

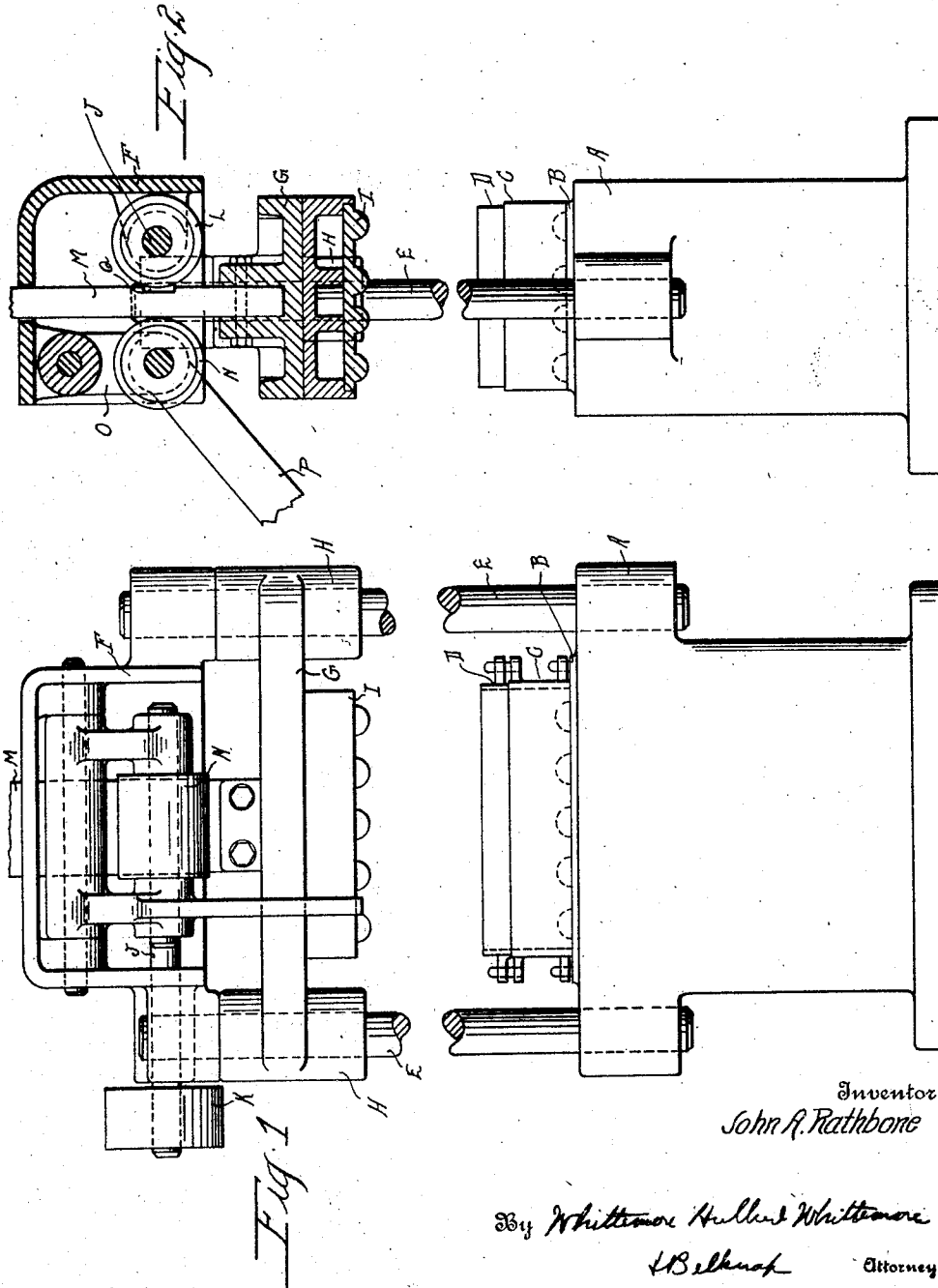
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MOLDING MACHINE

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MOLDING MACHINE.

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The invention relates to molding machines of that type in which complementary patterns respectively above and below the mold flask simultaneously operate to form corresponding prints. It has been found difficult to obtain proper definition in the print formed by the upper pattern without a relative movement of considerable velocity and it is also necessary to impart a final compression with considerable force. The present invention is designed to accomplish such results without the use of compressed air and to this end the invention consists in the peculiar construction in which the velocity is obtained by acceleration of gravity and the final compression by the mass of the moving member.

In the drawings;

Figure 1 is a sectional front elevation of a molding machine of my improved construction;

Figure 2 is a cross section therethrough.

A is the bed for supporting the lower pattern B, the mold flask C and sand frame D. E are posts or guides rising from the bed A and supporting at a considerable distance above the same a cross head F. Beneath this cross head F is a second cross head G which is provided with bearings H slidably engaging the guides E. I is the upper pattern mounted on the cross head G and held in proper registration with the lower pattern B. The arrangement is such that when the cross head G is released it will drop by gravity and in so doing will acquire sufficient velocity to cause the pattern I to form a sharp imprint in the sand. Also the mass of the cross head G and pattern carried thereby is calculated that after the first impact there will be a steady pressure sufficient to obtain the requisite density in the sand body.

For operating the machine means must be provided for raising the cross head H and releasing the same. This may be accomplished in various ways but as shown J is a revoluble shaft mounted in bearings in the cross head F and driven by a pulley K at one end thereof. L is a friction pulley mounted on the shaft J centrally between

the guides E and adapted to engage with an upwardly extending shank M on the cross head G. N is a presser roll for holding the shank M in frictional contact with the pulley L, said roll being preferably supported on the swinging link O and having the laterally extending operating arm P which also serves to press the roll against the shank. Thus, the revolution of the shaft J and pulley L will frictionally drive the shank M in an upward direction lifting with it the cross head G and pattern I until further movement is prevented by the registration of a notch or cut away portion Q in the shank with the friction pulley. The cross head will then be retained in lifted position until pressure of the roll N is withdrawn by the lifting of the handle P. This will at once release the cross head permitting it to fall and to accelerate as before described.

It is obvious that various other mechanisms may be employed for lifting the cross head G but the essential feature is that the distance through which the cross head is permitted to fall and its mass or weight should be so selected as to produce, first the required velocity for securing good definition in the sand, and second, the required force for the final squeeze to obtain proper density.

What I claim as my invention is:

1. In a molding machine, the combination with a mold flask and a superposed pattern, of means for imparting a predetermined relative velocity to said members through gravity acceleration.

2. In a molding machine, the combination with a bed, a mold flask supported thereon and a superposed pattern, of means for guiding said pattern permitting of the lifting of the same a predetermined distance above said mold flask and then dropping whereby a predetermined velocity is acquired by gravity acceleration.

3. In a molding machine, the combination with a bed, a mold flask supported thereon and a superposed pattern, means for guiding said pattern permitting of the lifting of the same a predetermined distance above said mold flask and means connected

to said pattern and movable therewith for obtaining a predetermined mass.

4. In a molding machine, the combination with a bed and a mold flask supported thereon, of a superposed pattern, means for guiding said pattern in a vertical movement away and towards said flask permitting of

dropping the same from a predetermined height sufficient to obtain a predetermined gravity acceleration and means connected with said pattern for imparting a predetermined mass to the falling body. 10

In testimony whereof I affix my signature.
JOHN A. RATHBONE.