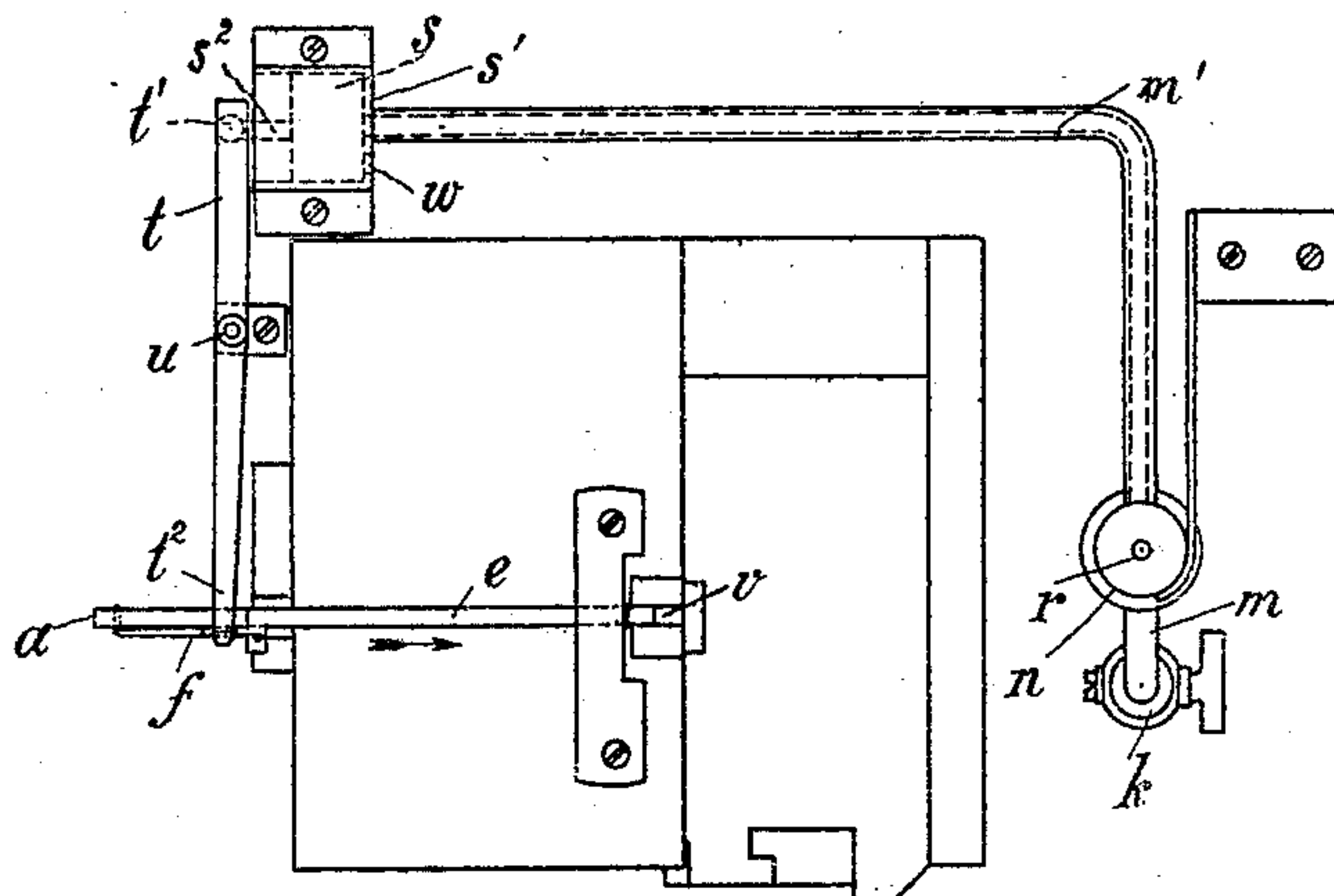


DEVICE FOR CASTING SHORT QUADS IN TYPE CASTING MACHINES.

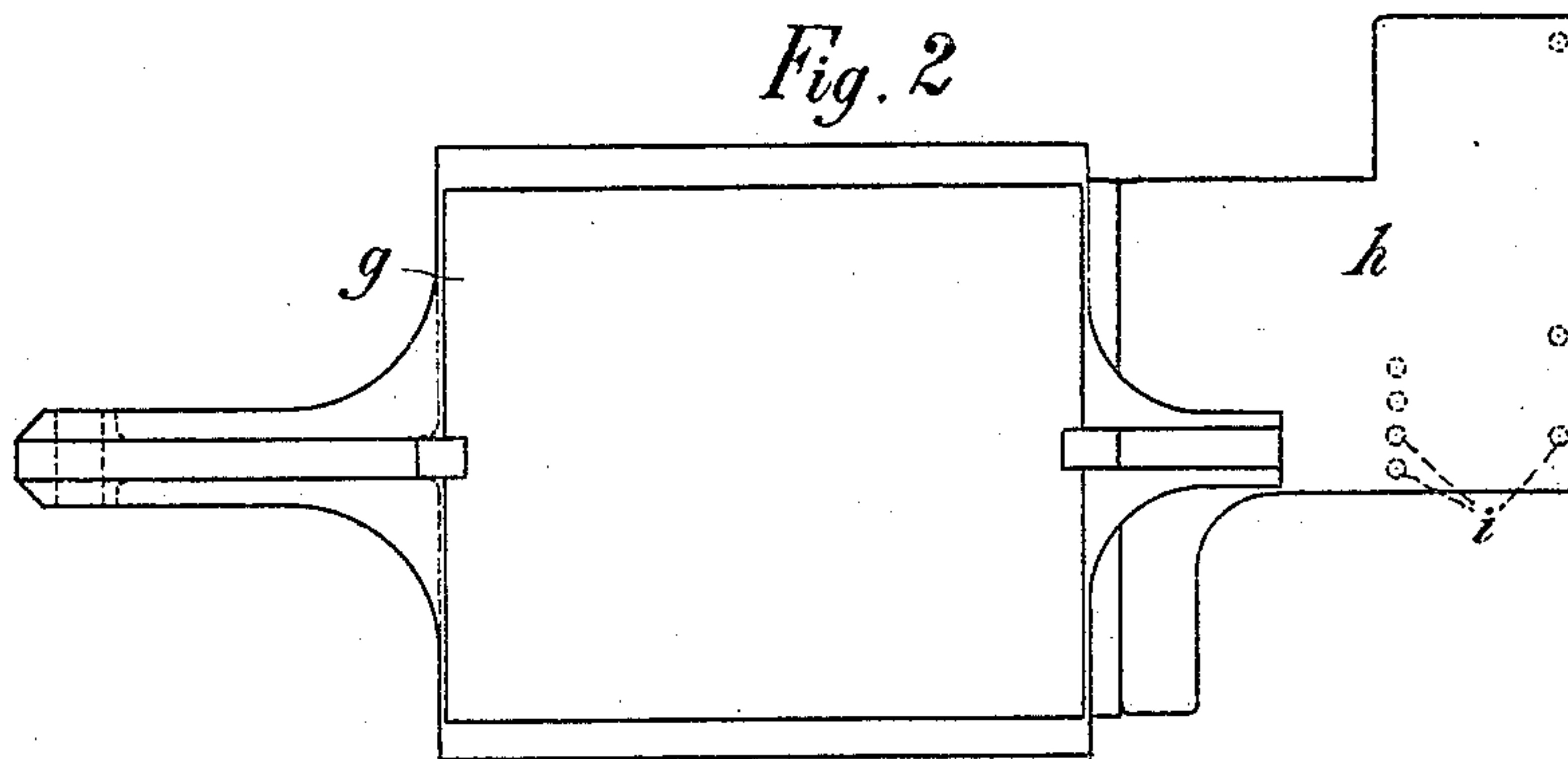
**929,862.**

Patented Aug. 3, 1909.

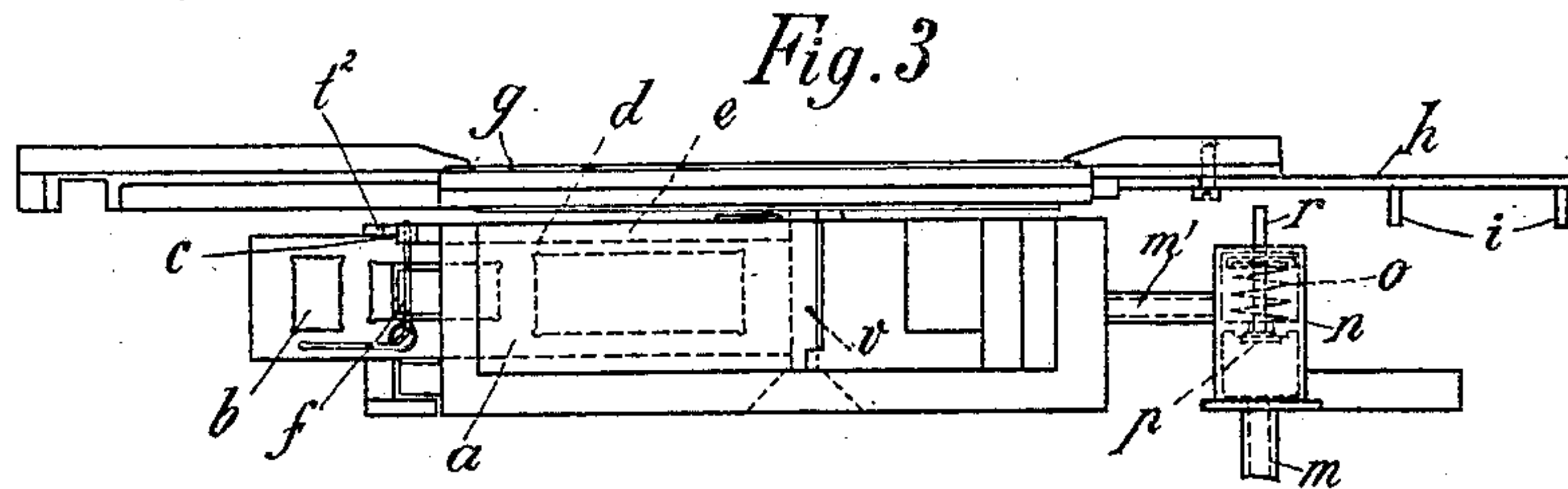
*Fig. 1*



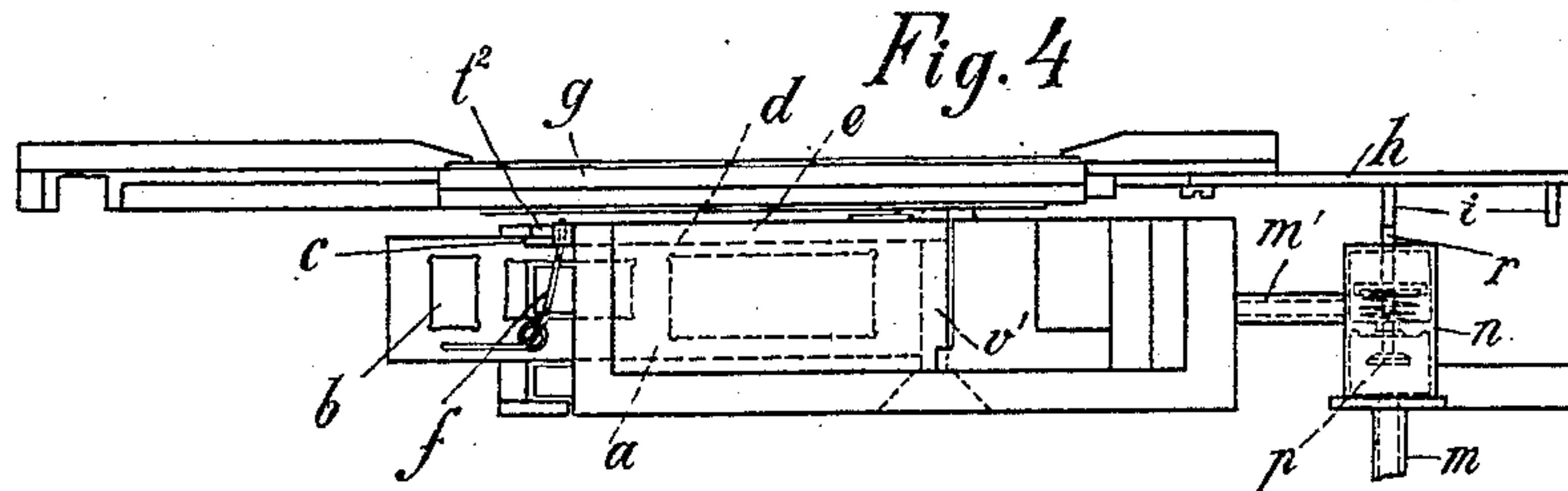
*Fig. 2*



*Fig. 3*



*Fig. 4*



WITNESSES:

W. H. Berrigan.  
John R. Stouing.

INVENTOR,  
JOSEF KUKLA,  
by *Frank J. O'Donnell*  
Attorney.



# UNITED STATES PATENT OFFICE.

JOSEF KUKLA, OF BRÜNN, AUSTRIA-HUNGARY.

## DEVICE FOR CASTING SHORT QUADS IN TYPE-CASTING MACHINES.

No. 929,862.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed December 22, 1908. Serial No. 468,780.

*To all whom it may concern:*

Be it known that I, JOSEF KUKLA, subject of the Austro-Hungarian Empire, residing at Brünn, Austria-Hungary, have invented a new and useful Improvement in Devices for Casting Short Quads in Type-Casting Machines; and I do hereby declare the following to be a full, clear, and exact description of the same.

This invention relates to type-casting, and especially to combined type-casting and composing machines in which each type and each quad, or space lead, is cast separately by the employment of matrices, and subsequently assembled in "justified" lines. These machines have the drawback that the quads cast therein are of the same height as the type, and, as a consequence, the quads are printed along with the characters of the lines, that is, so-called blacks or picks originate.

The subject matter of this invention is a device on or improvement of the casting machine referred to, by which space leads or quads of the desired shortness—having the height usual for hand composition—are cast.

In the drawing, Figure 1 shows, partially, a plan view of the casting machine; Fig. 2 is a top view of the matrix frame employed, and Figs. 3 and 4 are front views of the casting machine and of the matrix frame, in two different positions of the casting chamber and of the matrix frame.

The part *a*, forming with its front wall the one side wall of the casting chamber, is arranged to be shifted to and fro in the usual manner by a lever (not shown) and engaging into its hole *b*, has, on its upper side, a step, *c*, next to which lies, on a shoulder part, *d*, a sliding piece (*e*) which is pressed on the step *c* by means of a pressure spring, *f*, fixed to the core *a* and catching on the sliding piece (*e*). The recited arrangement and connection of parts result in practical advantages, as hereinafter pointed out. On the usual matrix frame, *g*, is fixed a plate (*h*) and on the lower side of the latter are inserted or carried, at corresponding or selected places or points a number of projections or pins *i*.

From a compressed air pipe *k*, serving, in the well-known manner, for the actuation of the matrix frame, *g*, branches off a tube, *m*, which runs into a valve casing, *n*. In the latter casing is inserted a valve, *p*, under the pressure of a spring *o*, which valve possesses

a feeler *r* passing through the lid of the valve casing, *n*. From said valve casing, the pipe *m* leads to a casing, *s'*, having therein a piston, *s*, which carries a pin, *s'*, projecting from the casing. In the path of the pin lies the downwardly-turned end, *t'*, of a lever *t*, pivoted on the bolt *u* fixed on the casting mold, and whose other end, *t''*, engages the free end of the sliding piece *e*.

The aforesaid parts are so proportioned and arranged that upon presentation of a letter space to the casting-chamber, the latter will retain its usual length—that of a type—while, upon presentation of a quad space to the casting-chamber, the latter will be shortened, and quads shorter than type will be cast.

Fig. 3 shows the described device in the first-mentioned position, when a letter type is to be cast. The sliding piece *e*, is pressed by the piece *f*, on the shoulder or step *c*, and the casting space is formed of the space *v* and the matrix covering the same. When, however, a space lead or quad is to be cast, the matrix frame *g* assumes such a position that one of the pins *i* of the plate *h* stands exactly over the feeler *r*, and, as the frame *g* sets upon the casting-mold, the valve *p* is opened and compressed air flows from the pipe *m*, into the valve casing *n*, into the pipe *m'*, whereby the piston *s* is moved outwardly and the lever *t* is shifted in such a manner that its free end, *t''*, displaces the sliding piece *e* in the direction of the arrow in Fig. 1, so that the casting space is covered by the end of the sliding piece *e*. As a result, a corresponding lower or smaller casting space *v'* is formed and a short quad or space lead is cast (see Fig. 4).

As soon as, during the subsequent upward movement of the matrix frame *g*, the pin *l* leaves the feeler *r*, the valve *p* closes, and the compressed air ceases to act upon the piston *s*; then the spring *f* can press the sliding piece *e* on the step *c*. The core *a*, and also the lever *t* and the piston *s*, are then actuated further in the well-known manner by a lever (not shown) engaging into the hole *b*. During the return movement of the piston, *s*, compressed air, located behind the same, escapes through a hole *w* provided in the bottom of the casing.

I claim:

1. In a casting machine, a casting mold, a movable piece adapted to shorten the casting space in said mold, a lever for operating

said piece, a compressed air conduit, a branch conduit therefrom, a piston for operating the lever aforesaid and controlled by the air in the branch conduit, a valve casing inserted  
5 in the latter conduit and a valve in said casing and controlling the supply of air to said branch conduit.

2. In a casting machine, a piston, a casting mold, a movable piece adapted to shorten the  
10 casting space in said mold, a conduit for supplying compressed air to control the piston, a valve for controlling the supply of air to

said conduit and having a feeler for operating the valve, in combination with a matrix frame provided with a plate having 15 pins for operating the feeler.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEF KUKLA.

Witnesses:

MORITZ SCHMOLSY,  
LEOPOLD DRDÁCKÝ.