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PATENTED DEC. 17, 1907.

J. A. WALDBURGER.
FEEDING MECHANISM FOR GAS PRODUCERS, FURNACES, &c.
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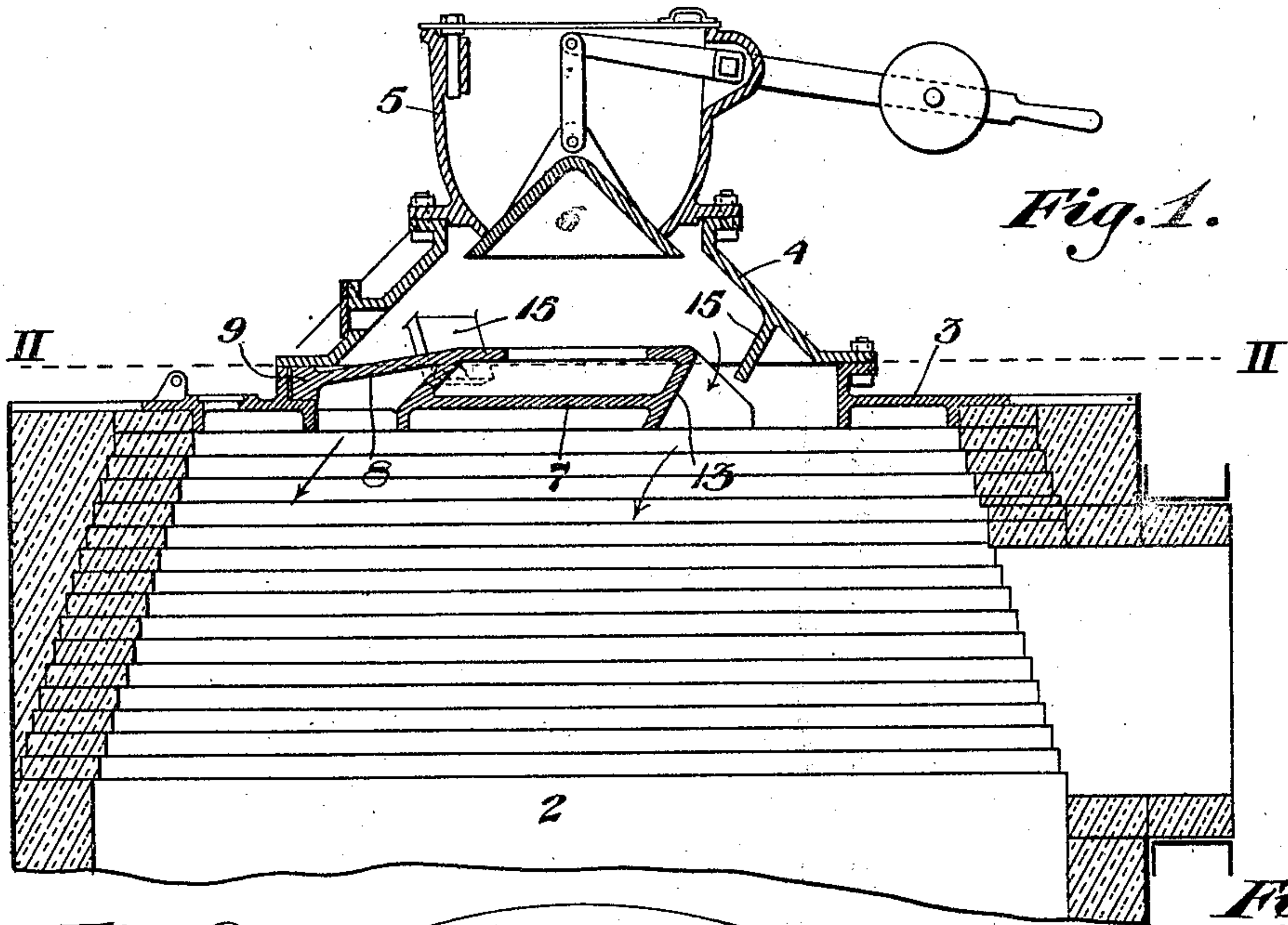


Fig. 2.

Fig. 3.

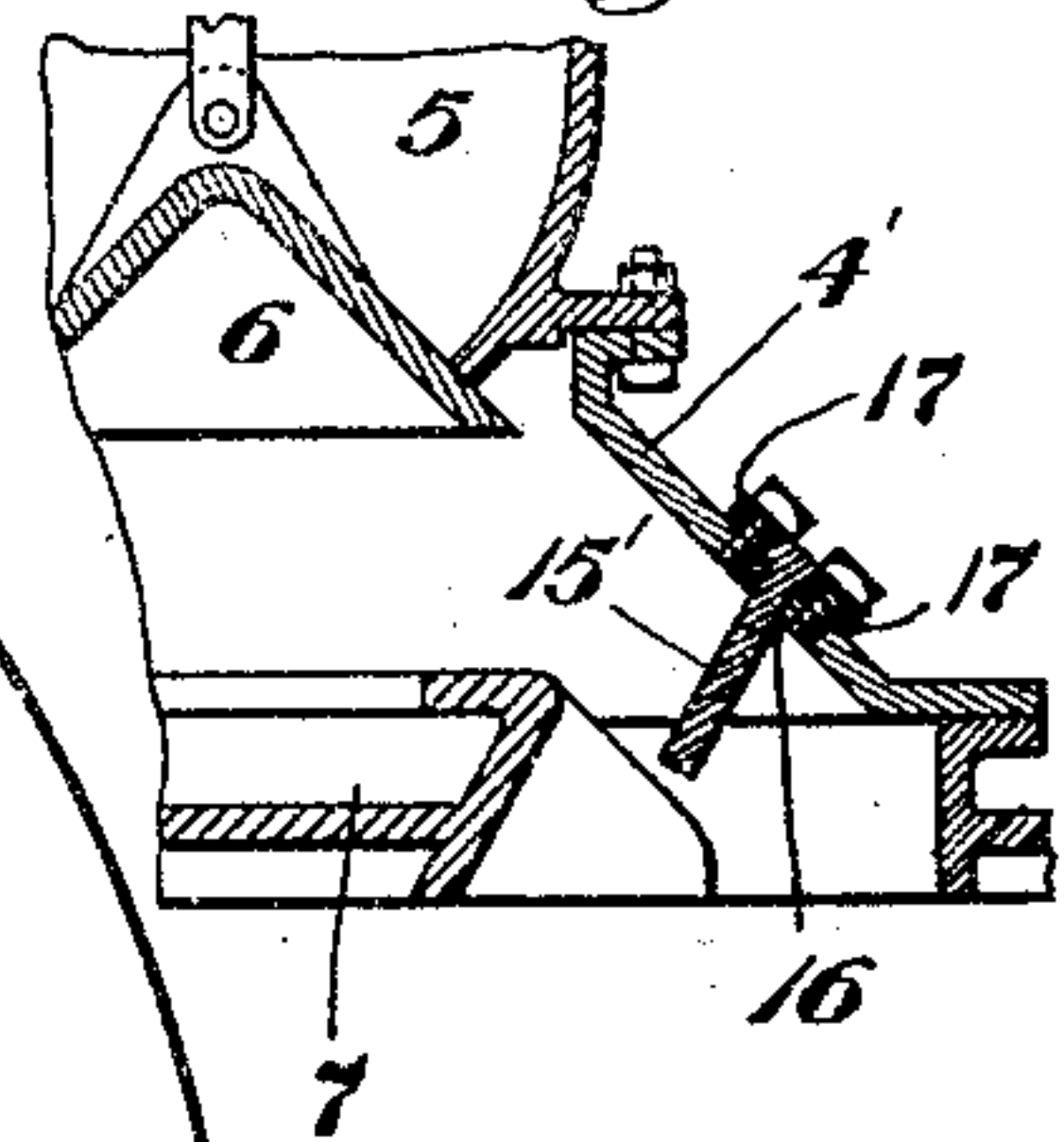
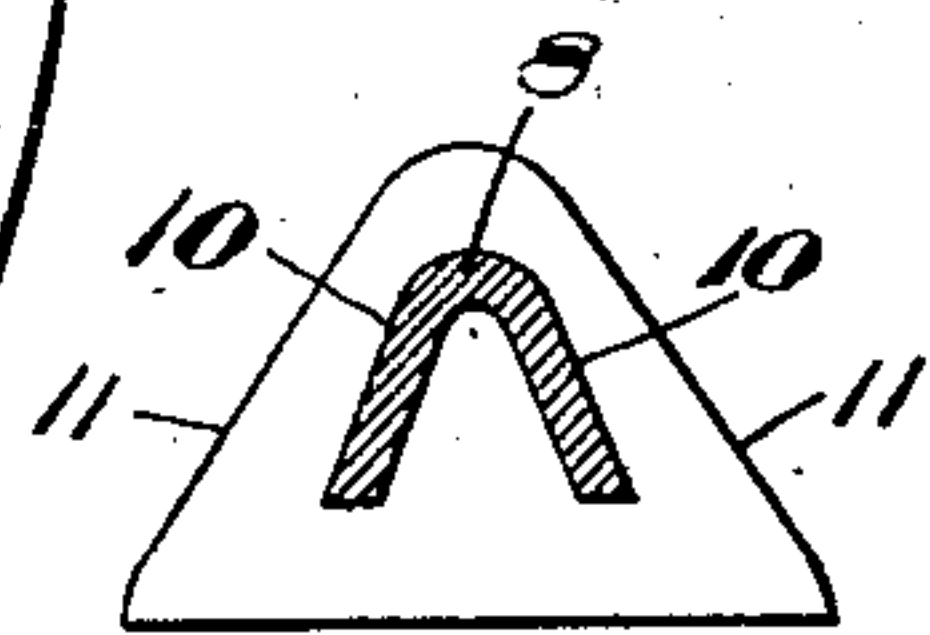


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN A. WALDBURGER, OF McKEESPORT, PENNSYLVANIA, ASSIGNOR TO FORTER MILLER ENGINEERING CO., OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

FEEDING MECHANISM FOR GAS PRODUCERS, FURNACES, &c.

No. 874,352.

Specification of Letters Patent.

Patented Dec. 17, 1907.

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To all whom it may concern:

Be it known that I, JOHN A. WALDBURGER, a citizen of the United States, residing at McKeesport, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Feeding Mechanism for Gas Producers, Furnaces, &c., of which the following is a specification, reference being had therein to the accompanying drawing.

My invention refers to improvements in the class of feeding mechanism for gas producers, furnaces, or similar structures wherein it is desirable to charge quantities of fuel or other material into the furnace chamber from time to time, the objects in view being to provide means for distributing the material evenly over the surface of the charge.

With the ordinary bell and hopper construction the charge is distributed peripherally from the edge of the bell and lodges in the form of an annular ridge immediately within the walls of the furnace, leaving an inverted conical cavity in the center.

My invention has in view to correct such an unequal distribution and to provide means which will deflect a portion of the charge inwardly toward the center.

Referring to the drawings wherein the invention is illustrated, Figure 1. is a vertical sectional view of the upper portion of a gas producer or other similar structure indicated by the line I. I. of Fig. 2 taken on varying planes. Fig. 2. is a plan view of Fig. 1, the hopper and bell construction having been removed on the line II. II. Fig. 3. is a partial sectional detail view similar to Fig. 1 showing a modified construction of deflector. Fig. 4. is an enlarged detail sectional view taken on the line IV. IV. of Fig. 2, looking in the direction of the arrow.

In the drawings, 2 represents the producer or furnace structure which is usually cylindrical in form and is closed at its upper portion with a frame or coping plate 3, upon the upper portion of which is mounted the hopper base 4 and hopper 5 in which is located the usual lowering bell 6 with any suitable operating mechanism. The hopper base 4 flares outwardly below the hopper 5 and its bell at substantially the same angle of direction as that of the bell 6 providing proper clearance for the falling material and is pro-

vided with suitable deflecting or interfering abutments as shall be hereinafter described. 55

Upon the base plate 3 is set the transversely arranged frame 7 supported in base 3 by a series of arms 8, the terminals 9 of which are seated in suitable recesses or sockets around the inner peripheral portion of said base. The central portion of said frame 7 is substantially circular in construction, the arms 8 extending outwardly therefrom and being of ridge form having downwardly sloping sides 10, 10, facilitating the passage of the material while the bases of said arms are widened out as indicated at 11 providing sloping shelves which extend downwardly and outwardly in radial directions so as to deflect a portion of the material outwardly toward the outer edge of the interior of the producer, and also away from the ridges 8 at each side. Between each of said arms 8 and their widened bases I provide reversed concavities 12 which are bounded by walls 13, 14, of the frame, the walls 13 sloping inwardly as shown in Fig. 1 while walls 14 slope downwardly and away from each other, thereby providing an open clearance space through which portions of the material may freely pass downwardly and inwardly toward the center of the charge. 70

Ordinarily all of the material from the bell will fall either downwardly or outwardly owing to the momentum induced by the sloping sides of the bell, and for the purpose of counteracting such tendency and deflecting portions of the charge inwardly toward and through spaces 12, I have provided the deflecting abutments 15 extending downwardly and inwardly from the inside of hopper base 4 at positions opposite said openings 12. By this construction and arrangement it will be readily seen that the desired object is accomplished and the material will be distributed in the manner indicated by the arrows. As shown in Fig. 1 the abutments 15 are made integral with the hopper base 4, but for the purpose of renewing said abutments from time to time they may be made separable as indicated at 15' Fig. 3, inserted through suitably located slot-like openings 16 in hopper base 4', to which the abutments are secured by bolts passing through integral flanges 17. 90

The operation of the device will be readily 105

understood from the foregoing description, and it will be found to greatly contribute to the even continuous operation of the furnace or producer while providing facility for renewal of the parts.

It will be understood that the number of arms 8 and intervening spaces 12 and the corresponding abutments 15 may be changed or varied owing to the conditions of size or design, also that other changes or variations may be made by the skilled mechanic within the scope of the following claims.

What I claim is:

1. In combination with a furnace or producer, a transversely arranged distributor having outwardly and downwardly disposed deflecting faces and intermittently arranged openings adapted to permit portions of the charge to fall outwardly and inwardly respectively, means for fixedly supporting said distributor, and inwardly disposed deflecting abutments located outwardly beyond and opposite said openings, substantially as set forth.

2. In a furnace or producer, the combination with an upper charge-receiving and lowering structure, of a transverse frame having radially arranged arms and intervening clearance openings, with independent deflecting abutments located outwardly opposite said openings, substantially as set forth.

3. In a furnace or producer, the combination with an upper valve-controlled holder, of a lower transverse distributor having radially arranged arms and inclined faces with intervening inwardly directed clearance openings, and deflecting abutments located in proper relation to said openings for directing portions of the charge therethrough, substantially as set forth.

4. In a furnace or producer, the combination with an upper valve-controlled holder, of a lower transverse distributor having radially arranged arms and inclined faces with intervening inwardly directed clearance openings, and an outer shell having downwardly and inwardly deflected abutments, substantially as set forth.

5. In a furnace or producer, the combination with an upper valve-controlled holder, of a lower transverse distributor having radially arranged arms and inclined faces with intervening inwardly directed clearance openings, and an outer shell having separable downwardly and inwardly deflected abutments, substantially as set forth.

6. In combination with a coping shell and a superimposed hopper and bell, a transverse distributor having inclined faces arranged to direct portions of the charge outwardly and intervening openings arranged to permit portions of the charge to fall inwardly, and deflecting abutments projecting inwardly towards said openings, substantially as set forth.

7. In combination with a furnace or producer, a distributor located transversely of the charge-receiving opening thereof having inclined faces arranged to direct portions of the charge outwardly and intervening openings arranged to permit portions of the charge to fall inwardly, and deflecting abutments projecting inwardly towards said openings, substantially as set forth.

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

JOHN A. WALDBURGER.

Witnesses:

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