

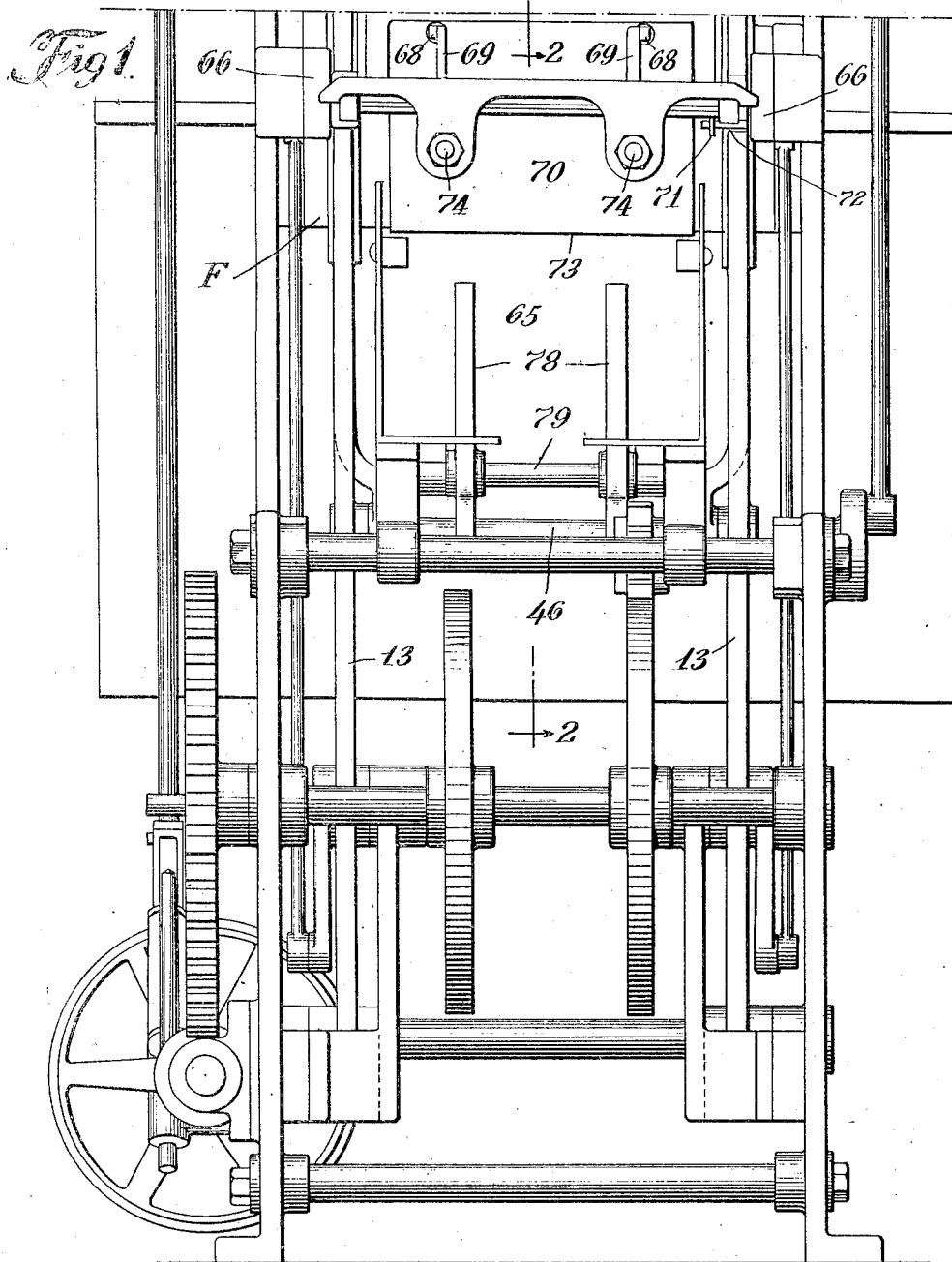
Aug. 31, 1926.

C. E. HOPKINS

1,597,793

CASTING FINISHING MECHANISM

Original Filed March 2, 1922 4 Sheets-Sheet 1



Charles E. Hopkins, Deceased
Inventor

By the Plainfield Trust Co. Adm.

By its Attorney

W. H. Becken

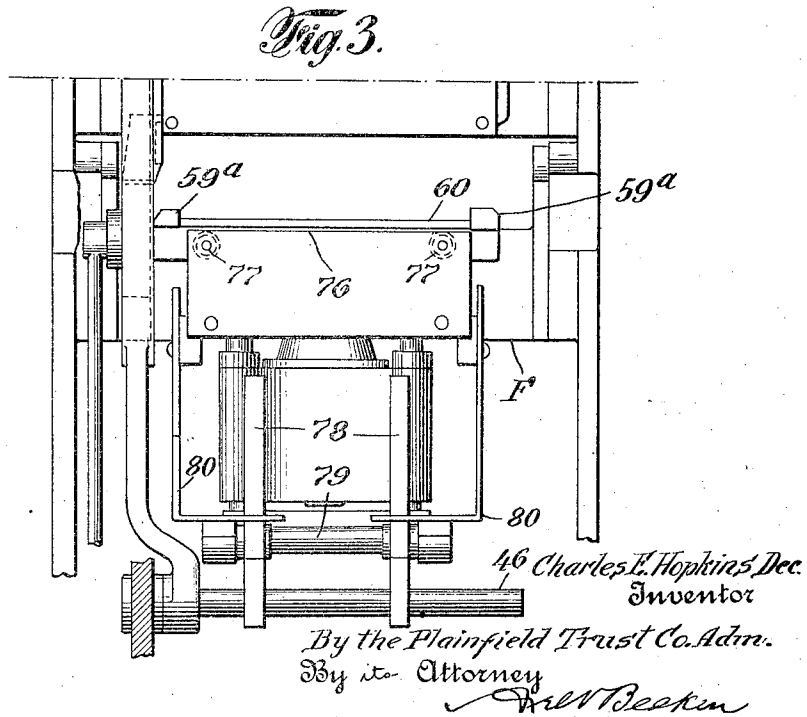
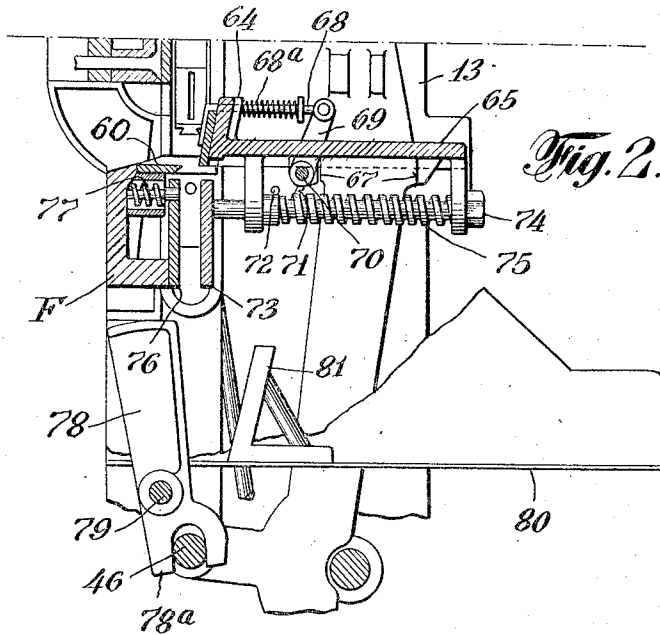
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CASTING FINISHING MECHANISM

Original Filed March 2, 1922 4 Sheets-Sheet 2



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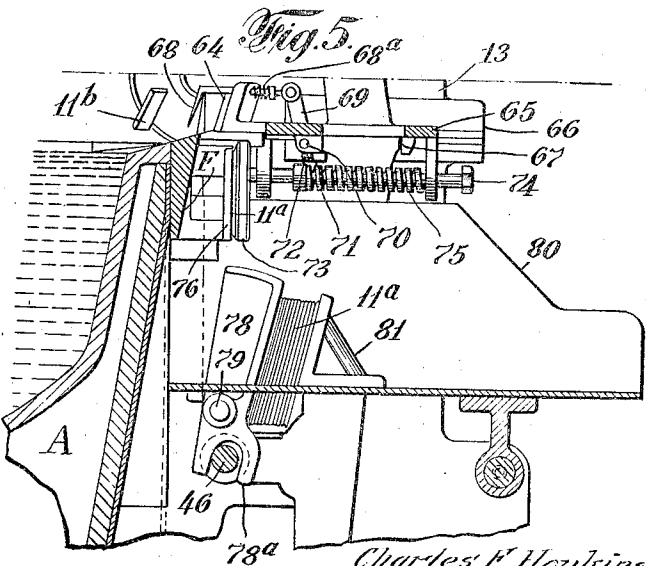
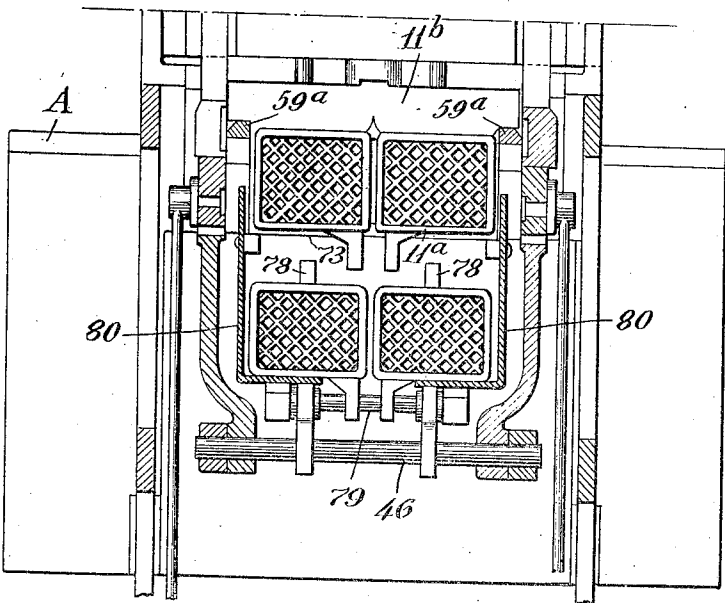
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Fig. 4.



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Original Filed March 2, 1922 4 Sheets-Sheet 4

Fig. 6.

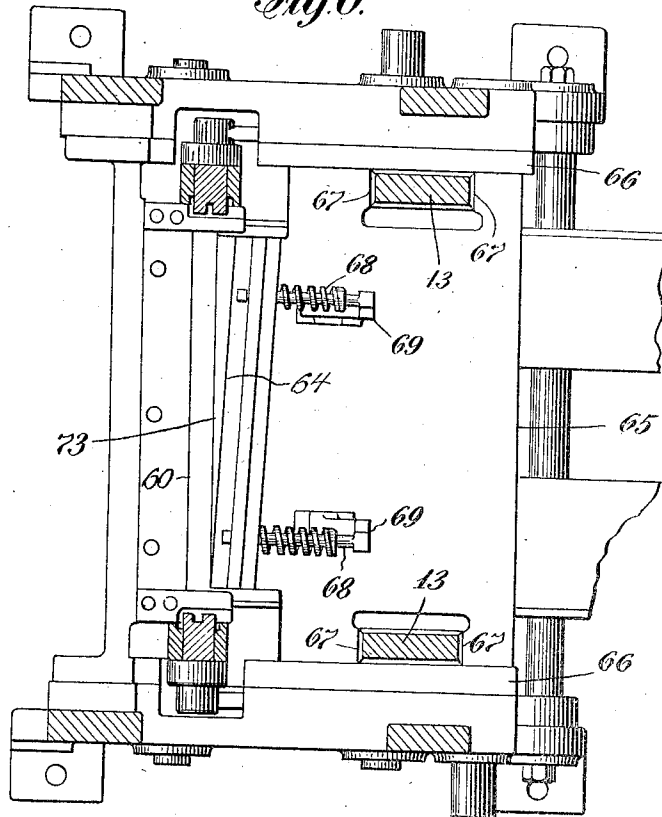
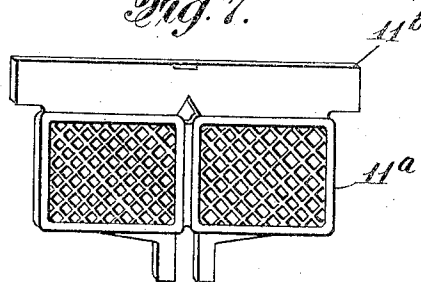


Fig. 7.



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Patented Aug. 31, 1926.

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UNITED STATES PATENT OFFICE.

CHARLES E. HOPKINS, DECEASED, LATE OF PLAINFIELD, NEW JERSEY; BY THE PLAINFIELD TRUST COMPANY, ADMINISTRATOR, OF PLAINFIELD, NEW JERSEY.

CASTING-FINISHING MECHANISM.

Original application filed March 2, 1922, Serial No. 540,481. Divided and this application filed November 17, 1924. Serial No. 750,241.

This invention relates to finishing devices for castings, and has for its main object and feature to finish a casting of the character that may be produced by the machine shown in application Ser. No. 540,481, filed March 2, 1922, and the present application is a division of said application Ser. No. 540,481.

In the accompanying drawings the invention is disclosed in one concrete and preferred form in which:

Fig. 1 is a front elevation of a finishing device embodying one form of the invention.

Fig. 2 is a vertical section of the parts shown in Fig. 1, substantially midway of the device on the plane of line 2—2 of Fig. 1.

Fig. 3 is a view similar to Fig. 1 but with one of the clamping members and knives removed.

Fig. 4 is a view similar to Fig. 3 but with parts broken away and in section and with castings in position.

Fig. 5 is a view somewhat similar to Fig. 2, but partly in elevation, and partly in section with castings in position.

Fig. 6 is a horizontal sectional view showing the device in plan.

Fig. 7 is a view in elevation of a casting before it is subjected to the finishing operation.

The casting to be acted upon is shown in Fig. 7 where it will be observed that casting 11^a has an overcast or sprue 11^b which is substantially in the form of a T-shaped head and by means of which it is sustained by support 59^a located on either side of a stationary knife 60. The casting may obviously be placed on this support by hand but, as it is desirable to avoid a separate handling, said casting is preferably carried automatically from the mold and deposited on said support in the manner described in said application Ser. No. 540,481.

Reference numeral 64 indicates a movable knife mounted on a horizontally movable supporting slide 65 moving in guideways formed in brackets 66 carried by the frame. Looking at the movable knife in plan it will be noted that it is disposed at a slight angle to the stationary knife so that a shearing cut will be imparted to the metal. The plane of these knives is coincident with the line that separates the overcast or sprue 11^b

from the cast 11^a proper so that the T-head 55 is severed from the main part of the casting. The movable knife may receive its motion from any suitable source such as by means of rock arms 13 that extend through openings 67 in the supporting slide. For the purpose of holding the casting firmly while the trimming or cutting operation takes place, I provide a yielding vise or clamp consisting of a clamping plate 73 carried by a pair of push rods 74 slidably mounted in bearings formed on the underside of sliding support 65. Surrounding each rod is an expansion spring 75. Facing this clamping plate is an abutment plate 76 yieldingly held by springs 77 in a position slightly in advance of the cutting edge of the fixed knife. When sliding support 65 advances, springs 75 are thereby compressed and, these springs being stronger than springs 77, the backing plate of the clamp is moved against solid cross frame F. When sliding support 65 is withdrawn the movable clamp 73 is likewise withdrawn and springs 77 will then push back plate 76 inward thereby stripping the cast from the stationary knife and allowing said cast to slide down between the clamping plates to support 80.

The cutting elements just described are spaced some distance from the lower end of the casting mold, there being an opening in the framework at that point that opens on melting pot A. Overcast 11^b when held on support 59^a is therefore slightly above said melting pot. This arrangement is made for the purpose of permitting the severed overcast or sprue 11^b to be expelled or ejected into the melting pot. The means for accomplishing this are as follows: 68 indicate two rods, extending through movable knife blade 64, and carried by two arms 69 mounted on a small rock shaft 70 movably carried in bearings on the underside of supporting slide 65. Rods 68 are surrounded by springs 68^a and are bent down at their outer ends to conform to the angle of the knife and are flat and somewhat flexible as shown. 71 indicates a projection on shaft 70 for engagement with pin 72 on the side frames. As supporting slide 65 advances, to sever the metal, projection 71 engages pin 72 just prior to the time the overcast is cut off, thereby tilting arms 69 so that when the overcast is severed, said rock arms 69 will

make a quick forward motion and kick the overcast 11^b into the melting pot. Springs 68^a retract the ejector on the return movement of the slide.

Support 80 on which the cast proper 11^a drops may conveniently be in the form of two members spaced transversely of the machine on which slide upright supports 81. 78 indicate packer arms pivotally supported on red 79 and actuated from shaft 46 by means of the yoke 78^a carried at the lower end of packer arms 78. As has previously been described shaft 46 is carried by rocker arms 13 and therefore the closing movement of the mold packs the second previously made casting against upright 81 and out of the way so that the next severed casting coming from supports 59^a may be received. The parts will preferably be so arranged that said next casting slides down over packer arm 78 and lands gently on support 80.

I claim:

1. A casting finishing mechanism including: a support for sustaining a casting the upper end of which has extensions resting on the support, means for removing the upper end of the casting including the extensions to free it from said support, a second support, below the first one, on which the casting is delivered in an upright position after its upper end has been removed, and a packer for moving the finished castings facewise while in an upright position.

2. A casting finishing mechanism including: a support for sustaining a casting the upper end of which has extensions resting on the support, a clamp below said support for clamping the main portion of the casting, knives for shearing off the top of the casting including the extensions while the main portion is clamped, and means for stripping the main portion of the casting from the knives.

3. A casting finishing mechanism including: a support for sustaining a casting the upper end of which has extensions resting on the support, a clamp below said support for clamping the main portion of the casting, knives for shearing off the top of the casting including the extensions while the main portion is clamped, and an ejector for ejecting the top of the casting from the finishing mechanism.

4. A casting finishing mechanism including: a support for sustaining a casting the upper end of which has extensions resting on the support, a clamp below said support for clamping the main portion of the casting, knives for shearing off the top of the casting including the extensions while the main portion is clamped, an ejector for ejecting the top of the casting from the finishing mechanism, and means for stripping the main portion of the casting from the knives.

5. A casting finishing mechanism including: a support for sustaining a casting the upper end of which has extensions resting on the support, a clamp below said support for clamping the main portion of the casting, knives for shearing off the top of the casting including the extensions while the main portion is clamped, a second support, below the clamp, in which the casting is delivered in an upright position after it is released from the clamp, and a packer for moving the finished castings facewise while in an upright position.

6. A casting finishing mechanism including: a support for sustaining a casting the upper end of which has extensions resting on the support, a clamp below said support for clamping the main portion of the casting, knives for shearing off the top of the casting including the extensions while the main portion is clamped, means for stripping the main portion of the casting from the knives, a second support, below the clamp, on which the casting is delivered in an upright position after it is released from the clamp, and a packer for moving the finished castings facewise while in an upright position.

7. A casting finishing mechanism including: a support for sustaining a casting the upper end of which has extensions resting on the support, a clamp below said support for clamping the main portion of the casting, knives for shearing off the top of the casting, including the extensions while the main portion is clamped, an ejector for ejecting the top of the casting from the finishing mechanism, a second support, below the clamp, on which the casting is delivered in an upright position after it is released from the clamp, and a packer for moving the finished castings facewise while in an upright position.

8. A casting finishing mechanism including: a support for sustaining a casting the upper end of which has extensions resting on the support, a clamp below said support for clamping the main portion of the casting, knives for shearing off the top of the casting including the extensions while the main portion is clamped, an ejector for ejecting the top of the casting from the finishing mechanism, means for stripping the main portion of the casting from the knives, a second support, below the clamp, on which the casting is delivered in an upright position after it is released from the clamp, and a packer for moving the finished castings facewise while in an upright position.

Signed at Plainfield, in the county of Union and State of New Jersey, this 12th day of November, 1924.

THE PLAINFIELD TRUST COMPANY,

Administrator of Charles E. Hopkins, deceased.

By H. DOUGLAS DAVIS,

Ast. Secty. and Trust Officer.