

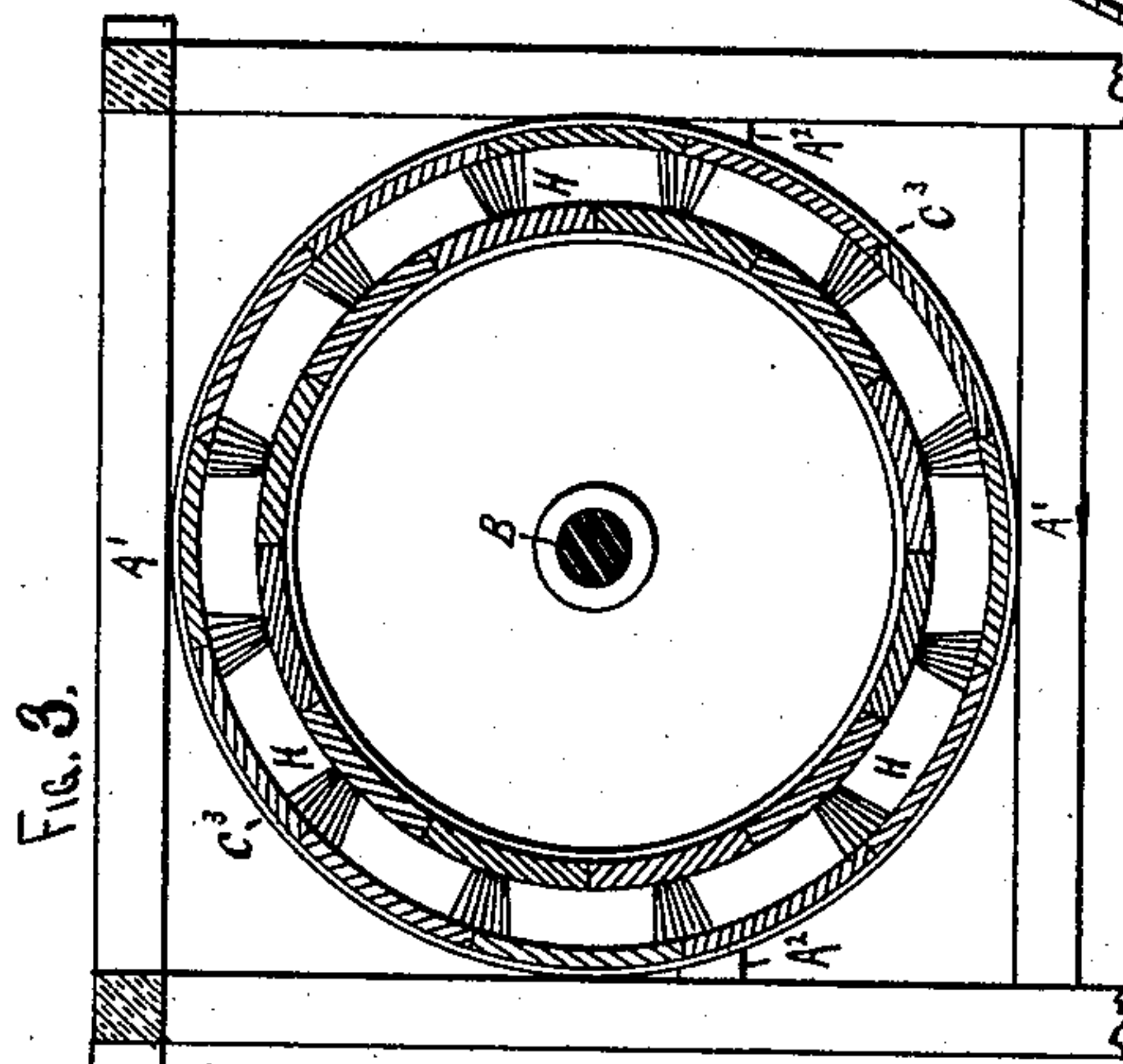
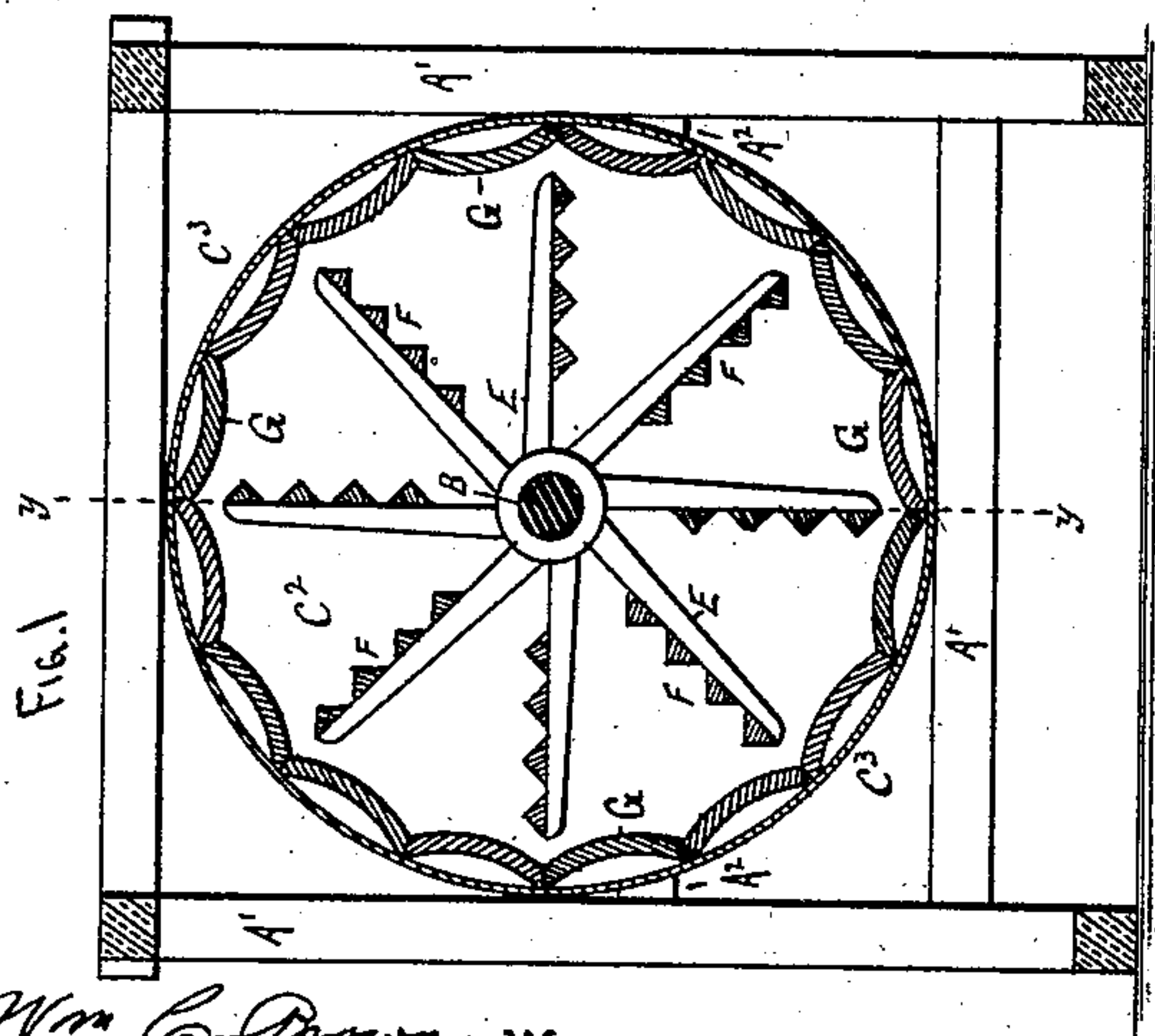
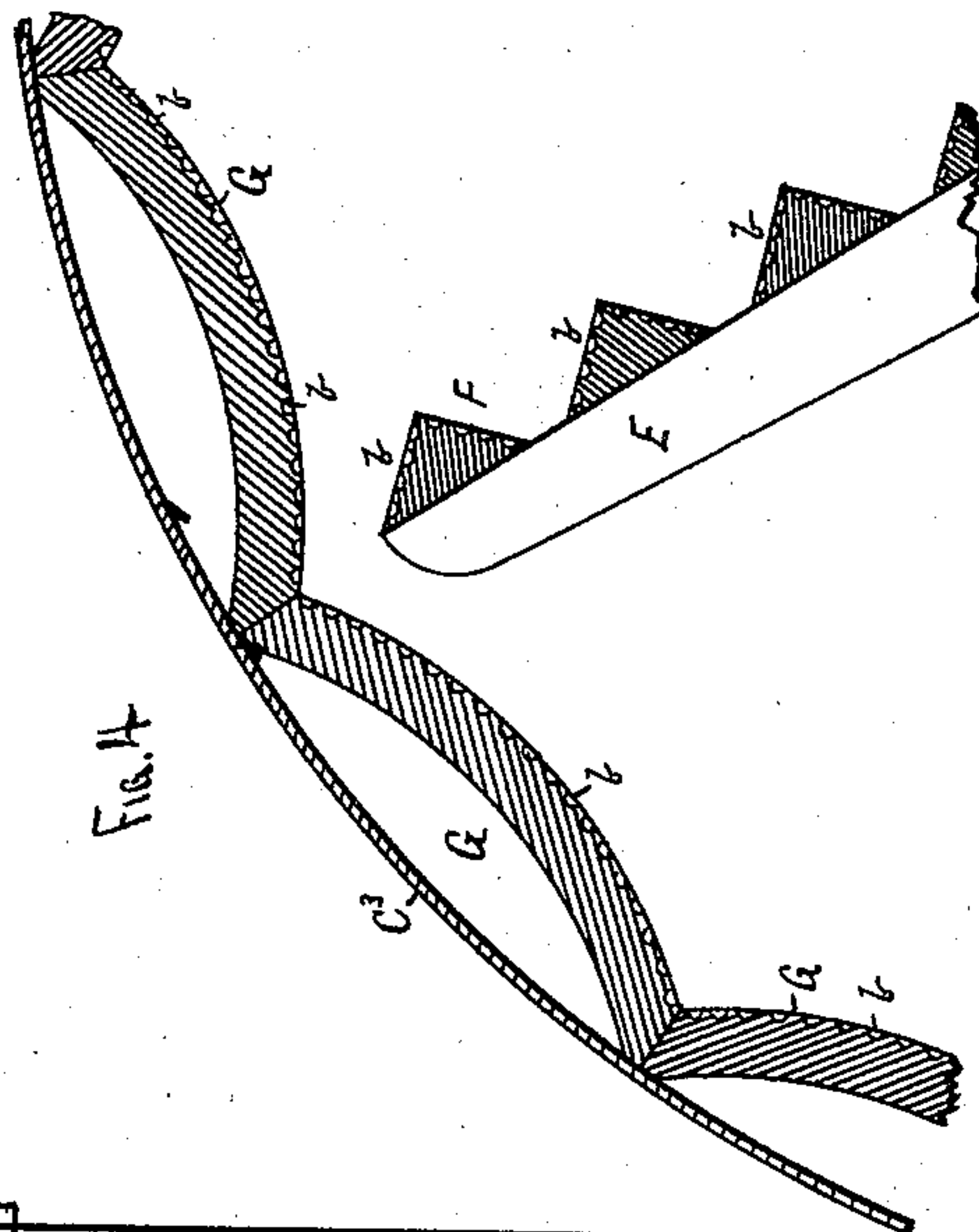
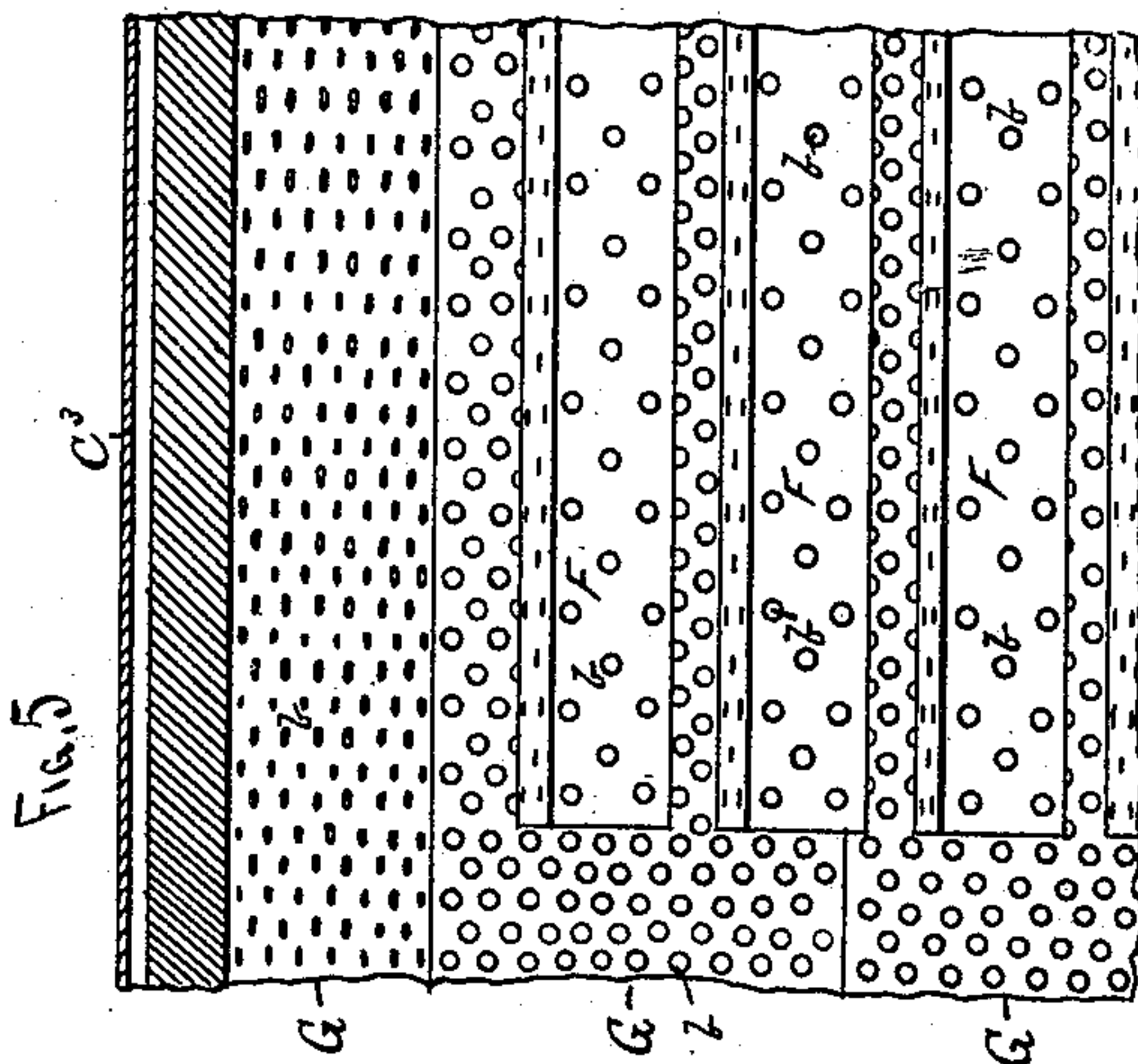
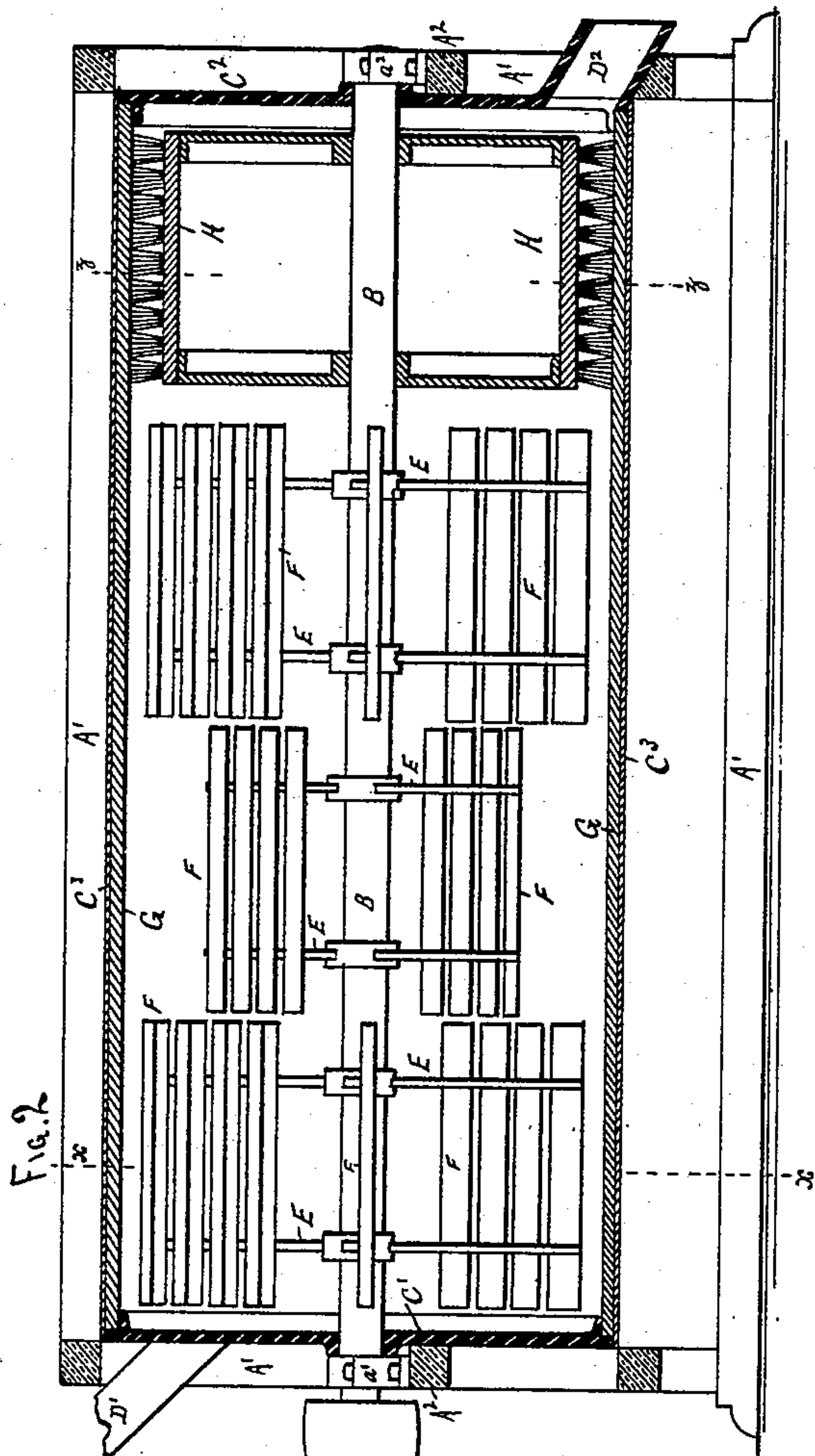
(No Model.)

F. DORSEY.

WHEAT SCOURING AND CLEANING MACHINE.

No. 322,700.

Patented July 21, 1885.



Wm. C. Brown
H. S. Webster. WITNESSES.

Frederick Dorsey,
INVENTOR, BY
Charles H. Woodward Atty.

UNITED STATES PATENT OFFICE.

FREDERICK DORSEY, OF HAGERSTOWN, MARYLAND.

WHEAT SCOURING AND CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 322,700, dated July 21, 1885.

Application filed April 1, 1885. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK DORSEY, a citizen of the United States, and a resident of Hagerstown, in the county of Washington and State of Maryland, have invented certain new and useful Improvements in Wheat Scouring and Cleaning Machines, of which the following is a specification.

Figure 1 is a cross sectional view on the line xx of Fig. 2. Fig. 2 is a longitudinal section on the line yy of Fig. 1. Fig. 3 is a cross-sectional view on the line zz of Fig. 2. Figs. 4 and 5 are enlarged sectional details of portions of the cylinder and beaters, illustrating more fully their construction.

This invention relates to machines for treating wheat, preparatory to its reduction into flour, to remove the fuzzy matter from the small ends of the kernels and the germ from the larger or germ ends, and also to remove any adhering foreign matter; and it consists in the construction and combinations of parts, as hereinafter described and claimed.

In the drawings I have shown the most approved construction A' being the frame, of any desired form, and arranged to support a horizontal shaft, B , in boxes or bearings $a' a''$ on the cross-timbers A^2 on the ends of the frame A' .

$C^1 C^2$ are disks surrounding the shaft B near its ends, and forming the ends of a sheet-metal cylinder, C^3 . This cylinder is stationary, and provided with a feed-spout, D' , leading through the head-disk, C^1 , and with a discharge chute, D^2 , leading from the tail-disk C^2 , as shown.

Attached to the shaft B inside the cylinder C^3 , at suitable intervals, are a series of "spiders" or beaters supporting arms E , across which angular beater-ribs F are attached, as shown. These beater-ribs may be made the whole length of the cylinder C^3 , or broken up into alternating sections of short ribs, as shown in the drawings. I prefer the latter arrangement, as the beaters thereby act more thoroughly upon the kernels when thus constructed. The beater-strips are formed in about equilateral triangles in cross-section, and arranged with the apex of each angle pointing in the direction in which the strips are moving, as shown. The strips F are secured to the arms E in substantially parallel lines, and with small spaces between them,

and are formed of cast-iron, with the surfaces which act upon the grain "chilled," so as to be hard enough to resist wear.

The interior of the cylinder C^3 is lined with curved plates G , of cast-iron having chilled inner or working faces. The plates G will be of suitable size for convenient handling and casting, usually about six inches wide and with a curve of about seven inches radius for a machine with a twenty-inch interior diameter of cylinder; but the sizes of the plates and the radii of the curves may be varied to suit circumstances and the size of the machine.

The beater-strips will be about one and one-half ($1\frac{1}{2}$) inch wide in a twenty-inch machine, but may be enlarged or reduced as found necessary.

The working-surfaces of both the plates G and the beaters F may be provided with indentations b , as shown in Figs. 4 and 5. These indentations will be quite shallow, just deep enough to receive the ends of kernels of wheat, so that as the beaters catch the wheat and throw it against the plates G the ends of the kernels will catch in the indentations in the beaters, and the grain will be thrown against the plates G , striking the latter endwise and thus rubbing the fuzzy particles from the kernels if the small end strikes first, and breaking the germ loose from the large end if the large end strikes first. Again, the beater-strips striking the kernels will remove the germ or fuzzy matter according to which end strikes first, and then the fuzzy matter or germ remaining will be removed when the kernels are thrown against the plates G .

The grain is fed into the cylinder through the spout D' , and, being caught by the rapidly-revolving beaters F , is thrown against the plates G and gradually discharged from the spout D^2 .

The beater-ribs F may be set at a slight angle to the shaft B , so as to give them a "screw" form to cause them to act as a conveyer at the same time that they act upon the wheat, and thus carry the wheat gradually through the cylinder. A very slight inclination of the beaters will be sufficient to accomplish this result, and the speed with which the grain is to be conveyed through the machine may be regulated by the extent of this inclination, as will be readily understood.

Some qualities of grain will require to be treated for a longer period of time than others, and this may be easily accomplished by adjusting the beaters. I have not shown any means for thus adjusting the beaters, but any approved and well-known means may be used.

The beater-strips F will be attached to the arms E by bolts, rivets, clamps, screws, or other suitable means that will enable them to be easily removed or adjusted.

The spaces between the beater-strips will not be large enough to allow the grain to pass, but will be ample to permit the passage of the smaller particles of fuzzy and other matter which is rubbed from the grain.

I attain a great advantage in the form and arrangement of the beater-ribs, as the grain is caught and thrown from side to side between the ribs, and by the peculiar form of the kernels this action turns each one of them endwise and throws it in that position against the plates G, and also from the angular face of one beater to the angular face of the adjoining one. Thus at some stage of its progress through the machine each end of each individual kernel will come in contact with either the beaters F or the plates G, and be relieved of the fuzzy matter and the germ, as well as all adhering foreign matter. The indentations b also add materially to the successful co-operation of the parts, as they increase the tendency of the endwise arrangement of the kernels.

After the grain has been treated by the beaters F and the plates G it will generally be found advantageous to subject it for a brief period to the action of a brushing or rubbing machine. This brushing is accomplished in the same cylinder, C³, as shown, by increasing the length of the cylinder, and arranging the

brushes H on the same shaft, B, and forming the interior of that part of the cylinder opposite the brushes with a smooth surface; or the brushing may be accomplished in a separate machine.

I do not wish to be confined to the use of chilled cast-iron for the working-surfaces of the beaters F or plates G, as I am aware that ordinary cast-iron, or iron or wood coated with emery, or plates of prepared emery, such as emery grinding-wheels are made of, may be used to advantage.

Having thus described my invention, what I claim as new is—

1. A scouring-cylinder and a rotating shaft mounted within the same, in combination with sets of radial arms secured to said shaft, and series of parallel beater-ribs secured to each set of radial arms, said ribs being parallel with said rotating shaft, each of said ribs being triangular in cross-section and set with its apex pointing in the direction of the rotation of the shaft, substantially as set forth.

2. A scouring-cylinder having its interior surface made up of convex strips having abrasive surfaces, in combination with beater-ribs arranged to rotate within said cylinder, each of said ribs being triangular in cross-section, with its apex set pointing in the direction of the rotation of the ribs, and having its working or forward surfaces abraded, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FREDERICK DORSEY.

Witnesses:

C. N. WOODWARD,
A. W. DAYNES.