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P. N. BRAUN

2,011,560

IRONING PRESS AND WORKHOLDER

Original Filed Feb. 26, 1930 2 Sheets-Sheet 1

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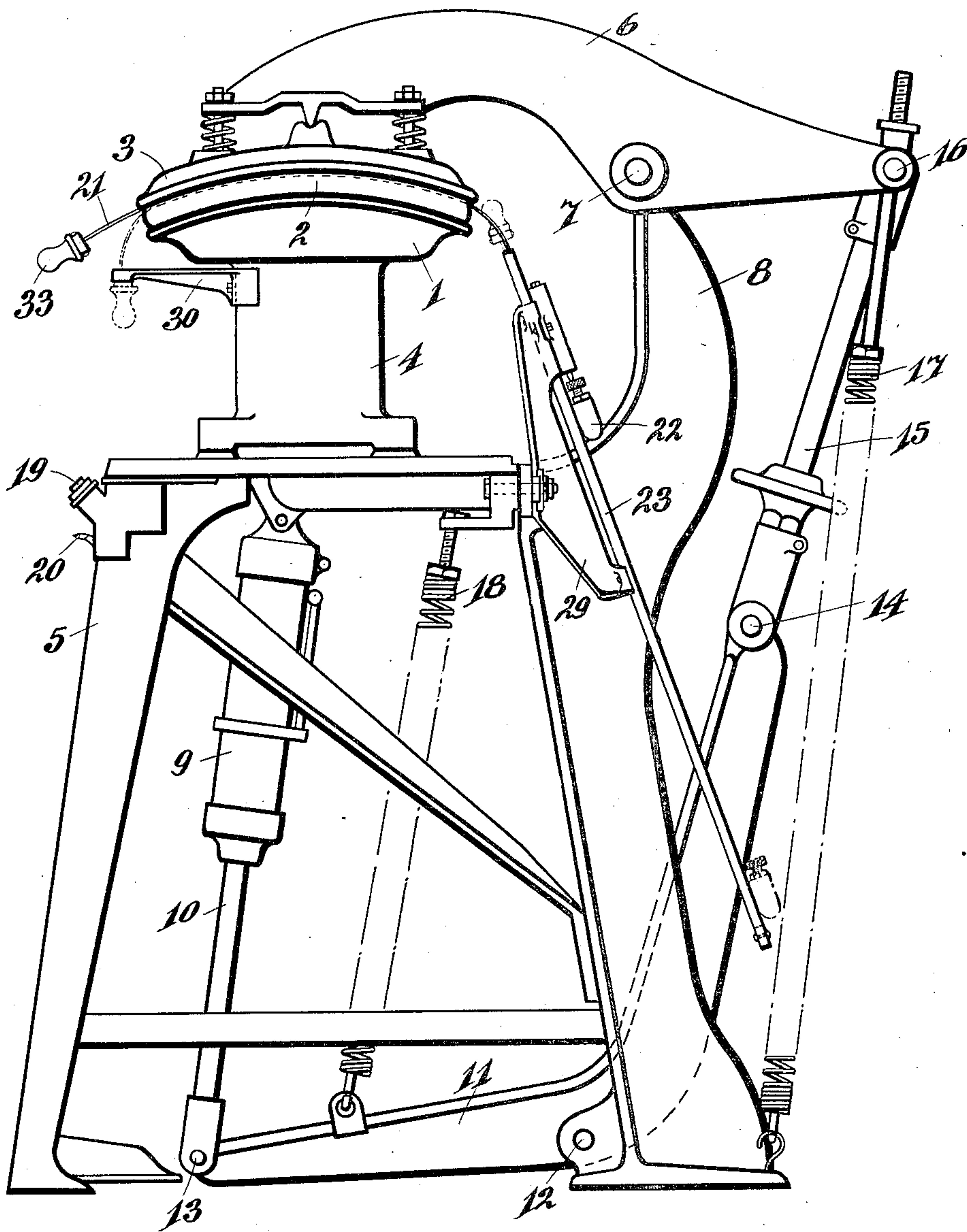
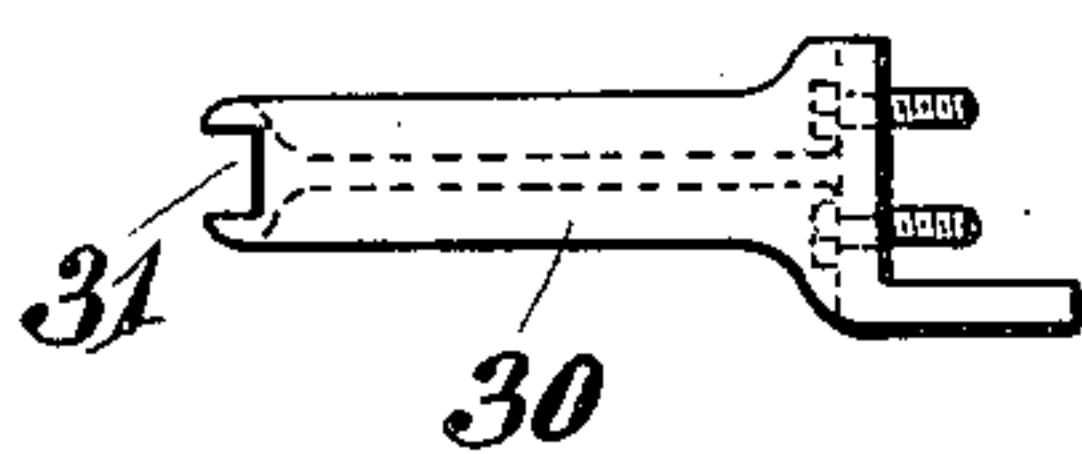


FIG. 4.



INVENTOR:

Philip N. Braun,

BY

Bodell & Thompson
ATTORNEYS.

ATTORNEYS.

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FIG. 3.

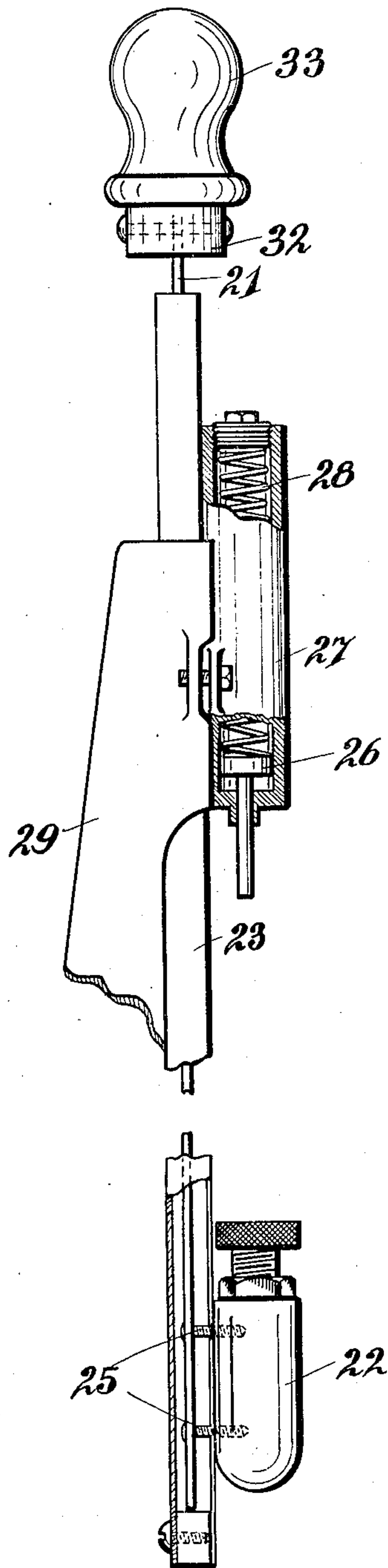
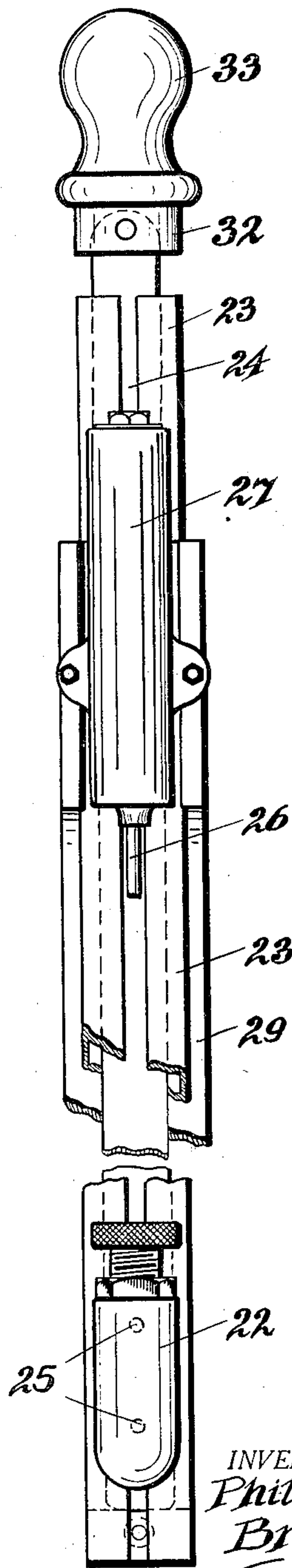


FIG. 2.



BY

INVENTOR:
Philip N. Braun,
Bodell & Thompson
ATTORNEYS.

UNITED STATES PATENT OFFICE

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IRONING PRESS AND WORKHOLDER

Philip N. Braun, Syracuse, N. Y., assignor to The
Prosperity Company, Inc., Syracuse, N. Y., a
corporation of New York

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This invention relates to garment or ironing presses and particularly to work holders therefor.

An object is to produce a work holder which is particularly simple and economical in construction, easily operable, readily applied to a pressing machine, and highly efficient in use.

One of the particular objects of the invention is means by which the work holder is automatically released as the press goes under pressure and automatically returned to its inoperative position when the press opens.

Another object is a work holder including a comparatively stiff but resilient flexible band material, so that it is readily moved into and out of operative or clamping position and readily unlocked by the closing of the press.

Another object is the supporting of the work holder in a particularly compact manner so that it returns automatically to its inoperative or non-clamping position when released.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is a side elevation of a pressing machine embodying my invention, showing the front end of the clamp band unreleased in full lines by the press closing action and locked in clamping position in full lines prior to closing of the press.

Figure 2 is a fragmentary enlarged plan view of the work holder and guide therefor detached from the press.

Figure 3 is a side view partly in section of parts seen in Figure 2.

Figure 4 is an enlarged plan view of the catch for holding the work holder in its operative position.

This invention comprises generally a flexible ribbon or band work holder member movable from its normal non-clamping or inoperative position into an operative or clamping position over the lower pressing element or jaw of the pressing machine to hold the work thereon, and means for holding the work holder in its operative position of such construction that the work holder automatically releases itself from the holding means or catch shown in Figure 4 as the press goes under pressure, together with means for returning the work holder when released, that is, when the press opens to its inoperative position.

I have here shown my invention as embodied

in a standard type of garment pressing machine including upper and lower jaws or pressing elements, one of which, as the upper element, is movable toward and from the other, as the lower element, these elements being supported, and the movable element being actuated, by any suitable means.

The reference character 1 designates the lower pressing element or buck which is usually overlaid with a compressible padding 2, and 3 is the upper pressing element or head which is movable toward and from the buck 1. The buck 1 is mounted upon a suitable bracket or goose neck 4 which in turn is mounted upon any suitable frame designated generally 5. The head 3 is carried by a forwardly and rearwardly extending lever 6 pivoted between its ends at 7 to an upright 8 rising from the frame.

In the machine here illustrated, the head 3 is power actuated and the power mechanism comprises a cylinder 9 having a piston therein, the motion of the piston being transmitted to the head 3 through any suitable motion transmitting mechanism. This mechanism in addition to the lever 6 and the piston rod 10 comprises an angle lever 11 pivoted at 12 at its angle to the base of the frame and having a forwardly extending arm pivoted at 13 to the piston rod, and an upwardly extending arm pivoted at 14 to the lower end of a link 15 which is pivoted at its upper end at 16 to the rear arm of the lever 6. The piston is single acting and the press is opened, when the force tending to hold it closed is released, by counter-springs 17 and 18.

The flow of motive fluid, as compressed air, to the cylinder 9 is controlled by any suitable valve means not forming part of this invention, this means including a push button 19. The exhaust of the fluid from the cylinder to permit the press to open is controlled by any suitable valve means operated by a trip lever 20. For the purposes of this invention, a description of the control means is unnecessary. It is sufficient to bear in mind that upon the depression of the push button 19, motive fluid as compressed air will flow to the cylinder 9 and actuate the piston therein to close the press and hold it closed, and that to open the press it is merely necessary to operate the trip lever 20 to permit the motive fluid to exhaust from the cylinder 9.

The work holder includes preferably a resilient member movable into a position over the buck 1 and into engagement with the work thereon, it being here shown as movable into a position extending transversely of the buck from the rear

side to the front side thereof. This work holder is preferably a tape 21 of resilient material or metal, it being comparatively stiff and capable of being tensioned when bowed so that it will
5 spring back towards straightened position when released, and also stiff enough to hold itself extended without folding.

Means is provided which tends to return the work holder to its normal position when not held
10 from returning to its normal position, and also means is provided for holding it in its operative or extended position. The former means is preferably, a weight 22 movable along a downwardly extending guide, this guide being inclined out of
15 a vertical line, the weight being secured to the rear end of the work holder or tape 21. As here illustrated, the tape is normally arranged in a scabbard or housing 23 formed with a slot 24 in one side thereof, and the weight moves along one
20 side of the scabbard and the slot, and is secured to the rear end of the tape 21 by means of screws 25 extending through the slot. The slot 24 and the side of the scabbard in which it is formed, constitute a guide for the weight.

25 Means is also provided for tensioning or pulling the tape rearwardly to hold it engaged with the catch to be described. This means is here shown as a spring pressed buffer or plunger 26 arranged to engage the weight 22 when it ap-
30 proaches the end of its upward movement and compresses the spring during the latter part of the upward movement. The buffer is here shown as movable in a tubular housing 27 and its spring 28 is also located in said housing. The housing
35 is carried by a bracket 29 secured to the frame 5, and this bracket also supports the housing or scabbard 23.

The means for holding the work holder or tape in its operative position until the head closes, is
40 here shown as a catch 30 provided with an open ended slot or notch 31 for receiving the front end portion of the tape 21. The front end portion of the tape is provided with a shoulder or head 32 on a handle 33. The catch 30 is supported below
45 the level of the face of the buck 1, or the padding 2 thereon, so as to require the front end portion of the work holder which overhangs the buck 2 to be flexed out of the natural course of the work holder or bowed in order to be engaged in the
50 notch 31 with the shoulder 32 underlying the catch 30. When in this position, the weight 22 has compressed the buffer spring 28 and hence, this spring tends to pull the head or shoulder 32 against the lower side of the catch 30 and hold
55 the work holder in its operated position. Also, this catch 30 is so located and the upper end of the scabbard 23 is so located relatively to the surface of the buck 1, or the padding 2 thereon, that the work holder or band 21 bows upwardly when
60 pulled into engagement with the work on the buck and hence, is under tension tending to straighten itself, but the friction between the shoulder 32 and the catch 30 is sufficient to prevent the work holder from reacting and disengaging itself from
65 the catch 30. When however, the press comes under pressure and applies pressure to the bowed work holder 21, the work holder is further tensioned and the downturned front end portion moved slightly downward so that it disengages
70 from the catch 30 and moves from the dotted line position to the full line position, Figure 1.

Now it is apparent that the clamping band 21 will perform every clamping function when flexible or pliable and lacking resiliency, but such
75 pliable band will not release the locking means,

formed by the interengaging shoulder 32 and the catch 30, when the press head or movable jaw 3 engages the stationary jaw 2, or particularly when the movable jaw engages and presses the
5 band downwardly. It is desirable to have means which releases the locking means when the movable jaw 3 engages the stationary jaw 2, or particularly when the movable jaw 3 engages the clamping band 21. Now a resilient band when
10 bowed over the stationary jaw and locked or latched at one end will be more sharply bowed when the movable jaw 3 presses downwardly thereupon and the end of the band will be moved downwardly as the pad upon the stationary jaw
15 is pressed downwardly under jaw pressure. It is this sharper bowing and movement of the resilient band by the movable jaw 3 which releases the locking or latching means irrespective of its function as a clamping band.

It is for the above reason that the clamping
20 band 21 is made resilient, which resiliency gives the band the further capability and function of releasing the locking means so that when the press opens, the weight 22 will pull the clamping band to its retracted or inoperative position in
25 back of the stationary jaw or press. The clamping band has, therefore, the double function of clamping and releasing. This is the preferred form of releasing means because it functions in the desired manner and at the desired time and is particularly preferred because it is simple in
30 requiring only that the clamping band 21 be made resilient or of resilient material so that the releasing operation is obtained. The movable jaw 3 therefore cooperates with the resilient band 21
35 to release the locking means when the movable jaw engages the band or the stationary jaw.

Upon opening of the press, the weight 22 returns the work holder to its normal position in the scabbard 23. The weight is provided with a
40 suitable adjusting screw 34 for coacting with the buffer 26 or the stem thereof, this being initially adjusted to coact most efficiently with the buffer 26.

In operation, assuming the press is open, the
45 operator lays the work on the compressible padding on the buck 1 and reaches over the buck and takes hold of the handle 33 of the work holder, pulls the work holder out of the scabbard, and engages the front portion thereof in the notch
50 31 of the catch 30. During this movement, the weight 22 is moved upwardly and compresses the buffer spring 28. The reaction of the buffer spring holds the front end of the tape 21 in the notch 31. Upon closing of the press, as by de-
55 pressing the push button 19, the head 3 closes down on the work and the work holder and causes the bowed portion to flatten and also moves the front end downwardly slightly and causes it to disengage from the catch 30. When
60 the press is opened by operating the trip lever 20, the weight 22 moves down its guide and moves or pulls the work holder to its inoperative position at the back of the press and buck.

What I claim is:

1. A pressing machine comprising, in combination, coacting upper and lower pressing elements adapted to close on the work, a work holder normally out of operative position relatively to the lower pressing element and movable into a position over said element to hold the work thereon, the work holder being of a resilient material tensioned to spring away from the lower element when in operative position, means carrying one end of the work holder, the
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other end being free, hook means coacting with the free end for holding it in operative position, said hook means being located in such position that the free end portion of the work holder is bowed away from the lower pressing element when engaged with said hook means, so that when pressure is applied by the movable element to the work holder, the work holder flexes and tends to spring back to its normal position and thereby become released from the hook means, and means for returning the work holder to its normal position when the press opens.

2. A pressing machine comprising, in combination, coacting upper and lower pressing elements adapted to close on the work, a work holder normally out of operative position and movable into an operative position over the lower element and into engagement with the work thereon, the work holder being a resilient strip, means carrying one end of the work holder, the other end being free, the work holder being located relatively to the lower element to bow upwardly when in operative position, a catch for engaging the free end of the work holder when in operative position, said catch being located in such position that the work holder must be flexed to engage therewith, the engaging portion of the catch being located so that when the press goes under pressure and the bow of the work holder tends to straighten, the free end thereof will release from the catch.

3. A pressing machine comprising, in combination, coacting upper and lower pressing elements adapted to close on the work, a work holder normally out of operative position and movable into an operative position over the lower element and into engagement with the work thereon, the work holder being a resilient strip, means carrying one end of the work holder, the other end being free, the work holder being located relatively to the lower element to bow upwardly when in operative position, a catch for engaging the free end of the work holder when in operative position, said catch being located in such position that the work holder must be flexed to engage therewith, the engaging portion of the catch being located so that when the press goes under pressure and the bow of the work holder tends to straighten, the free end thereof will release from the catch, and means for returning the work holder to its normal position during the opening of the press.

4. A pressing machine comprising, in combination, coacting upper and lower pressing elements adapted to close on the work, a work holder normally arranged in inoperative position and movable into a position over the lower element to engage the work and hold the same on the lower element, means normally holding the work holder in inoperative position, the work holder being a resilient strip, means carrying the work holder at one end, the other end being free, a head at the free end of the strip, and a catch having a notch arranged to receive the free end of the strip with the head engaged with the catch.

5. A pressing machine comprising, in combination, coacting upper and lower pressing elements adapted to close on the work, a downwardly extending guide located below the lower element and having its upper end located near the level of the lower element, a weighted slide movable along the guide, and a work holder slidably mounted on the guide and consisting of a stiff resilient strip connected at one end to the weighted slide and having its other end free and

movable into a position over the lower element to engage the work thereon, the slide tending to move downwardly along the guide to return the work holder to its inoperative position behind the lower pressing element.

6. A pressing machine comprising, in combination, coacting upper and lower pressing elements adapted to close on the work, a downwardly extending guide located behind the lower element and having its upper end located near the level of the lower element, a weighted slide movable along the guide, a work holder slidably mounted on the guide and including a stiff resilient strip connected at one end to the weighted slide and having its other end free and movable into a position over the lower element to engage the work thereon, the slide tending to move downwardly along the guide to return the work holder to its inoperative position behind the lower pressing element, and a catch located in front of the lower pressing element and arranged to engage the free end of the work holder to hold the work holder in its operative position.

7. A pressing machine comprising, in combination, coacting upper and lower pressing elements adapted to close on the work, a downwardly extending guide having its upper end located near the level of the lower element, a weighted slide movable along the guide, a work holder consisting of a stiff resilient strip connected at one end to the slide and having its other end free and movable into a position over the lower element to engage the work thereon, the slide tending to return the work holder to its inoperative position, a catch arranged to coact with the free end of the work holder to hold the work holder in its operative position, the free end of the work holder connecting with the catch in such position that it will be released when the press goes under pressure, and a spring pressed buffer arranged in the path of the slide to be engaged therewith when the slide approaches the end of its movement toward the upper end of the guide.

8. A pressing machine comprising, in combination, coacting upper and lower pressing elements adapted to close on the work, a movable weighted member, a work holder consisting of a stiff resilient strip connected at one end to the weighted member and having its other end free, the strip being movable into a position over the lower element to engage the work thereon, the weighted member tending to return the work holder to its inoperative position, and upwardly sloping guide means in which the strip and weighted member slide.

9. A pressing machine comprising, in combination, coacting upper and lower pressing elements adapted to close on the work, a movable weighted member, a work holder consisting of a stiff resilient strip connected at one end to the weighted member and having its other end free, the strip being movable into a position over the lower element to engage the work thereon, the weighted member tending to return the work holder to its inoperative position, and a spring pressed buffer arranged to engage the weighted member when said weighted member approaches the end of its upward movement.

10. An ironing press and work holder, comprising in combination, a frame, coacting press jaws thereon, a clamp band depending downwardly its full length at the rear of the frame and yielding means retaining the band in such position when not in use, said band being mov-

able forwardly between the jaws and bendable to conform to the coacting jaw surfaces, frictional catch means at the front of the press to which the front end of band is attached and frictionally held by the yielding means preliminarily to closing the press, and spring means inherently provided in the front end of the band tending to disengage the catch means, whereby the closing action of the press loosens the frictional catch means.

11. A pressing machine comprising, in combination, cooperating press jaws adapted to close upon the work, work holder mechanism including a clamp band adapted to hold the work to be ironed on one jaw and possessing inherent resiliency and tensioned to normally spring away from the jaw and being movable from non-clamping position into clamping engagement with the press jaw to hold the work thereon, catch means for holding the clamp band at its free end in clamping engagement while the press is open including a handle upon the band which engages a catch upon the machine, the catch means being released due to the inherent resiliency of the clamp band by the closing action of the press in tightening down on the clamp band, and means to automatically retract the clamp band from between the press jaws when the press opens.

12. A garment or ironing press comprising, cooperating press jaws including a stationary jaw and a movable jaw, a yieldable pad on the stationary jaw, actuating means for the movable jaw, a work holder, including a clamp band movable over the stationary jaw into clamping position in contact therewith and away therefrom to inoperative position, means connected with one end of the clamp band to return the latter to inoperative position, latching means including interengaging members on the other end of the clamp band and upon the press to latch the clamp band in position over the stationary jaw, said latching means being automatically releasable upon compression of the yieldable pad by the movable jaw.

13. A garment or ironing press comprising, cooperating press jaws including a yieldable stationary jaw and a movable jaw, actuating means for the movable jaw, a work holder, including a clamp band means movable over the stationary jaw into clamping position and away therefrom to inoperative position, means connected with one end of the clamp band means to return the latter to inoperative position, latching means including interengaging members on the other end

of the clamp band and upon the press to latch the clamp band means in position over the stationary jaw, said latching means being automatically releasable upon yielding of the yieldable jaw by the movable jaw.

14. A garment or ironing press comprising, cooperating press jaws including a yieldable stationary jaw and a movable jaw, actuating means for the movable jaw, a work holder, including a flexible clamp band means movable over the stationary jaw into clamping position and away therefrom to inoperative position, means connected with one end of the flexible clamp band means to return the latter to inoperative position, latching means including interengaging members on the other end of the flexible clamp band means and upon the press for latching the clamp band means in position over the stationary jaw, said latching means being automatically releasable upon yielding of the yieldable jaw by the movable jaw.

15. A work holder for a garment or ironing press having a movable press jaw cooperating with a yieldable stationary press jaw comprising, a clamp band of resilient material movable over the stationary jaw into a bowed clamping position and away therefrom to inoperative position, means connected with one end of the resilient band to return the latter to inoperative position, and latching means including interengaging members on the other end of the resilient band and upon the press for latching the clamp band in position over the stationary jaw, one of said interengaging members being a hook and the other being a hook engaging means, the resilient clamp band being engaged by the movable press jaw and moving one of said interengaging members relatively to the other when the yieldable jaw is engaged by the movable jaw thereby releasing the latching means.

16. A work holder for a garment or ironing press having a movable press jaw cooperating with a yieldable stationary press jaw comprising, a clamp band movable over the stationary jaw into clamping position and away therefrom to inoperative position, means connected with one end of the clamp band to return the latter to inoperative position, latching means including interengaging members on the other end of the clamp band and upon the press to latch the clamp band in position over the stationary jaw, said latching means being automatically releasable upon yielding of the yieldable jaw by the movable jaw.

PHILIP N. BRAUN.