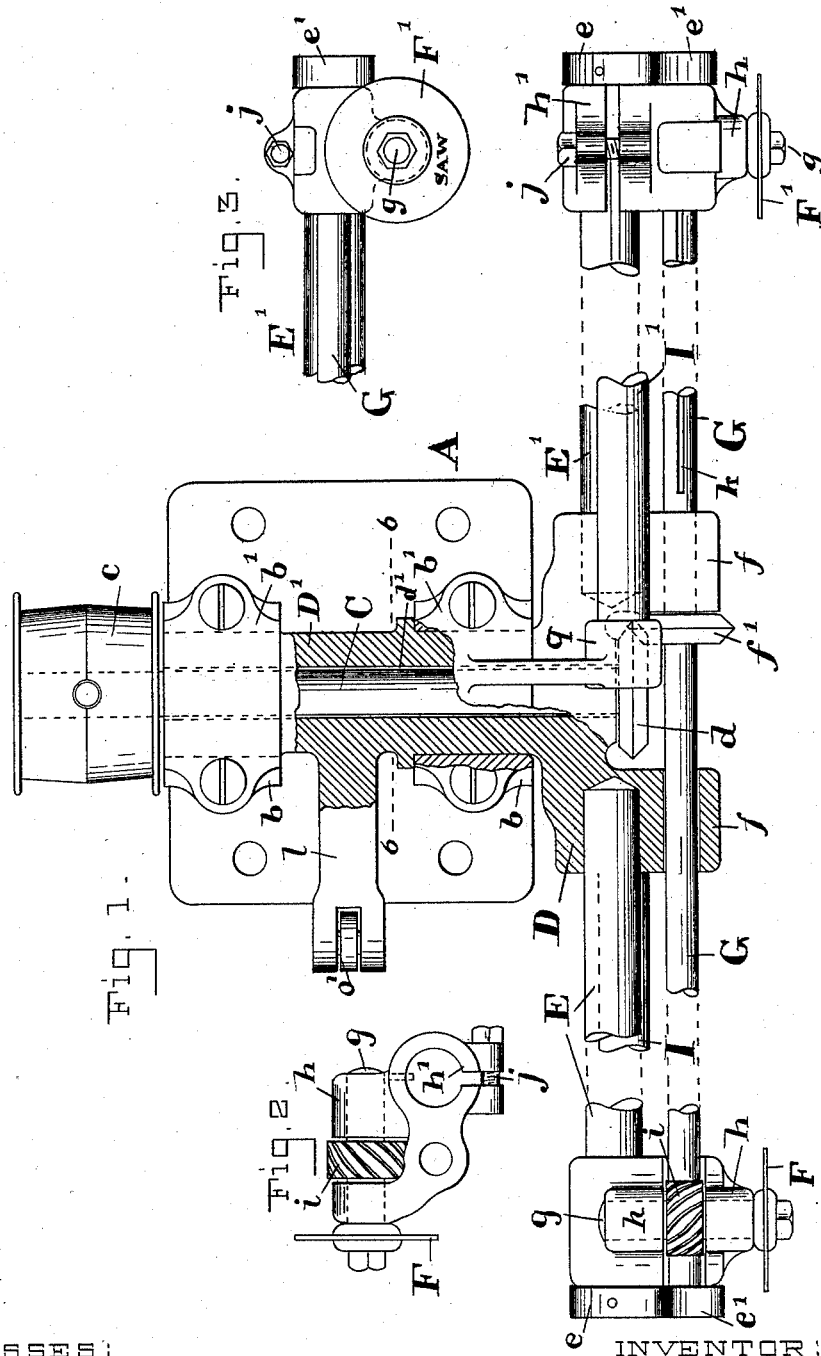


2 Sheets—Sheet 1.

MACHINE FOR SLOTTING UMBRELLA STICKS.

Patented Aug. 14, 1894.



INVENTOR:

Moses Gaus

ATTORNEY.

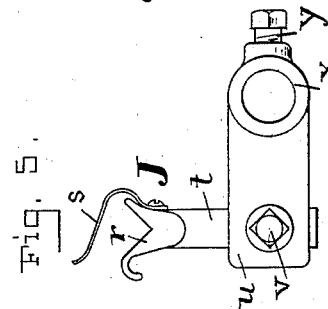
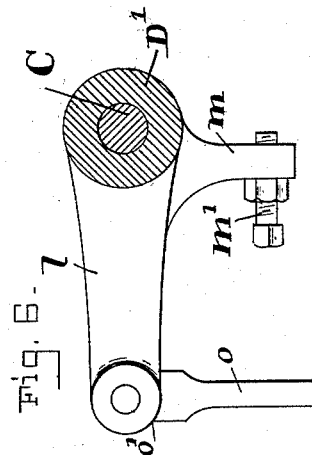
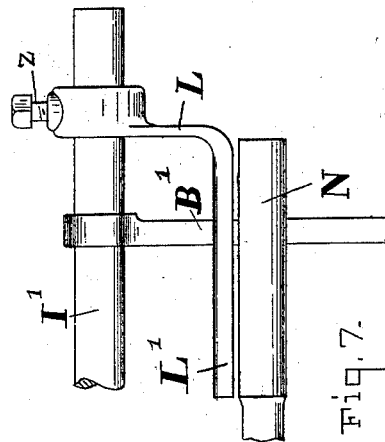
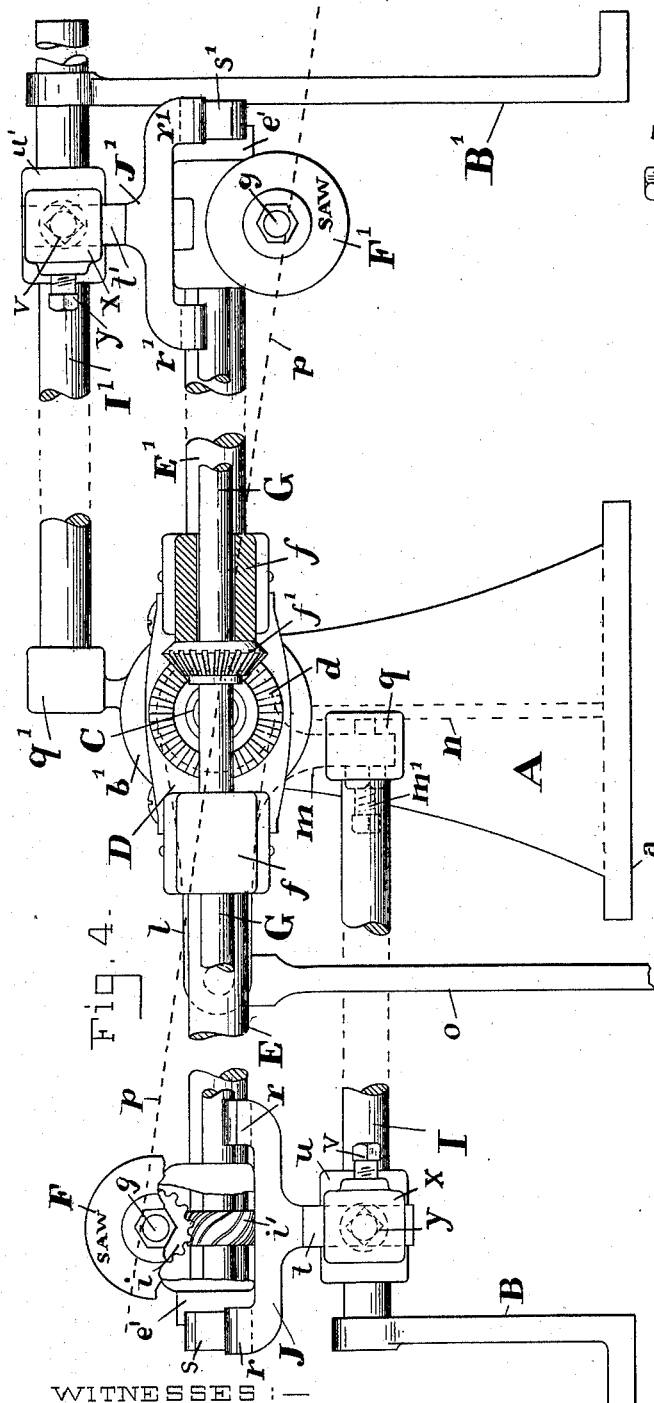
(No Model.)

2 Sheets—Sheet 2.

M. GANS.
MACHINE FOR SLOTTING UMBRELLA STICKS.

No. 524,418.

Patented Aug. 14, 1894.



WITNESSES:—

L. Ismy Van Horn.
Chas. B. Mann Jr.

INVENTOR:—

Moses Gans

By Chas B. Mann

ATTORNEY

UNITED STATES PATENT OFFICE.

MOSES GANS, OF BALTIMORE, MARYLAND.

MACHINE FOR SLOTTING UMBRELLA-STICKS.

SPECIFICATION forming part of Letters Patent No. 524,418, dated August 14, 1894.

Application filed November 1, 1893. Serial No. 489,712. (No model.)

To all whom it may concern:

Be it known that I, MOSES GANS, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Machines for Slotting Umbrella-Sticks, of which the following is a specification.

This invention relates to a machine for sawing kerfs in the sticks or handles of umbrellas. These sticks in the finished umbrella are provided with two spring catches which engage the "runner,"—one of the spring catches holds the runner when the umbrella is open, and the other holds it when the umbrella is closed; each of these spring catches occupy, or are movable in, slots or kerfs cut in the stick. It is important to have these slots or kerfs cut with accuracy; they should be of a certain depth, and should be located a certain distance apart on the stick, and a definite distance from the end of the stick; it is also desirable that each of these two slots or kerfs should be in a different radial line from the other.

The object of this invention, therefore, is to provide a machine which will cut both of these slots or kerfs simultaneously and accurately.

In order to make my invention understood, I have shown in the accompanying drawings a construction for carrying the same into practical effect, without, however, intending to limit the invention to the particular construction shown.

Figure 1 is a top or plan view of the machine, a certain part being in section, and the arms, shafts and bars being shown broken as their proportionate length would be too great for the sheet on which the drawing is made. Figs. 2 and 3 show, respectively, a transverse or cross view of the bearings for one saw, and a front side view of the other saw and its bearings. Fig. 4 is a side elevation of the same,—the rods being broken as in Fig. 1. Fig. 5 is a detail side view of one stick holder. Fig. 6 is a view of the treadle-arm by means of which the saw-carrying shaft is tilted. Fig. 7 shows a view of the "stop" for the end of the stick that is to be cut.

The letter, A, designates a base and standard of the machine; its flat bottom, *a*, is de-

signed to set upon a table or stand of any desired kind.

B, B', designate standards which are also designed to set upon the table.

On the base, A, are two bearings, *b*, in which is a revoluble shaft, C, carrying a pulley, *c*, to be driven by a belt from any source of power. The end of the drive-shaft, C, carries a bevel gear wheel, *d*.

An oscillatory head, D, is suitably mounted on the drive-shaft so as to permit of being tilted and to allow the drive-shaft to revolve. In the present instance this head has a lateral trunnion or wrist, D', which fits in the two bearings, *b*, while the drive-shaft, C, turns freely in a bore, *d'*, made through both the head and trunnion. Top plates, *b'*, confine the trunnion, D', in the bearings.

The oscillatory head, D, carries two rigid arms, E, E', each projecting from an opposite side of the head, and each carrying a circular saw, F, F', mounted as hereinafter described. The end of each arm has attached to it a plate, *e*, which has a laterally projecting bearing, *e'*, for the end of a revoluble shaft, G, which extends the entire length of the two rigid arms, E, E'. This shaft is supported at its center and turns in two bearings, *f*, on the oscillatory head, D. This shaft carries a miter gear wheel, *f'*, which meshes with the wheel, *d*, on the drive-shaft, C.

Each circular saw, F, F', is mounted on a short shaft, *g*, which is supported in bearings, *h*, mounted on the rigid arm, E; this short shaft has position crosswise of the revoluble shaft, G; a spiral gear wheel, *i*, is fixed on each short shaft, *g*, and meshes with a like gear, *i'*, fixed on the shaft, G, and thus the circular saw is driven. The bearings, *h*, have a split clip, *h²*, which take about the rigid arm, E, or E', as the case may be,—and a screw, *j*, passed through the two parts comprising the split serves to clamp the clip tightly on the arm. Of course these bearings which carry the saw shaft, *g*, may be moved or shifted along the arm, E, so as to locate the saw at any desired distance from the oscillatory head, D, by simply loosening the screw, *j*.

The revoluble shaft, G, has a longitudinal groove, *k*, and the spiral gear wheel, *i'*, on this shaft has an ordinary feather or spline

(not shown) which takes into the groove; thus the gear wheel, i' , cannot turn loose on the shaft, G , but it can slide along the shaft whenever it is desired to change the adjustment or location of the circular saw.

From this description it will be understood that the head, D , arms, E, E' , revoluble shaft, C , and the two circular saws, all oscillate or tilt, the shaft, C , being the axis or center point on which they tilt; and it will also be understood that as each circular saw, F, F' , is alike fixed on the arms, E, E' , they always have the same relative position with respect to each other.

To produce the tilting of the head and other parts the trunnion or wrist, D' , is provided with a lateral arm, l , having an adjustable stop to limit its throw and thus limit the extent of the tilt of the oscillatory head, D . By reference to Figs. 1, 4 and 6, this construction will be seen. The stop, m , projects at a right angle from the arm, l , and carries a set-screw, m' ; when the lateral arm, l , is pulled down, the end of the set screw will impinge against the vertical wall, n , of the standard, A , and thereby be stopped; this vertical wall, n , is denoted in Fig. 4 by two vertical broken lines. A vertical rod, o , is attached to the lateral arm, l , by a joint, o' , and this rod will extend down to a treadle (not shown) on the floor. A spring should be connected with the treadle and floor in such manner as to keep the vertical rod, o , and lateral arm normally elevated and thereby maintain the head, D , and saw-arms, E, E' , in a tilted position, rather than a horizontal position; the normally-tilted position referred to, is indicated in Fig. 4 by an inclined broken line, p . It should be stated that one of the circular saws, F , is to make its cut in the stick downward, and the other saw, F' , is to make its cut upward. Hence when the treadle is depressed the parts will be tilted from the normally-inclined position of the line, p , to a horizontal position, thereby lowering the saw, F , down on top of the stick and raising the other saw, F' , up to the under side of the stick; thus the stick during this operation is in the plane of and in a line between the two saws and the two kerfs thus cut in the stick will be on opposite sides thereof.

Two horizontal stationary bars, I, I' , are employed to sustain the stick-holders. The "stick" here referred to is the stick or handle for the umbrella. The standard, A , has on its front a lug, q , see Fig. 4, and one bar, I , extends from this lug to the standard, B ; the top plate, b' , has an upward and forward-projecting arm, q' , which supports one end of the other bar, I' , while the opposite end is supported by the standard, B' .

Two adjustable stick-holders are employed; they are substantially alike, but one has an inverted position with respect to the other. The holder, J , has two V-shaped seats, r , one of which has above it an overlapping spring, s ; to place the umbrella stick in position on this seat preparatory to being sawed it is only

necessary to press it laterally between the overlapping spring and the seat, whereupon the stick will enter the V-shaped seat. These two seats of the holder, J , have a vertical shank, t , which enters an arm, u , and is secured therein by a set-screw, v ; the seats, r , may be adjusted vertically with respect to the arm, t , by means of the set-screw, v . The arm, u , has a socket, x , and a set-screw, y ; the socket fits on the horizontal stationary arm, I , and the set-screw, y , impinges against the said stationary arm and holds it. It will be seen that this holder, J , just described, may be shifted or moved along the stationary arm to any desired point to co-act with the circular saw, F , at whatever position it may be set. As to the other or second stick-holder, J' , the description just given of the first holder applies also to it; the only difference is that the second one is inverted or turned upside down. The same letters of reference employed in describing the parts of the first stick-holder are also employed with the addition of a prime-mark for the same parts of the second holder.

A device by which the umbrella stick may be held from movement and gaged with respect to the position of the saws to determine where the slots or kerfs shall be cut, is attached to the end of the horizontal stationary bar, I' ; this device has a pendent plate, L , provided with a set-screw, z , whereby it may be adjusted along said bar and held at any desired position, and a lateral extension, L' . When the umbrella stick, N , see Fig. 7, is placed in the stick-holders, the handle rests under the lateral extension, L' , so that both the stick and the lateral extension can be grasped by the hand of the operator and held from movement while the kerfs are being sawed.

In operating the machine, an umbrella stick is placed in the two holders, J, J' , the treadle referred to will be depressed which draws down the rod, o , and tilts the oscillatory head, and thereby brings the two revolving saws, F, F' , against the stick.

Many modifications in the form and construction of the various parts of the machine will suggest themselves; for instance, instead of having the stick-holders stationary, and the circular saws movable, that is, carried by the oscillatory head, it is obvious that the action of these parts may be reversed, that is, the stick-holders may be movable, or carried by an oscillatory head, while the circular saws remain stationary, this and other variations I intend to cover by the following claims.

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

1. In a machine for sawing kerfs in sticks for umbrella handles, the combination of the following three elements, to wit,—two circular saws which always have the same relative position with respect to each other; stick-holders to support the stick in the plane of and in

a line between the said two saws so that one saw will take on one side of the stick and the other saw on the opposite side of the stick; and means to oscillate one of the first two named elements so that the saws and stick will be brought in contact and kerfs cut in opposite sides of the stick simultaneously.

2. The combination of a revoluble shaft; two circular saws which are carried upon oscillatory arms the axis or center of which is the said revoluble shaft; means to transmit movement from the revoluble shaft to the saws; a stick-holder to support a stick to be cut in the plane of and in a line between the two saws; and means to cause said oscillatory arms to tilt so as to bring the saws in position to cut kerfs on opposite sides of the stick.

3. The combination of an oscillatory head; a shaft, G, revoluble in bearings on the oscillatory head and said shaft being the axis or center thereof; two circular saws mounted on shafts which are carried by said oscillatory head; means to transmit movement from the revoluble shaft to the saws; a stick-holder to support a stick in the plane of and in a line between the two saws; and means to cause said oscillatory head to tilt so as to bring the saws in position to cut kerfs simultaneously on opposite sides of the stick.

4. The combination of an oscillatory head; a shaft, G, revoluble in bearings on the oscillatory head; circular saws to which motion is imparted by the revoluble shaft; stick-holders to support a stick in the plane of and in a line between the saws; and a rod, O, connected with the oscillatory head and leading to a treadle whereby the said head is tilted.

5. The combination or a drive-shaft; an os-

cillatory head the axis or center of which is the said drive-shaft; a trunnion or wrist attached to the oscillatory head and provided with a lateral arm; a rod leading from said arm to a treadle; two circular saws driven by a connection from the drive-shaft; and a stick-holder to support the stick in line with said two saws.

6. The combination of an oscillatory head; a shaft, G, revoluble in bearings on the oscillatory head; circular saws to which motion is imparted by the revoluble shaft; two horizontal stationary bars, and an adjustable stick-holder on each bar in the plane of and in a line between said saws.

7. The combination of an oscillatory head having an adjustable stop to limit the extent of the tilt of the said oscillatory head; means to effect the tilting of said head; two circular saws; and a stick-holder to support the stick in the plane of and in a line between the two saws.

8. The combination of a revoluble shaft; two circular saws mounted on shafts carried upon oscillatory arms the axis of which is the said revoluble shaft; a stick holder to support a stick in the same plane and in a line between the circular saws; and means to shift the saws toward or away from each other so as to vary the distance at which the slots will be cut on the stick.

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

MOSES GANS.

Witnesses:

CHAS. B. MANN,
C. C. HINES.